Federal Court Confidence: Successfully Litigating Personal Injury Cases

Part 2: Depositions in Federal Court

Materials By:
Andrew Smiley

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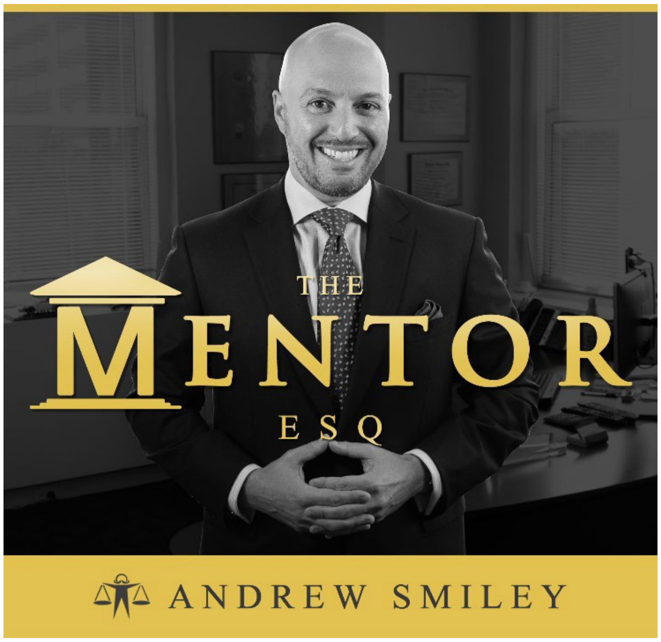

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CURRICULUM VITAE

Education:

·Brooklyn Law School - Juris Doctorate 1996

Moot Court Honor Society - Vice President/Executive Board (Chair of Trial Division)
Moot Court Honor Society - Competitor - National Appellate Trademark Competition
Moot Court Honor Society – Coach, National Trial Team – Regional Champions
CALI Excellence for the Future Award - Advanced Legal Research
Judge Edward and Doris A. Thompson Award for Excellence in Trial Advocacy

·Tulane University, New Orleans, LA - Bachelor of Arts (Honors, Psychology) 1993

Professional:

· *Smiley & Smiley, LLP*
Managing Partner & Senior Trial Attorney, January 2001 - present
Associate, June 1996 - December 2000
Law Clerk, September 1993 - June 1996
Major verdicts and settlements in plaintiffs' personal injury, medical malpractice and wrongful death litigation

· *Adjunct Clinical Instructor of Law - Brooklyn Law School*, Trial Advocacy Program (1998-2004)

· *The Mentor Esq. Podcast – A Podcast for Lawyers*

- Founder & Host (2019 – Present)

· *New York "Super Lawyer"*
2010, 2011,2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

Bar Admissions:
- The United States Supreme Court
- New York State Courts
- United States Eastern District, Southern District & Northern District of New York
- United States District Court of Vermont

Organizations/Affiliations:

·New York State Academy of Trial Lawyers
  -President (May 2017 – May 2018)
  -President-Elect – (April 2016- May 2017)
  -Vice President – 1st Dept. (July 2013-May 2016)
  -Executive Committee (May 2019 – present)
  - Board of Directors (2013- present)
  - Judicial Screening Committee (2013- present)
  - Master CLE Instructor (2020 – present)
  - CLE Instructor (2013 – present)

·New York City Trial Lawyers Alliance
  -Chairman of Board of Governors (July 2017 – July 2019)
  -President (July 2015 – July 2017)
  -Vice President (June 2013 – July 2015)
  -Treasurer (June 2011 – June 2013)
  -Secretary (June 2009- June 2011)
  -Board of Directors (2000-present)

- Judicial Screening Committee, Kings County Democratic Party (2013)
- New York State Bar Association
- Brooklyn Bar Association
  Medical Malpractice Committee
  Supreme Courts Committee
- American Bar Association
- The American Association for Justice

- Brooklyn Law School Alumni Association
- National Order of Barristers
- Lime Rock Drivers Club
- Porsche Club of America (Connecticut Valley Region)
- Porsche Sim Racing League
- Sports Car Driving Association (SCDA)
- Just Hands Racing Foundation – Board of Directors & Legal Counsel

Authored Books

Smiley, Andrew J. *How to Successfully Litigate a Personal Injury Case – A Practical Guide,* 2022, The Mentor Esq. Handbook Series – Amazon Best Seller in Personal Injury Law

Smiley, Andrew J. *Successful Trial Skills – A Practical Guide to Jury Selection, Opening Statements, Direct & Cross Examinations and Closing Arguments*, 2024, The Mentor Esq. Handbook Series – Amazon #1 New Release in Trial Practice

Continuing Legal Education (CLE) Presentations:

(81) *Federal Court Confidence: Successfully Litigating Personal Injury Cases – Part 2: Depositions in Federal Court,* New York State Academy of Trial Lawyers, May 1, 2025

(80) *Federal Court Confidence: Successfully Litigating Personal Injury Cases – Part 1: Overview of the Federal Court Process,* New York State Academy of Trial Lawyers, April 3, 2025

(79) *Who's on the Hook?- Part 4: Litigation and Insurance Issues in SUM Cases,* New York State Academy of Trial Lawyers, January 8, 2025

(78) *Who's on the Hook?- Part 3: Litigation and Insurance Issues in Premise Liability Cases,* New York State Academy of Trial Lawyers, December 4, 2024

(77) *Who's on the Hook?- Part 2: Litigation and Insurance Issues in Construction Accident Cases,* New York State Academy of Trial Lawyers, November 6, 2024

(76) *Who's on the Hook?- Part 1: Litigation and Insurance Issues in Ride-Share and Rental Car Accident Cases,* New York State Academy of Trial Lawyers, October 2, 2024

(75) *Introducing Evidence and Impeaching Witnesses*, Office of The New York State Attorney General – Legal Education and Professional Development, September 26, 2024

(74) *Walking the Line: Settlement Negotiation Skills & Ethics,* New York State Academy of Trial Lawyers, July 9, 2024

(73) *Novel Negligence Cases – Part 2: How to Successfully Litigate Dram Shop Cases*, New York State Academy of Trial Lawyers, June 5, 2024

Continuing Legal Education (CLE) Presentations Continued:

(72) *Working with Experts*, Office of The New York State Attorney General – Legal Education and Professional Development, April 2, 2024

(71) *Novel Negligence Cases – Part 3: How to Successfully Litigate Ski Accident Cases*, New York State Academy of Trial Lawyers, March 6, 2024

(70) *Novel Negligence Cases – Part 1: How to Successfully Litigate Personal Trainer and Gym Negligence Cases*, New York State Academy of Trial Lawyers, January 3, 2024

(69) *Litigation Back to Basics – Part 3: Introducing Evidence and Impeaching Witnesses*, New York State Academy of Trial Lawyers, December 6, 2023

(68) *Litigation Back to Basics – Part 2: Working With Experts*, New York State Academy of Trial Lawyers, November 1, 2023

(67) *Construction Site Injury Litigation: Pursuing or Defending Claims Against Site Owners, Contractors, and Other Third Parties,* Strafford CLE/BarBri, October 17, 2023

(66) *Litigation Back to Basics – Part 1: Preparing and Conducting Depositions*, New York State Academy of Trial Lawyers, October 4, 2023

(65) *Depositions*, Office of The New York State Attorney General – Legal Education and Professional Development, September 28, 2023

(64) *How to Litigate a Medical Malpractice Case – Part 6: The Trial*, New York State Academy of Trial Lawyers, June 7, 2023

(63) *How to Litigate a Medical Malpractice Case – Part 5: Pre-Trial Preparation*, New York State Academy of Trial Lawyers, May 3, 2023

(62) *How to Litigate a Medical Malpractice Case – Part 4: Discovery & Depositions*, New York State Academy of Trial Lawyers, April 4, 2023

(61) *How to Litigate a Medical Malpractice Case – Part 3: Commencing the Action*, New York State Academy of Trial Lawyers, February 28, 2023

(60) *How to Litigate a Medical Malpractice Case – Part 2: Expert Selection*, New York State Academy of Trial Lawyers, February 1, 2023

(59) *How to Litigate a Medical Malpractice Case – Part 1: The Initial Screening*, New York State Academy of Trial Lawyers, January 4, 2023

(58) *How to Litigate a Construction Accident Case – Part 4:* Motion Practice, New York State Academy of Trial Lawyers, December 7, 2022

(57) *Preparing for Depositions: Best Practices for Asking and Answering Questions,* Office of The New York State Attorney General, 2022 Legislature Program, December 6, 2022

Continuing Legal Education (CLE) Presentations Continued:

(56) *How to Litigate a Construction Accident Case – Part 3: Depositions*, New York State Academy of Trial Lawyers, November 2, 2022

(55) *How to Litigate a Construction Accident Case – Part 2: Commencing The Action*, New York State Academy of Trial Lawyers, October 3, 2022

(54) *Trial Series: Part 2 - Opening Statement Webinar,* Queens County Bar Association, September 22, 2022

(53) *How to Litigate a Construction Accident Case – Part 1: An Overview of New York Labor Law,* New York State Academy of Trial Lawyers, September 7, 2022

(52) *How to Litigate a Catastrophic Automobile Accident Case – Part 6: The Trial,* New York State Academy of Trial Lawyers, July 6, 2022

(51) *How to Litigate a Catastrophic Automobile Accident Case – Part 5: Mediation and Settlement,* New York State Academy of Trial Lawyers, June 2, 2022

(50) *How to Litigate a Catastrophic Automobile Accident Case – Part 4: Expert Depositions,* New York State Academy of Trial Lawyers, May 4, 2022

(49) *How to Litigate a Catastrophic Automobile Accident Case – Part 3: Liability and Damages Experts,* New York State Academy of Trial Lawyers, April 6, 2022

(48) *How to Litigate a Catastrophic Automobile Accident Case – Part 2: Commencing the Action,* New York State Academy of Trial Lawyers, March 2, 2022

(47) *How to Litigate a Catastrophic Automobile Accident Case – Part 1: The Investigation,* New York State Academy of Trial Lawyers, February 4, 2022

(46) *Anatomy of a Trial, a Trial Skills Series – Part 5: Summations,* New York State Academy of Trial Lawyers, January 5, 2022

(45) *Anatomy of a Trial, a Trial Skills Series – Part 4: Cross-Examination,* New York State Academy of Trial Lawyers, December 1, 2021

(44) *Anatomy of a Trial, a Trial Skills Series – Part 3: Direct Examination,* New York State Academy of Trial Lawyers, November 3, 2021

(43) *Anatomy of a Trial, a Trial Skills Series – Part 2: Opening Statements,* New York State Academy of Trial Lawyers, October 6, 2021

(42) *Anatomy of a Trial, a Trial Skills Series – Part 1: Jury Selection,* New York State Academy of Trial Lawyers, September 10, 2021

(41) *How to Successfully Litigate a Personal Injury Case Series - Part 7: It's a Wrap!,* New York State Academy of Trial Lawyers, July 7, 2021

<u>Continuing Legal Education (CLE) Presentations Continued</u>:

(40) *How to Successfully Litigate a Personal Injury Case Series - Part 6: The Trial,* New York State Academy of Trial Lawyers, June 2, 2021

(39) *How to Successfully Litigate a Personal Injury Case Series - Part 5:Pre-Trial Disclosures and Gearing up for Trial,* New York State Academy of Trial Lawyers, May 5, 2021

(38) *How to Successfully Litigate a Personal Injury Case Series - Part 4: Depositions,* New York State Academy of Trial Lawyers, April 7, 2021

(37) *How to Successfully Litigate a Personal Injury Case Series - Part 3: Your Adversary, the Preliminary Conference and Initial Discovery,* New York State Academy of Trial Lawyers, March 3, 2021

(36) *How to Successfully Litigate a Personal Injury Case Series - Part 2: Early Settlement, Jurisdiction, Venue & Commencing The Lawsuit,* New York State Academy of Trial Lawyers, February 3, 2021

(35) *How to Successfully Litigate a Personal Injury Case Series - Part 1: Getting the Case, Investigation and Ready to File,* New York State Academy of Trial Lawyers, January 6, 2021

(34) *Brick by Brick: Building a Personal Injury Practice,* New York State Academy of Trial Lawyers, December 10, 2020

(33) *Working with Experts to Build Your Case,* New York State Academy of Trial Lawyers, October 8, 2020

(32) *Fitness Industry Liability: Gyms, Trainers and Waivers*, The Mentor Esq. Podcast, September 8, 2020

(31) *Let's Make a Federal Case Out of It: Litigating Personal Injury Cases in Federal Court,* New York State Academy of Trial Lawyers, June 9, 2020

(30) *Crisis Management - The Corona Virus Pandemic,* The Mentor Esq. Podcast, April 9, 2020

(29) *Do You Have a Federal Tort Claims Act Case in Your Office,* New York State Academy of Trial Lawyers, December 10, 2019

(28) *Auto and Truck Claims, Accidents and Litigation 2019 – Evaluating Damages and Use of Experts*, New York State Bar Association, September 9, 2019

(27) *Thoughts and Strategies in the Ever-Evolving Product Liability Litigation – The Plaintiff's Perspective*, The Defense Association of New York, March 12, 2019

(26) *Trial Techniques: Lessons on Dealing with Millennial Jurors; Summations; Requests to Charge and Post-Trial Motions*, The Defense Association of New York, January 31, 2019

(25) *Trial Techniques: Interactive Lessons from the Plaintiff and Defense Perspectives*, The Defense Association of New York, September 17, 2018

Continuing Legal Education (CLE) Presentations Continued:

(24) *Punitive Damages – What to Plead, What to Prove: Medical Malpractice*, New York State Academy of Trial Lawyers, June 8, 2017 & June 21, 2017

(23) Presenter on Evidence, *2016 Annual Update, Precedents & Statutes for Personal Injury Litigators*, New York State Academy of Trial Lawyers, September 30, 2016

(22) *Medical Malpractice in New York: A View from All Sides: The Bench, The Bar and OCA,* New York State Bar Association, October 11, 2015

(21) *Effectively Using Experts in Personal Injury Cases,* Lawline, October 8, 2015

(20) *Killer Cross Examination Strategies,* Clear Law Institute, April 21, 2015

(19) *Powerful Opening Statements,* Clear Law Institute, January 13, 2015

(18) *The Dram Shop Law: New York Liquor Liability,* Lawline.com, November 20, 2014

(17) *Killer Cross Examination Strategies,* Lawline.com, November 20, 2014

(16) *Trial Techniques: Tricks of the Trade Update,* Lawline.com, October 14, 2014

(15) *Personal Trainer Negligence Update,* Lawline.com, October 14, 2014

(14) *Trial Techniques – Part 2: Cross- Examination & Closing Arguments*, Brooklyn Bar Association, May 15, 2014

(13) *Trial Techniques – Part 1: Jury Selection, Opening Statements & Direct Examination*, Brooklyn Bar Association, May 7, 2014

(12) *Health, Fitness & Adventure Sports Liability*, New York State Bar Association, August 1, 2013

(11) *Direct Exams: How To Make Your Witnesses Shine*, New York State Academy of Trial Lawyers, May 6, 2013

(10) *Opening Statements: A Recipe for Success*, Lawline.com, August 7, 2012

(9) *"You Had Me at Hello": Delivering an Effective and Powerful Opening Statement*, New York State Academy of Trial Lawyers, April 1, 2012

(8) *Preparing the Construction Accident Case*, New York County Lawyers Association, March 26, 2012

(7) *The Nuts and Bolts of a Trial*, New York State Academy of Trial Lawyers, October 24, 2011

(6) *Personal Trainer Negligence*, Lawline.com, March 22, 2011

Continuing Legal Education (CLE) Presentations Continued:

(5) *Trial Effectively Using Experts in Personal Injury Cases*, Lawline.com, May 4, 2011
Techniques: The Tricks of the Trade, Lawline.com, February 16, 2011

(4) *Practice Makes Perfect: Learn to Practice Like a Pro*, Lawline.com, January 18, 2011

(3) *Jury Selection 101, New York State Academy of Trial Lawyers*, December 14, 2010

(2) *Practical Guidelines for Getting Items into Evidence*, Lawline.com, March, 2010

(1) *Winning Your Case: Trial Skills that Count*, Lawline.com, August 21, 2009

Television Appearances
Fox News Channel
    -The O'Reilly Factor
    -What's Happening Now with Martha McCallum
    - America's News Room
    - Fox & Friends
    -Fox Business Channel
    -Neil Cavuto
    -Money with Melissa Francis
CNN **-**Anderson Cooper 360
ET – Entertainment Tonight
Bloomberg TV
Headline News
Tru TV
Court TV
The Morning Show with Mike and Juliet

Interests, Hobbies:

High-Performance Driving Events, Lime Rock Drivers Club, Porsche Enthusiast, Sim Racing, Tennis, Lego, Cooking, Yoga

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August 22, 2017

James Ughetta, Esq.
The Centre at Purchase
4 Manhattanville Road, Suite 202
Purchase, NY 10577

Subject: **Nicolosi v BRG**
File No.: **20170037**

Dear Mr. Ughetta:

In accordance with your request, Guidance Engineering and Applied Research analyzed from a biomechanical engineering perspective Stella Nicolosi's accident on March 12, 2015 that involved a BellFit Resistance Band.

Qualifications

I am a Principal and Biomechanical Engineer at Guidance Engineering and Applied Research. I specialize in biomechanical engineering, dynamic system analysis, and accident reconstruction. I investigate human injuries in accidents and product failures by using biomechanical engineering techniques that apply the principles of engineering to the human body. I have extensive experience with mechanical testing design and analysis. I have researched accidents and injury potential using volunteer studies, anthropomorphic test devices ("crash test dummies"), computational models of the human body, and statistical analyses.

I hold a Bachelors of Science in Mechanical Engineering from the University of Pennsylvania. I also have a Masters of Science and a Doctorate in Mechanical Engineering from the University of California, Berkeley, where I specialized in dynamic systems and biomechanics. I held the position of Adjunct Associate Professor of Clinical Physical Therapy in the Department of Biokinesiology and Physical Therapy at the University of Southern California (USC) from 2004 to 2009. I am currently an Affiliate Scientist in the Applied Biomechanics Laboratory at the University of Washington (UW). At UC Berkeley, USC, and UW, my research activities included biomechanical engineering analysis, modeling, and testing related to human injury.

I serve on the Board of Directors for ASTM International and for the Safety Equipment Institute. I am a USA delegate on the International Standards Organization committee TC83/SC4, president of the International Society for Skiing Safety, chairman of ASTM F27 on Snow Skiing and Snowboarding and, the subcommittee chair for ASTM F27.60 for Research and Statistics. My current curriculum vita, testimony list for the past four years, and fee schedule are attached to this report as Attachments A, B, and C.

Information Received

A list of the materials that have been received and reviewed is provided in Attachment D.

Accident Summary

According to the Plaintiff's response to interrogatories, Ms. Nicolosi purchased the subject resistance band at Modell's in Brooklyn, NY on March 20, 2012, and first used the resistance band on March 12, 2015 (the date of the subject accident). Ms. Nicolosi was using the band as shown on its box; she was stepping on the band while holding a handle in each hand. After a minute or two, the band came out from under her foot and the hard-plastic ball attached to the band struck her right eye. As a result, Ms. Nicolosi's right eye sustained a total and permanent loss of vision, traumatic maculopathy, recurrent hyphema necessitating paracentesis, and a corneal abrasion.

Ms. Nicolosi claimed that the "hard plastic ball" should not be attached to the band and that the instructions should have a warning that the ball could cause injury and should be removed before engaging in exercises shown on the box.

Ms. Nicolosi had no prior injury to her right eye but was legally blind in her left eye before the subject accident.

Deposition Summary of Stella Nicolosi

According to the deposition testimony of Ms. Nicolosi, she purchased the subject resistance band at Modell's in 2012. While at the store, she did not inquire about instructions or safety information for the resistance band. Prior to purchasing the subject resistance band, she had once used briefly her trainer's band at the gym; his band had handles but did not have a ball. Her trainer had set up the band, she stepped on the band with one foot, and was able to stretch and pull it up. Her trainer did not give her any safety instructions or warnings about using the band.

Ms. Nicolosi kept the subject resistance band packaged in its box in her workout bag and first removed it from its box on the day of her accident. The band came with a ball and a manual. In the manual, she learned the ball was intended to be hooked on a door knob; she did not use any exercises using the door anchor ball. She wanted to remove the door anchor ball before performing exercises, but did not know how to remove it and could not find instructions in the manual about how to remove the ball. Ms. Nicolosi wanted to do bicep curls with the band and testified she reviewed the manual before performing exercises. When attempting her first bicep curl with the band, Ms. Nicolosi stepped on the anchor ball, pulled up on the handles, and the anchor ball slipped out and "smashed" her eye.

Ms. Nicolosi was standing with her right foot in front and her back leg bent; she did not recall if she was leaning forward or if her forward leg was bent. She was standing firmly on the door anchor ball, with the door anchor ball under the middle of the ball of her right foot. She testified that she did not step on the tubing and that the band felt like it was securely under her foot when she stepped on the ball. She did not recall how far she pulled up on the handles, but did not think she touched her shoulders. She did not lift her foot off the ground and was looking up, when the ball slipped out from the front of her foot. She did not see the door anchor ball when it slipped out or before it contacted her eye. At the time of her accident, Ms. Nicolosi was on the tile floor of her apartment's hallway and was wearing Nike sneakers and workout clothes.

The door anchor ball struck "dead center" in her right eye; no other part of the band came in contact with her eye and the band did not snap her arm. When the ball contacted her eye, she was still standing straight up and looking straight ahead. Ms. Nicolosi testified that as a result of the accident, she now only has a little bit of peripheral vision that is blurry and cloudy in her right eye.

At the time of the accident, Ms. Nicolosi was 5 feet tall, 115 pounds, and wore a size 7 shoe. Prior to her accident, she was blind in her left eye and only needed reading glasses for her right eye. She competed in Women's Figure competitions in 2004, 2007 and 2009/2010.

Deposition Summary of Thom Parks

According to the deposition testimony of Mr. Parks, he was the vice president of corporate affairs at Bell Sports and was involved with safety, warnings, instructions, and testing of the BellFit Resistance Band line.

Mr. Parks testified that the BellFit Resistance Band evolved from when it first came on the market in 2009 or 2010 and when the line was sold to Bollinger Sports in 2012. In the first-generation bands, the door anchor was made of a hollow wooden ball enclosed in nylon webbing. Around 2009 to 2010, he became aware of injuries from door anchors that released from doors and one or two instances of first generation door anchors breaking. Instead of removing the door anchors that customers had come to expect, they looked at a variety of ways to make door anchors; the lightweight plastic ball performed the best and offered little threat to the consumer when used properly. For the second-generation bands, the door anchor ball was made of tough, lightweight plastic, its diameter increased from ¾-inch to 1- or 1¼-inches, and it was exposed (that is, not enclosed in the nylon webbing). Mr. Parks was unaware of any second-generation door anchors breaking. They also added a warning to wear safety glasses in 2009 after injuries occurred when customers did not use the door anchor properly.

Throughout their evolution, the BellFit resistance bands were tested at the factory, by people in the Hong Kong office, and by himself. A similar product marketed under the Embark brand (supplied by Bell exclusively to Target Company) was also tested at Bureau Veritas. Target chose to conduct a voluntary recall of the Embark brand of resistance bands. Mr. Parks spoke with the CPSC and found that they were under no obligation to do the same. He felt that the product was safe if it was used according to the instructions or with common sense. Also, the injury rate was extremely low.

The manual provided instructions to place the tubing under the arch of the foot to ensure the band is secure and does not fly back when tensioned. All the illustrations clearly show that the door anchor ball is not under the foot when doing underfoot exercises. He never considered adding to the manual that one should remove the door anchor before doing underfoot exercises. They never had an allegation of an injury from the door anchor when someone stepped on the door anchor attachment. Also, there were no instructions on how to remove the door anchor because it is common sense. He never heard of any customers or testers having difficulty removing the door anchor from the band.

Deposition Summary of Steven Tipton, Ph.D., P.E.

According to the deposition testimony of Dr. Tipton, Mr. Friedman gave him an exemplar resistance band identical to the subject resistance band; the band, instructions, and packaging were identical. He measured the anchor ball to be 1.1 inches and weigh 0.7 ounces. Dr. Tipton conducted static testing with a handheld load cell to collect force versus deflection data as he stretched the exemplar cord in 1 foot increments up to 6 feet.

Dr. Tipton believed Ms. Nicolosi was using the product as intended and the resistance band did not break in the subject accident. The ball came out from under her foot because the band was exerting a force on the ball that was greater than the frictional forces that were keeping the ball in place. Because Ms. Nicolosi was on tile, the frictional force between the anchor ball and floor was lower than if she had been on carpet or a workout mat.

Dr. Tipton used his static testing data to calculate the velocity of the anchor ball to be 97 miles per hour in Ms. Nicolosi's accident. Dr. Tipton based his speed calculation on Ms. Nicolosi's height of 5 feet and he assumed her hands came up to her chin. He testified the resistance band was stretched about 19 inches but 12 inches of stretch would be adequate to cause Ms. Nicolosi's injury. He did not calculate the force applied by the ball to Ms. Nicolosi's face at impact. Dr. Tipton did not know Ms. Nicolosi's exact injury, if the band struck her eye, or whether the band could have created her injury. Dr. Tipton testified that if the tubing hit Ms. Nicolosi's eye, it could still produce an eye injury.

Dr. Tipton testified that he was not critical of the band, the handles or the nylon strap; he was only critical of the hard, polypropylene ball used as a door anchor. He opined that foam donut shaped door anchors would have been a reasonable door anchor design; they had been used for a three-year period with no reported injuries. Dr. Tipton also came up with his own design that consisted of a piece of PVC pipe inserted into a red foam ball. He did not do any testing to determine the effects of exposure to UV, chemicals, water, or sweat on the materials he used. He also did not evaluate the force of the red ball on the eye if someone stretched the band 19 inches and whether it could create an eye injury.

Dr. Tipton did not believe removing the door anchor was obvious or simple and stated "there's a trick to it." While there was an easy way to remove the door anchor ball, he believed that it was only obvious after you know the trick and do it a few times.

Dr. Tipton had not taken any courses in biomechanics and was not provided with any medical records. He did not know to what extent Ms. Nicolosi's eye was damaged; he only knew that she is now blind. Dr. Tipton testified he does not know the forces necessary to cause eye injuries and is not familiar with the anatomy of the eye beyond "it is round." Dr. Tipton has previously analyzed

4 other eye injury cases (all involving the Embark resistance bands); none of them involved someone stepping on the ball.

Summary of Medical Records for Stella Nicolosi

On March 12, 2015, Ms. Nicolosi presented to the Emergency Department (ED) of Lutheran Medical Center with complaints of blurred vision and black floaters. Ms. Nicolosi stated she accidentally hit her right eye with the ball attached to the band she was using while working out. Ms. Nicolosi denied a complete loss of vision, weakness/headache, dizziness/lightheadedness, and unsteady gait. The review of symptoms noted eye pain, but no visual changes or discharge. The ED Physical note stated the right upper eye lid had soft tissue swelling and ecchymosis, there was subconjunctival hemorrhage at the outer eye area, and the right conjunctiva was infected. The diagnosis was right eye injury and Ms. Nicolosi was sent to the eye clinic.

The same day, Ms. Nicolosi was seen by Dr. Dessner at the eye clinic at Lutheran Medical Center. It was noted that the patient was status post high velocity blunt trauma to the right eye. The vision exam revealed Ms. Nicolosi was able to see hand motion with her right eye but had no light perception in her left eye. Upon examining the retina of the right eye, Dr. Dessner noted wrinkling, posterior vitreous detachment (PVD), and vitreous hemorrhage. Dr. Dessner also reported iridodialysis in the right eye, a corneal abrasion, and a posterior subcapsular cataract (PSC). The impression was commotio retinae with hyphema and iridodialysis of the right eye.

Ms. Nicolosi returned to Lutheran Medical Center on March 13, 2015 (the next day) and presented to Lekha Gopal, M.D., for follow up. The patient stated she was exercising when a plastic strap broke and a ball hit her in the right eye. The ophthalmology examination revealed subconjunctival hemorrhage and chemosis in her right eye, a blood clot and microhyphema in the anterior chamber of the right eye, a traumatic cataract of the lens in the right eye, a nuclear sclerotic cataract (NS) in the lens of the left eye, proptosis of the right eye, and a right eye lower lid laceration laterally. Of note, the cornea, pupil, and iris of both eyes were within normal limits. The biomicroscopy evaluation was normal in both eyes although it was noted there was no view of the fundi. Dr. Gopal's diagnosis was hyphema. Dr. Gopal referred Ms. Nicolosi to Richard Feig, MD.

Ms. Nicolosi presented to the office of Dr. Feig on March 13, 2015. It was stated that the patient was doing exercise and the resistance band snapped. Ms. Nicolosi had complaints of floaters in her right eye, swelling, soreness, cloudiness, and her visual acuity was black and white. Examination of the anterior portion of the eye revealed subconjunctival hemorrhage, a clot, and a subluxed lens. Upon examination of the posterior portion of the right eye, there was no retinal detachment, however there was no view of at the center of the retina. The diagnoses were hyphema and subluxed lens of the right eye after trauma with an exercise band. Ms. Nicolosi returned to Dr. Feig on March 16, 2015 for follow up and reported pain and decreased visual acuity. Again, subconjunctival hemorrhage and hyphema were noted.

According to the medical records provided by Dr. Feig, on March 18, 2015, a pars plana vitrectomy and intraocular lens placement were performed on Ms. Nicolosi's right eye that day. Dr. Feig's record dated March 24, 2015, reports Ms. Nicolosi had complaints of pain in her right eye and "all of the right side" including a throbbing sensation and headaches. The tonometry exam measured an intraocular pressure of 42 and an 80% clot was noted to the anterior chamber of her right eye. The diagnosis was recurrent hyphema; the plan was to perform a paracentesis of the right eye and on March 25, 2015, a repeat washout was performed. On March 26, 2015, Ms. Nicolosi returned to Dr. Feig with complaints of pain. The tonometry reading was 40 in her right eye and a decision was made to perform paracentesis. The impression was recurrence of hyphema. On March 27, 2015, she followed up and stated her pain improved slightly.

On April 14, 2015, Ms. Nicolosi again returned to Dr. Feig's office for a follow up visit. She stated that she could not see in bright light and her visual acuity was better in "softer light" but was still very blurry. She described seeing a "lightning" that happens almost every day in her right eye. Examination of the retina revealed no vitreous hemorrhage or retinal detachment; it is unclear if the center of the retina was visualized.

The next record from Dr. Feig's office was dated May 7, 2015 and noted Ms. Nicolosi underwent a pars plana vitrectomy the day before on May 6, 2015. She did not have any complaints and the intraocular pressure was 15 for her right eye. Examination of her retina indicated she had a macular scar.

Prior to the subject accident in May 1996, Ms. Nicolosi was diagnosed with an intracranial olfactory meningioma, a left optic nerve glioma versus optic nerve sheath meningioma, and a tumor growing on the margin of her right lower lid between the medial and lateral third. Ms. Nicolosi's intracranial tumor was removed on June 14, 1996, but her optic nerve tumor remained untreated until her visual field was zero in the left eye. She underwent 27 treatments of radiosurgery for her left optic nerve tumor from June 21, 1999 through July 29, 1999, more than three years after being diagnosed.

Ms. Nicolosi's BellFit Resistance Band

Geometry of the Subject Resistance Band

On July 20, 2017, I inspected the subject resistance band used by Ms. Nicolosi at the time of her accident. The subject resistance band was provided to me in its box (see Figure 1) along with the instruction manual. The subject resistance band was a BellFit Classic Resistance Band with Padded Grips, size medium (15 lbs. weight equivalent). The padded grips attached to the tubular, elastic portion of the resistance band with webbing and polymer connectors. The diameter of the resistance band ranged from 0.43 to 0.47 inches along its length, the resistance band weighed 0.38 pounds (with the door anchor attached), and the door anchor weighed 0.045 pounds; see Figure 1 below. When unloaded, the subject resistance band was approximately 3 feet 10 inches long without handles and approximately 4 feet 11 inches with handles.

Figure 1. Box (*Top-Left*) for the subject BellFit Classic Resistance Band (*Top-Right*). (*Middle-Left*) Each end of the subject resistance band had a padded handle and webbing that attached to the main part of the band. (*Middle-Right*) The band diameter was approximately 0.43 to 0.47 inches. The resistance band and door anchor weighed 0.38 pounds (*Bottom-Left*) and the door anchor weighed 0.045 pounds (*Bottom-Right*).

The door anchor consisted of a polymer ball with webbing that passed through a hole in the ball; see Figure 2 below. The ball was approximately 1.37 inches in diameter and had two sides that were flat such that the distance between the two flat sides was approximately 1.16 inches. The webbing that was attached the door anchor ball created a loop that was approximately 2.51 inches in diameter; see Figure 2 below. The door anchor ball (with webbing) moved freely along the length of the resistance band and could be placed anywhere along its length. In addition, the padded handle with webbing (that was approximately 1.27 to 1.3 inches thick – see Figure 2) passed easily through the door anchor webbing loop (that was approximately 2.51 inches in diameter).

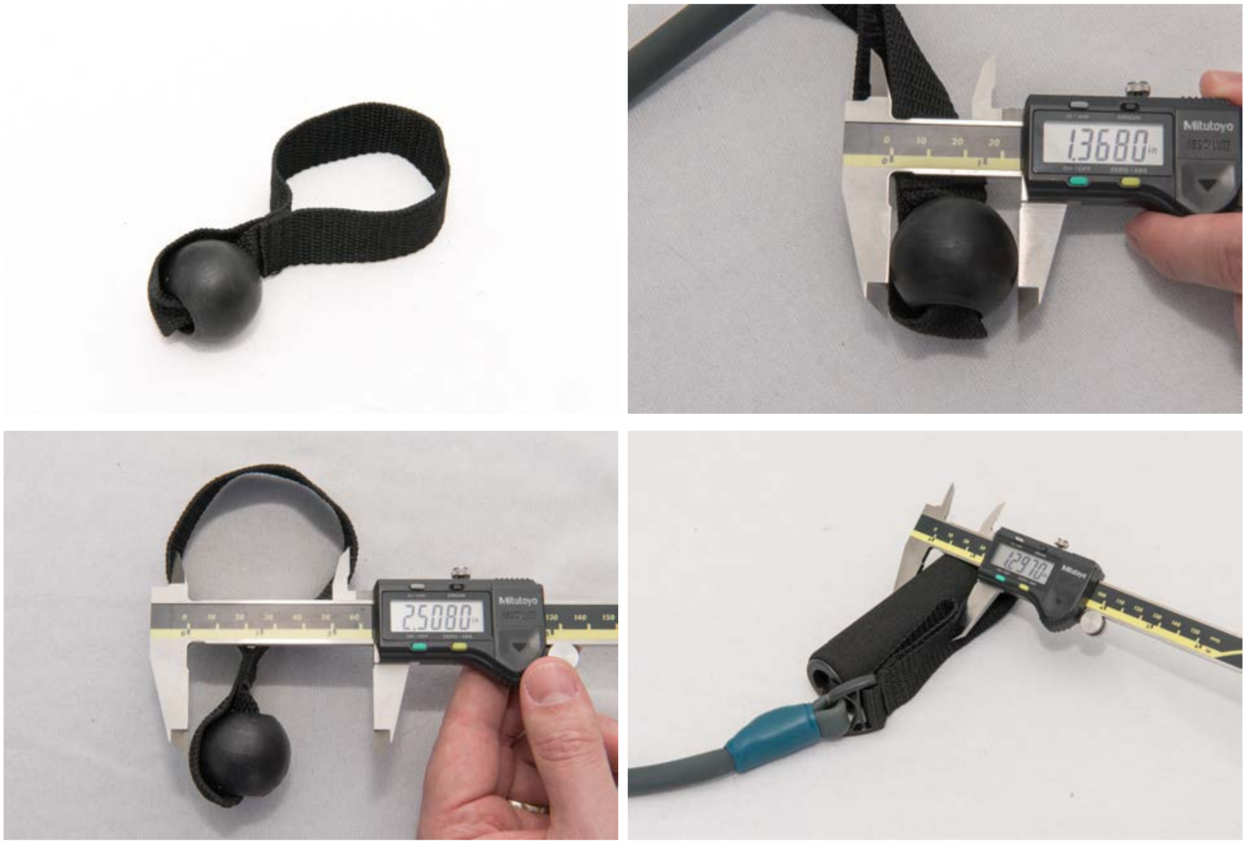


Figure 2. (*Top-Left*) Door anchor that included a polymer ball and webbing. (*Top-Right*) the door anchor ball was approximately 1.37 inches in diameter. (*Bottom-Left*) The door anchor webbing was approximately 2.51 inches in diameter. (*Bottom-Right*) The padded handle with webbing was approximately 1.27 to 1.3 inches thick and passed easily through the door anchor webbing loop.

Stiffness Testing of the Subject BellFit Resistance Band

I measured the stiffness characteristics of the subject resistance band during my July 20, 2017 inspection. To this end, the handles of the subject resistance band were placed around a fixed aluminum channel and the resistance band was stretched using the sole of a sneaker; see Figure 3 below. The magnitude of displacement (that is, the stretch of the resistance band) was measured using a string potentiometer (PA-50, Unimeasure, Corvallis, Oregon; Range: 50 inches; Resolution: 0.002 inches). The force required to stretch the resistance band was measured simultaneously using a load cell (WMC-500-460, Interface, Scottsdale, Arizona; Range: 500 pounds; Resolution: 0.015 pounds). The data were collected digitally at 6,000 Hz using a 16-bit data acquisition system with a 1,200 Hz anti-aliasing filter (Slice Nano, Diversified Technical Systems, Seal Beach, California). Multiple cycles of resistance band stretching were measured during my testing. The data were filtered digitally to remove noise using a 4-pole, low-pass, zero-phase shift, Butterworth filter with a 300 Hz cut-off frequency.

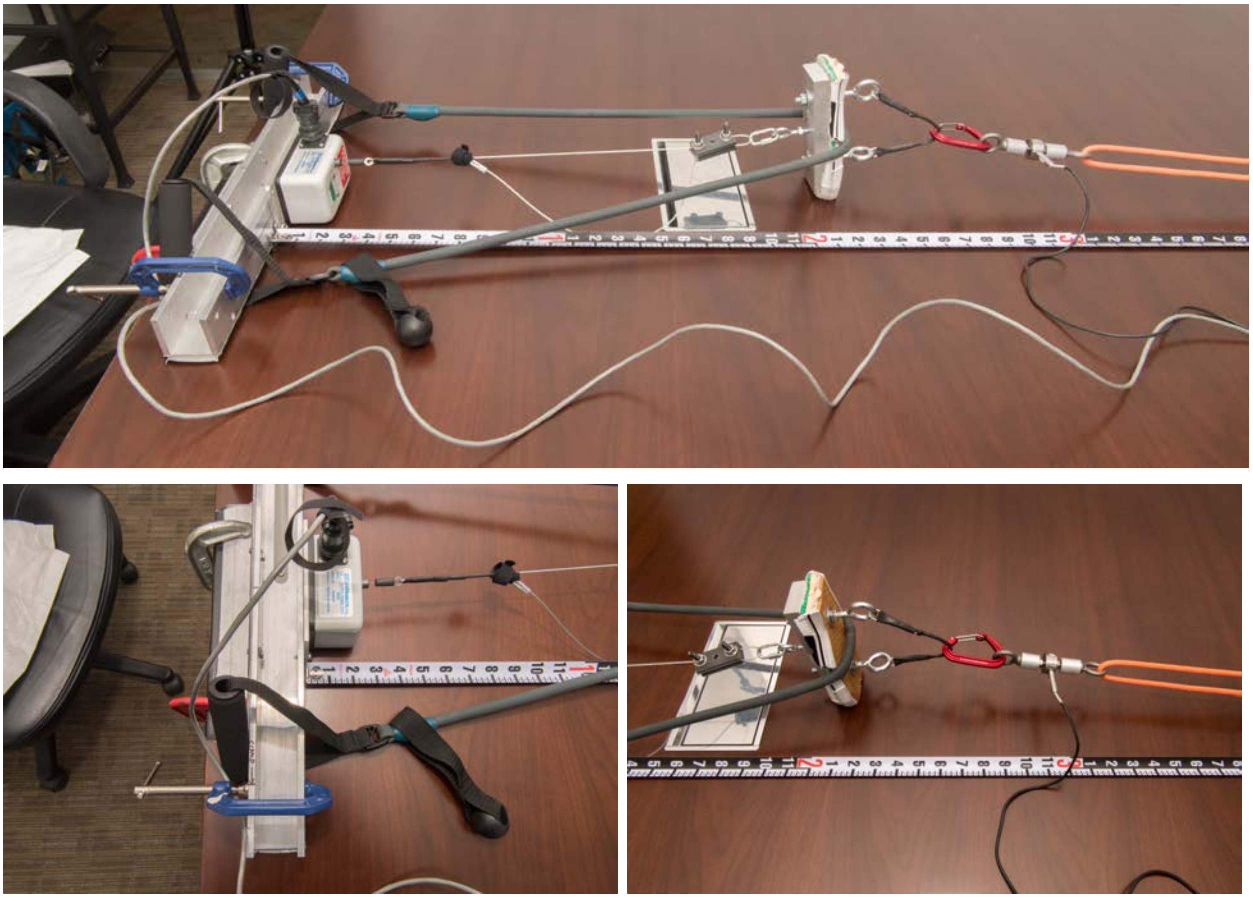


Figure 3. (*Top*) Setup for testing the stiffness characteristics of the subject resistance band. (*Bottom-Left*) The padded handles were placed around a fixed aluminum channel during testing and the displacement (or resistance band stretch) was measured using a string potentiometer (*yellow circle*). (*Bottom-Right*) The sole of a fitness shoe was used to apply a stretching force to the subject resistance band. The force required to stretch the resistance band was measured using a load cell (*orange circle*).

The data from the displacement and force measurements (see Figure 4) were used to determine the average stiffness of the resistance band. In the range of resistance band stretching for Ms. Nicolosi conducting curls (as described in her deposition), the average stiffness of the subject resistance band in its linear region was 0.6 pounds per inch of stretch (displacement).

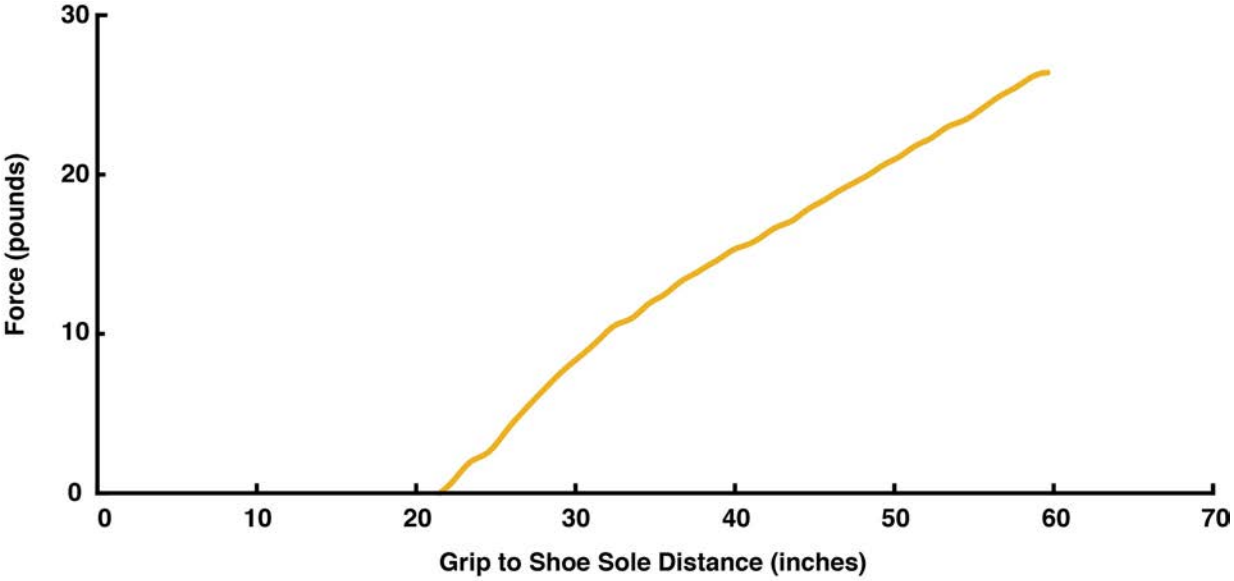


Figure 4. Data from the displacement and force measurements of the subject resistance band.

Exemplar BellFit Resistance Band

Geometry of an Exemplar Resistance Band

After considerable effort, I found and purchased an exemplar resistance band that was similar to the one used by Ms. Nicolosi at the time of her accident. Like Ms. Nicolosi’s resistance band, the exemplar resistance band was a BellFit Classic Resistance Band with Padded Grips, size medium (15 lbs. weight equivalent); see Figure 5 below. The diameter of the exemplar band ranged from 0.44 to 0.48 inches along its length, the band weighed 0.38 pounds (with the door anchor attached), and the door anchor weighed 0.05 pounds. When unloaded, the exemplar band was approximately 3 feet 10¼ inches long without handles and approximately 4 feet 11 inches with handles. The dimensions of the exemplar band matched well the dimensions of Ms. Nicolosi’s resistance band.

Figure 5. Box (*Top-Left*) for the exemplar BellFit Classic Resistance Band (*Top-Right*). (*Bottom-Left*) The exemplar resistance band diameter was approximately 0.44 to 0.48 inches. (*Bottom-Right*) The door anchor webbing was approximately 2.53 inches in diameter.

Stiffness Testing of the Exemplar BellFit Resistance Band

I measured the stiffness characteristics of the exemplar resistance band using the same equipment and test methods described in the *Stiffness Testing of the Subject BellFit Resistance Band* section above. The data from the displacement and force measurements (see Figure 6) were used to determine the average stiffness of the exemplar resistance band. In the range of resistance band stretch for Ms. Nicolosi conducting curls (as described in her deposition), the average stiffness of the exemplar resistance band in its linear region was 0.6 pounds per inch of stretch (displacement). In addition, the overall stiffness (force vs. displacement) characteristics of the exemplar band were substantially similar to the subject band used by Ms. Nicolosi (for example, see Figure 6 below).

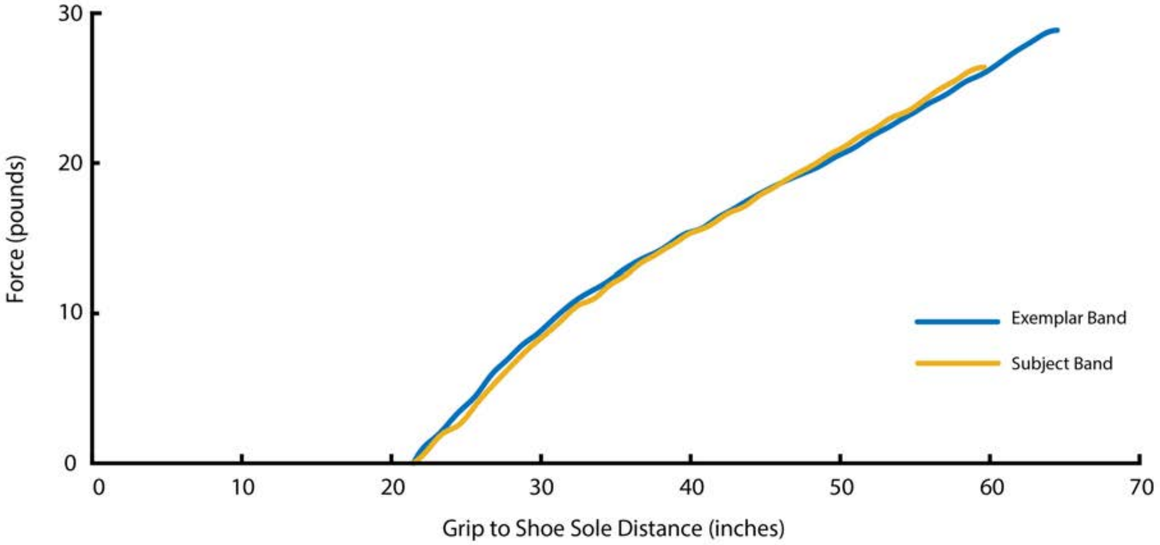
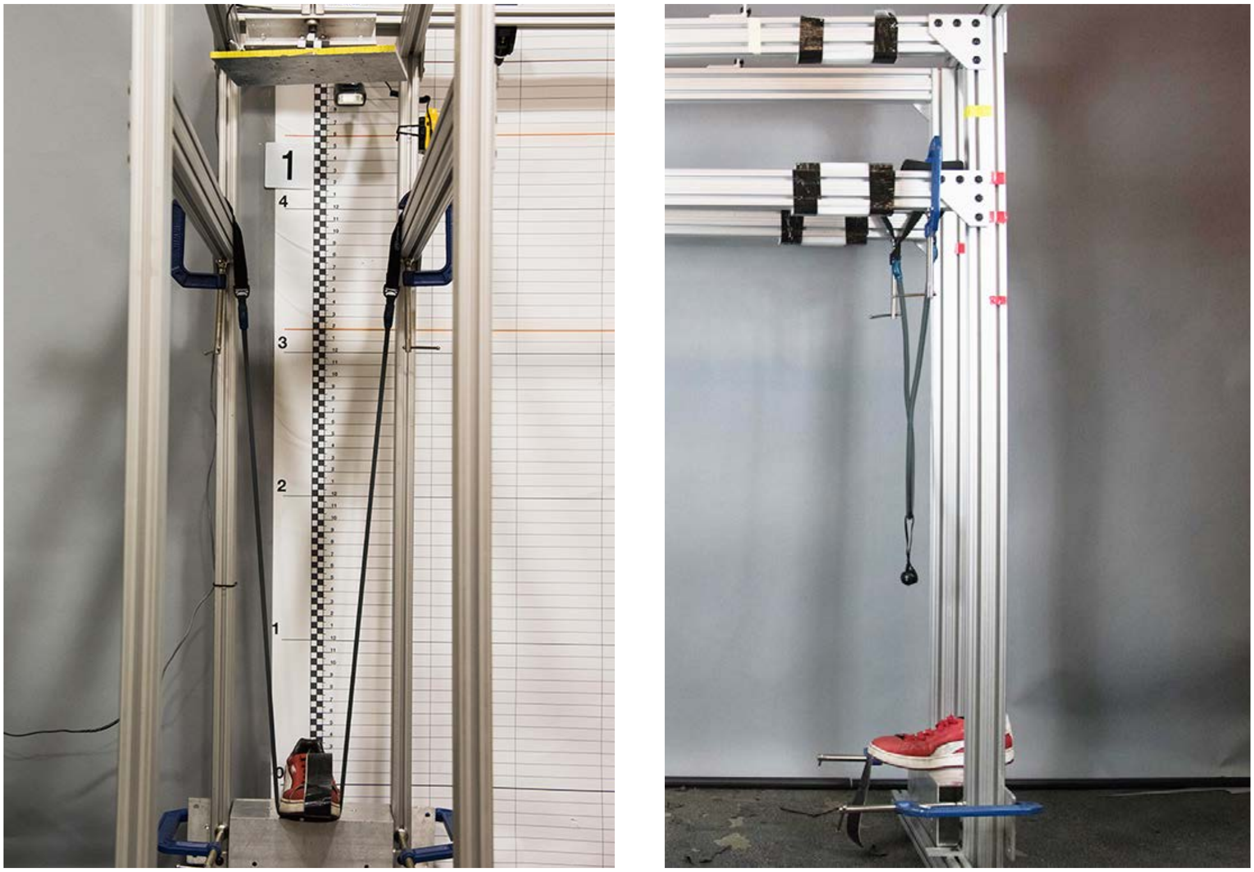
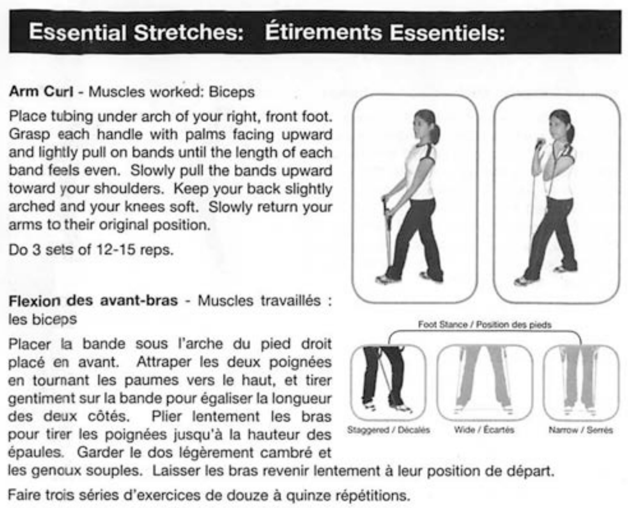


Figure 6. Data from the displacement and force measurements of the exemplar (*blue line*) and the subject resistance band (*yellow line*). The overall stiffness characteristics of the exemplar band were substantially similar to the subject band that was used by Ms. Nicolosi

Testing Setup for the Exemplar BellFit Resistance Band

Using a custom-built testing system, I measured the speed of the exemplar resistance band when it reached Ms. Nicolosi's eye height. The testing system consisted of a rigid, aluminum frame with an athletic shoe mounted near its base and two adjustable aluminum supports to hold the padded grips of the exemplar resistance band; see Figure 7. Based on Ms. Nicolosi's height, her testimony, and the body position demonstrated for arm curls in the BellFit resistance band manual, I estimated the general body configuration and determined the approximate distances between the floor and various parts of the body; see Figure 7 below. Ms. Nicolosi's elbows and hands were likely about 14 inches apart while performing the curl exercise; based on this, the aluminum supports of the testing system that held the padded grips were placed 14 inches apart. The height of the aluminum supports was adjusted to accommodate the range of hand heights expected for a female individual of Ms. Nicolosi's size who is performing curls. For the testing, the height of the aluminum supports (and, therefore, the padded grips of the exemplar resistance band) ranged from 38 to 48 inches, representing approximately 90 degrees of elbow flexion to fully-flexed elbows, with the hands near shoulder level.





Essential Stretches: Étirements Essentiels:

Arm Curl - Muscles worked: Biceps

Place tubing under arch of your right, front foot. Grasp each handle with palms facing upward and lightly pull on bands until the length of each band feels even. Slowly pull the bands upward toward your shoulders. Keep your back slightly arched and your knees soft. Slowly return your arms to their original position.

Do 3 sets of 12-15 reps.

Flexion des avant-bras - Muscles travaillés : les biceps

Placer la bande sous l'arche du pied droit placé en avant. Attraper les deux poignées en tournant les paumes vers le haut, et tirer gentiment sur la bande pour égaliser la longueur des deux côtés. Plier lentement les bras pour tirer les poignées jusqu'à la hauteur des épaules. Garder le dos légèrement cambré et les genoux souples. Laisser les bras revenir lentement à leur position de départ.

Faire trois séries d'exercices de douze à quinze répétitions.

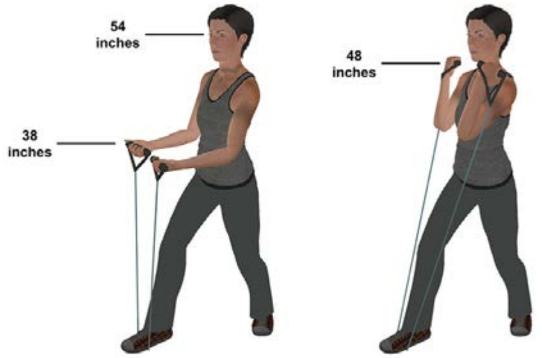


Figure 7. (*Top Row*) Testing frame used to measure the response of the exemplar BellFit resistance band. The frame included a red, athletic shoe mounted near the base and two aluminum supports used to hold rigidly the padded grips of the exemplar band. (*Bottom-Left*) Arm curl section of the BellFit manual (page 8) that describes and illustrates the arm curl exercise with the resistance band. (*Bottom-Right*) General body configuration and approximate distances between the floor and padded grips or eyes for a female of Ms. Nicolosi's height performing arm curls as shown in the BellFit manual.

For each test, the resistance band system was placed under the ball of the foot of the unweighted athletic shoe, the resistance band was released, and the unconstrained resistance band system moved upward; for testing without the door anchor, the front of the shoe was placed into slight dorsiflexion to allow the resistance band to slip forward. A high-speed camera (Phantom Miro LC230S, Vision Research Inc, Wayne, New Jersey) was used to record the motion of the resistance band system near the eye height level for a female individual of Ms. Nicolosi's size who is performing curls. The high-speed camera recorded 3,600 frames per second at a resolution of 1027 x 768. A photography flash was used to synchronize the video.

Using a scale in the video for distance, the high-speed video was examined to determine the time required for the resistance band system to move through the last 1 and 2 inches before reaching eye level. Using the time and distance data, the average speed of the resistance band just before reaching eye level was ascertained (resolution range: 2.7 to 3.4 miles per hour).

The effective mass of the resistance band system during contact was examined for each test. A rigid aluminum plate was placed at eye level and was mounted to a load cell (WMC-500-460, Interface, Scottsdale, Arizona; Range: 500 pounds; Resolution: 0.015 pounds). When the resistance band system reached eye height, the contact force on the rigid plate was measured[1]. The data were collected digitally at 6,000 Hz using a 16-bit data acquisition system with a 1,200 Hz anti-aliasing filter (Slice Nano, Diversified Technical Systems, Seal Beach, California). The data were filtered digitally to remove noise using a 4-pole, low-pass, zero-phase shift, Butterworth filter with a 300 Hz cut-off frequency (that was chosen based on an analysis of residuals). Using the principle of impulse-momentum, the force, impulse time, and pre-impact velocity data were used to determine an effective mass of the resistance band system during contact.

Three resistance band and contact conditions were tested: (A) *No Door Anchor* – the door anchor was removed from the resistance band prior to these tests and the resistance band started under the ball of the foot region of the unweighted athletic shoe. The elastic tubing of the resistance band contacted the rigid plate in this test condition; (B) *Door Anchor* – the resistance band system was tested in a similar manner to the *No Door Anchor* condition, with the door anchor on the tubing portion of the band. The door anchor and the tubing contacted the rigid plate in this test condition; and, (C) *Door Anchor with Only Tubing Contact* – the resistance band system was tested in a similar manner to the *Door Anchor* condition with a smaller rigid plate that was moved slightly to one side. The door anchor did not contact the rigid plate in these tests, but the tubing of the resistance band did contact the rigid plate. In addition, the tests were conducted with the padded grips at various heights for each of the 3 test conditions. The heights corresponded to elbow flexions of approximately 90 degrees, 135 degrees, and full-flexion (towards 180 degrees) for a female individual of Ms. Nicolosi's size who is performing curls.

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[1] By using a rigid plate, the properties of the resistance band system were isolated and the effective mass of the resistance band system could be determined.

For each test trial, the kinetic energy of the resistance band system was calculated using the effective mass specific to that test trial (described above). The kinetic energy for each impact was normalized using the projected area of the component making contact (this is called the Normalized Kinetic Energy). Because the exact length of the elastic resistance band that could contact the eye of a user was not known, a range of lengths between ¼ and 1 inch were used for determining the projected area of contact by the tubing of the resistance band. Using these data and the scientific literature on the likelihood of eye injuries from projectile contact, I calculated the likelihood of various injuries; see Figure 8 for an example of the eye injury probability curves from the peer-reviewed, scientific literature.

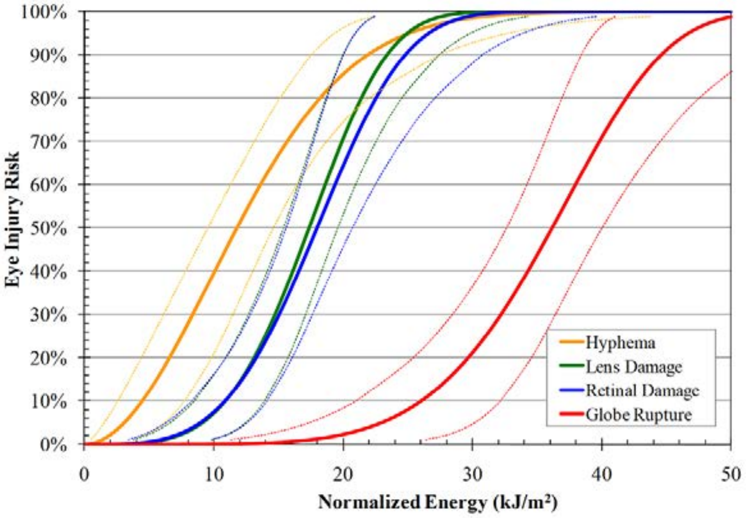

Figure 8. Eye injury risk as a function of normalized kinetic energy. Taken from *Kennedy and Duma, Eye Injury Risk Functions for Human and FOCUS Eyes: Hyphema, Lens Dislocation, and Retinal Damage, 2011.*

The data were compared between the three conditions (*Resistance Band*; *Door Anchor Contact*; and, *Door Anchor No Contact*) and for the three padded grip heights. ANOVA and t-tests with a Bonferroni correction were used to determine statistical significance; a significance level of 0.05 was used for all statistical comparisons.

Testing Results for the Exemplar BellFit Resistance Band

A total of 42 tests were conducted using the exemplar BellFit Classic Resistance Band with Padded Grips, size medium. Testing was not conducted for the *Door Anchor* condition with the padded grips at shoulder height because the door anchor ball showed signs of damage from repeated contacts with the aluminum plate. There were multiple tests conducted for all other combinations of test condition and padded grip heights. A summary of the data is contained in Table 1 below.

For each test, when the resistance band was released from under the unweighted athletic shoe, it moved simultaneously upward (toward the padded grips) and forward relative to the athletic shoe; see Figure 9. This forward motion occurred regardless of whether the door anchor ball was on the tubing (the *Door Anchor* and *Door Anchor with Only Tubing Contact* conditions) or not (the *No Door Anchor* condition).

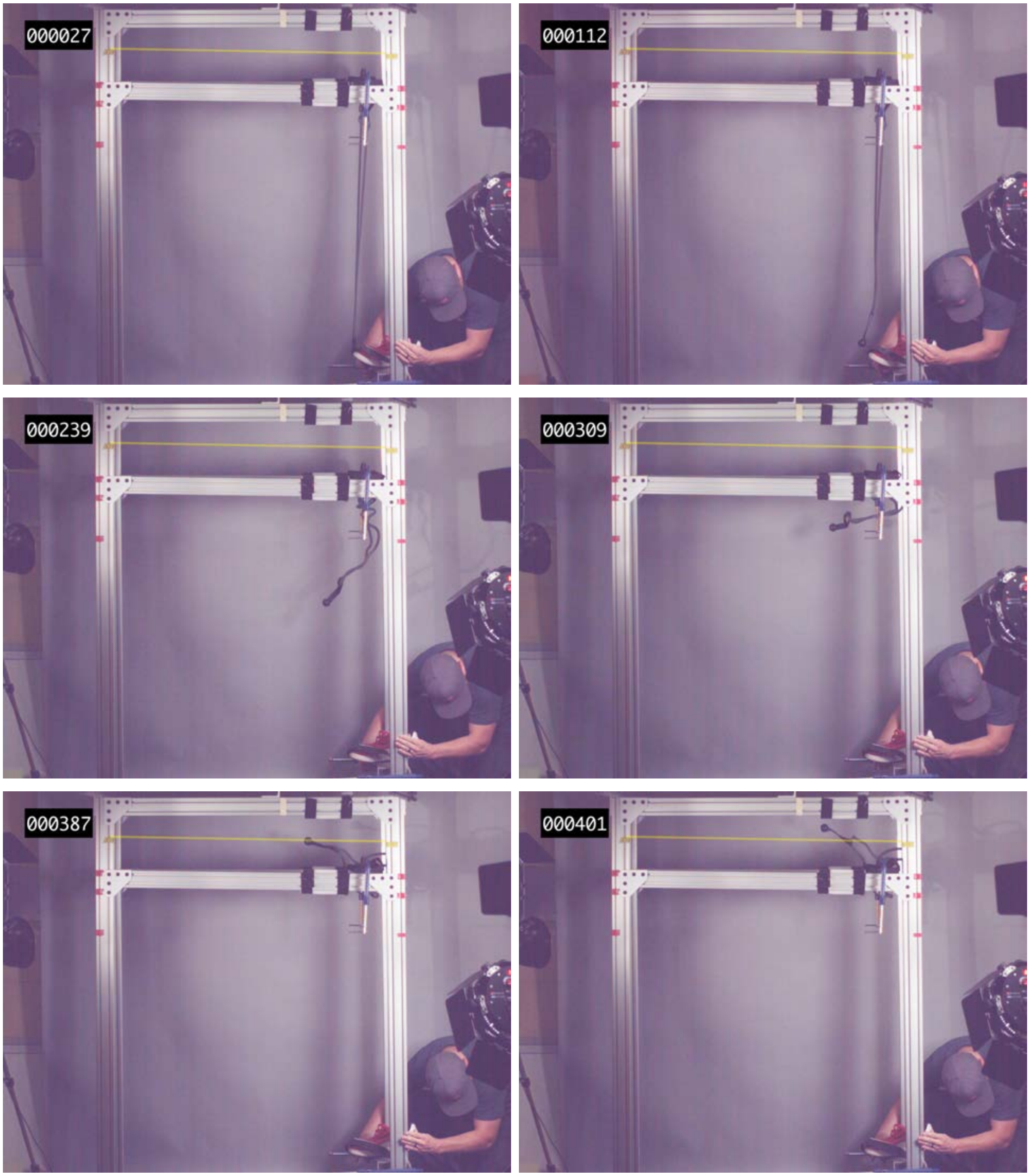

Figure 9. Still images from a high-speed video from the side of a resistance band and door anchor release with the padded grips at shoulder level. The progression shows the upward and forward motion of the tubing and door anchor. (*Note: frame numbers in the upper left of each image indicate order and frame 387 is when the door anchor reaches eye height for someone of Ms. Nicolosi's size)*

Table 1. Mean (± standard deviation) of the velocity, effective mass, kinetic energy, and normalized energy of the resistance band (either the tubing or the door anchor) when it reaches eye height for a female individual of Ms. Nicolosi's size. *Note: An effective tubing length for eye contact was ½ inch for this table.*

Test Condition *Elbow Flexion*	**Velocity at Contact** (*miles per hour*)	**Effective Mass** (*pounds*)	**Kinetic Energy** (*J*)	**Normalized Energy** (*kJ/m^2*)
No Door Anchor				
90°	20.6 ± 2.2	0.027 ± 0.013	0.5 ± 0.3	3.5 ± 1.9
135°	39.4 ± 4.7	0.027 ± 0.008	1.9 ± 0.6	14.1 ± 4.3
Fully flexed	45.7 ± 7.6	0.036 ± 0.010	3.7 ± 1.8	25.3 ± 12.6
Door Anchor Contact				
90°	15.8 ± 2.0	0.055 ± 0.004	0.6 ± 0.2	0.8 ± 0.2
135°	37.8 ± 1.5	0.060 ± 0.002	3.9 ± 0.3	5.1 ± 0.4
Fully flexed	--	--	--	--
Door Anchor with Only Tubing Contact				
90°	9.0 ± 1.2	0.07 ± 0.06	0.1 ± 0.1	0.9 ± 1.0
135°	21.6 ± 2.0	0.04 ± 0.02	0.4 ± 0.3	3.0 ± 1.9
Fully flexed	29.1 ± 4.7	0.06 ± 0.04	0.9 ± 0.6	6.2 ± 4.3

Discussion Considering Testing Results

In general, the door anchor and tubing moved upward and forward, not backwards where the user's head would be located when in position to perform arm curls. From the tests, it is unclear how the door anchor or tubing would contact the eye of a user as it reached eye level. Despite this, the analysis assumed that the door anchor or the tubing would contact the user's eye when it reached eye height.

Considering the kinetic energy of the contacting component of the resistance band and the scientific literature, the *No Door Anchor* and the *Door Anchor Contact* tests had sufficient energy to create corneal abrasions for the elbow flexions tested and retinal damage for 135 degrees or more of elbow flexion. That is, the tubing or the door anchor would have had sufficient kinetic energy to create significant eye injuries. There was a lower likelihood of retinal damage when padded grips were placed in the position for 90 degrees elbow flexion; this was true for both the tubing and door anchor.

The *No Door Anchor* tests examine the eye injury likelihood in a scenario in which the door anchor is removed from the resistance band (or never existed at all), a user of Ms. Nicolosi's size attempts a curl, and the tubing comes out from under the foot of the user. Though the tubing in the testing moved forward (away from where the user's face would be), the analysis assumes that the tubing contacts the eye. Using the normalized kinetic energy and the scientific literature, the *No Door Anchor* condition would likely produce hyphema with 135 degrees or more of elbow flexion. Lens damage and retinal damage were also likely for higher elbow flexions. The likelihood of each eye injury increased with elbow flexion and decreased with increasing tubing length (and projected area). Based on this data, had the door anchor been removed from the subject band by Ms. Nicolosi and the band came out from under her foot, she still would have sustained a significant eye injury.

Both *Door Anchor* conditions examine the eye injury likelihood when the door anchor is still on the resistance band and under the ball of the foot, a user of Ms. Nicolosi's size attempts a curl, and the door anchor comes out from under the foot of the user. *Door Anchor Contact* and *Door Anchor with Only Tubing Contact* differ in the component that would contact the eye.

For the *Door Anchor Contact* tests conducted, the normalized kinetic energy from door anchor contact related to a low likelihood of producing hyphema, lens dislocation, retinal damage, and/or globe rupture. While the kinetic energy of the door anchor in the *Door Anchor Contact* condition was similar to or greater than the tubing kinetic energy in the *No Door Anchor* condition, the projected area was more than 2½ times greater for the door anchor. This significantly larger projected area decreased the normalized kinetic energy. Even if one were to decrease the projected area of the door anchor by half (though there is no reason to do so), significant eye injury (hyphema, lens dislocation, retinal damage, and/or globe rupture) remained unlikely. Furthermore, for the same initial conditions as the *No Door Anchor* (that is, when the initial length of the resistance band is the same), the resistance band tubing had generally higher eye injury likelihoods when compared the to the door anchor.

For the *Door Anchor with Only Tubing Contact* tests, the normalized kinetic energy from door anchor contact related to a low likelihood of producing hyphema, lens dislocation, retinal damage, and/or globe rupture. Because the likelihood of injury was low from door anchor or tubing contact when the door anchor was attached (and placed under the ball of the foot), my testing does not support the conjecture that adding the door anchor to the resistance band increases the likelihood of an eye injury.

The time between the release of the resistance band system and when it reached eye level for Ms. Nicolosi was a small fraction of a second. Though Ms. Nicolosi testified that the door anchor ball hit her eye, there would have been little time for her to observe and differentiate what part of the resistance band system contacted her eye. Based on the limited time and the speed of the resistance band system, it is unlikely that Ms. Nicolosi had sufficient information available to her to determine what part of the resistance band system (that is, the anchor ball or the band) contacted her eye.

Biomechanical Engineering Analysis

The subject accident of March 12, 2015, was evaluated from a mechanical and biomechanical engineering perspective to examine the resistance band mechanical properties and kinematics and the mechanisms associated with Ms. Nicolosi's eye injury. The evaluation was based on the materials received and reviewed, the laws of physics, the principles of biomechanical engineering, scientific literature regarding human tolerance, my inspection of subject resistance band, and my testing. In addition, the analysis involved a detailed review of Ms. Nicolosi's medical records.

Benefits of a Resistance Band

Exercise resistance bands are simple, but versatile, pieces of exercise equipment that can be used for strength training and stretching for all fitness levels. Resistance bands were first used in sports medicine for injury prevention and recovery. Because resistance bands are lightweight and the direction of resistance can be manipulated (unlike free weights), exercises performed with resistance bands have the ability to target or isolate muscles to correct muscle imbalances while simultaneously preventing loading of bones, ligaments, and tendons of an injured area. For strength training, resistance bands can be used in lieu of free weights for familiar exercises such as squats, deadlifts, arm curls, flys, rows, chest and overhead presses, front and lateral raises, tricep kickbacks and overhead extensions, and abdominal exercises like Russian twists. Resistance bands can also be used for exercises that cannot be performed with free weights such as hamstring curls, glut presses and kickbacks, leg extension, and adductions and abduction exercises. Additionally, resistance bands can be used when the user is alone (that is, they do not require a spotter) and provide the benefits of partner assisted stretching without needing another person. Because resistance bands are small and lightweight (unlike free weights), they require minimal storage space and can be easily packed for travel.

Resistance Band Forces and Motions for Arm Curls

The BellFit Resistance Band users' manual describes and illustrates how to perform an arm curl (see Figure 7 *Bottom Left* above). To perform an arm curl with a resistance band, as shown, the athlete is in a staggered stance; that is, one foot is anterior (forward) of the pelvis and the other foot is posterior to (behind) the pelvis. The athlete holds onto the padded grips and places the tubing under the arch of the front foot. To execute an arm curl, the athlete pulls the band upward toward his or her shoulders. This action moves the hands posteriorly (rearward) from the starting position (say over the front foot). As the athlete moves his or her hands toward the shoulders, the resistance band stretches, creating tension in the resistance band. The section of resistance band tubing under the athlete's front foot experiences force on both sides of the foot (that is, the medial and lateral sides of the foot) that has components in the superior (upward) and posterior (rearward) directions; see Figure 10 below. The athlete must weight the front foot to resist the upward component. If the band were to slip under the athlete's foot, the force (in particular the posterior component) would move the band posteriorly and all subsequent band motion would be between the athlete's legs. A person executing an arm curl as described in the BellFit Resistance Band users' manual could not have the resistance band slip out from under his or her foot and make contact with his or her eyes.

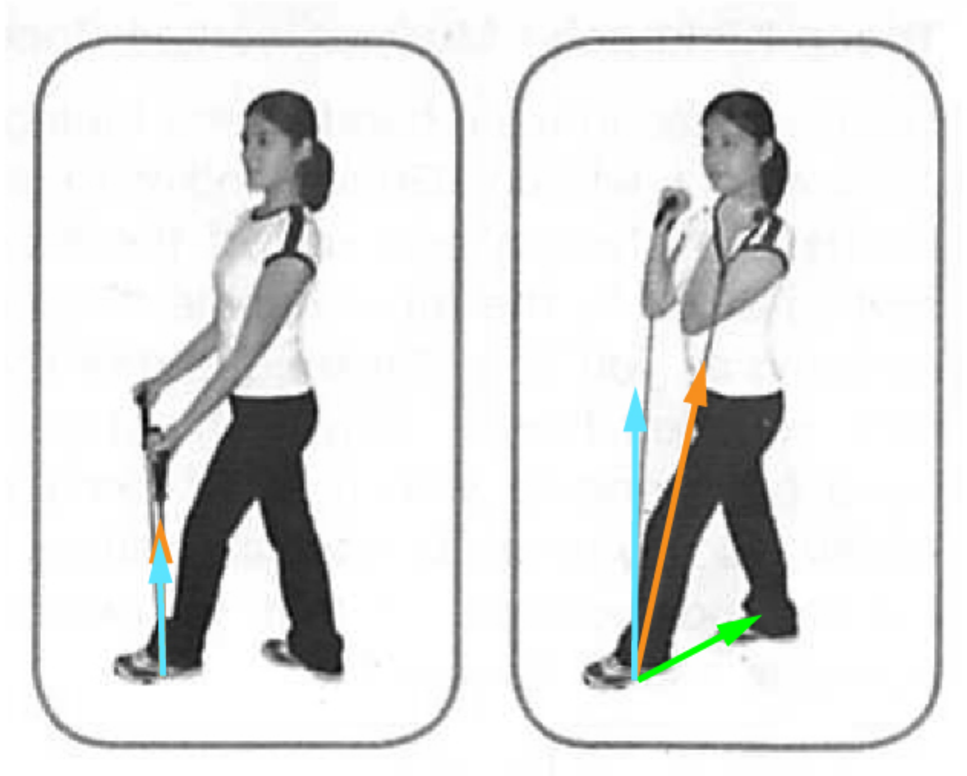

Figure 10. Arm curl illustration from the BellFit manual (page 8) shows an athlete executing the arm curl exercise with the resistance band. The force and force components shown with arrows on the lateral side of the tubing as it comes out from under the foot. A similar force would be placed on the tubing as it comes out from under the foot on the medial side. (*Left*) Hands at the low position with the resistance band close to vertical and little tension on the resistance band. The force has mainly one component, in the superior direction (*orange and blue arrows*). (*Right*) The athlete has her hands at shoulder level. The force on the lateral side of the tubing as it comes out from the foot (*orange arrow*) has large components in the superior (upward – *blue arrow*) and posterior (rearward – *green arrow*) directions.

Ms. Nicolosi testified that she was attempting to perform arm curls in the manner shown in the BellFit Resistance Band users' manual. Ms. Nicolosi had her right leg in front of her body and the ball of her foot on the ball of the door anchor. Ms. Nicolosi's did not use the body configuration described in the text or shown in the illustration of the BellFit Resistance Band users' manual; the text instructs the athlete to "place tubing under arch of your right, front foot" and the illustration shows the athlete with her front foot flat (there is no observable ankle dorsiflexion in the illustration). The Safety Tips & Care Instructions on the first page of the manual also say to "make sure the band is secure under your foot before proceeding with each exercise." Placing the ball of her foot on the door anchor ball is an unstable condition and one would have ample proprioceptive cues that it was unstable. For example, when the door anchor ball is under the ball of the foot, it creates a stress concentration under the ball of the foot that would feel awkward when weighting the front foot. Furthermore, the front foot would feel unstable because the ankle would be dorsiflexed and the athlete would need to balance his or weight on the round door anchor (under the ball of the foot) and on a small region of the heel (on the ground); the athlete would need to actively keep the ankle from rolling (into inversion or eversion) and would have difficulty keeping securely the door anchor under the ball of the foot. It is not reasonably foreseeable that a user would step on the door anchor ball during an arm curl exercise. Furthermore, Ms. Nicolosi did not have to remove the door anchor ball to use the resistance band properly for arm curls. She could have moved the door anchor to the side or even held it at the padded grips. Because the ball of the door anchor was under the ball of her foot, she was not following the instructions in the users' manual.

Eye Anatomy

A diagram of the eye is provided in Figure 11. The eyeball is a globe-shaped structure that contains light focusing elements and photoreceptors responsible for vision. It consists of three layers surrounding a fluid filled vitreous body that gives the eye its shape. The outermost layer is the fibrous layer, the middle layer is the vascular layer, and the inner layer is called the retina. The fibrous layer is made up of the sclera and cornea which are continuous with each other. The sclera (the white part of the eye) provides an attachment for extraocular muscles that move the eye. The cornea is the transparent portion located centrally at the front of the eye and responsible for refracting light. The middle layer consists of the choroid, iris, and the ciliary body. The choroid contains blood vessels to nourish the eye. The iris (the colored portion of the eye) is located in the anterior section and consists of a disc shaped structure with an aperture in its center called the pupil; smooth muscles in the iris dilate and constrict the pupil. Just posterior to the iris is the ciliary body, which contains the ciliary muscles that change the shape of the lens to focus light onto the retina and the ciliary processes that suspend the lens in place through ligaments (also known as zonules). The iris sits posterior to the cornea and anterior to the lens and ciliary body. The area between the cornea and the iris is known as the anterior chamber and is filled with aqueous humor, a clear fluid secreted by the ciliary processes that provides nutrition to the structures of the eye.

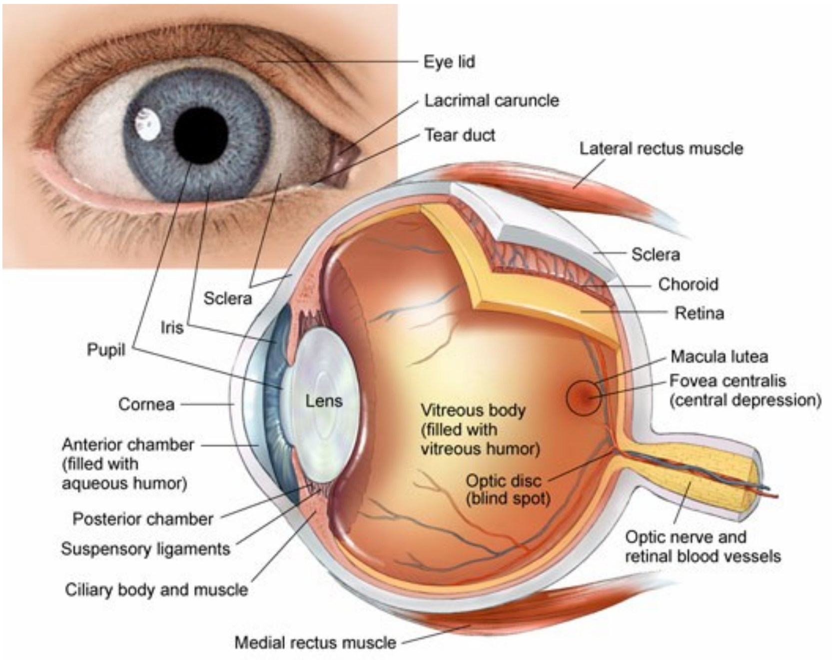

Figure 11. Diagram of the eye.

The innermost layer of the eye is known as the retina. The retina consists of an inner neurosensory layer with photoreceptors that detect light and an outer pigmented layer that is attached to the choroid and supports the neural layer. Both layers of the retina are present in the posterior and lateral portion of the eye. Only the pigmented layer continues to the anterior section and is known as the non-visual retina. In the center of the retina (in the posterior eye) is the macula. It contains a depression called the fovea that is about 1.5 millimeters in diameter, has a high concentration of photoreceptor cone cells, and is responsible for central, color, high-acuity vision.

Ms. Nicolosi's Diagnosed Right Eye Injuries

On the day of the accident, Ms. Nicolosi was evaluated by Dr. Dessner at the eye clinic at Lutheran Medical Center. Commotio retinae, wrinkling, posterior vitreous detachment, and vitreous hemorrhage were noted to the retina of her right eye. Corneal abrasion, hyphema, and iridodyalysis were reported to the anterior structures of the right eye. A posterior subscapular cataract was also noted. The following day, Dr. Gopal examined Ms. Nicolosi and reported subconjunctival hemorrhage, microhyphema, a traumatic cataract in the right eye, a nuclear sclerotic cataract in the left eye, proptosis of the right eye, and a right lower lid laceration laterally. The diagnosis was hyphema. Dr. Gopal did not have a view of the fundus (internal surface of posterior retina). Dr. Feig also evaluated Ms. Nicolosi the day after the accident and diagnosed Ms. Nicolosi with hyphema and a subluxed lens. Upon examining the retina, he noted that it was flat with no retinal detachment but had no view of the center (close to the macula). On May 7, 2015, Dr. Feig examined the retina and found a macular scar.

Three doctors examined Ms. Nicolosi within one day of her accident; the only common diagnosis was hyphema. Both Dr. Dessner and Dr. Gopal mention cataracts. Dr. Dessner does not clarify in which eye the posterior subscapular cataract was found. It is unclear if he is referencing the traumatic cataract mentioned by Dr. Gopal in the right eye or the posterior sclerotic cataract found during an IME by Dr. Fromer in the left eye.

Hyphema is characterized by blood in the anterior chamber of the eye and presents as redness over the iris (or colored portion of the eye); see Figure 12, bottom right. Hyphema can arise from trauma, intraocular surgery, or spontaneously due to a variety of conditions. When hyphema develops after blunt trauma, it is usually a result of a tear to the ciliary body or iris. The ciliary body has attachments to both the iris and the lens. A tear to the ciliary body can disrupt its attachment to the iris, resulting in iridodialysis, or its attachment to the lens, resulting in a dislocated or subluxed lens. A subluxed lens is a partially dislocated lens that remains in the lens space and can occur as a result of trauma, secondary to ocular disease (such as hypermature cataracts), or a post-surgical complication.

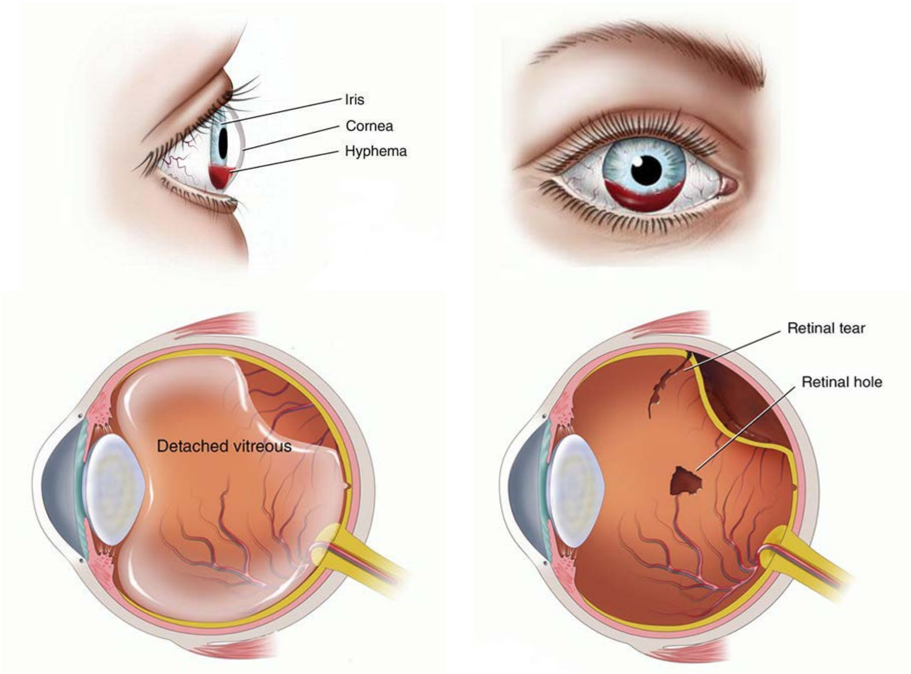

Figure 12. (*Top Row*) Illustration of hyphema - blood in the anterior chamber of the eye between the iris and cornea. (*Bottom Row, Left*) Illustration posterior vitreous detachment with an attached, intact retina. (*Bottom Row, Right*) Illustration of a retinal tear, retinal hole, and retinal detachment.

A posterior vitreous detachment refers to when the membrane of the vitreous body pulls away from the retina at the back of the eye and occurs due to age-related shrinking of the vitreous humor. Other risk factors for posterior vitreous attachments include myopia, trauma, and recent eye surgery (such as cataract operation). In most cases of posterior vitreous detachment, the retina remains intact and attached to the choroid layer; see Figure 12 *Bottom Row, Left*. However, if the retina adheres to the vitreous, the retina can tear as the vitreous pulls away from the structures at the back of the eye. Most retinal tears occur spontaneously but can also occur from trauma. When the retina heals, it can produce scar tissue that causes the retina to wrinkle. When the scar tissue overlies the macula, it is referred to as a macular scar.

Comments on Dr. Tipton’s Report and Deposition

In his report, Dr. Tipton produced experimentally a force deflection curve of an exemplar resistance band he received from Mr. Friedman. Dr. Tipton did not inspect the subject band. He assumed the exemplar band he tested has the same force-deflection characteristics as the subject band. The force displacement characteristics of Dr. Tipton’s exemplar band may not match the subject band (it is unclear how exactly he tested his exemplar band); thus, any of his calculations that relied on his exemplar testing may not be applicable to the subject accident.

Dr. Tipton stated that he converted the strain energy from his force deflection curve into kinetic energy for his analysis. Although it is unclear how exactly he tested his exemplar band, it appears that that Dr. Tipton stretched his exemplar band well beyond the range that Ms. Nicolosi would have used in performing an arm curl. If he used erroneously an exaggerated stretch, Dr. Tipton would have overestimated the strain energy related to Ms. Nicolosi's accident and his subsequent calculations are not applicable to the subject accident. From his force deflection curve and the mass of the ball, Dr. Tipton calculated the velocity of the door anchor ball to be 97 miles per hour as it is released from the foot. Dr. Tipton's analysis is incorrect. When the ball initially leaves the foot, its velocity is zero (or very close to zero) and it accelerates from the force exerted on the door anchor by the tubing. In his testimony, Dr. Tipton implied that the velocity of the door anchor ball was 97 miles per hour when it contacted the eye. Based on the testing results above, the door anchor ball is traveling much slower when it reaches eye level and this slower speed relates to a much lower kinetic energy. Dr. Tipton's opinion on the velocity of the ball is erroneous and not applicable to the subject accident.

During his deposition, Dr. Tipton testified that he was unfamiliar with Ms. Nicolosi's diagnosed eye pathologies and the biomechanics to create her specific eye injuries. He did not determine the door anchor ball or tubing velocity, force, or energy at eye contact. Furthermore, Dr. Tipton did not calculate or use any metric to determine the likelihood of eye injury related to Ms. Nicolosi's accident or any other scenario. Dr. Tipton conducted no scientific analysis and he lacks the bases to conclude (to a reasonable degree of scientific certainty) that the presence of the subject door anchor ball increased the likelihood of Ms. Nicolosi's eye injuries or increased the likelihood of an eye injury in general. My testing showed that even without the door anchor attached, if the tubing struck Ms. Nicolosi's eye it would likely produce an eye injury (and would be more likely than contact from the door anchor ball). The presence of the door anchor ball on the resistance band did not increase the likelihood of Ms. Nicolosi's injury and does not represent an additional hazard as Dr. Tipton claims.

Dr. Tipton testified that he did not know whether the tubing struck Ms. Nicolosi's eye or if the tubing could have caused her eye injuries. Because Dr. Tipton submitted an analysis on the assumption that the door anchor ball contacted Ms. Nicolosi's eye and proposed alternate designs (discussed below), he should have shown that the door anchor ball contacted Ms. Nicolosi's eye and caused her injuries. From my examination of the subject resistance band system, there was no physical evidence on the door anchor or tubing that was a signature of contact with Ms. Nicolosi's eye. On the other hand, Ms. Nicolosi's injuries can be used as physical evidence. Her medical records did not show evidence of significant contact on the orbital rim, just contact with the eyeball. Based on the scientific literature, the average width of the margins of the right orbit is approximately 1.391 inches. The diameter of the subject door anchor ball is 1.368 inches; see Figure 2 above. For someone with an average sized right orbit, the difference between the orbital width and the door anchor ball diameter would be approximately 0.023 inches (that is, 3/128 inches); with such a small difference, it is unlikely that the door anchor would contact the eyeball and not contact the orbital rim for an average person. Furthermore, if the door anchor ball has a component of velocity that is not into the eyeball (that is, it has a component of velocity along the superior-inferior and/or medial-lateral axes), then it is more likely that the door anchor ball will contact the margin of the orbit. This likelihood increases with increasing door anchor ball speed. The tubing portion of the resistance band has a diameter of 0.43 to 0.47 inches and bends in the band can form small areas to contact the eyeball. The tubing is much more likely to contact the eyeball and not contact with an orbital rim. Based on this analysis, Ms. Nicolosi's diagnosed pathologies, and the lack injury in and around the orbit (including the skin), it would be more likely that the tubing contacted Ms. Nicolosi's eye (not the door anchor ball); the geometry of the door anchor ball (that Dr. Tipton is critical of) makes it unlikely that it would contact the eyeball alone. It is unclear why Dr. Tipton makes the assumption that Ms. Nicolosi's eye was contacted by the door anchor. If the tubing contacted Ms. Nicolosi's eye and created her injuries, then any alternate design for the door anchor provided by Dr. Tipton would not be applicable to subject accident.

Dr. Tipton was critical of the door anchor ball on the subject band. He wrote that a "hard ball" should not be used and when Bell increased the size of the ball, it made the product "potentially even more dangerous." It is unclear why Dr. Tipton believes that the larger ball size would be more dangerous. Mr. Parks, from Bell, testified that he was unaware of any of the second generation (larger) door anchors breaking. This would indicate the redesign was successful for the intended purpose. If the second-generation ball were to come back toward a user, the larger door anchor ball would also be more likely to contact the bones around the eye (instead of just the eyeball), sharing the load transmitted to the face and reducing the energy transferred to the eye. This would make eye injury less likely. Also, a larger ball would have an increased projected area if the ball did contact the eyeball. From the scientific literature, a larger projected area decreases the normalized energy of contact and lowers eye injury likelihood. Based on this, Dr. Tipton's opinion that the larger, second-generation door anchor ball is more dangerous is incorrect.

Alternative Door Anchor Designs

Dr. Tipton opined that "under no circumstances should a hard ball have been used with any kind of attachment." He presented alternative door anchor designs that he claimed were safer. In his report and deposition, Dr. Tipton provided no scientific analyses or data to support his "safer" designs or his opinion that they would reduce the likelihood of injury.

Dr. Tipton made a prototype of his own design that consisted of a 3½-inch foam ball, a PVC tube insert, a "safety strap" fabricated from a parachute cord, and spring-loaded ball cord locks. Though the parachute cord was sewn into the nylon strap of the anchor ball, it was unclear how the nylon strap was attached to Dr. Tipton's ball. Dr. Tipton did not consider how the foam material he chose would degrade over time or the environment it in which it may be used. For example, he did not consider foam degradation from wear that could (and likely would) alter the surface and dimensions of a foam ball. Furthermore, there was no consideration by Dr. Tipton of the environmental conditions such as exposure to water, sweat, cleaning solutions, or UV light – all of which may be in contact with the door anchor ball during transport, storage, or cleaning. As the foam deteriorates, the margins or surface of a foam rubber ball would change and, in Dr. Tipton's design, could expose the PVC tube pipe. In addition, depending on the foam selected, it may fail to work properly as a door anchor, sliding past the door and creating a potential for injury; it is important to note that the subject ball did not fail to perform its function as a door anchor and no components of the subject resistance band system broke. Also, if the parachute cord were to be wrapped around the resistance band tubing, it would produce a stress concentration on the tubing, increasing the likelihood of tubing failure. While Dr. Tipton stated that he tested his prototype a dozen times using a door, he did no analysis to show that his door anchor would not deteriorate, lose function, or become a hazard.

In addition to the mechanical issues with Dr. Tipton's alternative design, he did no analysis to show that his design would lower injury likelihood in general or prevent Ms. Nicolosi's accident. Dr. Tipton did not know how much his design weighed. He also did not provide analyses related to the velocity or kinetic energy of his door anchor in the scenario in which someone were to step on the ball, have it release from under the foot, and have a component of the Dr. Tipton's door anchor contact the eye. This type of analysis would also need to be conducted for a door anchor ball with significant wear (as described above) that could expose the margins of PVC pipe and for the spring-loaded ball cord locks (that would appear to be made of a hard polymer similar to the BellFit door anchor ball). Dr. Tipton did not evaluate or provide any scientific evidence that his prototype performs better as a door anchor or would decrease the likelihood of an eye injury compared to the subject ball anchor.

While Dr. Tipton provided recommendations to optimize his design, he did not state what parameters he intended to "optimize." Dr. Tipton indicated that he would use a "softer foam ball" that would weight 20 to 25 percent less and have a lower coefficient of restitution, as well as, replace the PVC tubing with softer rubber or a dense foam rubber insert. His "optimized" design has not been created or tested. These "optimizations" do not solve (and most likely would make worse) the problems with reliability and degradation in Dr. Tipton's proposed design. There is no evidence that Dr. Tipton's optimized design would perform better as a door anchor or would reduce the risk of injury, when compared to his prototype or the subject BellFit door anchor.

Dr. Tipton also mentioned door anchors consisting of only a strap (from Bollinger) and donut designs used by Bodyelastics and the BellFit Fit Stick. Dr. Tipton did not provide any bases or evidence that these alternatives would work better as a door anchor than the subject ball and did not mention whether or not these designs had other potential problems. For example, attaching directly a strap door anchor to a door handle could cause premature failure of the door handle and locking mechanism. The foam donuts mentioned would also have the same degradation and cleaning problems discussed above for Dr. Tipton's prototypes. Furthermore, the edges of the cylinder in the donut design shown by Dr. Tipton could contact the eye and create injury. Dr. Tipton does not analyze or show that these alternate designs would lower injury likelihood in general or prevent Ms. Nicolosi's accident.

Conclusions

Based on the analysis presented above, I have reached the following conclusions:

1. A person executing an arm curl consistent with the instructions and illustrations in the BellFit Resistance Band users' manual could not have the resistance band slip out from under his or her foot and make contact with his or her eyes unless the user does not keep his or her foot securely on the floor.
2. It is not reasonably foreseeable that a user would step on the door anchor ball during an arm curl exercise.
3. Ms. Nicolosi did not have to remove the door anchor ball to use the resistance band properly for arm curls. Had she moved the door anchor ball to the side, she could have performed an arm curl as described in the BellFit Resistance Band users' manual.
4. The resistance band tubing can cause significant injuries to an individual of Ms. Nicolosi's size, regardless of whether or not the door anchor is attached to the tubing. Had the door anchor been removed from the subject band by Ms. Nicolosi and the band came out from under her foot, she still would have sustained a significant eye injury.
5. The likelihood of an eye injury was not increased with the addition of the subject door anchor; the testing results do not support Dr. Tipton's conjecture that adding the door anchor to the resistance band increases the likelihood of an eye injury.
6. Dr. Tipton's opinion on the velocity of the ball is erroneous and not applicable to the subject accident.
7. It is unlikely that Dr. Tipton's alternative design would function well over time as a door anchor. Furthermore, Dr. Tipton did no analysis to show that his design would lower injury likelihood in general or prevent Ms. Nicolosi's accident or injury.

The opinions in this report, based upon the materials reviewed and my education, experience, and knowledge, and they are presented with a reasonable degree of mechanical engineering, biomechanical engineering, and scientific probability. As more information becomes available, this report may be amended.

Sincerely,

Irving S Scher, Ph.D., P.E.
Principal and Biomechanical Engineer

Licensed Mechanical Engineer
Alaska #AEL M 12083
California #M32908
Washington #44553

Attachment A. Curriculum Vita for Irving Scher, Ph.D., P.E.

Dr. Irving Scher is a Principal and Biomechanical Engineer at Guidance Engineering and Applied Research. He specializes in biomechanical engineering and accident reconstruction. Dr. Scher evaluates product safety and investigates human injuries in accidents and product failures by using biomechanical engineering techniques that apply the principles of engineering to the human body. He also uses mechanical engineering to analyze mechanical systems used for injury mitigation or those involved in accidents and product failures. He has reconstructed and evaluated injury claims resulting from transportation accidents (including aircraft, bicycle, motor vehicle, and railroad accidents), slips/trip and falls, consumer product failures, industrial equipment accidents, and recreational activities (such as skiing, snowboarding, water skiing, wakeboarding, cycling, and amusement park rides).

Dr. Scher has extensive experience with biomechanical engineering testing design and analysis. For recreational sports and motor vehicle accidents, Dr. Scher has researched human motion, forces, and injury potential using volunteer studies, anthropomorphic test devices, computational models of the human body, and statistical analyses. He has also investigated the effectiveness of personal protective devices, such as snowsport, bicycle, and motorcycle helmets. Dr. Scher has dedicated years of research to skiing and snowboarding safety and has conducted award-winning research in the areas of snowsport safety and human-machine interfacing.

Dr. Scher serves on the Board of Directors for ASTM International and for the Safety Equipment Institute. He is the president and former scientific chair of the International Society for Skiing Safety; a USA delegate on the International Standards Organization committee TC83/SC4 on Snowsports Equipment; the chairman of ASTM F27 on Snow Skiing and Snowboarding; and, the subcommittee chair for ASTM F27.60 for Research and Statistics. He is also an Affiliate Scientist in the Applied Biomechanics Laboratory at the University of Washington. Dr. Scher held the position of Adjunct Associate Professor of Clinical Physical Therapy in the Department of Biokinesiology and Physical Therapy at the University of Southern California (2004 to 2009).

Academic Credentials and Professional Honors

Ph.D., Mechanical Engineering, University of California, Berkeley, 2000
M.S., Mechanical Engineering, University of California, Berkeley, 1998
B.S., Mechanical Engineering, Chemistry Minor, University of Pennsylvania (*cum laude*), 1995

Sachiko Yahashi Memorial Award, International Society for Skiing Safety (2005); Fellowship to study at the Danish Center for Applied Mathematics and Mechanics, Technical University of Denmark, Lyngby, Denmark (1998); Tatnall Award in Mechanical Engineering, University of Pennsylvania (1995); 1st place, Senior Design competition, University of Pennsylvania (1995); 1st place, ASME Undergraduate paper competition, Southeastern Pennsylvania (1995); Mayor's Scholar, University of Pennsylvania (1991–1995)

Engineering Licenses and Certifications

Registered Professional Mechanical Engineer, Alaska, #AEL M 12083
Registered Professional Mechanical Engineer, California, #M32908
Registered Professional Mechanical Engineer, Washington, #44553

Certified *XL* Tribometrist, CXLT, for floor slip resistance measurements

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Shealy J, Scher I, Johnson R. Jumping Features at Ski Resorts: Good Risk Management or Not? Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Keystone, CO, May 2011.

Stepan L, Scher I, Thomas R. Protective Capabilities of a Watersports Helmet for Boom-to-Head

Impacts during Sailing. Abstract number SBC2010-19717, presented at the ASME 2010 Summer Bioengineering Conference, Naples, FL, June 2010.

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Stepan L, Scher I, Shealy J. Unconstrained speeds of skiers and snowboarders: Factors influencing the in-run of a table-top jump. Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Garmisch, Germany, April 2009.

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Richards D, Ivarsson J, Scher I, Thomas R. Modern hockey equipment and its relationship to head injuries. Abstract presented at the Biennial Meeting of the International Symposium on Safety in Ice Hockey, Denver, CO, May 2008.

Heller M, Mkandawire C, Scher I, Gloeckner D, Bussone W, Cargill R. Head motion in the coronal plane during low-speed lateral impact collisions. Abstract presented at the Biennial Meeting of the International Society of Biomechanics, Taipei, Taiwan, July 2007.

Scher I, Young D, Trachtman D. The influence of age on the forces produced during normal seat belt buckling. Paper presented at the Annual Bioengineering Conference of American Society of Mechanical Engineers, Keystone, CO, June 2007.

Scher I, Richards D, Carhart M, Thomas R, Lam T. Pediatric head and neck injuries: Evaluating the influence of helmets. Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Aviemore, Scotland, May 2007.

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Mkandawire C, Mazzucco D, Vijayakumar V, Scher I, Heller M, Morrison H. Head kinematics and upper neck loading during simulated low-speed lateral impact collisions. Paper presented at the Annual Meeting of the FISITA World Automotive Congress, Yokohama, Japan, October 2006.

Scher I, Cargill R, Vijayakumar V, Richards D, Kuzel M. Examining bumper cars as a surrogate for low-speed rear-end and frontal collisions. Paper presented at the Quadrennial Meeting of the World Congress of Biomechanics, Munich, Germany, July 2006.

Richards D, Scher I, Vijayakumar V, Carhart M, Larson R, Taylor S, Corrigan C. Repetitive head loading: Accelerations during cyclic, everyday activities. Paper presented at the Biennial Meeting of the International Society of Biomechanics, Cleveland, OH, August 2005.

Chen Y, Powers C, Scher I, Lee T. Validation of a three dimensional model to quantify patellofemoral joint forces. Abstract presented at the Biennial Meeting of the International Society of Biomechanics, Cleveland, OH, August 2005.

Scher I, Richards D, Vijayakumar V, Carhart M, Corrigan C, Jaekel D. Coronal head accelerations during vigorous activities of daily living. Abstract presented at the Annual Bioengineering Conference of the American Society of Mechanical Engineers, Vail, CO, June 2005.

Scher I, Trachtman D, Young D, Dubey A. Falling objects: Is there really a potential for head injury? Abstract presented at the Annual Bioengineering Conference of the American Society of Mechanical Engineers, Vail, CO, June 2005.

Scher I, Richards D, Carhart M. Head contact after catching an edge: An examination of snowboarding helmets. Knee Surg Sports Traumatol Arthrosc 2006; 14. Presented at the Biennial Meeting of the International Society for Skiing Safety, Arai, Niigata, Japan, April 2005.

Chen Y, Scher I, Powers C. Quantification of three-dimensional patellofemoral joint reaction forces during gait: A subject specific modeling approach. Abstract presented at the Annual Meeting of the Gait and Clinical Movement Analysis Society, Portland, OR, April 2005.

Chen Y, Powers C, Scher I, Lee T. Influence of vasti orientation on the patellar ligament force/quadriceps force ratio during knee extension. Poster presented at the Annual Meeting of the American Society of Biomechanics, Portland, OR, October 2004.

Scher I, Mote CD Jr. Minimum retention setting predictors. Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Breuil-Cervinia, Italy, 1999.

Scher I, Mote CD Jr. Obstacle based minimum retention settings. Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Breuil-Cervinia, Italy, 1999.

Scher I, Grewal D, Gulick D. How binding is simple retention: Setting standards and smart bindings. Abstract presented at the Annual Meeting of the American Society of Mechanical Engineers, Sacramento, CA, September 1997.

Scher I, Mote CD Jr. Comparison of needed and recommended ski binding settings. Abstract presented at the Biennial Meeting of the International Society for Skiing Safety, Whistler, British Colombia, 1997.

Selected Invited Lectures

Scher, I. Limitations and opportunities in designing safer snow park jumps. International Olympic Committee and FIS Meeting on Injury Prevention Initiatives, Lausanne, Switzerland, June 2015.

Scher I, Shealy J, Thomas R. Science and research related to jumping in terrain parks: examining how science can help make jumping safer. Cutter's Camp, Ski Area Management, Mt. Snow, VT and Timberline, OR, 2012.

Scher I, Shealy J. The science behind terrain park jumps. Presented at the Annual Meeting of the National Ski Areas Association Winter Conference and Tradeshow, Snowbird, UT, January 2008.

Cargill R, Bussone W, Scher I, Heller M. Current trends in amusement industry biomechanics: Introduction to biomechanics and rider kinematics. Presented at the Annual IAAPA Attractions Expo Education Programs, Atlanta, GA, November 2006.

Scher I. Selected topics in sports biomechanics. Presented at the Department of Mechanical Engineering, University of California at Berkeley, Berkeley, CA, October 2006.

Richards D, Scher I, Carhart M. A comprehensive look at helmet safety. Presented at the Annual Meeting of the National Ski Areas Association Winter Conference and Tradeshow, Squaw Valley, CA, March 2006.

Scher I. Introduction to gait biomechanics. Presented at the Department of Kinesiology, California State University, Long Beach, Long Beach, CA, October 2005.

Scher I. Biomechanics: An introduction to injury analysis. Presented at the Department of Aeronautics and Astronautics, Stanford University, Palo Alto, CA, May 2005.

Conferences Hosted

International Society for Skiing Safety, 19th International Congress on Ski Trauma and Skiing Safety, Keystone, CO, May 2011.

Patents

U.S. Patent No. 6,888,537: Configurable Industrial Input Devices That Use Electrically Conductive Elastomer, May 2005 (with D. Benson).

U.S. Patent No. 6,871,395: Methods for Manufacturing a Tactile Sensor Using an Electrically Conductive Elastomer, March 2005 (with D. Benson).

U.S. Patent No. 7,358,649: Small Piezoelectric Air Pumps with Unobstructed Airflow, April 2008 (with P. Varadi).

Professional Affiliations

- American Society for Testing and Materials
    - Member of the Board of Directors
    - Chairman for Committee F27 on Snow Skiing and Chair of the subcommittee on research and statistics (voting member)
    - Committee F08 on Sports Equipment and Facilities (voting member)
- American Society of Mechanical Engineers (member)
- International Society for Skiing Safety (President and former scientific chair and USA national secretary)
- International Standards Organization, USA representative for Committee TC 83/SC 4 on Snowsports Equipment
- Safety Equipment Institute (member of the Board of Directors)
- Society of Automotive Engineers (member)

Attachment B. Testimony List for Irving Scher, Ph.D., P.E.

Depositions (2013-2017):

08/13	Sullivan v. Keystone Masonry, Snohomish County Superior Court, Washington
09/13	Summers v. Salmon Bay Barge Line, United States District Court, Western WA
12/13	Farnsworth v. City of Yakima, Yakima County Superior Court, Washington
02/14	Wilder v. United Airlines, United States District Court, Western Washington
03/14	Chamberlain v. Hedderly-Smith, Summit County Court, Utah
03/14	Amerald v. Tropicana Las Vegas, United States District Court, Nevada
08/14	O’Donnell v. Sunbelt Rentals, Cuyahoga County Court of Common Pleas, Ohio
10/14	McLaughlin v. Mountain High, Los Angeles County Superior Court, California
10/14	Hendelman v. Mammoth Mountain, Mono County Superior Court, California
01/15	Canales v. Roywell Services, Brooks County District Court, Texas
02/15	Shumbo v. K2 Sports USA, Hartford Superior Court, Connecticut
03/15	Garcia v. Awerbach, Clark County District Court, Nevada
03/15	Hausman v. Holland America Line, United States District Court, Western Washington
05/15	Ashe v. Gerriten, Clark County District Court, Nevada
11/15	Strozier v. Time Warner Cable, Los Angeles County Superior Court, California
05/16	Thompson v. Central Plumbing & Heating, Anchorage District Superior Court, Alaska
06/16	Pedersen v. Crystal Mountain Resort, King County Superior Court, Washington
07/16	Silva-Bilboa v. Hotspur Sports Company, United States District Court, Colorado
11/16	Graham v. Snowshoe Mountain, Pocahontas County Circuit Court, West Virginia
12/16	Mahoney v. Deer Valley Resort, United States District Court, Utah
02/17	Lipton v. Mountain Creek Resort, United States District Court, New Jersey
02/17	McIntyre v. Quirk, United States District Court, Utah Central Division
06/17	Kearney v. Okemo LLC, United States District Court, Vermont

Trials, Hearings, and Arbitrations (2013-2017):

12/13	Thompson v. Central Plumbing & Heating, Anchorage District Superior Court, Alaska
02/14	Puentes v. Barnett, Thurston County Superior Court, Washington
09/14	Eliasen-Ortiz v. Elizabethtown Gas, Union County Superior Court, New Jersey
12/14	McLaughlin v. Mountain High, Los Angeles County Superior Court, California
02/15	Molloy v. State of New York, New York Court of Claims, New York
04/15	Heilman v. Terry Peak Ski Area, Lawrence County Circuit Court, South Dakota
04/15	Bourgeois v. Bear Creek Mountain, Berks County Court of Common Pleas, PA
06/15	Shumbo v. K2 Sports USA, Hartford Superior Court, Connecticut
10/15	Hausman v. Holland America Line, United States District Court, Western Washington
02/16	Garcia v. Awerbach, Clark County District Court, Nevada
04/16	Ashe v. Gerriten, Clark County District Court, Nevada
05/16	Rosenkranz v. U-Haul of Washington, Clark County Superior Court, Washington
06/16	Thompson v. Central Plumbing & Heating, Anchorage District Superior Court, Alaska

Attachment C. 2017 Guidance Engineering Fee Schedule

Hourly Rates for Consultants

Guidance Engineering charges hourly rates for services performed, including design review, material review, travel time, inspections, analysis, testing, deposition and trial preparation and testimony time. For depositions, Guidance Engineering charges for travel time to and from depositions at the standard hourly rates. Rates may be increased by 25% with deliverables due within 25 business days of project commencement*.

Jasper Shealy, Ph.D., C.P.E.	$450
Irving Scher, Ph.D., P.E.	$385
Lenka Stepan, Ph.D.	$250
Bethany Suderman, Ph.D.	$225
Nick Yang, Ph.D., P.E.	$225
Jeff Campbell, Ph.D	$180
Testing Consultants	$75-$150

Expenses

Guidance Engineering charges (with a 10% markup) for all out-of-pocket costs and expenses attributable directly to the work performed on a project, including:

- Travel costs, such as airfare and reasonable amounts for accommodations and meals
- Automobile travel is billed at $0.60 per mile
- Contract testing and labor, facility rental, equipment rental, and consumable testing components
- Specialized engineering software usage fees are charged on a per project basis and range between $250 and $2,500
- Daily usage charges for the following equipment are as follows:

Motion Capture Body Suit	$7,500
3D Laser Scanner (Faro)	$1,200
ASTM F504 machine	$1,000
High Speed Video Camera	$500
English XL Tribometer	$375
Vermont Release Calibrator	$350
Radar Gun (Stalker ATS II)	$250
Other specialized equipment	quoted on a per project basis

Attachment D. List of Client Supplied Materials

Legal Documents

- Plaintiff's response to defendant BRG Sports, Inc.'s first set of interrogatories

Deposition Transcripts

- Richard Della Penta with exhibits, dated March 22, 2017
- William Nelson, dated July 7, 2017
- Stella Nicolosi with exhibits, dated March 22, 2017
- Thom Parks with exhibits, dated April 27, 2017
- Steven Tipton, Ph.D., with exhibits, dated June 8, 2017

BRG Documents

- Resistance Band Exercise Manual
- Bureau Veritas Reports

Photographs

- Copies of photographs of plaintiff (5)
- Copies of product inspection photographs (41)

Medical Records

- NYU Lutheran Medical Center
- The Brooklyn Eye Center – Robert Feig, M.D.
- Staten Island University Hospital
- Verification of Legal Blindness

Other Expert Reports

- William Nelson (Humatec) Report, dated May 31, 2017
- Steven Tipton, Ph.D., P.E., Report dated May 23, 2017

Attachment F. Selected References

Bekerman, I., Gottlieb, P., & Vaiman, M. (2014). Variations in Eyeball Diameters of the Healthy Adults. *Journal of Ophthalmology*, 1–6.

Duma, S. M., Ng, T. P., Kennedy, E. A., Stitzel, J. D., Herring, I. P., & Kuhn, F. (2005). Determination of Significant Parameters for Eye Injury Risk from Projectiles. *The Journal of Trauma*, *59*(4), 960–964.

González-Castaño, C., & Castro, J. (2006). Subluxation of the lens: etiology and results of treatment. *Arch Soc Esp Oftalmol, 81*, 471-478.

Kennedy, E. A., Ng, T. P., McNally, C., Stitzel, J. D., & Duma, S. M. (2006). Risk functions for human and porcine eye rupture based on projectile characteristics of blunt objects. *Stapp Car Crash Journal*, *50*, 651–671.

Kennedy, E. A., & Duma, S. M. (2011). Eye injury risk functions for human and FOCUS eyes: hyphema, lens dislocation, and retinal damage. Prepared for: US Army Medical Research and Materiel Command, Fort Detrick

Joondeph, S. A., & Joondeph, B. C. (2013). Retinal Detachment due to CrossFit Training Injury. *Case Reports in Ophthalmological Medicine*, *2013*(10)

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK
---X
STELLA NICOLOSI,
PLAINTIFF,
-against- Index No:
16 CV 02910

BRG SPORTS, INC. and EASTON-BELL SPORTS, INC.,

DEFENDANTS.
---X

DATE: December 7, 2017
TIME: 11:30 a.m.

VIDEOCONFERENCE DEPOSITION of a Non-Party Witness, IRVING SCHER, taken by the Plaintiff, pursuant to an Order, held at the offices of Smiley & Smiley, LLP, 122 East 42nd Street, New York, New York 10168, before Marleine Lamey, a Notary Public of the State of New York.

APPEARANCES:

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Attorneys for the Plaintiff
STELLA NICOLOSI
122 East 42nd Street
New York, New York 10168
BY: ANDREW J. SMILEY, ESQ.
JASON FRIEDMAN, ESQ.

LITTLETON JOYCE UGHETTA PARK & KELLY, LLP
Attorneys for the Defendants
BRG SPORTS, INC. and EASTON-BELL SPORTS, INC.
4 Manhattanville Road
Purchase, New York 10577
BY: JAMES C. UGHETTA, ESQ.

* * *

FEDERAL STIPULATIONS

IT IS HEREBY STIPULATED AND AGREED by and between (among) counsel for the respective parties herein, that filing and sealing be and the same are hereby waived.

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, shall be reserved to the time of the trial.

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be sworn to and signed before any officer authorized to administer an oath, with the same force and effect as if signed and sworn to before the Court.

IRVING SCHER, called as a witness, having been first duly sworn by a Notary Public of the State of New York, was examined and testified as follows:

EXAMINATION BY
MR. SMILEY:

Q. Please state your name for the record.

A. Irving Scher.

Q. What is your current business address?

A. 205 Northeast, Northlake Way, Suite 100, Seattle, Washington 98105.

Q. Good morning, Dr. Scher. As you know from our prior directions, my name is Andrew Smiley. I am going to ask you some questions today, all right?

A. Sounds good.

Q. If you need to take a break, let us know and otherwise we're going to try and go straight through today, all right?

A. Sounds good.

Q. I previously received at our request through your counsel a copy of your file via a video download which was in a format with a bunch of sub-folders where you categorized the information in your file, correct?

A. I believe so.

Q. Other than that file do you have any other items or documents that were part of your review or analysis that were not contained in that digital file provided to us?

A. Yes.

Q. Could you tell me what that information was?

A. Sure. We provided previously the full set of data and videos for my testing, so that was not in the download that you had, so if we submitted it previously, it wasn't necessarily in that new file and then, obviously, I didn't provide you in the digital download physical items from the case.

Q. By physical items are you referring to anything other than your testing equipment and testing setup?

A. That is pretty much it.

Q. I noticed when you came in for the deposition in the room that you had a box. Would you mind telling me what information is contained in that box?

A. Sure. Let me grab it. I have exemplar straps or exemplar strap, other resistance bands, resistance band, door anchors, load cells or a load cell, strength tensiometer and some other testing components.

Q. Were those all items that were referenced in your report somewhere?

A. For the most part, yes.

Q. Is it fair to say that if any of those items had any significance in your analysis in this case, they would have been referenced somehow within the four corners of your report?

A. Well, I am not sure that is necessarily the case but probably.

Q. Is there anything you can think of that is contained within that box that was part of your analysis that was not referenced in your report?

A. Yes.

Q. Could you tell me what that is or those items are?

A. Sure. For example, I have a door anchor from my own personal resistance band that is in the box. It's not referenced in the report.

Q. When you say your own personal resistance band, is that something that you own outside of your capacity as an expert engineer?

A. Outside of this case, correct.

Q. Is that something you were using for personal use in your leisure time or was that something that was used outside of this case but still is part of your professional work?

A. No, no, it was not part of the professional work, this was a personal use item.

Q. Had you used that before your involvement in this case?

A. My own personal resistance band, yes.

Q. Can you tell me what item that is?

A. Yes. It's a -- here, I will show you. It's a door anchor for the resistance band.

MR. SMILEY: Just let the record reflect because we're not on video that that appears to be some type of flat rectangular object.

A. It's a webbing piece. It's an SPRI door anchor.

Q. It's a webbing material?

A. There is webbing and then a larger end the other side, so there is a loop where the resistance band would go through and then the side that would go through the door for the doorjamb.

Q. That is some type of strap; is that fair to say?

A. Yes, strap and anchor.

Q. There is no ball on there, is there?

A. Internal to the webbing there is.

Q. Could you tell me the make and model of that unit?

A. It's an SPRI. I don't know the model.

Q. Do you happen to have any of the packaging that came in?

A. Probably not.

Q. Did you use that in your analysis in this case?

A. I considered it but it's not part of the engineering analysis in this case.

Q. What did you consider about that?

A. I considered its design when assessing Dr. Tipton's alternate designs.

Q. Did you form any opinions as a result of that?

A. I think this is just part of my thought processes. I don't think there is anything in particular with this that went into an opinion but it's part and parcel to my consideration in the case.

Q. Did you consider that that attachment was a reasonable alternative design as a door anchor for resistance band to the door anchor that we'll be discussing in Ms. Nicolosi's case?

A. That was a lot. I think the answer is I think this is an inferior design to what is in the subject case.

Q. Why is that?

A. Because I think it's harder to keep this in the door than the subject ball or the subject door anchor.

Q. Did you do testing to come to that conclusion?

A. I did not.

Q. Have you used that yourself to do biceps curls?

A. Yes.

Q. Did you find it worked okay?

A. Yes. The SPRI band worked fine for curls, yes.

Q. Did you use it with the door attachment to do any exercises?

A. I don't think I did, no.

Q. So, you did not actually affix that door anchor or door attachment to a door and perform exercises with the resistance band?

A. Correct.

Q. Do you hold any professional licenses in New York State?

A. In New York State?

Q. Yes.

A. No.

Q. Are you a member of any professional organizations in New York State?

A. Yes.

Q. Tell me which ones, please?

A. The American Society of Mechanical Engineers.

Q. That is a national society?

A. It is.

Q. Are you a member --

A. I believe they're headquartered in New

York.

Q. Are you a member of a specific New York chapter of that organization?

A. No.

MR. UGHETTA: Objection. Presupposes that there is one. Objection to form.

Q. Any other professional organizations that you're a member of in New York State?

A. Not New York State specific that I can think of.

Q. Are you ever taught any courses in the State of New York?

A. Not that I can think of, no.

Q. Have you ever lectured in your professional capacity to anyone in the State of New York?

A. Not that I can think of, not in New York, no.

Q. Now, in a prior case in which I was representing a plaintiff and questioned you as an expert that was involving a ski accident, correct?

A. That's correct.

Q. At that time you presented yourself as an expert in cases involving ski accidents, correct?

A. I was offered as an expert in skiing, sure.

Q. Would you agree that the bulk of your professional expertise as set forth in your CV is snow or alpine sports related?

A. I certainly have specialized knowledge in that area.

Q. Would you agree that the bulk of your expertise as you identify it in your CV as far as organizations, publications, presentations and committees is in snow or alpine-related activities?

A. I would say the bulk of my work is in biomechanical engineering. I certainly hold a number of leadership positions in the snow sport community but my research and my interest is in biomechanical engineering.

Q. As far as what you have lectured in and published in as defined in your CV, would it be fair to say that as far as lectures and publishing that the subject matter of those was primarily in snow or alpine-related situations?

A. I would say that is true.

Q. Would you be able to say what percentage of your publications or lectures is snow or alpine related relative to other areas?

A. I am not sure what it would be.

Q. Would it be fair to say at least 75 percent of your publications and presentations were snow or alpine related?

A. It could be. I am not sure.

Q. What percentage of expert work do you do on behalf of plaintiffs being the injured parties?

A. I would say 10 to 20 percent of my litigation related work would be on behalf of plaintiffs.

Q. What percentage of your litigation work is done on behalf of defendants?

A. It would be the rest of it to equal a hundred percent, so 80 to 90 percent.

Q. Prior to your involvement in this case do you have any prior experience professionally with resistance bands?

A. Professionally with resistance bands, no.

Q. Prior to your involvement in this case do you have any prior experience with home fitness products?

A. No. Professionally you're asking, correct?

Q. That's correct?

A. Okay.

Q. Do you consider yourself an expert in the field of resistance bands?

A. I feel I now have specialized knowledge in that area.

Q. In resistance bands specifically?

A. Yes.

Q. Did you have any specialized knowledge in resistance bands prior to your involvement in this case?

A. No.

Q. So, to the extent that you consider yourself to have specialized knowledge in resistance bands it's solely as a result of your work in this case; is that fair to say?

A. Yes, specific for resistance bands.

Q. Prior to your involvement in this case did you consider yourself to be an expert in resistance bands?

A. If you would say an expert means I have specialized knowledge, I probably would say not necessarily, although I do feel I have specialized knowledge in biomechanical engineering.

Q. But specifically with regard to prior knowledge or specialized knowledge in resistance bands did you have any prior to your involvement in this case?

A. I don't believe so, no.

Q. Is it fair to say prior to your involvement in this case you never published any articles relating to resistance bands?

A. Yes.

Q. Would it be fair to say prior to your knowledge in this case you never conducted any peer review studies involving resistance bands?

A. That is true.

Q. Would it be fair to say prior to your involvement in this case you never taught any courses involving resistance bands?

A. Yes, I think that is true.

Q. Have you ever received any training of any kind in the use of a fitness band?

A. Yes.

Q. Can you tell me about the training you received?

A. Yes. As part of the USC physical therapy department resistance bands were used there and as part of my work there I observed and saw people being trained on how to use resistance bands.

Q. When was that?

A. Early 2000s.

Q. Did you receive any formalized training that resulted in any type of certification, anything like that, in the use of resistance bands?

A. No.

Q. Are you certified as a personal trainer?

A. I am not.

Q. Are you certified as an athletic trainer?

A. I am not.

Q. Prior to your involvement in this case did you ever testify as an expert in a matter involving resistance bands?

A. No.

Q. Prior to your involvement in this case did you ever testify as an expert regarding any type of door anchor or door attachment in use with a fitness product?

A. No.

Q. So, is it fair to say that since you have no prior experience professionally with resistance bands that you're not really an expert in the field of resistance bands?

MR. UGHETTA: Objection to form.

A. I believe I now have specialized knowledge with respect to resistance bands.

Q. So, do you consider yourself to be an expert in the field of resistance bands?

A. If by expert you mean do I have specialized knowledge, I believe I do have specialized knowledge now relating to resistance bands.

Q. What is your basis for your specialized knowledge?

A. My work in this case, the testing that

I have done, my analyses.

Q. So, you became an expert in resistance bands by being retained for this case, is that fair to say?

A. I guess you could consider it that way. I feel like the case or my role is biomechanical engineering applying to resistance bands, so I feel like I was -- I had specialized knowledge in that before and now I have applied it to resistance bands, so it's specific to resistance bands. I believe I have gained that knowledge.

Q. Do you have your laptop open or your iPad that you can access your report that you rendered in this case?

A. I do.

Q. Can you please go to page 19 of your report?

A. I am at page 19.

MR. SMILEY: Just let the record reflect we're referring to Dr. Scher's report that he rendered and signed and was exchanged in this case. It's the only report that has been exchanged on his behalf.

Q. Now, do you see there is a paragraph that starts, quote, benefits of a resistance band?

A. I do.

Q. Where did you get that information from that is contained in that report in that paragraph?

A. That is general information that either I knew or I observed in relation to this case.

Q. Did you come up with this language on your own or was it taken from somewhere?

A. You know, I may have come up with some of it on my own, some of it may be paraphrasing from other things that I have read or I have seen, I can't say for sure.

Q. What did you read or see regarding resistance bands that you would have used for the information in this paragraph of your report?

A. Internet searches, looking at various product descriptions, watching videos, things of that nature.

Q. Doing something that anybody in the general public could do to get this information; is that fair to say?

A. For the benefits of resistance bands, sure.

Q. So, in other words, this is not information that you know as an expert in resistance bands that you're putting in your report, it's information that anybody in the general public could find out about, correct?

MR. UGHETTA: Objection to form.

A. If someone were to do the research, they could look a lot of this information up, sure. Some of it I knew from my work at USC in the physical therapy department.

Q. Are you a licensed physical therapist?

A. I am not.

Q. Did you have any prior experience before this case in evaluating accidents involving eye injuries?

A. I have had experience with them, yes.

Q. Can you tell me how many cases you have been involved in as an expert where a plaintiff has sustained an eye injury?

A. I don't know if I can give you how many were included in eye injury but where the main injury was an eye injury I would say in the ballpark of six.

Q. Did you render reports in those six cases where the main injury was an eye injury?

A. I don't recall.

Q. Did you testify either at a deposition or at trial in any of those cases that involved eye injuries?

A. I don't recall.

Q. Would you be able to check and find out and if we requested of Mr. Ughetta you can let him know if you did, in fact, either testify or render a report in any prior matters involving eye injuries?

A. I can look for that but I only keep my testimony list for the last four years, so if it's before that, I wouldn't have a way of finding that out.

Q. As you sit here today do you have a recollection specifically of any of the facts involving any of those six cases where the main injury was an eye injury?

A. Yes.

Q. Can you tell me case by case what you recall?

A. The one that comes to mind is an eye injury in snow sports.

Q. Is that one case or more than one case?

A. Well, all of those approximate six cases are snow sports related but the one that comes to mind that I remember most vividly is a snow sports case.

Q. How did the person sustain an eye injury in that case?

A. That was with the handle of a pole that they were using during skiing.

Q. What was the injury sustained to the eye?

A. If I remember correctly, and this is just a vague recollection, I think it was a globe injury.

Q. What is a globe injury?

A. A rupture. The eyeball breaks open.

Q. As a result of that was that person rendered blind?

A. In that eye, yes.

Q. Did you do a biomechanical engineering analysis in that case as to the forces placed onto the eye?

A. Yes. That was part of the analysis.

Q. What year was this that you did the analysis of this case?

A. I don't know, over ten years ago.

Q. Do you know the name of the plaintiff or the name of who your client was?

A. No and no.

Q. In order to test the loads on the eye in that analysis did you use any type of synthetic eye for that purpose?

A. I did not.

Q. What, if any, material did you use to replicate the eye for receiving that load?

A. I used a head form in that case.

Q. What head form? Do you recall the make or model of that head form?

A. I don't know the make and model but it would be a standard isotype of head form.

Q. Did the head form contain load cells?

A. No.

Q. Did the head form contain any eye modules?

A. No.

Q. Other than that case can you tell me the specifics of any other cases you were involved in relating to eye injuries where the eye injury was the main injury?

A. The other ones that come to mind are snow sport injuries where people contacted objects and sustained eye injuries.

Q. Can you give me any examples?

A. For example, contacting a tree.

Q. Anything else? Any other examples of contacts that caused eye injuries in snow sports cases that you were involved in?

A. Not that I recall.

Q. Do you have any medical training?

A. I do not.

Q. Do you have any training with regard to the anatomy of the eye?

A. Nothing specific to that, no.

Q. Have you had any training in injuries of the eye?

A. No specific training, no.

Q. Do you have any training in treatment of eye injuries?

A. No.

Q. Have you ever examined a human eyeball?

A. No.

Q. Have you ever rendered medical treatment for an eye injury?

A. No.

Q. Have you ever published in the field of eye injuries?

A. No.

Q. Have you ever published anything relating to an eye injury?

A. Not that I can recall.

Q. Have you ever taught any courses on injuries of the eye?

A. No.

Q. Have you ever conducted any peer review studies involving traumatic eye injuries?

A. No.

Q. Have you ever testified at trial about eye injuries?

A. Not that I recall.

Q. Do you consider yourself an expert on the anatomy of the eye?

A. I feel I have specialized knowledge in that.

Q. Do you have any specified training in that?

A. Not specified training, no.

Q. What is the basis of your position that you have specialized knowledge in the eye?

A. Conducting research to come up to speed to learn about the eye from biomechanical engineering and anatomy literature.

Q. Would you agree, sir, that an expert as far as litigation is someone that has a specialized background in way of training, teaching, lecturing in the field?

MR. UGHETTA: Objection to form.

A. Certainly an expert in court could have those.

Q. Would you agree an expert in court should have those to be deemed an expert?

MR. UGHETTA: Objection to form.

A. I don't have an opinion one way or the other. That sounds like something the court would have an opinion on, not an engineer.

Q. Is it fair to say other than your independent reading you have done and studying you have done and work you have done on your own that you have no other specialized knowledge regarding the anatomy of the eye?

MR. UGHETTA: Objection to form.

A. Certainly I have conducted my own research on my own, yes, but other than that I don't have any specialized training in the eye.

Q. Are you in any organizations relating to the anatomy of the eye or injuries of the eye?

A. Maybe if you can be more specific.

Q. Like an ophthalmologic association, anything like that?

A. No. I am not involved in any medical societies dealing with the eye.

Q. Do you have any prior experience in the designing of fitness products?

A. Sure.

Q. Have you designed fitness products?

A. No, although I have helped companies with their designs and analyzing them.

Q. But you, yourself, have never designed a fitness product?

A. That is correct.

Q. Were you ever involved in the design of any type of resistance band?

A. No.

Q. Have you ever published articles relating to fitness products?

A. No.

Q. Prior to your involvement in this case did you have any experience in designing a test to evaluate injuries caused by resistance bands?

A. No, and if I can go back to the last question you asked, so you're asking about fitness products and I just want to be clear I am considering fitness products for -- and it's an assumption I made, I am not sure I should have made it, I separated then supporting goods because certainly I have done a lot of research and a lot of work in sporting goods, so if sporting goods are considered fitness products, and perhaps they should be, then the answer should be yes.

Q. Let me rephrase that. Have you

published in the field of fitness products unrelated to snow and alpine use?

A. Sure.

Q. What products have you published regarding?

A. For example, a reaction time study on baseballs.

Q. Anything else?

A. That is what comes to mind.

Q. Is it fair to say that other than snow and alpine products and other than a reaction time study regarding baseballs you never published with regard to any other type of fitness product?

A. No, that is not true either.

Q. Can you tell me what fitness products that you have published in that is not relating to snow, sports or baseball reaction time?

A. Sure. I published an article or an article was published last year and the year before that in ice hockey shoulder pads.

Q. Other than that anything else that you published relating to fitness products?

A. No, I think that is it.

Q. I am just going to reask the question because I want an answer to this specific question as to whether or not you had prior experience in designing a test to evaluate injuries caused by resistance bands.

A. Prior experience, no.

Q. Did you ever conduct any testing on resistance bands prior to this case?

A. No.

Q. Did you ever design a testing system to test resistance bands prior to this case?

A. No.

Q. Is it fair to say that your involvement in this litigation is the very first time that you designed a testing system to evaluate injuries sustained to an eye by a resistance band?

A. That was a lot. Can I have that read back, sorry?

MR. SMILEY: Marleine, would you mind reading it back?

(Whereupon, the question was read back by the court reporter.)

MR. UGHETTA: Objection to form.

A. Yes, I think that is true.

Q. Prior to this case did you ever design a test to evaluate eye injuries sustained by projectiles?

A. Did I design a test?

Q. Yes.

A. No.

Q. Would you consider the test that you designed in this case a test to evaluate a projectile into an eye?

A. I guess one could call it that. I would call it biomechanical engineering testing of a resistance band, so I would call it something different but it's just my terminology.

Q. Prior to this case were you ever involved in any way with any studies involving projectile-producing injuries of the eye?

A. No.

Q. We'll get to the studies that you list as references in your report a little bit later but is it fair to say that you have never been involved in any types of studies of the type that you have referenced in your report where they evaluated trauma to the eye?

A. If you mean the peer-reviewed articles, no, I have not conducted studies like those and peer-review articles referenced in my report.

Q. Prior to this case were you aware of a resistance band without a door anchor causing a user to go blind?

A. Not that I can think of, no.

Q. Did you independently seek out that information as to whether or not someone using a resistance band without a door anchor ever sustained an injury that rendered them blind?

A. Sorry, can I have that question again?

Q. Did you independently seek out, in other words, do one of your own research or ask counsel as to whether or not a user of a resistance band was ever rendered blind by using a resistance band without a door anchor?

A. Blind? No, I don't think I have seen that.

Q. Did you make any attempt to find out if that ever occurred prior to this case?

A. Prior to this case, no.

Q. Let me rephrase the question.

Did you make any attempts as part of this case, as part of your analysis in this case, to determine whether or not prior to Ms. Nicolosi's accident a user of a resistance band was ever rendered blind?

A. So, I think rendered blind is what I am having difficulty with. Maybe you can explain to me what you mean exactly by that.

Q. A significant injury to the eye such that they were considered blind?

A. Certainly I inquired about eye injuries. I don't know if there is enough detail to say whether someone was blind or not.

Q. Did you inquire as to whether anyone prior to Ms. Nicolosi had sustained a significant eye injury while using a resistance band?

A. Yes.

Q. Tell me what inquiries you made?

A. I asked counsel if there was any information about that. I looked at Mr. Parks' deposition and I also went to the NEISS database.

Q. What did you learn from the Parks EBT as to whether or not a user prior to Ms. Nicolosi sustained a significant eye injury from using a resistance band?

A. I think your question kind of got garbled. You said the Parks and I missed a few words.

Q. What did you find out from your review of the Parks deposition as to whether or not an individual prior to Ms. Nicolosi sustained a significant eye injury while using a resistance band?

A. It's my understanding that there were previous eye injuries using resistance band.

Q. Was that a band with or without a door anchor?

A. I don't recall and I am not sure it was in there.

Q. Was that of significance to you in your analysis in this case as to whether or not prior injuries to an eye that was sustained while using a resistance band involved a door anchor or not?

A. It's certainly something I was

interested in.

Q. Did you attempt to find out whether or not any prior injuries sustained by users of resistance bands to the eye involved door anchors or not door anchors?

A. I don't think there was enough data to determine whether injuries to the eye had door anchors or whether there was door anchor involvement at all.

Q. What did you learn from counsel as to whether or not users prior to Ms. Nicolosi sustained significant eye injuries while using resistance bands?

A. I was referred to Mr. Parks' deposition.

Q. Were you advised by counsel as to whether or not counsel was aware of prior instances before Ms. Nicolosi where users of resistance bands sustained significant eye injuries?

A. I don't recall counsel telling me one way or the other.

Q. Now, you said there was a NEISS database?

A. That is correct.

Q. Could you spell that acronym for me?

A. N-E-I-S-S.

Q. What does that represent?

A. That is the CPSC's National Electronic Injury Surveillance System database.

Q. What did you learn from looking at that database as to whether or not any individual prior to Ms. Nicolosi's accident had sustained significant eye injuries using a resistance band?

A. From that database I found that fitness equipment creates eye injuries including resistance bands and free weights and a variety of home fitness equipment. There were previous eye injuries labelled in the NEISS database as resistance-band related.

Q. Did you attempt to find out whether any of those involved a door anchor or not?

A. I did look through the comments in the NEISS database and for the most part I could not tell whether there was door anchor involvement or not.

Q. Of any of these prior instances that

you learned of either from counsel or the Parks' deposition or the NEISS database did any of those involve user doing biceps curls with a resistance band resulting in an eye injury?

MR. UGHETTA: Objection to form.

A. Not that I recall.

Q. Did you specifically look for that to see whether or not a biceps curl was the type of exercise being performed at the time that the eye injury was sustained?

A. I don't remember specifically looking for biceps curl but I was looking for what the user was doing in general but I don't recall biceps curl in particular.

Q. Do you recall in particular any exercises that were being performed resulting in an eye injury?

A. No, I do not.

Q. When you said you read a transcript of Mr. Parks, what transcript was that, was that from this case or a different case?

A. That is from this case.

Q. Did you read any other transcripts of Mr. Parks from other cases?

A. I did not.

Q. What were you retained to do in this case? What is your understanding of why you were hired?

A. To conduct a biomechanical engineering analysis of Ms. Nicolosi's accident to assess Dr. Tipton's alternate designs and to -- really in particular to look at whether adding the door anchor increased the likelihood of a significant eye injury.

Q. So, if I understood your answer, there are, basically, two aspects to your understanding of why you were hired, one was to assess Mr. Tipton's testimony, Dr. Tipton's testimony regarding alternate designs, and the other as to whether or not the door anchor increased the likelihood of injury to the eye?

MR. UGHETTA: Objection to form.

A. Generally, and I wouldn't just limit it to Dr. Tipton's alternate design but really looking at what he did and assessing it biomechanically.

Q. Were you asked to determine how it was that she struck her eye doing a biceps curl to analyze that?

A. Maybe you can be more clear. I am not sure what you mean.

Q. Well, did you make a determination in your analysis of how it was that she struck her eye doing the biceps curl with this resistance band?

A. I mean, generally some component of the resistance band system contacted her eye, so I am not sure what you're asking here.

Q. So, as a biomechanical engineer did you perform an analysis to see how that happened, how it went from position one before she started the curl to position two where it struck her in the eye?

A. I mean, I guess generally you could say yes. Maybe I am not understanding the question but, I mean, it's a biomechanical analysis of what happened generally, so, yes, I guess that would include that.

Q. Can you tell me how it was that she got struck in the eye by the resistance band while doing a biceps curl, how that occurred?

A. Sure. The resistance band door anchor slipped out from under her foot and the resistance band system came up and went toward her face and contacted her eye.

Q. Did your testing confirm that that is what happened?

A. I mean, that is the testimony, that is what we have, so it's consistent with that but I don't think I proved that she got an eye injury from either the resistance band. I think that is already a given.

Q. Do you dispute that the resistance band struck her eye during the process of her doing a biceps curl?

A. I believe that -- well, I don't know if she was doing the curl at that point but I do believe some component of the resistance band system contacted her eye, sure.

Q. Am I correct that the testing you performed was unable to show how a component of the resistance band struck her eye?

MR. UGHETTA: Objection to form.

A. I disagree with that.

Q. Did you put somewhere on your report that it was unclear how a component of the resistance band made contact with her eye?

A. Maybe I should be more clear. A component contacted her eye. We don't know if it's the resistance band door attachment or the band itself or possibly even the handle. I mean, that is a possibility here too but some component of the resistance band system contacted her eye. It's unclear which one of those actually contacted her eye though.

Q. But from your testing you were not able to determine how the anchor or tubing would contact the user at eye level, correct?

MR. UGHETTA: Objection to form.

Can we have that question read back, please?

(Whereupon, the question was read back by the court reporter.)

MR. UGHETTA: The same objection to form.

A. So, I think you're probably referring to a part in my report where I am talking about someone who is using proper arm curl form and someone who is using proper arm curl form as described and illustrated in the manual, it's unclear how someone could get part of the resistance band system to contact their eye. In this case we know some parts of the resistance band system did contact Ms. Nicolosi's eye though.

Q. So, you're saying if she did it properly, it would not have contacted her eye, correct?

A. If she was performing the arm curl properly as demonstrated in illustrations and words in the manual, it's highly unlikely that the resistance band system would contact her eye.

Q. That is based on your testing that you determined that?

A. The testing and my analyses.

Q. Were you able in your testing to replicate how, in fact, that it did hit her eye?

A. The testing assumes that it hits her eye, so I am not trying to replicate her event in my testing.

Q. My question specifically is whether or not your testing attempted to replicate how she was struck in the eye?

A. It's not a recreation if that is what you're asking.

Q. That is not what I am asking. Can you please try to answer my specific question? Did your testing --

MR. UGHETTA: One person at a time. Would you like to ask another question, go ahead.

Q. Specifically my question is whether or not you attempted in your testing to replicate how it was that she was struck in the eye by the resistance band?

A. The testing relates to that but I did not recreate her accident.

Q. Did you attempt to determine in your testing how she was struck in the eye?

A. Again, I think I answered that question.

Q. Is the answer no, you did not attempt to recreate that?

A. It's not a recreation. What I did was test parameters that related to her getting struck in the eye.

Q. As a biomechanical engineer do you

have the capability if you choose to undertake it in this case to try and determine how it was that she was struck in the eye by using the resistance band doing a biceps curl?

A. Sure.

Q. Since you have that capability did you consider doing that in this case?

A. Yes.

Q. Did you take steps to try and replicate what happened in her case to show during a biceps curl she could have been struck in the eye?

A. I did not replicate any testing but I do believe I had some ideas of how she got struck in the eye.

Q. I am not asking whether or not you have ideas, I am asking whether or not you used your capabilities as a biomechanical engineer to show how that happened, how during her performance of the biceps curl she ended up getting struck in the eye?

A. So, I think the short answer here is it's not possible with the information that we had provided because there are inconsistencies.

In the end you cannot do that in this case.

Q. Did you attempt to do that?

A. Yes.

Q. Were your attempts unsuccessful in reproducing what happens in Ms. Nicolosi's accident?

A. So, my issue here is in reproducing. I did not try to reproduce her accident.

Q. So, the answer is no, you did not try to reproduce what happened in her specific case?

A. I have not tried to recreate that in testing, no. I tried to look at parameters that relate to her eye injury, her particular instance.

Q. Could you have tried to reproduce or recreate what occurred in her accident?

A. Overall, no.

MR. UGHETTA: In about five minutes would it be able to take a break?

MR. SMILEY: Sure.

Q. Let's talk about your test system, okay? This was a custom built testing system; is that correct?

A. That is correct.

Q. Was it of your design or someone else within your company?

A. Both. We worked together on it.

Q. This was the first time that you and your company designed this type of system?

A. That is true.

Q. Is it fair to say that this testing system was designed solely for this litigation?

A. Solely for this testing, yes.

Q. Solely for this litigation, right?

A. Sure, yes, the testing was done for this particular case.

Q. Prior to this case you never designed any type of test to test resistance bands to see what kind of injuries they would cause, correct?

A. That is true.

Q. You had, in fact, no experience in doing that prior to this case, correct?

A. I haven't done it before but in terms of experience I believe it's just mechanical design and I do have experience with that.

Q. But you had never done it before, correct?

A. Mechanical, sure, I have.

Q. This type of testing, design, you had never done it before, correct?

A. For resistance band with this particular apparatus I had not done it before this case, that's correct.

Q. Now, were you aware of other ways of testing injuries to the eye other than creating a custom-built system?

A. Sure.

Q. Did you consider using any of those other methods for testing injuries to the eye that you were aware of were already in existence other than creating a custom built one?

A. Sure.

Q. Why did you not avail yourself of a design that had already been used?

A. It would not be appropriate in this case. It would not have provided the testing that was necessary. You couldn't test with a resistance band with those apparatus.

Q. How do you know that?

A. From the designs of the other tests that are out there.

Q. Now, in the studies that you

referenced there were two Kennedy studies from 2006 and 2011?

A. That's correct.

Q. Did you see how they set up their testing to evaluate injuries to the eye?

A. I did.

Q. Do you know how they did it in the 2006 case? Do you recall that?

A. I believe so.

Q. How did they set up the testing of loads to the eyeball in that case?

A. I believe they launched a projectile of the eye.

Q. What did they use to represent an eye in that case?

A. For their testing they used eyes.

Q. Actual eyeballs, correct?

A. That is true.

Q. They placed it in a gelatin solution as well, do you recall that?

A. I do.

Q. In 2011 in the Kennedy study do you know how they tested loads on an eye?

A. I believe in a similar fashion,

although it's mostly a review paper if I remember correctly.

Q. Do you recall their use of a FOCUS system?

A. They do discuss the FOCUS headform, sure.

Q. You're familiar with the FOCUS headform?

A. I am.

Q. Were you familiar with the FOCUS headform before you did your custom-built testing in this case?

A. Yes.

Q. Are you aware that the FOCUS headform has been validated scientifically?

A. I believe it has.

Q. Are you aware that the FOCUS headform had synthetic eye modules available for testing with it?

A. Sure.

Q. You were aware that they had more than one synthetic eye module available for testing?

A. I don't recall that but it's certainly possible.

Q. Are you aware that that synthetic eye module had load cells that came with that eye module?

A. It is an instrument headform, yes.

Q. Are you aware that the synthetic eye modules with the FOCUS headform have all been validated?

A. I believe they have.

Q. Was your testing system validated prior to being used in this case?

A. The components all meet the requirements and traceable.

Q. Was your testing system validated for the purpose that you were using it?

A. Yes, I believe so. I think it meets all of the standard mechanical engineer principles. There is nothing exotic about it.

Q. Has any entity within the scientific community validated your testing system as a system that can scientifically predict likelihood of projectile injury to an eyeball?

MR. UGHETTA: Objection to form.

A. As you stated it, no.

Q. However, the synthetic eye module by

Humanetics with the FOCUS headform has been validated to predict injuries sustained to the eyeball, correct?

A. I think you have a mistake in that question, sorry.

Q. The synthetic eye modules that are used with the Humanetics headform that we have spoken about, those have been validated?

A. Are you talking about Humanetics?

Q. Yes. I am pronouncing it wrong?

A. That is fine.

Q. So, the FOCUS headform in the synthetic eye module that is from a company called that I have been mispronouncing Humanetics, right?

A. I just want to make sure we're talking about the same thing.

Q. Humanetics, right?

A. Correct.

Q. Is it your understanding that the headform and the synthetic eye modules have been validated within the scientific community to show that they accurately replicate forces upon the eyeball?

A. That is my understanding, yes.

Q. Is there anything that is in your custom testing system been shown to be validated to accurately predict loads upon the eyeball?

MR. UGHETTA: Objection to form.

A. No.

MR. UGHETTA: 9:30 can we take a quick break?

MR. SMILEY: Sure.

(Whereupon, a recess was taken.)

Q. The FOCUS headform and synthetic eye module were used in the 2011 Kennedy study, correct?

A. I believe the FOCUS headform was in that, yes.

Q. That study was published and peer reviewed, right?

A. Certainly published. I think it's a report for the military.

Q. Do you know if it was peer reviewed?

A. I am not sure. I think it was but I am not a hundred percent sure.

Q. Now, is there a reason that you didn't use the FOCUS head system, headform system?

A. Yes.

Q. What is that?

A. Well, first off, there is more than a 24 week lead time to order a FOCUS head system, it's well over a hundred thousand dollars to get an instrument headform, they are not part of a lease program and then from what I understand it's a non-trivial dead acquisition system application for the headform.

Q. Did you actually make an inquiry to try and get the FOCUS headform to use for this evaluation?

A. I did inquire with Humanetics, yes.

Q. Do you have anything back from them in writing?

A. No. I just made a phone call to our contact over there.

Q. So, initially you thought it would have been a good idea to use the FOCUS headform for your testing?

A. It was something that I considered.

Q. Cost was a concern for you?

A. Yes. The FOCUS headform is well over a hundred thousand dollars from what I understand.

Q. Did you discuss the extra cost with counsel?

A. No.

Q. Has cost been a concern to you in your work on this case?

A. I am always cost-conscious.

Q. Do you know what your total billing has been on this case so far for this company?

A. I do not.

Q. Would it be fair to say it's in excess of $60,000 already?

A. It may be.

Q. Other than the FOCUS headform did you look into any other type of synthetic modules to use for your analysis in this case?

A. No. That was the main one.

Q. Are you aware of any other way of evaluating an eye injury other than how you set it up in your custom system and other than by using a FOCUS headform?

A. So, just to be clear, in my test apparatus I am using that eventually to look at eye injury but I am looking at the mechanical properties of the resistance band in my testing, so you keep saying it as if I am using it to directly calculate eye injury likelihood. There are multiple steps and that is just the mechanical portion of my analysis.

Q. Was your testing meant to be predictive of likely outcome of eye injuries?

A. It could be used down that path but in and of itself it does not provide that information.

Q. Did you use that in your analysis to determine whether or not Ms. Nicolosi would likely sustain a greater injury from a door anchor or from just the band without the door anchor?

A. Greater injury?

Q. Yes.

A. No.

Q. Do you have an opinion as to whether or not contact with her eye of the door anchor ball as opposed to the band itself would cause a greater or lesser injury?

A. Both have the potential to create significant eye injuries.

Q. Does one have the potential to cause greater injury than the other in light of its physical properties?

A. I am having trouble with greater than. Maybe you can explain what you mean because I'm just not getting it.

Q. Would you agree there are varying types of injuries that the eyeball can sustain when hit with an object?

A. There are different injuries an eye can sustain, sure.

Q. Some are greater than others, correct?

A. What do you mean by greater?

Q. Well, more severe.

A. What is more severe than another?

Q. Well, you put in pretty good detail within your report various injuries of the eye, right? You comment on different injuries of the eye?

A. There are different injuries, yes.

Q. Would you agree some are more severe than others?

A. I think they are all significant eye injuries. You know, I don't have an opinion of what is more severe than one of the other ones.

Q. So, you have no opinion as to whether or not an anchor ball could result in a more severe injury to an eyeball than an elastic resistance band without an anchor ball that strikes the eye?

A. I think both can create significant eye injuries.

Q. My specific question is whether or not you have an opinion as to whether the anchor ball can cause more severe injury than just the rubber elastic band itself?

A. Again, both can. I don't think there is one is greater than or more severe than the other. I think both can create significant eye injuries.

Q. So, you have no opinion on whether one can be more severe than the other as far as injury producing?

A. I think they both can produce severe injuries. I don't think unless you give me some metric to talk about more severe, I don't think there is any way we can determine one or the other.

Q. For example, a scratch on the eyeball as opposed to a global rupture, using those two examples, would you agree a global rupture of the eyeball is more severe than a scratch on the eyeball?

A. I would agree with that.

Q. So, do you know whether or not the anchor ball would more likely than not cause a global rupture upon impact than the resistance band material itself contacting the eye?

A. I think they are equally as likely.

Q. So, to be clear, you don't have an opinion that one or the other is more or less likely to cause a greater injury to the eyeball?

A. That is right. They are equally likely to.

Q. Now, the system that you custom-built didn't use eyeballs, correct?

A. That is true.

Q. It didn't use anything to recreate the properties of an eyeball, correct?

A. That is true.

Q. You set up a system for the resistance band and door anchor to strike an aluminum plate; is that correct?

A. That is right. The resistance band and/or door anchor would come with and contact an aluminum plate.

Q. Does an aluminum plate accurately represent an eyeball?

A. No, but that is not the point of doing that in the test.

Q. A plate is flat where an eyeball is convex, correct?

A. That is true.

Q. Did you consider that different at all in your custom built testing system?

A. I did.

Q. Would that have a change at all in your analysis whether or not the resistance band or door anchor struck a flat aluminum plate as opposed to a convex eyeball type material?

A. In the testing that I have done I don't think it makes a significant difference. I think for the purpose of my testing flat aluminum plate was adequate.

Q. Prior to your custom-built system have you ever seen any study or publication where loads to an eye were measured using an aluminum plate?

A. Not that I recall but it's not the point of the aluminum plate in my test.

Q. Is it fair to say that prior to your custom-built test you have never seen any studies of trauma to the eye utilize a plate instead of some type of synthetic eye or actual eye in the testing, correct?

MR. UGHETTA: Objection to the form.

A. So, again, that is not the point of the aluminum plate in my test but, no, I haven't seen that in the literature.

Q. Did you consider at all trying to replicate either the size, the shape or the material qualities of an eyeball for your testing in this case?

A. I did consider it, yes.

Q. Did you make any attempts to try and replicate an eyeball either in size, shape or material properties for your testing?

A. It was not necessary for my analysis, so, no, I did not.

Q. What are the average dimensions of a human eyeball? Do you know that off the top of your head?

A. Off the top of my head approximately an inch in diameter but I am going to go to the literature in my file. The 2014 Beckerman article has a nice table of eye dimensions for right and left. I will give you the right eye because it's on the left column here. In the transverse direction it's about 24.156 millimeters on average and in the sagittal plane it's approximately 23.799 millimeters on average.

Q. Do you think the results of your testing would have been any different if you had used a FOCUS headfoam with a synthetic eye module as opposed to an aluminum plate?

MR. UGHETTA: Objection to form. The thing is your keep presupposing he did some sort of test that has anything to do with your question. I am just going to keep objecting to it.

MR. SMILEY: They are all preserved as you know, Jim.

A. For the purposes of my testing and how I used the data, no.

Q. Do you think the results would have been the same?

A. I think the overall results and conclusions, yes.

Q. The FOCUS headform has an orbital rim that can be assessed, correct?

A. I don't recall.

Q. Did you have anything in your testing system to see what, if anything, impact the resistance band or anchor ball would have on the orbital rim?

A. No. That was not the point of my testing.

Q. Do you think that the effective mass of the tubing of the resistance band would have been lower using a FOCUS headform than using the aluminum plate in your testing setup?

A. No, I do not.

Q. Do you think the results for the effective mass of the door anchor would have been the same if you used the headform?

A. I believe so.

Q. What were the dimensions of the aluminum plate in your testing system?

A. I don't recall off the top of my head. I want to say maybe a quarter inch thick, maybe ten inches by eight inches but I don't recall off the top of my head. It's more of a guess or an estimate.

Q. Do you have it in your file, that information?

A. I do not.

Q. Do you record that as part of your analysis?

A. No.

Q. Isn't proper scientific analysis of a custom-built setup to record the size and dimensions of what is used in that setup?

A. One can if one wants. I don't think it's necessary.

Q. Do you have an opinion as to whether or not the length, width or thickness of the aluminum plate would make any difference in the results of your testing?

A. They could.

Q. Did you consider different dimensions for the aluminum plate?

A. I did.

Q. What are the dimensions that you considered using?

A. A smaller aluminum plate.

Q. How small?

A. I want to say maybe half of the width.

Q. Just that? Anything else that would make it smaller other than half the width?

A. That is what I considered.

Q. Why didn't you use that other size?

A. It would have been much harder to hit the plate and get any kind of repeatable results with a smaller plate.

Q. Do you know what the difference would have been in the data received if you had used that smaller plate?

A. We may not have been able to collect data in many cases, so you may have very different files because there may be some that are empty.

Q. Well, do you agree that if you used a different size plate, different dimension plate, that you could get different data in the testing as a result of that?

A. Sure. For example, let's take the door anchor cases, if the door anchor misses the plate, you're not going to collect any data, so just like if the door anchor misses the head, it's not going to apply a force to the eye, so the data could be different.

Q. What about the impact on the size of the plate, if the impact is spread amongst a larger plate as opposed to impacted among the spread of the smaller plate, would that effect the data?

A. It could for some impacts.

Q. Did you run different testing with different size plates to evaluate the different loads?

A. There were two different size plates.

Q. You ran data with two different size plates?

A. Yes.

Q. Did you give us data for both of those plates?

A. Yes.

Q. Did you define that on what you

provided us as to one was using one size plate and one was using a different size plate?

A. Yes, and it should be obvious from the videos or the test where the door anchor goes to the side of a plate and then the band, the resistance band, contacts the plate, that plate is a different size than the other tests.

Q. What were the dimensions of that plate?

A. I don't recall.

Q. Did you project the door anchor directly into that smaller size plate or did you only use the smaller size plate so that the door anchor could pass it?

A. The smaller plate was used so that the door anchor would miss the plate and the band would contact.

Q. Did you have the door anchor hit that smaller plate so you could compare the data received between the door anchor hitting the smaller plate and a larger plate?

A. No.

Q. You could have done that though, right?

A. I could have but the results would be exactly the same.

Q. We don't know that, do we?

A. I am very confident based on the principles of mechanical engineering that it would be the same.

Q. But you don't have anything to show for that other than your confidence as far as data, correct?

A. Based on my mechanical engineering experience it would be the same. I don't have any data from testing to show that.

Q. So, you're not able to tell whether or not a really large plate being hit by the door anchor would have the same exact data as a really small plate being hit by the door anchor, correct?

MR. UGHETTA: Objection to form.

A. It would be the same.

Q. But you don't have any data to show the difference, right?

A. I don't have any testing data to show that, that is correct.

Q. There is no other way as far as any

outside validation of the system you set up to determine whether or not what you're saying is true as far as loads onto those different size plates, right?

MR. UGHETTA: Objection to form.

A. Sure. Someone could test it.

Q. Has someone tested it?

A. Not that I know of.

Q. So, we don't know what you're saying is accurate, right, because we haven't seen anything to validate it?

A. Based on the principles of mechanical engineering it would be the same.

Q. But that is just your word saying it would be the same, correct?

MR. UGHETTA: He wasn't done.

A. You don't have to test Newton's laws over and over again to show they work. They have been tested for hundreds of years in the same vein, same mechanical engineering principles hold, so I don't have to reinvent the wheel each time. I am confident it would be the same.

Q. In your custom-built system at no time did you use any different size or shape plate or other material to record the load of the door anchor or resistance band, correct?

A. No, that is wrong.

Q. You did use different sizes to record the loads?

A. We just talked about that, yes.

Q. I am not talking about doing it so that the door anchor could pass it, I am talking about recreating the exact same scenario in your testing, one using a larger plate and one using either a smaller or different shape or different material device to receive the load, you did not do any type of that comparison, correct?

A. No.

MR. UGHETTA: Can I ask who is in the room with you guys?

MR. SMILEY: So, we have the court reporter and we have the technician here running this.

MR. UGHETTA: Okay, thank you. We never got who was in the room.

MR. SMILEY: Brontus, can you show yourself so he can see?

MR. UGHETTA: That is okay, I saw him earlier. Usually everybody introduces themselves, okay.

Q. Dr. Scher, just to be clear on your last answer of no, am I correct that at no time in your testing in this case did you specifically do the exact same projectile into different size or shape plates to see what, if any, difference there would be in the data received?

A. How you asked it the answer is I have but I think what you're getting at is did I do a pair test with the same thing with different size plates and then the answer is no.

Q. How can you be sure that the aluminum plate you used is the scientifically accurate method for determining potential loads in subsequent injuries to an eyeball?

MR. UGHETTA: Objection to form.

A. That was not the purpose of using it.

Q. Well, ultimately don't you form opinions as to the extent of injury Ms. Nicolosi would be expected to sustain from either a door anchor or a resistance band?

A. Ultimately I am looking at injury likelihood.

Q. Injury likelihood to an eyeball, correct?

A. To an eye, correct.

Q. So, since you're looking at injury likelihood to an eye, how can you be sure that the aluminum plate you used is a scientifically accurate method for determining potential loads and injuries to an eyeball?

MR. UGHETTA: Objection to form.

A. Again, that is not the purpose of using the aluminum plate. It's to look at the mechanical properties if you will for the mechanical system and then using that in the rest of the biomechanical engineering analysis.

Q. How is the load cell connected to the test frame?

A. It's bolted to a piece of 8020 which is another piece of aluminum.

Q. So, you have the aluminum plate, then you had another piece of aluminum and then you had the load cell connected to that?

A. No, no, you have the frame and

included in the frame I guess you could call it part of the frame if you want is a bar, the load cell bolts to the bar and then the aluminum plate bolts to the load cell.

Q. What type of load cell is used?

A. Let me see which one we used in that. I don't remember off the top of my head. One second. That was an interface load cell with a range of 500 pounds and a resolution of 0.015 pounds.

Q. Why did you select that load cell for this testing?

A. Ample resolution and enough range to capture anything that I thought I would need to capture.

Q. Did you take any steps to validate that your design of attaching a load cell to an aluminum plate would accurately measure forces sustained by a human eyeball?

A. Again, that is not the point of the aluminum plate or the load cell. It's to measure the mechanical properties of the system, so the answer is no.

Q. Would you agree that a large plate

connected to a load cell may not reflect a load cell connected to an eye?

MR. UGHETTA: Objection to form.

A. They may be different, sure.

Q. Now, the entire length of tubing can hit a plate but only a small amount of tubing can hit an eyeball, correct?

A. Sure. It depends on the size of your plate.

Q. Did you consider that might have an impact on the data that you obtained?

A. I did.

Q. Did you consider that the data may not accurately reflect what could happen to a user of a resistance band struck in the eye by a resistance band?

MR. UGHETTA: Objection to form.

A. Again, the point of the plate is not to do that. I believe for assessing mechanical properties in whatever it's testing is adequate.

Q. What was the mass of the plate?

A. I don't recall.

Q. Do you have that data saved anywhere?

A. I don't know that I even weighed it.

Q. Were the load cell measurements compensated for by the inertia of the plate?

A. The inertia of the plate? Yes.

Q. How?

A. We zero the load cell for the data.

Q. How do you do that?

A. You take data with nothing applied to the load cell but the plate.

Q. You recorded that?

A. That is part of the initial process when you do the data acquisition, so it's internal to every data file that you have.

Q. Do you have to make some calculated adjustment for that to flow through your data?

A. No. It's part of the data acquisition system.

Q. What system is that?

A. That is a DTS nano slice system.

Q. Was your custom testing design scientifically validated to show produced reliable results?

A. I don't think there is any particular validation to do that. I believe using my engineering experience it would produce valid results.

Q. But there are ways to validate testing systems to see if the results are accurate, right?

A. The load cell was -- has a missed traceable calibration. The data activation system is calibrated annually. I am not sure what other validation you're asking for but the system measures accurately.

Q. Are you aware, sir, if you can answer yes or no, of whether or not your testing system could have been validated by anyone outside of your company to show that it produced reliable results?

A. I believe the components are in your terms validated or I would call them calibrated.

Q. That is not my question. My question specifically is about validation. You know what validation is, right?

A. Maybe you can explain it to me because I think we have a misunderstanding here.

Q. Have you ever heard in your line of work as to whether something has been validated?

A. Sure.

Q. For example, we spoke of the headform in the synthetic eye modules being validated, correct?

A. We may have.

Q. What that means is that they have been shown to give reliable results through outside confirmation somehow; isn't that fair to say?

A. I am not sure that is exactly right.

Q. Well, what is your understanding of what it means as a scientist if you go to use a crash test on me that says that it's been validated? What is your understanding of what that means?

A. So, it's not just would produce reliable results, so you do the same thing twice, you get a consistent result but validated to me would also have some aspect of being able to be biofidelic, so it's going to produce a response similar to what you're -- what you would like to measure but you can't, so, for example, if a crash test dummy is a surrogate for a human and so it's validated in various crash responses to perform like a human.

Q. So, how was your custom-built system

validated to show that it performs like a human being doing biceps curls with a resistance band?

A. Well, it's not validated for that purpose. It's -- the system was used to assess the mechanical properties of the resistance band under an application like a curl maneuver and in that case there is no validation.

Q. Would you agree that your testing system has not been validated to reliably show results of what would happen with a person doing a biceps curl?

MR. UGHETTA: Objection to form.

A. I disagree with the premise because you're asking something that is -- the question is kind of wrong. The system is calibrated and in the end there is no validation for the system.

Q. So, the answer is no, it's not been validated as a system in any way, correct?

MR. UGHETTA: Objection to form.

A. There would be no validation for that system --

Q. So --

A. -- as we have discussed.

Q. You're saying that system can't be validated?

A. In the way we were just talking about validation I don't think there is a validation.

Q. You did not publish the results of this testing in this case, did you?

A. No.

Q. Your testing in this case wasn't peer reviewed, was it?

A. It was not.

Q. Was anybody outside of your company brought in to confirm the setup of your testing to say that they felt it was a proper way to achieve your goals?

A. No, not that I can think of.

Q. Do you know what the error rate was of your testing?

A. Yes.

Q. What was your error rate?

A. For speed I would say approximately three miles per hour, for the force measurements it's going to be in the ballpark of 0.03 pounds.

Q. How do you determine those error rates?

A. That is the reliable resolution of the equipment.

Q. Where do you get that information from?

A. Well, for the load cell it's from the calibration of the equipment. For the speed which is taken from the high speed camera it's based on the frame rate and the pixels per inch but the actual camera it seems.

Q. So, you're talking about the error rates for the equipment you use to measure force and speed, right?

A. That is right.

Q. I am asking whether or not there is an error rate for your system that you custom-built as a whole, not for the individual units?

A. I think those are the error rates for the system as well.

Q. Is that all of the information you can give me regarding error rates for your custom-built system?

A. That I can think of. If I think of more, I will let you know.

Q. Did you consult with anyone or any

company that previously conducted testing on eye injuries sustained by projectiles?

A. No.

Q. Did you consider doing computer modelling in this case, finite element modelling?

A. I did not.

Q. Why not?

A. I didn't think it was the appropriate tool to assess this particular event.

Q. Did your testing system accurately recreate Ms. Nicolosi's accident?

MR. UGHETTA: Objection to form.

A. So, if you mean the testing frame, the load cell and all of that, again, that is not a recreation of her accident, it's to get the mechanical properties related to someone doing a curl, an individual her size doing that, it's not a recreation of her accident.

Q. So, would the answer be no, your testing system did not accurately recreate Ms. Nicolosi's accident?

MR. UGHETTA: Objection. It presupposes that is what the test system is for. I object to the form.

A. I think I answered that with the last question so.

Q. Respectfully I don't think you did. It's either yes or no. Was this testing system an accurate recreation of Ms. Nicolosi's accident?

MR. UGHETTA: Can I have the question read back, please?

(Whereupon, the question was read back by the court reporter.)

MR. UGHETTA: Objection to form.

A. Again, that wasn't the point of the testing apparatus. It's not a recreation of Ms. Nicolosi's accident, so, I mean, that is my answer.

Q. So, your answer is no, the custom-built system you designed did not recreate Ms. Nicolosi's accident, correct?

MR. UGHETTA: Objection to form.

A. I believe I answered it, what, twice now.

Q. You didn't. That is why I keep asking it, Dr. Scher.

Am I correct, yes or no, and then I will move on, am I correct, yes or no, that your testing system did not recreate Ms. Nicolosi's accident?

A. I think I have answered that. I don't think a yes or no provides an adequate answer to your question.

Q. I think it does, so can you answer that yes or no? Are you saying you cannot answer my question yes or no?

A. Mr. Smiley, I believe I have answered the question a few times now and I am sorry you're not happy with the answer but that is my answer.

Q. The reason, sir, I am not happy is because you're not answering my question, so I am going to keep asking it respectfully until you answer it. Regardless of what the goal was of your testing, whether your goal was to recreate it or not, my specific question is whether or not your testing system accurately recreated Ms. Nicolosi's accident; yes or no?

A. Again, for what the fifth time now the purpose of the testing is not to recreate her accident but to look at the mechanical properties of the system, resistance band system, when someone of her size uses the resistance band for an arm curl.

Q. So, the answer is no then, correct, that it did not recreate her accident?

A. I believe I have answered it, I am sorry.

Q. Well, we're going to stay here until you give me a clear answer because all of your answers are saying I believe I answered it and then you go off with a different explanation. I am going to keep asking the question. It calls for a yes or no?

MR. UGHETTA: Don't argue, just ask the question again. Maybe if you want to try to qualify it a different way, maybe if you change the words a little bit maybe but he believes he's answered it, you don't, so ask another question.

Q. Dr. Scher, whether or not you intended for it to recreate Ms. Nicolosi's accident or not, would you agree that your testing system did not recreate Ms. Nicolosi's accident?

A. I believe I have answered it. Again, it wasn't the point of it and so I don't believe it does recreate her accident.

Q. At the time of her accident were her hands moving or static when the ball came out from under her foot?

A. We don't know for sure but from what she testified to I believe they were moving.

Q. In your testing design were the handgrips moving or static during the course of your testing?

A. They were stationary.

Q. So, that would be different than what you believe she was doing at the time of her accident, correct?

A. The grip configuration or the grip condition would be different if her hands were moving in the accident.

Q. Was Ms. Nicolosi pulling straight up or was she pulling back toward herself at the time that the ball released from under her foot?

A. We don't know for sure but I think she was probably pulling more up.

Q. What is your basis for saying that?

A. Looking at how it's possible that the resistance band system came in contact with her eye and based on my experience testing not with the test setup but with the resistance band outside of the test setup.

Q. You tested the resistance band outside of the test setup?

A. Yes.

Q. How did you do that?

A. By using the resistance band under my foot in various conditions with other people in my office under their feet in various conditions and seeing where the resistance band system went when it was released from under their foot or my foot.

Q. Did you record any of that data?

A. I did not record that testing, no.

Q. Did you photograph it or videotape it?

A. I did not.

Q. Did you make notes of it?

A. I did not.

Q. Why not?

A. I didn't think it was necessary.

Q. Is it fair to say that that testing

you're referring to that was not recorded in any way was the only actual attempt to replicate what happened as far as how the resistance band was used by Ms. Nicolosi?

A. I don't think that was to replicate what Ms. Nicolosi was doing at the time of her accident.

Q. So, you believe that she was pulling straight up, is that what you're saying, at the time that the ball released?

MR. UGHETTA: Objection to form.

A. Not in the manner that you just done at your conference room table but, yes, I believe it's more upward in her accident.

Q. The basis for your opinion is on this testing you did that you didn't record or document in any way where either you or your staff attempted to use the resistance band?

A. Partly on that, partly on the test setup, partly on her body mechanics, her body size orientation.

Q. What about her body mechanics?

A. If she were to use the proper mechanics from the manual and she was in the position illustrated and described in the manual, the resistance band system would not contact her eye, so I was trying to determine or look at what could happen.

Q. Did you do any testing to demonstrate or prove what you just testified to that had she done it properly, that it wouldn't have hit her eye?

A. I believe my analysis is in my report.

Q. Tell me specifically how you tested that theory that if she had done it properly, it wouldn't have hit her eye?

A. Sure. So, I think the first part of the analysis is looking at the force vectors which is described in my report. The second part is if you look at what is in the manual and you place the resistance band tubing under the arch of the foot, that it would not come out from under the foot. I have tested that myself. I have looked at that with other people in my office. We were looking at how it would be possible and in the end following proper body mechanics shown in illustrations and words in the manual the resistance band does not come out from under the foot, it stays under the foot and if the foot does somehow come up off the ground, the resistance band comes back in between the legs.

Q. So, that is the second time you have referred to your own testing and the testing with your office that you do with the resistance band. Would you agree that that individual testing that you did was significant to your opinions in this case?

A. It's something that I considered.

Q. Why didn't you mention that anywhere in your report or record any of that data anywhere then?

A. I don't think there is data for that but the analysis is shown where the force vector is. It's shown in my report. I talk about it.

Q. Did you consider Ms. Nicolosi's weight in your analysis?

A. I considered it.

Q. What was her weight?

A. I believe about 115 pounds.

Q. Where did you get that information from?

A. I thought she testified to it but I will take a look. Maybe it's in the medical records as well.

Q. That is all right. I don't need you to look it up if that is okay.

Why was the consideration of her weight a factor?

A. It was something I considered.

Q. Why --

A. But I am not sure -- sorry, please.

Q. Why did you consider her weight? What, if any, effect would that have on your analysis?

A. I was considering her whole body size, so height and weight go into that.

Q. Specifically how does the weight go into your analysis?

A. I don't think it plays a large part but I certainly considered it.

Q. Did it play any part in your analysis?

A. In the end I don't think it did.

Q. When she was stepping on the ball during the exercise she had weight on it, correct?

A. I am not sure of that.

Q. Would that be a factor to consider whether or not she was applying weight onto the ball while doing the exercise?

A. Something I considered, sure.

Q. So, you did consider that?

A. That she was applying weight to the door anchor ball as she was stepping on it.

Q. Yes?

A. Yes.

Q. The shoe in your testing that you used that was unweighted, correct?

A. That is true.

Q. Did you consider the fact that if Ms. Nicolosi was placing weight on the ball while doing the exercise and the shoe in your testing system was unweighted, that that might account for any difference in the data?

A. Yes, and I account for that by putting a solid piece of wood into the shoe to keep it rigid.

Q. How does putting a solid piece of wood in the shoe account for the weight that Ms. Nicolosi would have been applying, if any, to the ball?

MR. UGHETTA: Objection to form.

A. Because if she is applying weight to the anchor ball when she is stepping on it, her foot is going to remain, I am going to use the term flat, but I don't mean flat to the ground, I mean not bending up into a dorsal flexion if that makes sense, it's not bending back. I am going to illustrate. So, if she is applying weight, then the shoe is not going to bend up at the tip. If you don't have something in the shoe to keep it rigidly, again, I am using the term flat but I don't mean flat to the ground, then you could get different kinematics for the band system leaving the shoe area.

Q. Was any pressure applied to the ball as the band was being pulled upwards in your testing?

A. There was some pressure between the ball and the shoe in some cases, yes.

Q. How much pressure was applied?

A. I don't know.

Q. Would the amount of pressure applied to the ball by the shoe before it is released have an impact on the data results?

A. Maybe a small effect but I don't believe it would be a large one.

Q. Did you measure any differences in your testing as far as different amounts of weight placed on the ball before it was released?

A. There were no weights placed on the ball.

Q. How much did the wood piece weigh?

A. I am not sure.

Q. Did you measure that?

A. I did not.

Q. How did you determine Ms. Nicolosi's height was five feet?

A. I believe she testified to that.

Q. Did you look at her medicals as well to look for her height?

A. I did. I don't recall it in there but I am pretty certain that she said it in her deposition.

Q. Did you see in medical records where it says she was five foot six?

A. I saw something like that but I am

going to go off her deposition testimony. I think she would probably know best.

Q. Did you do your testing at any other heights other than assuming a height of five feet?

A. I did not do any other testing where I assumed she was a different height.

Q. Would that have changed the data if you set up your testing to reflect that she was a different height other than five feet tall?

A. If she were 5-6, it could make a difference. If she is 5-1 or 4-11, I don't think it's going to make much of a difference.

Q. Did you consider changing the testing setup so that you could see what, if any, difference would occur by changing your height for Ms. Nicolosi in your analysis?

A. I did consider it.

Q. Did you take any steps to try and do that?

A. I did not.

Q. Did you consider her shoe size or the type of tread under her sole?

A. Yes and yes.

Q. What was her shoe size?

A. I believe a size seven woman.

Q. Is that the type of shoe that you used?

A. No.

Q. What size shoe did you use?

A. It was slightly larger. I don't remember the exercise.

Q. Why didn't you use the same shoe size as Ms. Nicolosi's for your test?

A. It was what I had available in my lab.

Q. Did you consider buying a shoe to match her size?

A. I did and, actually, I was waiting for her shoes, Ms. Nicolosi's shoes, to be provided to us for inspection. I had asked on multiple occasions. I was told that there were multiple pairs it could be, I asked to see the multiple pairs and that never happened, so these were around the time I needed to test with what I had.

Q. Would you agree that if you used a different size shoe, that might have a change in the data obtained?

A. Well, it's possible. I doubt it would.

Q. We don't know that though, right?

A. I can't see mechanically how it would make any significant difference.

Q. Did you try different shoes in your testing?

A. I did not.

Q. What about the tread on the sole, whether it's a worn tread or a grippy tread, would what make a difference in the data?

A. I doubt it would make much of a difference at all.

Q. Did you simulate a biceps curl in your testing, an actual curling movement?

A. No, not the curling movement, just the amount of stretch related to a curl for someone of Ms. Nicolosi's size.

Q. At any time at any part of the custom-built testing system was anything done to try and simulate how the grips would move during a biceps curl?

A. The testing incorporates that to some degree with the different amount of stretch, the length or the distance between the shoe and where the grips are but there is no mechanical motion of the grips in my testing.

Q. Now, for your testing you estimated the general body configuration; is that correct?

A. That's correct.

Q. Did you change the body configuration throughout the course of your testing to see how that changed the data?

A. The same body positioning if you will was used. That is not clear. I assume she was the same size throughout my testing, assumed that she was using proper form because that is what she testified to, so all of the testing setups were assuming those.

Q. Did you shift it at all to see what, if any, difference it would make if you moved the foot a little one way or moved where you expected her arms would be another way? Did you do any modification throughout the course of your testing?

A. That is internal to the testing because I tested three different levels of where the grips were so that would be incorporated in that.

Q. Other than changing the levels of the grips did you do anything else to simulate a change in her body configuration in your testing?

A. No.

Q. Would you agree that if you did take steps to change her body configuration, that that could change the results of your testing?

A. It could slightly.

Q. Did you change the approximate distances that you used between the floor and the various parts of the body in your testing?

A. Between the floor -- I am sorry, one more time, the floor and the various?

Q. Parts of the body. I believe that is on page 12 of your report.

A. Let me go to that. Okay, where are you at?

Q. If you could look at page 12 of your report.

A. I am there.

Q. Do you see under testing setup in that paragraph?

A. I am at that paragraph.

Q. So, if you look at the next page under figure seven.

A. Okay, I am there.

Q. The last sentence under that figure do you see where it says, quote, general body configuration and approximate distances between the floor and padded grips or eyes for female of Ms. Nicolosi's height performing arm curls as shown in the Bellfit manual, quote.

A. I see that.

Q. So, my question, sir, did you change those approximate distances between the floor and the padded grips or eyes in your testing setup during your testing?

A. Right, so I tested between 38 and 48 inches, so, yes, I did change the grip height, the amount of stretch in the band.

Q. Did you change the approximate distances between the floor and where the eyes would be?

A. No.

Q. Did you consider doing that?

A. I did consider it.

Q. You chose not to change that?

A. I don't believe it would make much of a difference at all within the reasonable range of what we have here.

Q. Now, if you could go to page 15 of your report, please.

A. I am there.

Q. On figure eight?

MR. UGHETTA: Five minutes.

MR. SMILEY: Yes, five minutes we'll take another break.

Q. Do you see under where it says testing results?

A. On page 15, yes.

Q. Do you see where it says, quote, testing was not conducted for the door anchor condition with the padded grips at shoulder height because the door anchor ball showed signs of damage from repeated contacts with the aluminum plate, quote?

A. Yes.

Q. So, is it fair to say you have data to report with regard to the door anchor hitting the aluminum plate with the grips at shoulder height?

A. That is true.

Q. In the case of Ms. Nicolosi could that have been when she suffered her injury with the grips at shoulder height?

A. It's possible.

Q. If that is what happened in her case, you have no data to offer relative to that setup, correct?

MR. UGHETTA: Can I have that read back, please?

(Whereupon, the question was read back by the court reporter.)

A. I disagree with that.

Q. How many tests did you conduct with the door anchor?

A. I don't know, I mean, let me take a look, I think 25 unless I miscounted.

Q. My review I see you did six using the door anchor at a flexion of 90 degrees and 3 at a flexion of 135 degrees?

A. Those are nine of the tests with the door anchor, sure.

Q. Did you do testing at other degrees

with the door anchor?

A. Yeah, so fully flexed if you look at test 32 through 36.

Q. Could you point to me where in the digital files those results are, tests 32 to 36?

A. So, you received the data before. That would be on the hard drive. We can go to a summary of the data. Let's go to folder 14 analysis, sub-folder testing data analysis. Let's go to folder D, initial impacts only, and then let's go to file one, data logs, initial, and then you will have test number, test condition, a variety of information for you.

THE WITNESS: Is this a good time?

MR. SMILEY: Yes. Why don't we do it now. We seem to do good with a break on the hour. Another five minutes?

THE WITNESS: Yes.

MR. UGHETTA: Yes.

(Whereupon, a recess was taken.)

Q. So, you had to stop some of the testing with the anchor ball because the ball itself was damaged; is that correct?

A. I am sorry, were you breaking up

there. You kind of got garbled.

Q. So, you had to stop some of the testing relating to the anchor ball because the anchor ball was damaged; is that correct?

A. I am sorry to ask you one more time, I am sorry, my apologies.

Q. Am I correct that you had to stop your testing of the anchor ball, the ball itself had sustained damage?

A. Right. Yes, so I didn't want to test with it fully flexed because the ball was starting to crack from repeated impacts.

Q. Did you think it might be relevant what the results would be for the fully flexed position?

A. It could be.

Q. Well, did you think it would be relevant, not whether it could or couldn't be, did you think it would be relevant what the results would be?

A. I certainly would rather have the data than not but in the end the resistance band, the exemplar, was extremely hard to find. I was more afraid of breaking the only exemplar I could get than pushing the data and trying to get the fully flexed position.

Q. So, you would agree this was a significant limitation of your testing that you weren't able to follow through with it to see what the results would have been in the fully flexed position, correct?

MR. UGHETTA: Objection.

A. I disagree. I think I was able to conduct my analysis even without that.

Q. Did you try to get another ball to use to continue with the testing?

A. I tried to find another exemplar but this was the only one I could find.

Q. Did you take any photographs of the damage sustained by the anchor ball from your testing?

A. No, I did not.

Q. Can you describe what kind of damage it sustained?

A. Sure.

MR. UGHETTA: He can show you. It's one of the items he brought.

MR. SMILEY: Okay.

A. I don't know if this will come through on the video --

Q. Doctor, if I can stop just because we're not recording this, so it's not going to be of benefit just if you can show me now. If you can describe the damage that you see and then what I would ask you to do is to provide that to Mr. Ughetta and we would ask Mr. Ughetta to keep that so we may take a look at it prior to trial if that is okay?

MR. UGHETTA: Sure.

A. The ball portion of the door attachment has cracks.

Q. Was that of significance to you at all that the anchor ball suffered cracks from the repeated testing?

A. Was it of significance to me? Yes, because I didn't want to break the ball in subsequent testing and use the only exemplar that I had. There was also some chipping of the material kind of on the internal portion of the hole that goes through the ball.

Q. Did you observe when it first started to sustain any damage during the course of your testing?

A. Yes.

Q. When was the very first time you observed any damage to the ball during the course of the testing?

A. I think the first time I saw it was during the next to last 90 degree test, so that would be test 16.

Q. Then how long did you continue to use it for test 16?

A. For the rest of the testing.

Q. Did you consider that the ball in any way having sustained damage would change the data obtained in subsequent tests using a ball that had damage on it?

A. It had some small amount of damage and I don't believe it would make a difference. It wasn't until we got the crack and the chipping that I thought it would make a difference and that I was really afraid that it would no longer survive another impact.

Q. Based on your analysis would you expect that anchor ball to sustain damage if it was repeatedly struck against an eyeball?

A. I don't know, maybe not. I am not sure.

Q. Did the band sustain any damage from your testing?

A. Not that I saw, no.

Q. Was it of any significance to you that the anchor ball sustained damage in the testing but the band itself did not sustain any damage?

A. No.

Q. Did your testing system take into consideration the change in trajectory of the band, if any, from the addition or removal of the door anchor attachment?

A. Did you say did I consider it?

Q. No.

Did your testing take into consideration the change in trajectory if at all from when the door anchor was on to when it was not on?

A. It's a weird question. I am not sure I really get it because I tested without the door anchor and the trajectory is the trajectory, so I am not sure what you mean.

Q. I will try and see if I can clarify.

If I understood your testing correct, the ball was held down and released kind of like a slingshot and it shot straight up to the aluminum plate; is that fair to say?

A. Which test because there is different initial configurations?

Q. The trajectory was, basically, a vertical straight up and down; is that fair to say?

A. That is not exactly true too. It's mostly but.

Q. My question is if you consider this axis of going straight up and down and assuming that one way is looking at the ball and the band going vertically straight up and another would be with the ball moving off that access further away from the user and another would be the band and ball moving on the access closer to the user, all right, that change with what I'm defining as a change in axis between straight up, moving forward and moving back, did you take measurements of that change in movement off of that axis in your testing?

A. You keep saying change in movements.

I am not sure what you're referring to.

Q. So, did you observe whether or not in different testing the band as it shot upwards toward the plate appeared to move further away from the user, move closer to the user or whether it stayed in the same relative line going up and down?

A. For the most part the band or the band involved moved upward and slightly forward.

Q. Did you measure that movement forward in any of the tests to see whether or not there was a difference in the amount of movement forward in the different tests that were run?

A. No, I did not measure that.

Q. Did you take any measurements to see what, if any, difference there was in movement of the band forward, backwards or neither relative to whether the door anchor was on or off?

A. No, no direct measurements but we have contact with the plate in each of those cases and it's generally in that small forward/backward dimension of the plate.

Q. I am sorry, I don't understand what

you mean by the forward/backward dimension of the plate. Can you explain that for me?

A. Sure. You're asking what the motion is forward or backward of the band or the ball when it's released and both the band and the ball hit the plate with the plate in the same spot, so it's within that range of where the plate is. A few inches forward of the load cell, a few inches behind the load cell.

Q. Did you notice whether there was any difference even if it's miniscule between the movement in one direction or another as to when the anchor ball was on or when it was off?

A. I didn't notice. We didn't measure that, no.

Q. Directing you to page 17 of your report under the section where it says discussion considering testing results?

A. I am there.

MR. UGHETTA: Page 17?

MR. SMILEY: Yes.

Q. In that first paragraph you state, quote, from the tests it is unclear how the door anchor or tubing would contact the eye of a user as it reached eye level. Despite this the analysis assumed that the door anchor or the tubing would contact the user's eye when it reached eye height, quote. Do you see that?

A. I do.

Q. Is it fair to interpret that statement as meaning your testing did not show that the anchor or the tubing would contact the user's eye?

A. So, this is something I wasn't clear enough with in my report I think. The point here is in proper arm curl configuration or body positioning as described in the Bellfit user's manual, so if you're using proper technique and it's unclear how it would hit the user's eye, I don't think it would, so if the user is not using proper technique, not in that configuration, then it could, so I wasn't clear enough in my report on that point.

Q. Did you attempt to change the configuration of your testing to show what position a user would have to be in for the band tubing or the door anchor to hit the user in the eye?

A. So, it's not based on the testing with the testing frame per se, it's more all part of my analysis then the answer is yes.

Q. How did you go about changing the configuration to demonstrate how it could contact the user's eye?

A. So, if the user were leaning forward so the front foot is not anterior to the head but it's now underneath or maybe even inferior to the head, then that would work for the band coming up and contacting the eye, especially if the user were looking down toward the foot or the toe region.

Q. So, if a person were to take the band and put it under their foot and have their head in alignment with their foot looking down to do the curl, that could cause it to hit them in the eye?

A. I can't see where your foot is but, hopefully, you can see mine, leaning forward so the person's eyes and head are forward of the foot, so weighting the front foot and pulling up leaning down.

Q. So, in that configuration that could

cause the band or the anchor to hit the user in the eye?

A. I believe so.

Q. How much forward of the foot would the eyes have to be for the band or the anchor to hit a user in the eye?

A. Not very far forward. We're talking a few inches.

Q. What if the user had their eyes, I know you probably can't see here, but what if the user had their eyes aligned up directly over the foot so that they were looking down at their foot, would that be enough for the band or the ball to hit them in the eye?

A. I can't tell where your feet are in that but if the user's body is bent forward, so you're in more forward flexion, here we go. I can see.

Q. So, if my head, if my forehead is lined up with the tip of my foot, would that be enough of a position like this, my head is down looking down at the point of my foot, doing a biceps curl, would that be enough of a position to cause the band to strike me in the eye or the anchor ball to strike me in the eye?

A. I think that is still unlikely. I think you need to move your head forward a little bit more, at least that's the way it looks in the video.

Q. How much forward technically since you ran these tests are you able to determine someone's eyes would have to be relative to their front right foot for the band or the door anchor to hit them in the eye?

A. I can't give you an exact number but a few inches forward of the toe region of the foot.

Q. Did you line up where you had the toe of the shoe in your testing setup to where the aluminum plate was struck in the various points of your testing to see how straight aligned that was?

A. I am sorry, I don't understand.

Q. So, during your testing the band and anchor ball struck the plate in different spots; is that fair to say?

A. Yes.

Q. Did you line up any of those spots of impact with the aluminum plate to the toe of the shoe that you were using to see whether or not it was a straight line up and down, to see whether it was forward or see whether it was behind?

A. So, I didn't measure that. It was within the plate region forward and backward and also left and right if I am understanding your question.

Q. So, the ball and the band hit various parts within the four corners of that aluminum plate; is that fair to say?

A. Yes.

Q. It hit some straight in the middle, it hit some more towards one end and more towards the other end; is that fair to say?

A. Yes.

Q. Did any of those points of that plate line up directly above the sneaker you used?

A. I think some of them may have, yes.

Q. So, if someone's head were in that position where the plate was where it was struck by the band or ball, that head only had to be in line directly above where the shoe is to sustain the injury to the eye; is that fair to say?

A. In those cases, yes, the eye would be along that projected path.

Q. So, any user of this resistance band if they were looking down and had their head directly in line over that right front foot was in risk of being struck in the eye by the band or the anchor ball; is that fair to say?

MR. UGHETTA: Objection to form.

A. So, no, if you're using proper form that is in the Bellfit manual, again, as illustrated and written, then that would not be possible. If you're in incorrect form or you're leaning forward, the eyes are forward of the toe region, even if the head is to the left or to the right or something like that, then there is the possibility of contact.

Q. So, if I am a new user to the resistance band and ball, I never used it before, I never worked out in a gym and I don't do it exactly in the position shown in the manual which is with your head straight up and your right foot forward but instead because I am not following it as great as I maybe should be, I lean forward a bit and I project my head over maybe to see how I am lined up and I do a pull like this with improper form, this could result in the band or ball striking me in the eye, is that fair to say?

MR. UGHETTA: Objection to form.

A. So, in the position that you are in there you are going to need to move forward more, at least the way it looks in the camera, you need your eyes forward of the toe, so it might be the angle of this camera, maybe a little forward but, yeah, I mean, that is the idea, if your eyes are forward even if they're a little to the left or to the right of the toe, it's possible because the band doesn't just come up straight up, it has a slight angle or it can have a slight angle.

Q. That is based on your custom-built system that you set up, it shows that if the head is in line looking down at the shoe, that it would be in the zone where it could be struck by the band or the anchor ball, correct?

MR. UGHETTA: Objection to form.

A. So, not just the testing setup there

but also my testing or informal testing with the band where I am releasing it where other people in the office are looking at it, my familiarity now with the band.

Q. The videos that you took showed the door anchor shoots straight up upon release; is that fair to say?

A. It's generally straight up. I mean, it may have some small angle to it. It certainly moves slightly forward relative to the foot.

Q. What material was the anchor ball made of?

A. I don't know exactly. It's some polymer but I am not sure what exactly it is.

Q. Isn't that within your realm as a biomechanical engineer to analyze materials?

A. I could but I didn't in this case.

Q. Do you know what any type of the material was that made up that ball?

A. I don't.

Q. Do you know whether it had any elasticity as part of it?

A. It's not as solid as aluminum, so I

imagine there is some elasticity but it's pretty hard too. I don't know.

Q. Did you think that would be important in your testing to know what the material of the anchor ball was?

A. No.

Q. Did you think it would be important to know what the elasticity of any of that anchor ball was?

A. No.

Q. Do you know if the type of material that would go into an anchor ball could make a difference on the extent or severity of injury upon impact with an eyeball?

A. I haven't seen data to support that.

Q. So, whether or not something is hard plastic or soft rubber would that make a difference in the degree of trauma it could cause upon hitting an eyeball?

A. I haven't seen that either.

Q. Did you look into that?

A. I did.

Q. You didn't find anything that comments on the type of material of the object striking the eyeball what difference that would make?

A. No. The main factors that relate to eye injury are mass, velocity and projected kinetic energy or normalized kinetic energy, sorry.

Q. What material was the resistance band made of?

A. I believe some type of latex or rubber. I don't know exactly.

Q. You don't know what type of material the resistance band was made of?

A. Not specifically, no. I believe some latex or rubber combination.

Q. Did you try to determine what the material was made of?

A. No.

Q. Did you make any inquiries to determine what type of material the anchor ball was or what type of material the resistance band was?

A. I did not.

Q. Did you compare the qualities of the materials of the anchor ball and the elastic band?

A. In what sense?

Q. In any sense. Did you compare the material qualities?

A. Sure I did.

Q. Tell me what you did to compare them?

A. I felt both of them. I looked at both of them.

Q. Anything else that you did to compare the material qualities between the anchor ball and the band?

A. No.

Q. Do you know what a blunt object is?

A. Generally.

Q. What is your understanding of what a blunt object is?

A. In biomechanical engineering we use the term blunt object as something that contacts the body that does not have a sharp edge that would lacerate so that it penetrates or slices into the body. It's more of a flat impact if you will.

Q. Do you know if that is the same definition or understanding of what a blunt object is referred to in the medical literature?

A. I am not sure.

Q. Would you consider the anchor ball to be a blunt object?

A. I would.

Q. Would you consider the resistance band to be a blunt object?

A. I would.

Q. Can you look at page 21 of your report, please?

A. I am there.

Q. Do you see the section entitled eye anatomy?

A. I do.

Q. Where did you get the language for this paragraph in your report under where it says eye anatomy and above that diagram of the eye?

A. That would be from my research on the internet looking at articles, doing general research on the eye.

Q. Prior to your involvement in this case and prior to looking anything up did you know all of this information in your head such that you could have put it down in your report about the eye anatomy?

A. I knew some of it. I don't know if I knew all of it.

Q. Where did you go for your research to get this information that you put in your report?

A. Again, to the internet, to journal articles, to medical websites, to biomechanical engineering literature.

Q. Did you do that yourself or did someone else on your staff do that portion of the report for you?

A. Both, Dr. Linus Stefan and I worked on it together.

Q. So, the two of you worked jointly on this paragraph?

A. I would agree with that.

Q. Does that individual that you just referred to have any medical training?

A. No, a Ph.D. in biomechanical engineering.

Q. Did you consult with any physicians as part of your analysis in this case?

A. I don't think so, not in this case,

no.

Q. Now, the next page 22 if you could turn to that?

A. I am there.

Q. Do you see the paragraph a few down that started with the word hyphema is characterized by blood in the interior chamber?

A. I see that.

Q. Where did you get the information for this paragraph contained in your report?

A. The same research that I did for the eye.

Q. Can you give me the name specifically of any of the websites or publications or journals you went to for this information?

A. I don't recall off the top of my head. I know there was something from I want to say AAO -- no, AOS, American Ophthalmology Society, I think. I don't recall what specific websites, no.

Q. Did you have to have any special credentials to get into those websites to get that information?

A. I don't recall.

Q. I saw in the materials that you reviewed that you reviewed a report from Dr. Frommer who evaluated Stella Nicolosi; is that correct?

A. I believe that is the IME. Let me just take a look. Yes.

Q. Did anything in this report go into your analysis and opinions in this case?

A. Yes.

Q. What part?

A. He discusses what pathologies Ms. Nicolosi sustained and so those were things I looked at in my report.

Q. Did the pathologies that you see that Ms. Nicolosi sustained have any relevance to your testing and analysis in this case?

A. My analysis, yes.

Q. How so?

A. Well, I provide likelihood of various injuries, for example, hyphema or lens dislocation in my report.

Q. Do you see on page 2 under physical examination of Dr. Frommer's report about six lines down where he indicates that she had a surgical pupil in the right eye which was nonreactive?

A. I see that.

Q. Do you know what a nonreactive pupil in the right eye means?

A. Not specifically, no.

Q. Do you know what the causes are for a nonreactive pupil?

A. No. My assumption is that the pupil doesn't react for open or closed light but I don't know.

Q. Did you look into that as part of your analysis as to what could have caused her to have a nonreactive pupil?

A. I did not.

Q. On page 24 of your report, please.

A. One second, let me go back. All right, I am with you.

Q. If you can go down to the paragraph that says Dr. Tipton.

A. Does it start Dr. Tipton testified?

Q. Yes.

A. I am there.

Q. Do you see where it says, quote, in

the middle of that paragraph, I am sorry, quote, from my examination of the subject resistance band system, there is no physical evidence on the door anchor or tubing that was a signature of contact with Ms. Nicolosi's eye, quote.

A. Yes.

Q. What type of physical evidence would you expect to see on the door anchor or tubing that would be a signature of contact with Ms. Nicolosi's eye?

A. I am not sure there would be one. I think the point is that there is nothing on there that would indicate what contacted the eye.

Q. What could there be that would indicate anything to you as to what contacted the eye?

A. Well, for example, and I throw this out as a possibility, if the door anchor ball had contacted say only her orbital rim and created a fracture, the force and energy may have been sufficient to chip or crack the anchor ball. We don't see that. She doesn't have that fracture but that could be a signature that was shown on the anchor ball that would be consistent with her injury.

Q. Are you aware of any incident where an anchor ball was cracked as a result of impacting any part of a user of a resistance band?

A. Not that I can think of, no.

Q. Now, you say on the other hand, quote, Ms. Nicolosi's injuries can be used as physical evidence. Her medical records did not show evidence of significant contact on the orbital rim, just contact with the eyeball, quote. Do you see that?

A. I do.

Q. Are you saying that the evidence that you reviewed only showed contact with the eyeball itself, is that what you're referring to here?

A. That is right, the medical records don't have any evidence of significant contact to any area around the eye.

Q. What is the orbital rim? What do you mean by that?

A. That is the bony structure that surrounds the eye.

Q. Would that be the part between the eyeball and the bridge of the nose? Would that be part of the orbital rim?

A. You could include it but I am thinking more the superior and inferior portions that are part of the frontal and maxillary bones.

Q. Would the tissue below the eyeball be what you're referring to part of the orbital rim?

A. The bony structure, yes.

Q. What type of evidence would you expect to see if there was contact with the orbital rim?

A. A fracture in that area. If there was significant contact and we have seen this in other injuries, other cases, that there is fracturing and damage to the orbital rim.

Q. Would you expect to see anything short of a fracture such as bruising or discoloration of the orbital rim if she was struck by the anchor ball?

A. If that struck there, sure, although bruising is not necessarily a telltale sign that it contacted the orbital rim, it could be contact in another location too.

Q. What is your basis for saying that?

A. For example, if the ball were to contact the eye and the eyelid, you could create bruising that spread to the area over the orbital rim but there may have been no orbital rim contact.

Q. How do you know that that would occur?

A. It's based on my experience.

Q. Well, you're not an eye doctor, right?

A. No, but I have seen many cases where people get contacted or went into things and the bruise is not just or the ecchymosis even is not just in the location of contact, it spread from the exact location.

Q. Can you tell me what your basis would be for saying that something could contact only the eyeball and that there would be evidence of injury in the tissue surrounding the areas of the eye?

MR. UGHETTA: Objection to form.

A. If you're asking me for a medical opinion of it, I don't have an opinion but based on my experience seeing other injuries, sure, I think that the whole eye can swell if it's contacted even if the orbital rim is not contacted, the swelling could go into that area.

Q. Could the orbital rim be contacted and there not be a fracture?

A. Sure.

Q. Could Ms. Nicolosi have been struck in the eye with the anchor ball and not have sustained a fracture to her orbital rim?

A. I am sorry, one more time?

Q. Could Ms. Nicolosi have been struck in her eye with the anchor ball and not sustain a fracture of her orbital rim?

A. When you say eye, I assume you mean the eyeball itself, not the eye including the surrounding structures; is that what you mean?

Q. No. If she was using the resistance band and the anchor ball hit her in the right eye, if that happened, could she have sustained an injury to her eyeball without having suffered a fracture of the orbital rim?

A. Yes.

Q. So, the fact that there was no evidence of fracture of the orbital rim in her medical records does not mean she wasn't struck in the eye with the door anchor ball, correct?

A. The door anchor ball is a possibility to contact Ms. Nicolosi, yes.

Q. You're not testifying that it's your opinion that the ball did not hit her in the eye, are you?

A. So, I should be clear, I think we don't know if it's the band or the ball that contacted her in the eye, that it could be either. We don't have enough information to discriminate between the two nor does Dr. Tipton for that matter. At the end of the day either of those are possibilities. One of the two did, I just don't know which one.

Q. So, you're not saying one way or the other you think it was either the band or you think it was the ball, correct?

A. That is correct, it could be either the band or the ball, one of those two in this case.

Q. You're not saying that it wasn't the ball and you're not saying that it wasn't the band, correct?

A. That is correct.

Q. Did you see any photos of Ms. Nicolosi immediately following the trauma to her eye?

A. I saw photos of Ms. Nicolosi. I don't know if they are immediately following.

Q. Did you see any photos of her showing any injury to her eyeball or the surrounding areas?

A. No. I can't see an injury in any of the pictures I have of Ms. Nicolosi.

Q. Did you ask to see if there were any photographs depicting any injuries to her eye?

A. I don't think I asked specifically. I would assume --

Q. Sorry, go ahead.

A. I would assume I would be provided with them if they existed but I am not sure.

Q. Would that have made a difference in your analysis whether or not you saw photographs depicting any injury to her eye?

A. I can't imagine it would but I always like more information than less.

Q. Is it possible that the door anchor could contact the orbital rim and then deflect into the eyeball?

A. Sure.

Q. Since the door anchor is round, as long as the center of the door anchor is inside the rim of the orbit, it would deflect toward the eyeball, right?

A. Not necessarily, no.

Q. Do you know if it's possible for a larger diameter object to injure the eyeball something larger than the door anchor ball?

A. Sure, it can.

Q. You're aware that in the references you cite that they discuss severe eye injuries occurring from baseballs impacting the eye, right?

A. That's right, although they also have baseballs contacting the eye and it doesn't create an injury.

Q. Now, in your report you indicated I believe that it was your opinion that the eye injury sustained by Ms. Nicolosi could have been caused by contact with the tubing of the band alone; is that correct?

A. I believe so, yes.

Q. Is it your opinion that it's more likely for the injuries of the type that Ms. Nicolosi suffered would occur from contact from the tubing alone than from contact with the door anchor?

A. I think in general they are equally likely.

Q. Is that based on the testing you did that you're coming to that opinion that the injuries would be equally likely whether it was the tubing or the anchor ball?

A. The testing is part of it, the rest of the analysis is part of it as well.

Q. What is the rest of the analysis that you're referring to other than your equipment testing?

A. Well, the physical testing only gives me mechanical parameters for the actual resistance band and/or resistance band and door anchor. I then take that information and use it with the literature to determine likelihood of injury, so, again, it's not just the testing, it's also the continuation from there.

Q. It appears that you found that the

impact from the tubing alone can produce higher normalized kinetic energy than impact from the door anchor; is that correct?

A. That's correct.

Q. Is it your opinion that the best predictor for eye injuries that you considered is normalized kinetic energy?

A. I do believe that is the best predictor of significant eye injury.

Q. What is your basis for that opinion?

A. The biomechanical engineering literature.

Q. By that you're referring to the references you attach to your report?

A. That's correct.

Q. Any other literature other than the references attached to your report that form the basis for your opinion that normalized kinetic energy is the best predictor for eye injuries?

A. This is the main ones. I certainly read other articles, certainly Stitzel articles and others but I think the Tenion and Dumars articles are the main ones.

Q. Based on your testing results could

the door anchor have sufficient normalized kinetic injuries to cause the injuries Ms. Nicolosi sustained?

A. I think it could.

Q. So, is it fair to say your results indicate that the door anchor could have caused her injuries, right?

A. Again, I think we talked about this a few minutes ago, I tried to make it clear, I think it's possible it's the band or the ball that created her injuries, we don't know which one but one of those two.

Q. Did you consider any other injury criteria in your analysis other than what you have already spoken of?

A. Maybe you can be more clear.

Q. The injury criteria using normalized kinetic energy?

A. So, I have used normalized kinetic injury for the likelihood of injury but internal to that is velocity and mass and you bring those together to an area.

Q. Other than using the normalized kinetic energy criteria did you consider other injury criteria?

A. I am sure, yes.

Q. Which ones?

A. For example, kinetic energy.

Q. Why do you use normalized kinetic energy over kinetic energy?

A. Because it's been found to be a better predictor of significant eye injury.

Q. Are there any limitations to using that as injury criteria that you're aware of?

A. Sure.

Q. What are you aware of are limitations to using that criteria?

A. Well, for example, if you use an area that is bigger than the eye so that -- the baseball is a good example, the baseball can't fit into the orbit, so that may provide you an unreasonably low calculation for normalized kinetic energy, it would be a limitation.

Q. Is the injury criteria appropriate to use for a ball of a door anchor's diameter?

A. I believe so.

Q. What is your basis for saying that?

A. It can fit within the orbit and

transfer its energy to the eyeball.

Q. I notice in your latest disclosure that you did two calculations for the projected area, one was ball diameter and the other is eye diameter; is that right?

A. That is true.

Q. Which one did you use for the normalized energy calculations?

A. I used both.

Q. Which ones did you include in your report?

A. I think I used the ball diameter in my report but I considered both and I actually talked about the smaller projected area in my report as well.

Q. Why did you use the ball diameter in your report and not the eye diameter in your report?

A. Because the ball can fit within the orbit at least for an average person and transfer its energy to the eye. It seemed like the appropriate measure but I also considered if it were only the cross-sectional area of the eye and both cases I came up with the same results, not the exact numbers mind you, but certainly the conclusions were the same.

Q. Did one show higher energy levels than the other whether you used the eyeball diameter or the anchor ball diameter?

A. The energy is the same. The normalized kinetic energy is different.

Q. Which showed greater normalized kinetic energy?

A. When you use the smaller area, the normalized kinetic energy was larger.

Q. Which one was that, the eye or the ball?

A. The ball has a larger area than the eye, so the eye is the smaller area.

Q. So, the eye diameter would have a higher normalized kinetic energy, correct?

A. In my calculations, yes.

Q. But you chose to use the ball diameter in the report and used those numbers instead, correct?

A. I reported those numbers. I considered both and I talked about both in my report.

Q. Is the door anchor ball larger than the eye itself?

A. For the average person, yes.

Q. Drawing your attention to the Kennedy 2011 report if you can pull that up for me?

A. Okay, I am there.

Q. If you can go to page 11 of the report which I think is the twelfth page of the PDF, the last paragraph.

A. Okay, I am there.

Q. Do you see the last sentence where it says, quote, these data points were excluded because they were larger than the eye itself and would lead to unrealistically low estimates of normalized energy because the contact area between the projectile and eye would be less than the overall cross-sectional area of the projectile. Do you see that?

A. I do.

Q. Do you agree with that statement?

A. I mean, that is their statement I mean.

Q. Do you agree with it?

A. There is nothing to agree or disagree with it, that is what they did in their study.

Q. Do you have any reason to dispute the finding in their study that the data points for an object larger than the eye itself would lead to unrealistically low estimates of normalized energy?

A. That is not a finding in their report, that is what they are saying as a basis for excluding certain tests.

Q. Do you have any problem with their statement in that record?

A. No, and that is partly why I looked at a different normalized kinetic energy with just the eye diameter and, again, that does not change the results in a significant way and certainly not my conclusions but it was all part of my analysis during the report and it's mentioned in the report.

Q. Would you agree that the calculations in your report using the project area of the door anchor could result in unrealistically low estimates of normalized energy?

A. I don't think it would because I think that energy can be transmitted to the eye unlike a baseball that would be too large a fit into the orbit, the door anchor ball can.

Q. Now, my understanding is that you recorded high speed video of each of your tests, correct?

A. I did.

Q. Your report says that the frame rate was 3600 frames per second; is that also correct?

A. That is correct.

Q. You have a load cell recording that data?

A. No. The load cell doesn't record the video data.

Q. Was the load cell connected with the video data in any way?

A. They were synchronized.

Q. Now, your report says that there was a sampling rate of 6,000 hertz. Is that something that you changed yesterday; is that correct?

A. That is the other test, so the other test I did in your office on the subject band, I think, actually, in the conference table you're at now is the same room, so those tests were conducted not at 6,000 hertz but 5,000, so I had a typo in my report that, yes, it was corrected yesterday. Similarly, my testing of the exemplar bands that I showed you a few minutes ago with the same equipment was tested at 5,000 hertz, not 6,000, again the same typo.

Q. Again, that was the stiffness testing, that wasn't the load testing, correct?

A. Yes.

Q. Now, there is something in the report that indicates a 1,200 hertz filter?

A. Yes.

Q. What is that referring to?

A. That is the anti-aliasing filter for the load cell.

Q. Do I recall you made a correction of that number from 1,200 to 1,000?

A. For the stiffness testing test, that is correct.

Q. So, there is a 1,200 hertz filter for the load cell but a 1,000 hertz filter for the stiffness testing?

A. No. There is a -- so, the anti-aliasing filter is one fifth of your sampling frequency in the data acquisition system that I use, so for the stiffness tests the acquisition frequency was 5,000 hertz, the anti-aliasing frequency was 1,000 hertz. For the test where I used the high speed camera, I am looking into the mechanical properties of the exemplar band as it went up, that had a sampling frequency of 6,000 hertz and the anti-aliasing frequency of 1,200 hertz.

Q. What is that anti-aliasing frequency filter do? What is the purpose of that?

A. The short version is it makes sure that you don't have any frequency filter in your data that makes your data erroneous.

Q. Does it filter out some small erroneous data?

A. It filters out frequencies above the cut-off frequency, so if there is a frequency that's 2,400 hertz, that would not be acquired.

Q. Then there is a 300 hertz digital filter that I see referenced. Can you tell me what that was?

A. Right. Once you collect the data, then in processing I took that information and filtered with a zero phase filter that then took out noise spikes. The 300 hertz filter was determined based on what is called a residuals analysis, so you look at the data, you apply various filter frequencies and you figure out what the noise versus the signal is and you figure above that and that's what was done here.

Q. So, the 300 hertz filter was done after the loads are acquired; is that correct?

A. It's part of the acquisition process and processing of the data, so it gets acquired and then in the transition it becomes filtered.

Q. I see that you did an analysis of residuals that you just referred to. Did you record that analysis?

A. No, I did not.

Q. Why not?

A. It's not our practice to. We look for the appropriate filter frequency, we filter with that and then we have a clean signal where we have taken out the noise, so the appropriate signal noise.

Q. Do you have the data saved before it went through the 300 hertz filter?

A. I do not.

Q. So, the raw data that was measured by the load cell was modified by the 300 hertz filter; is that fair to say?

A. It gets filtered by the filter.

Q. So, the numbers change is what happens, right?

A. Maybe slightly but the process removes the noise from the signal.

Q. Would the peak force in the raw data be lower after the 300 hertz filter is applied?

A. It could be.

Q. Did you save any of the raw data?

A. No. I just saved the data that has the clean signal.

Going back to your last question if you're looking at peak force, what I am really interested in is impulse, so even if the peak was lowered slightly, the impulse time would increase your actual effected impulse is not going to change, certainly not significantly even if it does change.

Q. Is the data that you provided in the CSV files that is the data after the 300 hertz filter was applied, correct?

A. That is correct.

Q. Was anything else done to that data?

A. Not that I can think of.

Q. What units of force was it measured in?

A. I believe it's in pounds.

Q. So, in the CSV file those numbers are pounds?

A. I believe so.

Q. So, nothing else went into the CSV files that we have other than the data that was filtered as you have just described?

A. I am not sure what you mean.

Q. Any other changes to the data? Was it modified in any way?

A. There were no changes. The noise was removed from the data. There is multiple columns of data, so there is not just force data, so I am not sure I fully understand your question. Maybe you can ask it again.

Q. Other than the filters we have described that would modify the raw data to the data that shows up in the CSV file, was there any other type of filter, any other type of work done with that data to get from --

A. Not that I can think of.

Q. In your report you determine that the average speed of the band was within the last one to two inches before impact; is that correct?

A. The speed that I determined was within the last two inches.

Q. How did you calculate the speed?

A. Looking at the number of frames that the band moves within those last two inches.

Q. So, is the distance that the band moved divided by the time elapsed in the video frames?

A. That's right.

Q. Would that be at 3,600 frames per second?

A. That's correct.

Q. Can we go to the document in your file? You can find it under your analysis section, testing analysis.

MR. UGHETTA: Mr. Smiley, when you get a chance, are you ready for another five minutes?

MR. SMILEY: Yes, I think this is a perfect time. Why don't we do it now.

(Whereupon, a recess was taken.)

Q. Dr. Scher, if you can find the part of your file under testing analysis all impacts data log speed all PDF?

A. I am sorry, all impacts, what was the next one?

Q. Data log speed all.

A. Got it.

Q. I see a column there that has scale with numbers below it?

A. Yes.

Q. Could you explain to me, please, what the scaling is, what that column represents?

A. Sure. The plate that was contacted by the band and/or ball, door anchor ball, was not at the back where we have the inch scale showing eye height at 5-6, so because it's not in the same plane, the pixels per inch are going to be different, so this scale adjusts for that difference in length in pixels per inch.

Q. Between the level of the aluminum

plate and the inches on the wall behind it?

A. The vertical distance how many pixels represent an inch.

Q. Do you determine the value of the scale for each test because I see that the number changes?

A. Yeah. The camera moves slightly between tests even though it was on a tripod, so that is, basically, looking at the -- there is a scale on the load cell and looking at that compared to the scale on the backdrop.

Q. That was measured for each test?

A. That is right.

Q. Why is the scale lower on the test where you use the door anchor?

A. It changes all over the place. If it is, it just happens to be a slightly different position of the camera.

Q. Did the camera change its position for all of the door anchor contacts?

A. It changed position slightly across all of the testing.

Q. What would the effect on the data be, if any, as the scale number gets lower?

A. I think the -- well, I don't remember. I would have to look at it.

Q. Did you just calculate the impact velocity or did you also look at rebound velocity?

A. Just the impact velocity.

Q. Was there any rebound in any of these tests?

A. There was.

Q. Is there a reason why you did not measure that?

A. To be more conservative, and I say that because, really, the rebound was limited to the ball contacts and when you calculate the effective mass and you divide by change in velocity, there is a larger change in velocity that creates a smaller effective mass which would be less conservative, so in a sense I am giving the ball more benefit of the doubt in injury likelihood.

Q. Can you next go to the data log, the energy all PDF, please.

A. I am there.

Q. Can you show me what equations you

used to obtain the impulse numbers that you have listed here?

A. The impulse is the integral of the force over time, so it's the -- if you look at time history, you sum up the force as you go along using the cumulative trapezoid method.

Q. Can you tell me what data that you have here that you used to calculate the impulse time in the equation?

A. So, that is just based on the impulse itself, so you have all of that data. It's in the files.

Q. Where in the CSV files does it show the impulse number?

A. You have the whole force versus time history, so you can actually look at and observe the impulse.

Q. My question is, is there a formula that you use to calculate that impulse, a mathematical formula?

A. The impulse is what the impulse is. The force goes up and the force comes down and you can look at it and see it.

Q. So, those numbers, for example, test

number one where the impulse time is .004, can you direct me to something in your CSV files that shows .004?

A. The data -- if you plot the data, you can look at it, you can put it in Excel if you want and look at the data and you can measure the impulse time. I don't know how else to explain it to you.

Q. How do you measure it?

A. From when it goes up to when it comes down.

Q. So, which data do you use, you use specifically that you plot?

A. You plot the force versus time, those are the two columns of data that you have in the testing data for this or for these tests.

Q. When you plot force versus time in Excel and create a graph, one of the options will show you what the impulse time is?

A. You can look at it and get impulse time.

Q. Did you record the impulse times anywhere other than on this page we're looking at?

A. This is it.

Q. Was anything done with the force or speed data before using it in the impulse momentum calculations?

A. I think we talked about the filtering.

Q. So, I see the impulse times, next to the impulse time there is a column that says impulse and then there is an N-DS, is that Newton per second?

A. Not per, just Newton seconds.

Q. How do you get to that number, so in test one where it says .201, is there a formula to get to that?

A. You integrate the area under the force curve where you have a force time history.

Q. So, which numbers do you use, the force calculation?

A. Not calculation, the force data, the time history and then you integrate, you get the area under the curve.

Q. So, the same data that you use to get the impulse time you look at that data and you look at the area under the curve and that is how you get the calculation for the Newton seconds?

A. That is how you get impulse, that's correct.

Q. How about the LBF-S, is that pounds of force seconds?

A. Sorry, you're breaking up there.

Q. The column to the right of that that says LBF-S, what is that?

A. Pounds force second.

Q. How do you calculate that?

A. That is exactly the same thing, it's the impulse, it's the area under the curve.

Q. How do you convert Newtons to pounds?

A. It's 4.448 Newtons per pounds and the analysis -- the force history was in pounds I believe and then I converted to Newtons.

Q. How do you calculate effective mass?

A. Using the impulse momentum equation which is, essentially, a restatement of Newtons second law.

Q. What equation is that?

A. Force equal mass times acceleration is Newton's second law. When you take a discreet time interval, you can break it up into mass equals change in velocity over change in time.

When you saw off mass, you get force times change in time divided by change in velocity gives you your effective mass.

Q. Are those numbers that you use in this document that we're looking at, in other words, are you using specific numbers in this chart to get to the effective mass?

A. I have no idea what you mean. I mean, if you can ask again.

Q. So, for example, look at test number one, the top row, under effective mass you have .016 kilograms, right?

A. Correct.

Q. Can you tell me how you got to .016 in simplest terms possible? What figures or calculations did you use to get to that?

A. You take the impulse and you divided it by the velocity.

Q. So, impulse divided by velocity gets your effective mass?

A. Here, yes.

Q. So, in test number one would it be the Newton's seconds divided by the M-/S gets you the kilograms?

A. That's correct.

Q. Is M/S milliseconds?

A. No, that is meters per second.

Q. Meters per second?

A. That's correct.

Q. Then that velocity is based on the video analysis that we just spoke of before, correct?

A. That's correct.

Q. Next to the effective mass column on this document is kinetic energy, is that in joules?

A. That's correct.

Q. Could you be kind enough to tell me what numbers you use and what calculations of those numbers result in the kinetic energy in the first row we have here of test one?

A. It's just one half effective mass times velocity squared.

Q. So, the kinetic energy where it says 1.3 would be one half of the .016 kilograms multiplied by the square of 12.7?

A. That's right.

Q. Could you explain to me what effective mass means, what the effective mass is?

A. Sure. So, it's the mass that relates to the impulse. What you're looking at is an average force being applied to something over some time duration and it's going to equal some effective mass. It might not be the actual mass of the item, it might have some load sharing or some mass from other components. To give an example, if you have the band and you had one inch of band contacting, there is a certain mass of that one inch of band but the effective mass as it contacts may actually be -- that mass that is contacting as well as mass from items or parts of the band behind it loading that one inch of band, so now you look at the change in velocity for that structure and here what I have done is I have said okay, as it contacts, we're going to bring it to zero as it hits the plate.

Q. Can the effective mass ever be more than the total mass of an object?

A. Oh, yeah, absolutely and by that I am assuming you mean the anchor ball, for example, because the anchor ball is only 0.045 pounds but the effective mass is higher and that is probably -- well, there's two reasons for that, one, I assume the velocity goes to zero instead of having some rebound but, two, there's probably some load sharing or some mass of the band helping that out.

Q. Pushing behind it?

A. That's right, not in all tests but in some tests.

Q. How would the rebound effect the effective mass?

A. Essentially, a larger change in velocity would then decrease the effective mass that would decrease your kinetic energy in case you're wondering and decrease the likelihood of injury when I used it in the calculations, so to be conservative I just used it going to zero as opposed to including that rebound.

Q. Turning back to your report if you can go please to page 17 of your report.

A. I am there.

Q. The last sentence of table one at the top there do you see where it says, quote, note the effective tubing length for eye contact was half inch for this table; do you see that?

A. Yes, I do.

Q. Why did you choose half inch as the length?

A. So, the range for the contact length would be I think on the low end maybe a quarter of an inch and the high end the length of the eye about an inch, so I believe that the effective contact area is going to be in the ballpark of say half an inch to three-quarters of an inch, so for this table I chose half an inch to show.

Q. How would the normalized energy change if you used an inch as opposed to half an inch?

A. An inch, again, on the unrealistic full length of the eye contact it would be lower.

Q. Is it fair to say the longer the effective length, the lower the normalized energy?

A. That is correct.

Q. The shorter the effective length, the greater the normalized energy?

A. That's correct.

Q. Now, I think you indicate somewhere in the report that the exact length of the elastic resistance band that could contact the eye of a user was not known. Did you say that?

A. I don't know if I did but I believe that is true. The exact length would not be known, that is why I used a range.

Q. How could only a quarter inch length of tubing impact the eye?

A. If, for example, in Ms. Nicolosi's case the ball misses the face and the band wraps around the corner of the eye toward the outside, I believe you can get a quarter of an inch contacting the eye and as the ball moves past, you wind up loading the eye with the band.

Q. Have you seen any studies that would talk about what the resulting injuries to the eye would be in that type of scenario?

A. In that exact scenario?

Q. Yes.

A. No, but in general a lot of these articles that are referenced in my references, as well as others that I have read talk about small of area contacts to the eye.

Q. But specifically where you're talking about how a quarter inch of tubing could have hit Ms. Nicolosi's eye, are you talking about the ball going by and striking along the side of the eyeball, right?

A. The ball -- no, no, maybe I didn't make sense. If the ball misses the face and the band which is trailing behind it cuts across the corner of the eye, I am demonstrating here, obviously, it won't come up in the transcript, the band cuts across the eye like this (Indicating). Can you see that?

Q. Yes.

A. In that case as the ball moves up and the band stretches the eye, I think you can have a quarter of an inch contacting the eye.

Q. Would there be a scenario where you can have a quarter of an inch contacting directly a direct impact to the center of the eyeball?

A. A quarter of an inch might be on the small end. I think a half of an inch, sure, but I don't think necessarily a quarter of an inch center of the eyeball. It's possible but less likely.

Q. Are you aware of any of the testing that you did where the tubing piled up in a small area such as a quarter of an inch?

A. I don't think it was as small as a quarter of an inch but it did contact a small area.

Q. How small an area?

A. I don't recall.

Q. In the video did you see where several inches of tubing hit the plate?

A. There were instances of that.

Q. Would you expect that the loads reported when several inches of tubing hits a plate would be different than the loads you would anticipate with a less than a half inch of tubing striking an eyeball?

A. I think the condition would be different contacting an eyeball but that wouldn't be the point of the test. The point of the test was to examine mechanical properties and what was happening with the resistance band system. I think in terms of contacting the effective mass for my analysis, what I have is appropriate.

Q. So, if I have been understanding your testimony right, you did not set this up to demonstrate what type of injuries would result from an anchor ball or a band hitting an eye, you just set it up to see what kind of loads you could record from an anchor ball or a tubing hitting; is that fair to say?

A. I would say looking at the mechanical properties of the tubing system so I could calculate kinetic energy and normalized kinetic energy.

Q. Don't you think the testing if you were to set it up as a custom design for this case would have been more appropriate if you set it up in a manner where the likely size of tubing and/or door anchor hit something the approximate size of an eyeball?

A. No.

Q. How much area did that metal plate have?

A. I am not sure off the top of my head.

Q. How much area does an eye have?

A. Approximately three-quarters of a square inch.

Q. Now, how can you use a quarter inch to an inch length with an effective mass based on several inches of tubing by hitting the plate in your testing?

A. I am sorry, one more time.

Q. How can you use a quarter inch to an inch length with an effective mass based on having several inches of tubing hitting the plate in your testing?

A. I don't understand your question, maybe you can ask it a different way.

Q. So, in your testing what I saw on the video was often several inches of tubing hitting the plate; is that fair to say that, that is what occurred?

A. In some instances, sure.

Q. So, how do you take that an analyze database on a quarter of an inch or an inch of tubing?

A. So, what I am looking at is the effective mass of those contacts and where it contacts the plate is not necessarily what is loading the plate. The same thing with the eye, where it's contacting the eye, an actual eye impact may not represent the mass, the effective mass, of the item contacting it, so I think that the two are not independent but separate.

Q. But wouldn't the effective mass of two to three inches of the band hitting the aluminum plate be different than the effective mass of a one inch of tubing hitting an eyeball?

A. Not necessarily, no.

Q. Didn't you in your testing though calculate the effective mass of tubing as it piled up against the plate over a large area when in reality the tubing can only act on a small area of the eyeball?

A. So, the tubing could hit a small area of the eyeball and, for example, tubing could go by the eyeball instead of hitting a plate and still load the plate and we see that in the door anchor -- no, what do they call it, door anchor tubing only contact where you have a small section of tubing contacting a plate, yet the effective mass is quite high, so I think it's quite reasonable to do it this way.

Q. Is it fair to say that the effective mass of the tubing that you calculated in your testing was somewhat based on two to four inches of tubing hitting the plate?

A. No. I would disagree with that.

Q. What was it based on, how many inches of tubing?

A. Well, the effective mass if you look at the numbers could represent six to nine inches of tubing, not necessarily hitting the plate but causing the force on the plate. Again, the area that contacts the plate is not necessarily what the effective mass is going to be.

Q. Now, looking at your videos it appears that when the ball anchor was used, the ball anchor was always the first thing to reach the level of the plate; is that correct?

A. I would agree with that.

Q. It would get there by a faster amount of time than the resistance band would get there, correct?

A. It would reach the eye level first but we're talking about small fractions of a second, we're talking, you know, a few frames, so thousands of a second difference.

Q. But the ball gets there before the band when the ball is attached, right?

A. When the ball is attached, it reaches Ms. Nicolosi's eye height first, that's correct.

Q. When the ball is going up, the length of the strap is separating the ball from where it's attached to the resistance band, correct?

A. To the way you have just held your hands up, you had it vertical?

Q. Yes.

A. It's not always the case, sometimes the band is at the same level or sometimes maybe not exactly the same level, just below it, sometimes it is as you had your hands but it varies.

Q. The distance between the ball and the band is about six inches; is that fair to say? That is the length of the strap that connects the ball to the band?

A. It can be six inches or it could be virtually nothing.

Q. Did you measure that in any of your testing, the distance with which the ball would reach the eye level prior to the band when it was attached?

A. I am sorry, I don't understand what measurement you want.

Q. The distance between the ball and the band when the ball reaches eye level?

A. I did not measure that.

Q. Did you consider that measurement?

A. I don't think I considered that measurement, no.

Q. Did you measure the distance of the speed between which the ball would reach eye level and the band would reach eye level?

A. That doesn't make any sense. I am sorry, can you try it again?

Q. When there is a ball attached and it shoots up and the ball reaches the level of the eyes and the band is coming up behind it and the band reaches the level of the eyes, there is a distance in time between that, right?

A. I don't know about the distance. There is a time between that.

Q. I am sorry, I may have misspoke, there is a time, a distinction in time, there is a delay in time between when the ball gets there and when the band gets there, right?

A. Right, because the ball gets there first, correct.

Q. Did you measure the difference in that timing sequence?

A. No.

Q. Is it fair to say that when the door anchor is attached to the resistance band in use, that the ball of the door anchor is going to hit the target before the band is?

A. No, and that is the whole point of the testing that I did that was door anchor attached but only tubing contact.

Q. That is because you moved something off to the side of it, right? You moved the plate to the side of the ball?

A. That is right.

Q. If you didn't move a plate and it stayed where it was, isn't it fair to say that every time that you did a test where the door anchor was attached to the band, the ball of the door anchor is going to hit that plate first?

A. Yes, because I designed it that way.

Q. But in use isn't it fair to say that

when that accelerates upwards, that being the band with the door attachment on it, the door anchor, that door anchor is going to be the first thing that goes up vertically; isn't that true?

A. Right, we said this, I mean, this is the fourth time now. The ball reaches eye height first, it's not necessarily what contacts a person though.

Q. But it leads, it leads everything, in other words, the band follows the ball and the trajectory upwards in every situation, right?

A. The ball reaches eye level first, it doesn't necessarily pull the band up as your hand motion is describing. The band could be just slightly behind the ball but you're right, the ball reaches first but the ball may not contact the person, it may be the band that contacts the person.

Q. I understand that, depending on where things are it may shift the point of contact; however, all other things being equal, when that band comes up out from under the foot, the ball is going to be the first thing coming up, right?

A. The ball reaches eye level first. I think that may be the sixth time we talked about that.

Q. You're very good about keeping track of how many times. I'm going to quiz you later.

A. I was only kidding. I learned from the last depo.

Q. Are you aware of any studies that have concluded that an exercise resistance band tubing can cause the same or greater injury to an eye than a plastic ball?

MR. UGHETTA: Can I have that read back, please?

(Whereupon, the question was read back by the court reporter.)

MR. UGHETTA: Did you get that?

THE WITNESS: I think so.

A. I am not aware of any study that looked at that specific comparison.

Q. You're the first person as far as you're aware of that concluded that the injuries that a person can sustain using a resistance band with a door anchor could be the same injuries whether it's the anchor that hits the eye or the band that hits the eye; is that correct?

MR. UGHETTA: Objection to form.

A. So, I am not the first person to look at injury likelihood of eye injury but I may be the first to look at Ms. Nicolosi's accident and the circumstances here using biomechanical engineering technique.

Q. Specifically as far as you're aware knowing that there are other resistance bands that have been out on the market and other door anchors, you're the first person to come to the conclusion based on testing that the likelihood of injury to an eye while using that product can be the same whether it be the door anchor that strikes the eye or just the tubing itself that strikes the eye, correct?

MR. UGHETTA: Objection to form.

A. So, I think we're going through this again. It's -- this may be the first time that anyone has looked at Ms. Nicolosi's type of accident using biomechanical engineering techniques but people looked at eye injury likelihood. I am not familiar with any study that looked specifically at resistance band injury likelihood to the eye with or without a door anchor.

Q. Would you agree that as a result of your testing that there is no doubt that the resistance band product that Ms. Nicolosi used can result in serious injury to an eyeball?

A. I think that if misused the product can result in significant injury. If the product were used properly, I think the likelihood of injury is very low if not extremely low.

Q. You used the term misuse and your version of misuse is doing something different than the pictures in the manual, correct?

A. Yes, and it doesn't have to be exactly as the picture there but generally like what is described in the manual in the picture and in the text specifically the tubing is under the arch of the foot securely on the ground and the person is in a general body configuration where they are upright doing the curl maneuver.

Q. Would you agree that if a user of the resistance band that Ms. Nicolosi used put their head over their foot so that they were looking down at the location of the band under the foot and attempted to do a biceps curl, that that could result in extremely serious injury to an eye?

A. Again, only if not done properly. If the band is under the arch of the foot, this doesn't happen, so, for example, if Ms. Nicolosi even had the ball, the door anchor ball, under the ball of her foot and the band were under the arch of her foot, this wouldn't have happened, so I think as you stated it the answer is no.

Q. So, if a user were to put a ball, an anchor ball, under the ball of the foot and tried to do a biceps curl with their head looking over their foot looking down at it with their head position in line above their foot, that could result in serious injury to a person's eye?

MR. UGHETTA: Objection to form and hypothetical.

A. Not if the resistance band is securely under the arch of the foot.

Q. That wasn't my question.

A. The resistance band is -- well, you didn't include that in your hypothetical.

Q. Yes, I said under the ball of the foot, under the ball of the foot.

A. You said the ball is under the ball of the foot.

MR. UGHETTA: Objection to form. Objection to form. That is not what you said but okay.

Q. If a user of this product were to attempt to do a biceps curl by putting the anchor ball under the foot and had the head looking down in line with that front foot, could that result in the resistance band causing a serious injury to that person's eye?

MR. UGHETTA: Objection to form.

A. So, again, if the resistance band is under the arch of the foot, I think it's very unlikely. If the resistance band is say forward of the foot, then it's possible.

Q. So, having the ball forward to the arch of the foot is a distinguishing factor in your opinion as to whether or not the resistance band could cause serious injury to a user; is that fair to say?

MR. UGHETTA: Objection to form.

A. I think maybe you misheard. If that is a follow-up from the last question, it's the resistance band placement that I am talking about. I don't think it's a good idea to put the door anchor under the ball of the foot. I don't think you can securely hold it down, it's not secure, but if the arch -- I am sorry, if the band is under the arch, I don't think you're likely to get that happening, slipping out.

Q. My question is if a user were to do a biceps curl and putting the ball, the anchor ball, under the foot and was leaning forward such that their face was in line with that front foot doing a biceps curl, would that person by at risk of sustaining a serious eye injury?

MR. UGHETTA: Objection to form, asked and answered, go ahead.

A. Depending on where they put the resistance band they could be. If they put the resistance band forward of their foot, sure.

Q. So, under that scenario in your mind there is a distinction as to whether the ball under the foot is toward the forward part of the foot as opposed to under the arch or back of the foot; is that fair to say?

MR. UGHETTA: Objection but go ahead and explain it go slow.

A. So, if the resistance band itself is under the arch of the foot, it's unlikely that you're going to be able to get it to slip out, certainly not forward.

MR. UGHETTA: You used tubing, he used the word tubing instead of the word band, maybe he thinks the band is the ball and it's not, just use the word tubing.

A. It's the placement of the tubing. If that is under the arch of the foot, if the resistance band door anchor ball which I don't think should be under the foot, if it were under the ball of the foot, then it's unlikely to come out but if you move the resistance band tubing forward, then I think you're at risk.

Q. What do you think happened in Ms. Nicolosi's accident? How do you think she was positioned such that she was hit in the eye?

A. I think she had the resistance band door anchor ball under the ball of her foot as she described in her deposition. I think the tubing of the resistance band is forward of that, probably in front of the sneaker itself, and she is leaning over her foot looking down, so she is more forward than the tip of her foot as she is looking down and does the curl. I believe that as she does the curl, the tubing pulls the door anchor ball forward and out from under her foot and it comes up to her face.

Q. How high off the ground do you think her eyes were at that point of impact?

A. In the ballpark of four and a half feet, somewhere in that range.

Q. How high was your aluminum plate in your testing?

A. About four and a half feet.

Q. Do you consider yourself to be a warnings expert regarding use of products?

MR. UGHETTA: Just for the record he wasn't retained in this case to go over human factors engineering or warnings.

A. In general, no.

Q. You said on page 21 of your report that it's not reasonably foreseeable that a person would step on a door anchor; is that your opinion?

A. Let me go there. Yes, that is my opinion.

Q. What makes you an expert as to what is reasonably foreseeable as to how a consumer is going to use a fitness product?

A. So, this is really a response to Dr. Tipton's opinions where he said it was reasonably foreseeable that someone would do this and so for me in looking at this it would be examining the door anchor and the resistance band both myself and watching other people in my office look at it and seeing how unstable it felt and feeling how uncomfortable it was to try to do curls with the door anchor ball under my foot.

Q. If you're aware that people prior to Ms. Nicolosi had also attempted to do biceps curls with the ball of the door anchor under their foot, would that make a difference in your mind as to whether or not it's foreseeable somebody would do it that way?

MR. UGHETTA: Objection to form.

A. I am not familiar with any cases where that is the case. I would be surprised that someone would be doing it that way.

Q. My question, Doctor, is if someone did do it that way, did do a biceps curl with the ball of the door anchor under their foot prior to Ms. Nicolosi, would that change your opinion as to whether or not it was foreseeable that somebody would do a biceps curl with a resistance band with the ball of the door anchor under their foot?

MR. URHETTA: Objection, compound, objection to form.

A. I am not familiar with any instance of that happening before Ms. Nicolosi and it may or may not, depending on the circumstances.

Q. But you're not an expert on foreseeable use of fitness products, right? You have no expertise or background in human factors, do you?

A. I am not a human factors expert.

Q. You have no expertise in foreseeability of use of fitness products, do you?

A. I don't know if I agree with that. I certainly have a lot of experience with sports and fitness products. I think I do have some ability to talk about what people typically do or don't do.

Q. In this case your opinion is based solely on the other people in your office using the band and you using the band, that's what you base your opinion on as to whether or not it's foreseeable that somebody would do it that way?

A. Well, and my experience and seeing how unstable it was and how uncomfortable, yes, I believe those are included in that.

Q. Can you give me an idea of how much time you spent on this case since your September 21st invoice?

A. I don't know. I have no clue.

Q. How much time have you spent on this case in the last week?

A. Probably three day's worth.

Q. How many hours a day?

A. Maybe six and a half hours a day.

MR. SMILEY: Why don't we take two minutes if that is all right. I am going to review my notes and then we'll be finishing up, okay?

MR. UGHETTA: Sure, sounds good.

(Whereupon, a recess was taken.)

MR. SMILEY: I have no further questions.

Do you have questions?

MR. UGHETTA: I think I have two real quick.

MR. SMILEY: I have no further questions subject to any follow-up from Mr. Ughetta.

MR. UGHETTA: Understood. Just a few questions here.

EXAMINATION BY
MR. UGHETTA:

Q. What qualifies you to offer testimony about the mechanisms of body injuries including eye injuries?

A. So, I would say my education and my background and my experience. I have higher degrees in mechanical engineering, specializing in biomechanics and dynamic systems, undergraduate degree from University of Pennsylvania, I have a Ph.D. and a Master's from UC Berkeley in those disciplines, I conducted research on injury likelihood to the human body, I have doing that for 22 years now, no, more than that, somewhere in that ballpark, quite a long time. As part of my training and my experience I regularly read biomechanical literature, I look at anatomy textbooks, some medical literature as well, interact with medical doctors to look at likelihood of injuries, they diagnose the injuries and we talk about what creates them from a biomechanical standpoint, I work with them on that, my experience in doing research at the University of California, as well as the University of Washington as part of the applied biomechanics lab and all of that together gives me the ability to assess injury likelihood of the body and also the eye.

Q. Do you belong to any professional organizations or do you participate in any professional organizations that deal with eye injuries?

A. Yes. For example, AST International as part of AST FMA08 there is a group of 57 is the subcommittee that looks at eye protection, so there are specific eye protection standards that I have been part of, I've looked at and analyzed. The one that comes to mind quickly I believe is 659 on snow sports goggles, skiing and snow sporting goggles.

Q. Ms. Nicolosi's fiance testified, and I know you read his testimony, he mentioned that the bruising around her eye and some of the photographs might have some bruising around the eye, if there is bruising around the lower lids and upper lids of the eye, is that inconsistent with any of the opinions or testimony you've given here today?

A. No, that would be consistent.

Q. One last question, you evaluated the alternative designs recommended by Dr. Tipton. Are there any adverse effects associated with those alternatives of designs?

A. Well, I think the short version here

is that those alternative designs also can create eye injury. There's components of them like the hard plastic portion or the cord that could cause eye injury and then there is other functional injuries that need to be examined with his setup, such as the nerve material or whatever that material he has, depending on the foam, you could have issues with mold, fungus, breakdown. There is not sufficient testing to say that it would perform as required over what you would expect for the life of the product and the last part of that is, you know, it could still create eye injury. I am not sure what the advantage is of his alternate design.

MR. UGHETTA: That's all I have. Thank you.

(Continued on the next page for the jurat.)

MR. SMILEY: I have nothing further. Thank you.

(Time noted: 5:30 p.m.)

____

IRVING SCHER

Subscribed and sworn to
before me this _____ day
of _______________, 2017.

____
NOTARY PUBLIC

I N D E X

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E X H I B I T S

EXHIBIT	DESCRIPTION	PAGE
NONE		

REQUESTS

DOCUMENT REQUESTS: PAGE

NONE

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NONE

RULINGS: PAGE LINE

NONE

CERTIFICATE

I, MARLEINE LAMEY, a Shorthand Reporter and Notary Public of the State of New York, do hereby certify:

That, IRVING SCHER, the witness whose examination is hereinbefore set forth, was duly sworn, and that such examination is a true record of the testimony given by such witness.

I further certify that I am not related to any of the parties to this action by blood or by marriage; and that I am in no way interested in the outcome of this matter.

Marleine Lamey

MARLEINE LAMEY

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March 16, 2021

Johan A. Obregon, Esq.
Kerley, Walsh, Matera & Cinquemani, P.C.
200 Sheffield Street, Suite 208
Mountainside, NJ 07092

Re: Philip Troy Christy
Date of Birth: 10/01/1965
Date of Loss: 5/26/2017

Dear Mr. Obregon,

Today, I have seen and examined Philip Troy Christy for an expert spinal independent medical examination. He is seen here today in my Manhattan office, unaccompanied. His identity is confirmed by review of his active New York State driver's license. Please consider this note my detailed narrative report including today's interview and examination as well as review of sent records with opinion.

Mr. Christy reports involvement in a motor vehicle accident while driving for work on 5/26/17. He states that he was working in sales for HVAC equipment when his car was rear-ended by a truck going at high speed. His car was thrown to the left and then to the right, and he had neck, upper back, and lower back pain at the time. He was taken by ambulance to hospital where he was treated and released. He states that his neck and upper back pain have gone away, and his persistent problem only relates to the lower back. He has had two surgeries to the lower back since that date.

The first surgery to the low back was done on 5/31/18. Prior to surgery, he states he had treatment with medications for pain and pain management injections. He tried physical therapy, which was mainly modalities, but it did not help so he stopped going. He reports that symptoms prior to surgery included a central low back pain with radiation into both lower extremities including numbness and tingling, right greater than left. He also reports a severe "sciatica" pain in the right lower extremity, which was a new pain that began sometime shortly before the first surgery. He states that he was told by his surgeon that he needed a fusion, but a smaller surgery could be done to help mainly the "sciatic" pain. He chose to have the smaller surgery at that time. Following surgery, he states his symptoms improved with regard to the "sciatic pain", which resolved. However, he reports that there was persistent low back pain with continued radiation of pain into the lower extremities with numbness and tingling, which worsened over time.

He had additional injection treatments for pain and took medicines prior to a second surgery including spinal fusion, which was done on 9/11/20. During that time, he did not have any physical therapy or chiropractic care. He reports that symptoms prior to the second surgery included severe low back pain as well as the continued pain in both lower extremities with numbness and tingling. Following the fusion surgery and recovery, he states that his preoperative symptoms are essentially unchanged. He also has a very sensitive area in the left buttock, which he states was there before the surgery, but is now more prominent. There are no problems with coordination or bowel and bladder control. Treatment since the second surgery includes medications, and he is currently taking oxycodone 10 mg about four tablets a day. This is prescribed by his medical doctor. He does not wear a brace for the back and does not walk with a cane or any other assistive devices. He has had a recent sacroiliac joint injection, done about three weeks ago. He states that following the injection, he started getting fevers and sweats and was hospitalized for a number of days for possible infection. He was discharged yesterday, without a specific infection identified and without any continuing antibiotic treatment.

At the time of the accident, Mr. Christy was working in HVAC sales, and states that he continued for about eight months, but then was fired for missing time. A few days later, he began work at another job working only four hours a day in similar work, and worked on this job until 8/10/20. He has not worked since that date in HVAC sales or in any other occupation. He notes no prior history of any lower back pain, injury, or medical evaluation/care of any kind prior to 5/26/17. He also reports that since that date, there have been no new accidents or incidents involving the lower back.

On physical exam, Mr. Christy is 5 feet 9 inches tall and weighs 228 pounds. He has no difficulty changing positions by himself between sitting, standing, and lying supine. He is able to remove and replace his shoes and jacket without difficulty. He walks with a normal symmetric gait. He is able to heel and toe walk bilaterally, and reports lower back pain with attempting to do so.

Examination of the lower back reveals a well-healed 2 inch midline vertical incision which is tender to the slightest touch, especially to the left of midline. Contour of the back is normal, and there is no spasm. Voluntary lumbar range of motion, measured with a goniometer, his forward flexion 60 degrees (normal 70-90) and extension 15 degrees (normal 15-25). Lateral bend is 10 degrees, left and right (normal 20-25).

Leg lengths are equal and there is no atrophy in the thighs or calves, all measured with a tape measure from standard anatomic reference points. Pulses are 2+ symmetrically in the feet. Hip rotation is full range bilaterally, with complaint of low back pain with rotation of both the left and right hip. Straight leg raise exam, tested both seated and supine, causes report of low back pain bilaterally. There is no radiating lower extremity pain.

Detailed neurologic evaluation of the lower extremities is performed. There is decreased sensation reported throughout the right lower extremity as compared to the left, including dermatomes L2-S1. Strength is 5/5 full for roots L2-S1, with give way noted due to reported lower back pain for muscles about the knees and ankles bilaterally. Reflexes are 1+ symmetrically at the knees and 1+ of the left ankle and absent on the right. Plantar responses are flexor. There is no clonus.

Records available for review include:

1. Plaintiff's Summons & Complaint, 1/24/20.
2. Defendant's Answer to Plaintiff's Verified Complaint, 3/6/20.
3. Plaintiff's Response to Notice for Discovery and Inspection, including: four photographs, 8/3/20.
4. Plaintiff's Response to Defendant's Combined Demands, 8/3/20.
5. Plaintiff's Verified Bill of Particulars, 8/3/20.
6. Records of Vassar Brothers Medical Center, 12/6/11-1/9/17.
7. Records of New York State DMV, Police Accident Report, 5/26/17.
8. Records of Vassar Brothers Medical Center, 5/26/17-2/3/21, including:
    a. Emergency department records, 5/26/17, including:
        i. Report of x-rays of the pelvis and chest.
        ii. Report of CT of the head and cervical spine.
        iii. Report of CT angiography of the chest, abdomen and pelvis with contrast.
        iv. Report of CT of the thoracic spine and lumbar spine.
        v. Report of x-rays of the right shoulder.
        vi. Discharge instructions.
    b. Report of MRI of the lumbar spine, 7/28/17.
    c. Report of MRI of the lumbar spine, 5/14/18.
    d. Emergency department records, 8/19/19, including:
        i. Report of x-rays of the chest.
    e. Discharge summary, 8/22/19.
    f. Emergency department records 8/26/19, including:
        i. Report of CT angiography of the chest with contrast.
    g. Emergency department records, 7/22/20.

9. Records of Gabriel Dassa, D.O, Orthopedic Surgery, 6/13/17.
10. Records of Rabi R. Sinha, M.D., Ralph Garguilo, PA, and Chandra Naik, M.D., Community Primary Care, 7/11/17-11/27/20.
11. Records of Elvis Rema, M.D. and Cynthia Delavalle, NP, North American Partners in Pain Management/Vassar Pain Poughkeepsie, 3/29/18-1/13/21.
12. Records of Vassar Pain at Dutchess Ambulatory Surgical Center, including:
    a. Report of right sciatic nerve block, right L5-S1 TFESI, and right piriformis muscle TPI, 4/23/18. (Elvis Rema, M.D.)
    b. Report of bilateral L5-S1 TFESIs, 5/9/19. (Elvis Rema, M.D.)
13. Records of Seth Neubardt, M.D. and Jack Stern, M.D., Brain and Spine Surgeons of New York, 5/23/18-9/24/20.
14. Records of White Plains Hospital, 5/31/18-9/12/20, including:
    a. Operative report for right L5-S1 discectomy, 5/31/18. (Seth Neubardt, M.D.)
    b. Operative reports for revision laminectomy with discectomy and instrumented interbody and posterolateral fusion L5-S1, 9/11/20. (Seth Neubardt, M.D. and Jack Stern, M.D.)
15. Reports of Medical Diagnostic Imaging, including:
    a. MRI of the lumbar spine, 8/22/18.
    b. MRI of the lumbar spine +/- gadolinium, 7/28/20.
16. Records of Syed Naqvi, M.D., Cardiology, Westchester Medical Center, 5/1/19-2/4/20.
17. Records of Westchester Medical Center/Mid Hudson Regional Hospital, 5/20/19-8/29/19.
18. Records of Bradley Cash, M.D., Spine Options, Pain Management, 9/16/20-10/1/20.
19. Records of NYSIF, 2017-2020, including:
    a. Employee Claim C-3, 6/13/17.
    b. IME reports of Dr. Adam Soyer, Orthopedic Surgery, 5/1/18, 10/9/18, & 3/6/19.
    c. IME reports of Dr. Steven Hausmann, Orthopedic Surgery, 2/12/20, 2/27/20, 7/15/20, & 12/3/20.
20. Plaintiff's Deposition Transcript, 8/28/20.
21. 4 CDs of Study Images, Vassar Brothers Medical Center, including:
    a. CT scan of the cervical spine, 5/26/17.
    b. CT scan of the thoracic and lumbar spine, 5/26/17.
    c. CT angiography of the chest, abdomen and pelvis with contrast, 5/26/17.
    d. MRI of the lumbar spine, 7/28/17.
    e. MRI of the lumbar spine, 5/14/18.
    f. Fluoroscopic images of bilateral L5-S1 TFESIs, 5/9/19.
    g. AP fluoroscopic image of bilateral SI joint injections, 2/22/21.

There is a police accident report dated 5/26/17 indicating that Mr. Christy's car was slowed for heavy traffic and the driver of the vehicle behind him was unable to stop striking the rear of his car causing damage to both.

Mr. Christy was seen in the emergency department at Vassar Brothers Medical Center on 5/26/17. In the history note, it indicates that he "was driving on I-84 at approximately 40 mph when he was rear-ended by a tractor-trailer driving roughly 70 mph. The patient states positive seatbelt, negative LOC, and negative airbag." It is also reported that he got himself out of the car and was ambulatory upon arrival of EMS. Complaints included neck pain, back pain, and right shoulder pain. Also noted was chest pain after the accident and that Mr. Christy took two sublingual nitroglycerines. On physical exam, there was lower back pain with bilateral straight leg raise.

CT of the head and cervical spine was done on 5/26/17 at Vassar Brothers Medical Center. Impression of the study report is "no acute intracranial or neck soft tissue abnormality is identified. There is no fracture." I have reviewed the images of the cervical spine CT scan, which shows chronic degenerative spondylosis C4-5 and C5-6 with moderate L>R foraminal stenosis at C4-5, and bilateral foraminal narrowing at C5-6. There is no focal disc herniation, and no traumatic structural findings.

CT scan of the thoracic and lumbar spine was done on 5/26/17 at Vassar Brothers Medical Center. Impression of the study report is "mild degenerative disc disease seen at L5-S1. No evidence of thoracic or lumbar spine fracture or subluxation...." In the body of the report, it notes mild loss of disc height at L5-S1 with vacuum disc phenomenon. Mild broad disc bulges noted with mild right lateral recess narrowing as well. Also reported is mild bilateral foraminal narrowing. I have reviewed the images of this study, which show mid-upper thoracic chronic degenerative spondylosis, as well as moderate DDD with retrolisthesis at L5-S1. Also at L5-S1, there is moderate bilateral facet arthrosis and moderate bilateral foraminal narrowing. There are no acute traumatic findings seen, and no lumbar disc herniations.

In the body of the report of a CT-angiogram of the chest, abdomen, and pelvis done on 5/26/17 at Vassar Brothers Medical Center, it notes "severe L5-S1 degenerative disc disease". I have reviewed the images of this study, which do show moderate disc degenerative disease with retrolisthesis at L5-S1. There are no acute traumatic findings.

Consultation by Dr. Ramalingam in the Vassar Brothers Medical Center Emergency Room was done on 5/26/17. The accident history was noted, and complaints included 10/10 pain to the thoracic, lumbar, and sacral area. There was reported mild paresthesias in the lower extremities bilaterally, and scattered contusions were observed in the right upper arm and forearm. Also noted was right paraspinal and scapular pain. Among the diagnoses by Dr. Ramalingam included cervicalgia and back strain/muscle spasm, acute pain secondary to injury. Following the evaluation, Mr. Christy was discharged that same day with prescriptions for Norco, Flexeril, and Naprosyn.

On 6/13/17, Mr. Christy saw Gabriel Dassa, D.O., an orthopedic surgeon for initial consultation. Complaints included pain in the cervical and lumbar spine as well as bilateral shoulders and headaches. Burning, numbness, and tingling down the extremities is also reported. On examination, there was tenderness and spasm and multiple trigger points in the cervical and lumbar spine with limited range of motion, positive Spurling test, and positive straight leg raise at 30 degrees. Physical therapy and chiropractic care were recommended, as well as a lumbar spine brace and pain medicines.

Mr. Christy was seen for follow-up visit at Community Primary Care on 7/11/17. There are no other prior records from this facility available for review. The follow-up visit was for persistent low back pain and a refill of a Percocet prescription. At another follow-up visit on 7/20/17, Mr. Christy was seen by Ralph Gargiulo, PA. It was noted that his "Workmen's Compensation related injury from 5/6/26 resulting in exacerbation of low back pain." Percocet was again prescribed , as well as a lumbar MRI.

MRI of the lumbar spine was done on 7/28/17 at Vassar Brothers Medical Center. In the report, it notes comparison to a prior MRI done on 1/13/14. Impression of the study report is "congenitally short pedicles. Multilevel foraminal and spinal canal compromise. No discrete herniation. Slight progression since prior study." In the body of the report, it notes a mildly narrowed and desiccated disc at L5-S1. It also notes a "mild broad-based disc and mild ligamentum flavum hypertrophy is resulting in moderate right and mild left-sided foraminal stenosis. No change." I have reviewed the images of the study, which show a broad disc bulge at L5-S1 with retrolisthesis, resulting in right>left recess and foraminal narrowing. There is also moderate stenosis at L3-4, and mild stenosis at L4-5, with moderate bilateral facet arthrosis at L3-4, L4-5, and L5-S1.

On 3/26/18, Mr. Christy followed up at Community Primary Care. Complaints at that time included severe lower back pain on the right down the right leg x13 days. He stated that it was "sciatica." Examination that day noted negative straight leg raise bilaterally. Strength and sensation were intact. There was limited overall range of motion of the back.

On 3/29/18, Mr. Christy was seen by Elvis Rema, M.D., of North American Partners in pain management, Vassar Pain Poughkeepsie for initial consultation. Complaints included right leg pain, with symptoms reported as starting after he was hit by a tractor-trailer from behind. Severe pain with intense numbness and tingling was noted to be worsening over the past week. He had physical therapy by report in the past without relief. Injection treatments were discussed.

On 4/23/18, Mr. Christy underwent a fluoroscopically-guided right L5-S1 transforaminal epidural steroid injection with right piriformis muscle trigger point injection. The procedure was performed by Dr. Rema at Vassar Pain at Dutchess Ambulatory Surgical Center. There were no reported procedural complications.

Mr. Christy followed up with Dr. Rema on 5/2/18, reporting one day of relief of pain. Examination noted tenderness in the right buttock area, and has felt to possibly due to Piriformis syndrome. Recommendation was for an MRI of the sacrum to rule out Piriformis syndrome. Mr. Christy was prescribed gabapentin and Medrol Dosepak.

MRI of the lumbar spine was done on 5/14/18 at Vassar Brothers Medical Center, ordered by Dr. Rema. Impression of the study report is "right-sided L5-S1 moderate-sized disc herniation within the lateral recess, which indents the right thecal sac as well as abuts the right S1 nerve root. Clinical correlation is advised. This is new compared to the prior MRI from 7/20/17. Mild spinal stenosis at L1-2, L3-4, L4-5 levels as above." I have reviewed the images of this study, and agree with the new prominent disc herniation at L5-S1 on the right, not seen previously. The moderate stenosis at L3-4 and more mild stenosis at L4-5, with facet degenerative changes L3-4, L4-5, L5-S1 are unchanged from the 7/28/17 study.

On 5/23/18, Mr. Christy saw Seth Neubardt M.D., of Brain and Spine Surgeons of New York for initial consultation. Complaints included low back pain in the right leg. Dr. Neubardt reported that Mr. Christy "states that he had his chronic low back pain aggravated by a motor vehicle accident on 5/26/17." A three-month history of right-sided leg pain with numbness and weakness in the leg was noted, with no left-sided symptoms. Examination at that time noted a normal gait and no tenderness with limited range of motion and decreased sensation in S1 dermatomes on the right. Also noted was weakness to the right foot evertor. He was able to heel and toe stand. Straight leg raise was positive on the right. The recent MRI was reviewed, noting the herniated disc on the right with disc degeneration at L5-S1. Recommendation was for lumbar microdiscectomy, noting that this was to help the right leg pain and would likely have no impact on his "chronic low back pain."

On 5/31/18, Mr. Christy underwent lumbar spine surgery at White Plains Hospital, performed by Dr. Neubardt and Dr. Jack Stern. The procedure performed was a lumbar microdiscectomy on the right side at the L5-S1 level. There were no reported complications.

Mr. Christy followed up with Dr. Neubardt on 7/11/18, who noted that "his preoperative right leg symptoms are completely gone. He has been able to walk two miles a day. He has been working four hours a day, but unfortunately because of seven days of low back pain, he has been unable to work more than that." Dr. Neubardt noted that Mr. Christy was "still suffering from chronic back pain related to disc degeneration and therefore may have his work limited to four hours a day."

Mr. Christy saw Dr. Rema on 7/31/18, noting resolution of the leg pain after surgery and doing well for about two weeks and then "the pain suddenly recurred." There was residual discogenic back pain, and plan was for an additional injection.

On 8/22/18, MRI of the lumbar spine was done at Medical Diagnostic Imaging, ordered by Dr. Rema. Impression of the study is "L1-2 and L2-3 mild central canal stenosis. L3-4 and L4-5 mild-to-moderate central canal stenosis. L5-S1 moderate central canal stenosis with mild bilateral foraminal stenosis. No disc space or osseous signal abnormality. Anatomic facet alignment."

On 5/9/19, Mr. Christy had a bilateral L5-S1 transforaminal epidural injection done by Dr. Rema at Vassar Pain at Dutchess Ambulatory Surgical Center. There were no reported procedural complications.

From May 2019 through August 2019, there are multiple records regarding cardiac issues and hospital admissions with procedures performed. None are related to the lower back.

MRI of the lumbar spine with and without contrast was done on 7/28/20 at Medical Diagnostic Imaging, ordered by Dr. Rema. Impression of the study report is "L1-L5 mild central canal stenosis without significant interval change. Status post left L5-S1, left hemilaminotomy with recurrent/residual mild central canal stenosis and mild-to-moderate bilateral foraminal stenosis improved from prior. Mild facet arthropathy."

On 7/30/20, Mr. Christy again saw Dr. Neubardt, whom he had not seen in over two years. The visit note indicates a report of chronic low back pain, which was worsening over the last several months. The interval history of open heart surgery and stent placement in 2019 was noted, and that Mr. Christy had not worked since August of 2019. Complaints included low back pain radiating to both legs, now left greater than right to the sole of the feet with tingling. Examination reported an "extremely" positive SLR on the left side and to a lesser extent contralateral lifting right leg producing left-sided low back pain. Dr. Neubardt reviewed the MRI of the lumbar spine, noting that it "does show some residual recurrent herniated disc at L5-S1 with disc degeneration isolated to that level." Recommendation was for revision surgery with fusion at L5-S1.

Also on 7/30/20, Mr. Christy saw Dr. Jack Stern, the co-surgeon for the discectomy procedure, for consultation. Dr. Stern reviewed the MRI, who felt that there was "severe disc degeneration at L5-S1 whereas the other disc levels are really quite benign and, in addition, he has severe Modic changes at the L5-S1 level." He agreed with the recommended decompression and fusion surgery.

On 7/31/20, Mr. Christy was again seen in Dr. Rema's office for a pain medicine prescription. He was given Percocet. This was refilled on 9/21/20.

On 9/11/20, Mr. Christy underwent lumbar spine surgery at White Plains Hospital Center. The procedure, performed by Dr. Neubardt and Dr. Stern, included a revision decompression at L5-S1 with an instrumented interbody and posterolateral fusion. There are no reported procedural complications. Mr. Christy spent only one day in the hospital, being discharged on 9/12/20.

There is a phone call note from Dr. Neubart's office dated 9/14/20. Mr. Christy had called wanting a refill for Percocet, stating that he had been on the medication for 5 years prior.

On 9/16/20, Mr. Christy saw Bradley Cash, M.D., a pain management doctor, for consultation and care. Complaints included low back pains 10/10, which was caused by an accident, and also noted was "a history of similar pain prior back pain worsened from accident." It was reported that the last day Mr. Christy had worked was 8/15/19. He was taking Percocet four times a day. Diagnoses from Dr. Cash included long-term opioid use and degenerative disc disease with postlaminectomy syndrome. He was given MS Contin and was to take less Percocet over time.

On 9/24/20 Mr. Christy followed up at Community Primary Care where his staples were removed, and his Percocet prescription was refilled.

There is a note in the records from Dr. Neubardt on 9/24/20, who had called Mr. Christy stating that "I called to check in on him because he did not want to make an appointment for a follow-up with us." He consulted Dr. Brad Cash for pain management and his primary care physician who took out the staples. Dr. Neubardt reported that Mr. Christy noted occasional numbness and weakness to the legs, which was not worse than before surgery. There are no records of any in person follow-up care with Dr. Neubardt following the surgery.

On 10/1/20, Mr. Christy followed up with Dr. Cash. Dr. Cash noted that Mr. Christy "did sign paperwork and has already broken the agreement as he has gotten oxycodone from his PCP." Dr. Cash noted that "I will no longer give him opioids." There are no other records of follow-up care with Dr. Cash in the records provided.

On 1/13/21, Mr. Christy followed up with Cynthia Delavalle, a nurse practitioner at Dr. Rema's office. Ms. Delavalle specifically put in her note on that date that "his low back pain stems from an MVA while he was working in 2016 where he was rear-ended by a tractor-trailer at a high speed. He states prior to this injury he had no complaints and was able to be active and play golf routinely." Bilateral SI joint injections were recommended, as well as x-rays of the left hip.

On 2/3/21, x-rays of the left hip were done at Vassar Brothers Medical Center for complaints of left buttock pain. The report indicates mild left hip osteoarthritis.

An AP fluoroscopic image from Vassar Brothers Medical Center done 2/22/21 is reviewed, showing needles in both SI joints presumably for pain management injections. The AP image shows bilateral screw fixation L5-S1 with a titanium interbody cage.

In summary, Mr. Christy reports involvement in a motor vehicle accident on 5/26/17, when his vehicle was rear-ended while driving. He was taken by ambulance from the scene to an emergency room, complaining of pain in the neck, the back, and the left shoulder. His neck and shoulder pain resolved, but back pain persisted. The records indicate a prior history of chronic lower back pain, with likely regular narcotic use for years prior. The initial lumbar CT on the day of the incident and the lumbar MRI done only 2 months later both show chronic degenerative changes at L5-S1 without report of any acute traumatic findings or focal disc herniations. The MRI is reported as unchanged from a prior 2014 scan. More severe right lower extremity pain does not begin until about nine months after the reported accident, and follow-up MRI at that time notes a new right-sided disc herniation, which was not seen on the initial post-accident CT or MRI. He then undergoes discectomy, which helps his more acute right leg pain, but not his chronic lower back pain.

The first record reviewed with Mr. Christy's primary care physician is a follow-up visit on 7/11/17, when a Percocet prescription is refilled. It would be helpful to note when Percocet prescriptions began, either before or after motor vehicle accident. A later medical record in 2020 notes that Mr. Christy reported a prior 5 year history of Percocet use, strongly suggesting use prior to the 5/26/17 accident. It would also be helpful to have the report and images of the 2014 MRI, and the records of medical care surrounding the need for this scan.

With regard to the lower back, there is no evidence of any traumatic structural injury resulting from the 5/26/17 motor vehicle accident. The focal disc herniation on the right at L4-5 does not occur until nine months later, and is not seen until a follow-up MRI done a year after the accident. This is a new finding, and is not temporally related to the motor vehicle accident in question.

Mr. Christy sustained a lumbar sprain/strain resulting from the reported 5/26/17 motor vehicle accident. He continued to work many months, and then curtailed his work hours, but again continued to work until the more acute herniation occurring nine months later. This herniation is the result of progression of the degenerative disease, and is not causally related to the 5/26/17 motor vehicle accident. The surgical treatment was appropriate, including the fusion done later because of continued back pain from the advanced degenerative disc disease.

It is unclear whether Mr. Christy has had any follow-up care after the fusion surgery, as there are no records of any x-rays being done or him having seen a surgeon. He continues to use narcotic pain medicines prescribed regularly by his primary care physician. This is suboptimal pain management care at best, and more appropriate care should be focused on switching off of chronic narcotic pain medicines by a pain management specialist.

Currently in the office today, Mr. Christy has signs of symptom magnification and exaggeration throughout his examination. There are no focal anatomic deficits on examination, and the reported decreased sensation throughout the right lower extremity is in a nonanatomic distribution and is not spinal related. He is fully functional in the office today, and should be able to find gainful employment.

The above represents my opinions, with a reasonable degree of medical certainty, based on all the information provided to me to date. I, Jeffrey M. Spivak, M.D., am an orthopedic spinal surgeon duly licensed to practice in the State of New York. Pursuant to CPLR Section 2106, I am not a party in the above entitled action. I hereby affirm, under penalty of perjury, that the foregoing is true and accurate to the best of my knowledge. No doctor/patient relationship exists or was implied based on this examination. No pre-exam questionnaire or intake sheet was used in conjunction with this independent examination.

Sincerely,

Jeffrey M. Spivak, MD
Chief of Orthopedic Spine Service –Technology and Innovation
New York University Langone Medical Center
Clinical Professor of Orthopedic Surgery,
New York University School of Medicine

JSE/gisl/sta/raj/032021/JSE20618-1

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK
--------------------------------------x
ANNA CHRISTY, PHILLIP TROY and PHILLIP TROY CHRISTY,
Plaintiffs,
-against-

EAGLE TRANSPORT SERVICES INC. and JEFF ALAN THOMPSON,
Defendants.
--------------------------------------x
May 18, 2021
10:33 a.m.

VIDEOTAPED DEPOSITION BEFORE TRIAL VIA VIDEOCONFERENCE of an Expert Witness, JEFFREY MICHAEL SPIVAK, M.D., pursuant to Notice, before Randi Vecchione, a Notary Public within and for the State of New York.

A P P E A R A N C E S:

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BY: JOHAN OBREGON, ESQ.

STIPULATIONS

IT IS HEREBY STIPULATED AND AGREED by and between the attorneys for the respective parties herein, that filing and sealing be and the same are hereby waived.

IT IS FURTHER STIPULATED AND AGREED that all objections, except as to the form of the question, shall be reserved to the time of the trial.

IT IS FURTHER STIPULATED AND AGREED that the within deposition may be signed and sworn to before any officer authorized to administer an oath, with the same force and effect as if signed and sworn to before the Court.

IT IS HEREBY STIPULATED AND AGREED by and between counsel for all parties present that pursuant to C.P.L.R. section 3113(d) this deposition is to be conducted by video conference, that the court reporter, all counsel, and the witness are all in separate remote locations and participating via videoconference

STIPULATIONS

(LegalView/Zoom) meeting under the control of Lexitas Court Reporting Service, that the officer administering the oath to the witness need not be in the place of the deposition and the witness shall be sworn in remotely by the court reporter after confirming the witness's identity, that this videoconference will not be recorded in any manner and that any recording without the express written consent of all parties shall be considered unauthorized, in violation of law, and shall not be used for any purpose in this litigation or otherwise.

IT IS FURTHER STIPULATED that exhibits may be marked by the attorney presenting the exhibit to the witness, and that a copy of any exhibit presented to a witness shall be Emailed to or otherwise in possession of all counsel prior to any questioning of a witness regarding the exhibit in question. All parties shall bear their own costs in the conduct of this deposition by video conference, not withstanding the obligation by C.P.L.R. to supply a copy of the transcript to the

STIPULATIONS

deposed party by the taking party in civil litigation matters.

* * *

J. SPIVAK, M.D

JEFFREY MICHAEL SPIVAK, M.D., called as a witness, having been first duly sworn by a Notary Public within and for the State of New York, was examined and testified as follows:

EXAMINATION BY
MR. SMILEY:

Q. What is your name, please?

A. Jeffrey Michael Spivak, M.D.

Q. Good morning, Dr. Spivak.

A. Good morning.

Q. My name is Andrew Smiley. I'm going to ask you some questions today. As you know, I have rendered a payment to you for $5,300, I believe, for your appearance today for two hours of a deposition, so we'll go up until 12:30.

And since we do have that time limit, I would ask that you please try and give as concise answers to my questions as you can. And if more of an explanation is needed you can let me know and I can also ask you follow-ups; okay?

A. Yes. Can I just ask who else is with us?

Q. Yes, you can ask.

You have your lawyer, Johan Obregon; my associate, Michael Solomon; and the court reporter, Randi Vecchione.

A. Perfect. Thank you.

Q. And where are you located at this moment, Doctor?

A. I'm in Manhattan at my hospital administrative office.

Q. Okay. Is anybody with you there?

A. No. I'm alone in this room.

Q. Now, do you have a file on this case with you?

A. I have a number of things with me. I have a copy of my IME report. I have my CV. And I have the basic kind of intake and scribble sheet, I call it, for him. That's essentially my file.

Q. What about other documents that you reviewed; how do you maintain those?

A. I don't maintain those. They're on CDs and generally they're electronically reviewed. And after reviewing them they either get sent back or discarded.

Q. Do you currently have any medical records in your possession, either hard copy, a digital file, computer cloud in any way accessible to you related to Philip Troy Christy?

A. Not accessible to me. The only thing I have, I was recently sent an MRI CD and report. I believe it was from 2014, but I apologize, I did not bring that with me. That was an accident.

Q. When did you receive that?

A. Last week.

Q. When you say "you did not bring that with you," where would that be located, if not at your office?

A. It's at my home office desk.

Q. Did you charge any additional fee to review those records that were sent to you?

A. Not that I know of, no.

Q. Do you have copies of all your billing statements relative to this case?

A. Not with me, no.

Q. Can you produce those to Mr. Obregon?

A. Sure. I would be happy to.

MR. SMILEY: We call for the production of all billing statements. We have requested this in writing already.

MR. OBREGON: Just for the record, I e-mailed those to you before this deposition started. And, obviously, this is being recorded by video, I just ask that I be provided with a copy of the video as well.

MR. SMILEY: Yes. Absolutely. We'll provide that.

And we only got a billing for an updated record review that you sent over today, so if there's any additional billing for initial exam and review we would ask for a copy of that, please.

DOCUMENT/INFORMATION REQUESTED:

Q. Dr. Spivak, how is it that you got involved in this case?

A. I was hired to do an independent medical examination.

Q. Who hired you?

A. I guess Mr. Obregon's firm. I'm not sure who in the firm hired me, who makes that decision.

Q. Had you worked for Mr. Obregon or his law firm prior to this case?

A. The name is actually not very familiar, but I certainly may have done an examination or two before. I've not met Mr. Obregon and seen his face until today.

Q.   The law firm that he works for, Kerley, Walsh, have you done work for that firm prior to this case?

A.   As I said, it's not -- it's somewhat familiar to me, so I probably have, but I have no specific recollection.

Q.   Do you know how it was that you were connected with the firm for this case?

A.   No, I do not.

Q.   Do you get some type of letter requesting your assistance?

A.   It's often a letter or a phone call. More commonly it's a phone call to the office.

Q.   Did you receive any type of correspondence from Mr. Obregon or any person at his law firm to engage you in this case?

A.   I assume I did. I don't take care of that, so I don't see that, but we can certainly produce any correspondences for you. That's no problem.

Q.   All right. Well, I would ask that you please produce that to Mr. Obregon so that we can follow up on that. And to the extent that it hasn't been requested, which I believe it has already, we would follow up in writing on that.

DOCUMENT/INFORMATION REQUESTED:

Q. When you were engaged at some point to participate in this case, were you asked to do anything specifically?

A. No.

Q. Were you asked to examine Mr. Christy?

A. Yes.

Q. Were you asked to render specific opinions on any specific issues?

A. Yes.

Q. What were you asked to render opinions on?

A. Anything related to his spine. I do independent medical examinations regarding spinal issues. Many patients have other injuries, associated things in addition to spine, but I said nothing specific because for any claimant I'm going to examine, it's always related to whatever spinal issues they have. Sometimes neck. Sometimes back. Sometimes middle back. Whatever is related to the spine that's what I examine, review records for, and make opinions on.

Q. Were you asked to render an opinion on what, if any, treatment that Mr. Christy had was related to his automobile accident of May 26, 2017?

A. Yes.

Q. And did you specifically review the case to determine what, if any, treatment he received was causally related to the accident of May 26, 2017?

A. Again, that's part of my overall review, but not specifically reviewing for that information.

Q. Did you in fact make any conclusion with regard to whether any specific treatment received by Mr. Christy since the date of his accident to present was or was not causally related to his accident?

A. Yes, I believe I did.

Q. And what were your opinions as to what was and what was not causally related to the accident?

A. I would have to refer to my report, if that's okay with you.

Q. Yes, you may. Just direct me, please, to where you're referring to in your report.

A. On page ten, third paragraph from the bottom I was discussing the herniated disks that Mr. Christy had and I opined that the quote, disk herniation is the result of progression of the degenerative disease, and is not causally related to the 5/26/17 motor vehicle accident.

Q. Other than reference to that specific disk herniation not being causally related to the accident, did you render any opinions as to whether any other conditions or treatment rendered to Mr. Christy following this accident was or was not causally related?

A. I don't believe I did.

Q. As you sit here today, do you have an opinion as to whether specific treatment rendered to Mr. Christy following this automobile accident was or was not causally related?

A. I would have to review the treatments, but I would have an opinion, yes.

Q. And what is your opinion?

A. Again, I don't recall. I would have to review my notes to know exactly what was done, but I did opine that he sustained a lumbar strain or sprain resulting from the accident, so treatment related to that, physical therapy, sometimes even injections, things like that would be appropriate and would be causally related.

Q. What, if any, treatment that you observed in the records that you reviewed in this case is not, if any, causally related to the automobile accident?

A. His surgeries.

Q. Which surgery?

A. Both surgeries, the diskectomy surgery and the subsequent spinal fusion.

Q. So it is your opinion within a reasonable degree of medical certainty that those two surgeries were not causally related at all to the rear-end accident of May 26, 2017?

A. That's correct.

Q. Do you have an opinion as to whether or not there was an aggravation of a preexisting spinal condition as a result of this accident?

A. I believe he had a lumbar sprain or strain as a result of the accident, not an aggravation of some preexisting condition.

Q. And do you have an opinion as to whether or not the lumbar strain or sprain required any medical treatment?

A. Yes. As I said before, the nonoperative treatment, things like physical therapy, chiropractic care, acupuncture, medicines, those would all be appropriate treatment for that.

Q. The epidural injections, would you agree that those are causally related and required as a result of his accident?

A. They could be, yes.

Q. When you say "they could be," are you saying they're not causally related or they are?

A. I'm saying they may or may not be. I don't know. I can't say for sure.

Q. Why can't you say for sure?

A. Because in reality for a lumbar sprain or strain an epidural injection is not actually appropriate, but for a herniated disk or for pinched nerves related to that it would be appropriate.

Q. So are you saying they're not causally related?

A. I'm saying I'd have to review the records in more detail to know whether I think that they were causally related in terms of relative to the knowledge I have right now answering your question.

Q. Wasn't that part of what you were asked to do was to review all of the records and determine what, if any, treatment was or was not causally related?

MR. OBREGON: Objection to form. You can answer.

A. Yes, I guess that was part of what I was supposed to do.

Q. So as we sit here today, is it fair to say that as a review of all the records that you identified in your report and in addition to the 2014 MRI you were just provided that the only treatment that you are concluding was not causally related in any way to the accident of May 26, 2017 were the two surgeries; is that correct?

A. Yes.

Q. And as you sit here today, you are not saying that any of the other treatment that you reviewed that was provided to you was not causally related other than those two surgeries; correct?

A. Can you repeat that question again? I'm sorry.

Q. Sure. Other than those two surgeries, is it fair to say that all of the other treatment that you saw contained in all of the records you reviewed was causally related to the May 26, 2017 accident?

MR. OBREGON: Objection to form.

A. No. No. I just told you no with respect to the epidural steroids. The answer is I don't know.

Q. Well, let me phrase it in a different way.

Is there any treatment other than the two surgeries that following your examination of Mr. Christy and your review of all of his records since the date of the accident that you opine is not causally related to the automobile accident?

A. Much of the nonoperative treatment that was done prior to surgery may or may not be causally related given his history that's alluded to in the records of prior back issues, possibly being on narcotic medicines before the accident, and the like.

Q. You keeping saying "may or may not be related." My specific question is: Other than the two surgeries that you referenced that you say are absolutely not related in any way to his accident of May 26, 2017, do you have an opinion that any other treatment you reviewed was not causally related to the accident as well?

A. No.

Q. Is it fair to say that you spent at least four hours reviewing all of the medical records provided to you of Mr. Christy?

A. Yes.

Q. Is it fair to say that you reviewed hundreds, if not thousands of pages of medical treatment records?

A. Yes.

Q. And is it also fair to say that all of the records that you reviewed prior to writing your report were from either the date of accident, May 26, 2017, or sometime after the date of the accident, May 26, 2017?

A. Yes, that's correct.

Q. Other than the 2014 MRI and/or report that you were recently provided, have you reviewed any -- withdrawn.

Other than the 2014 MRI and report that

you were recently provided, are you aware, by way of reviewing all the records you did and any references contained therein, if Mr. Christy had any treatment prior to May 26, 2017 for his back?

A. In terms of treatment the only thing I have that was alluded -- again, alluded to in the records by Mr. Christy was a note, I think, from 2010 indicating -- I'm sorry, from 2020 indicating that he had been taking narcotic medicines for five years. That would put it well before the time of the accident.

Q. Other than that note you're referring to, in the hundreds to thousands of medical records you reviewed, did you see any reference anywhere of Mr. Christy receiving treatment for a prior back issue before the accident of May 26, 2017?

A. Not that I recall.

Q. Other than that note that you just referred to, are you aware of any symptomatic pain that Mr. Christy was having from his back prior to May 26, 2017?

A. No.

Q. Is it fair to say that in your review of the hundreds, if not thousands pages of medical records that you reviewed relative to Mr. Christy's care and treatment, that more likely than not if he had received any significant treatment for lower back pain prior to the date of the accident that would have been reflected somewhere in those records?

MR. OBREGON: Objection to form. You can answer.

A. No, not necessarily.

Q. Did you ask Mr. Christy when you examined him about his prior back condition, if any?

A. Yes, I did.

Q. And what did he tell you?

A. I don't see a sentence alluding to it in my note, but on my scribble sheet where I do ask that question there's a negative sign, so I would assume he told me there was no prior history, even if I can't find that reflected in my note.

Q. And you reviewed his deposition transcript, according to your report?

A. From 8/28/20, yes.

Q. And did you review that and read it?

A. I read it to a degree, yes.

Q. Is it fair to say that upon review of that transcript when he was asked questions about any prior treatment of his back that he responded in sum and substance that other than muscle pain that he had back around 2014 or '15 where he had it checked out and was told it was just muscle pain he had received no other treatment; did you see that?

A. I don't recall the specifics of the transcript at this point, but that would not surprise me.

Q. Is it fair to say that you have no reason to dispute that Mr. Christy was asymptomatic with regard to his lumbar spine prior to May 26, 2017?

A. Yes, that would be fair to say.

Q. And as you sit here today, is it your opinion that he had any type of prior lumbar back condition prior to May 26, 2017?

A. Yes.

Q. What opinion do you have with regard to whether or not he had a prior lumbar spine condition?

A. Well, he had an MRI from 2014 showing degeneration of a disk. There has to be a reason for that MRI to have been done. There are probably medical records surrounding that that we just don't have to look at today.

Q. I'm asking you what the basis is of your opinion that he had a prior lumbar spine condition?

A. That's the basis.

Q. The basis is that he had an MRI in 2014?

A. He had an MRI in 2014 and the allusions, as I said, to preexisting medication use and the prior MRI and the notes reviewed.

Q. But you have not observed anything independently to form an opinion that he had a prior condition of his lumbar spine other than looking at a 2014 MRI; correct?

A. Yes.

Q. And did you see something in the 2014 MRI that indicated to you that at that time he was suffering from some type of prior lumbar condition?

A. I would have to look back at the actual report. Usually there's a history that says, low back pain or something like that, but I don't know what it says because I don't have it in front of me.

Q. I'm going to pull up the report and share it with you. I'm not going to mark this as an exhibit because I will reference it as the January

13, 2014 MRI taken at DRA Imaging in Poughkeepsie, New York.

And do you see my screen, Dr. Spivak?

A. Yes.

Q. Do you see the ordering physician was someone named Holly Mault, M-A-U-L-T, NP?

A. Right, a nurse practitioner.

Q. That's not an orthopedist; right?

A. It's a nurse practitioner.

Q. And a nurse practitioner is not an orthopedist; correct?

A. Not even a doctor, that's correct.

Q. Not even a doctor.

A. Working for a doctor potentially, but not a doctor.

Q. You don't know who Nurse Mault is; correct?

A. That's correct.

Q. But what you do know is that it wasn't an orthopedist that sent him for this MRI; correct?

A. No, it may have been ordered by Miss Mault at an orthopedist's direction. I don't know. You know, the person writing -- there are many things that I order that my physician assistant does the actual paperwork, so it's addressed and noted to her.

Q. Okay.

A. I don't know who actually ordered or who was behind it. Just that the actual hands-on of ordering was done by Miss Mault.

Q. Now, it says, in clinical history, patient complains of lower back pain after shoveling ten days ago. Prior here in 2005. Do you see that?

A. Yes.

Q. Okay. So he has lower back pain and that's why he's having this MRI, as far as we can tell from this report; right?

A. Yes.

Q. Now, let's look through the findings of this report. I'll scroll through slowly, and I'll here at least on my screen where it looks like, L1 through L5 is benign; right? There's really no findings anywhere?

A. That's correct.

Q. And then at L5-S1 it says the disk is moderately narrowed and desiccated. There is a small focal central disk protrusion which abuts, but does not -- it says performs, which is probably a typo, the thecal sac. There is mild bilateral foraminal stenosis. Do you see all of that?

A. Yes.

Q. Now, would you consider this to be a normal MRI, an abnormal MRI, an MRI that is evidence of some type of condition that he has, or something else, Doctor?

A. It's an abnormal MRI.

Q. And what makes it an abnormal MRI?

A. The findings at L5-S1.

Q. What findings at L5-S1 make it abnormal?

A. Everything that's written there. The disk being desiccated. The disk being narrowed. The small focal central protrusion. The foraminal stenosis. Those are abnormalities.

Q. Okay. And is it fair to say that at this time with this MRI he could have been asymptomatic; correct?

A. Yes.

Q. And he could have been symptomatic; correct?

A. That's correct.

Q. Is it also fair to say that if you were to take most men around age 50 and had them have an MRI of their lumbar spine that many of those individuals could be asymptomatic and have findings such as this; correct?

A. That's correct.

Q. This MRI in and of itself is not evidence of some preexisting spinal condition; is it?

MR. OBREGON: Objection to form. You can answer.

A. It's the clinical history. It's a history of low back pain, so there is pain associated with it. It's the clinical history. It's not a big, prolonged clinical history, but there is a clinical syndrome of back pain at the time of this MRI.

Q. And in orthopedics clinical history is a very important part of your role as a physician and a diagnostician; correct?

A. Yes.

Q. And it's important to take a history of a patient to form a clinical impression; correct?

A. Yes.

Q. And it's important to find out when a patient has pain and when a patient doesn't have pain; is that correct?

A. Yes.

Q. It's important to look at as many records as possible to see about prior treatment to assist you in forming a clinical impression; right?

A. Sometimes that's important. Not always, but many times.

Q. So if a patient of yours had an MRI like this and was talking about having back pain, what, if any, treatment would you recommend?

A. I would probably recommend potentially physical therapy and nonsteroidal antiinflammatory medicine and giving it time.

Q. Okay. You wouldn't recommend surgery based on this, would you?

A. No.

Q. You wouldn't recommend epidural injections on this, would you?

A. That might be later on, but it would not be part of the first line recommendation.

Q. What does it mean that a disk is moderately narrowed and desiccated?

A. It means that its height is shortened, and it's -- desiccated just means drying out.

Q. And is that what we know to be degenerative disk disease?

A. Yes.

Q. So is it fair to say that a review of this MRI report would indicate to you that Mr. Christy in January of 2014 had degenerative disk disease at L5-S1?

A. Yes.

Q. What about at L1 through L5, does he degenerative disk disease there?

A. The report indicates some very mild changes at L1-2, and no abnormalities at the other levels.

Q. Would you say that he had degenerative disk disease at L1-L2 at the time of this MRI?

A. He has some elements of disk degeneration. I don't know if I would use the word disease.

Q. What about at L2-L3, would you call that degenerative disk disease at this time?

A. No, there's no evidence of that based on the report.

Q. And there's also no evidence of any type of degenerative disk disease at L3-4 or L4-5 at the time of this MRI in 2014; correct?

A. Based on the report that's correct.

Q. And did you review the actual film, image of this 2014 MRI?

A. Yes.

Q. And do you have any reason to disagree with the conclusions contained in this report from this radiologist?

A. I have no reason to disagree. I just don't have it in my head or remember it enough to definitely agree. That's all.

Q. Is it your intention to generate a follow-up report with your findings of that 2014 MRI for Mr. Obregon and his firm?

A. I'm not sure. That's up to him to request, but if he requests it I would generate that.

Q. Now, here it says at L5-S1 there's a small focal central disk protrusion. What is that?

A. That's a disk herniation essentially. The word protrusion -- protrusion is a type of disk herniation.

Q. Is there a difference between the terminology of a herniation and the terminology of a protrusion?

A. No. The differential is between -- again, a protrusion is a type of a herniation. There are other types of herniations. The differential is with the word disk bulge.

Q. And what's the difference between a disk bulge and a disk protrusion?

A. A disk bulge is a generalized nonfocal expansion of the disk as though you took a balloon and pressed on it from the top on a table and you'd see it expand around the sides. That's a bulge.

A protrusion or a disk herniation, I should say, because there are different types, refers to a focal area where that extension has come out because of a defect in the outer part of the disk, not a generalized wearing away and overall expansion of the circumference of the disk.

Q. What other types of herniations of a disk are there other than a disk protrusion since I believe you said it's one type of herniation?

A. Right. There are three types. Disk protrusions, disk extrusions, and disk sequestrations.

Q. Did I understand you to say there are three types of herniations; a protrusion, an extrusion, and a sequestration?

A. That's correct.

Q. What is the difference between a protrusion and an extrusion?

A. Protrusion is an example of what we call a contained disk herniation where the material has not -- the central material that leaves the disk, the actual herniation is still contained within outer fibers of the disk.

An extrusion, a piece of the disk material has come further out of place and is now free of the outer confines of the disk, but still attached to the disk.

And in a sequestration the disk fragment has not only come out of place, but has fallen so far out of place that it no longer connects to the parent disk where it came from.

Q. Would it be fair for a radiologist in reviewing this MRI, instead of using the term protrusion to have used the term herniation and say there's a focal central disk herniation; would that be appropriate verbiage?

A. Yes.

Q. And can you tell the location of the herniation here, whether it's the right side, the left side, or somewhere else relative to the thecal sac or spinal cord?

A. The word central implies that it's right in the center, not to the right or left.

Q. Okay. So is it fair to say that on January 13, 2014 there's no finding of any disk bulges in Mr. Christy's back; correct?

A. There's no report of that, that's correct.

Q. And there is a report of a herniation of a disk at L5-S1; is that correct?

A. Yes.

Q. Now, is it fair to say that based on that MRI report alone you would not diagnose Mr. Christy as having some type of degenerative back condition going on?

A. Based on the MRI report alone, that's correct.

Q. And based on that MRI report alone you certainly wouldn't say that prior to May 26, 2017 he had some type of prior back condition; correct?

A. He did, back in 2014.

Q. And the condition you're referring to is the herniation?

A. And the back pain that brought on the need for the decision to go ahead with an MRI.

Q. Does that make it a chronic condition?

A. Not necessarily, no.

Q. Do you know if he had a chronic condition as of 2014?

A. I don't know.

Q. Is it fair to say that there's no evidence anywhere in anything you reviewed to indicate that following this MRI in January of 2014 up to the automobile accident of May 26, 2017 that he had any significant pain in his lumbar spine?

A. Can you repeat that question? I'm sorry.

Q. Is it fair to say that there is no evidence whatsoever, based upon your review of all of the records that Mr. Christy had any pain in his lower back following this MRI of January of 2014 until the happening of the automobile accident in May of 2017?

A. Other than his report of use potentially of narcotics, then there would be nothing else.

Q. And that one note you're referring to, that was a note in Dr. Neubardt's chart from September 14, 2020 of a phone call; correct?

A. I believe so.

Q. That's the only note that you referred to of all the hundreds, if not thousands of pages that talk about prior narcotic use is a phone call note; is that fair to say?

A. Yes.

Q. And there's no reference as to if he had been taking narcotics prior to the date of this accident for what reason he was taking them; is that fair to say?

A. Yes.

Q. And, in fact, there's nothing in the records that you've reviewed that indicate that he was taking narcotic medication specifically for lower back pain; correct?

A. Correct.

Q. How does a herniation such as the one identified on this 2014 MRI occur?

A. Disk herniations, I would say most typically occur as a result or part of a degenerative process; although, traumatic incidents, physical activity can cause it to happen within the degenerative process. And very severe accidents can cause it to happen sort of immediately through a large tear of the disk itself.

Q.   Have you ever had a patient who was involved in an automobile accident or rear-end automobile accident that you treated for herniated disk?

A.   Yes.

Q.   At any time have you treated a patient who was rear-ended in an automobile accident and the evidence of a disk herniation did not appear on an initial MRI, but showed up at some time later on?

A.   That can happen typically within the first few weeks or so.

Q.   What about beyond the first few weeks, if someone had a partially herniated disk and then was in an accident, could that disk herniate even more months after the accident?

A.   A disk can always herniate further from time from anything, but that doesn't necessarily make it related.

Q.   How can you tell if a disk herniates more than how it was before an accident, but it's not evident until months after the accident, whether the accident caused that to happen or whether it's part of the degenerative process?

MR. OBREGON: Note my objection to form.

You can answer.

A. I think temporally you look at it to see how close it was to the time of the accident. If it happens a year later, many months later, many years later I don't think you can ascribe it to the accident. If it happens days later, that's a different story. There could be some initially tearing that later goes on to quickly, rapidly herniate.

Q. Could a herniation develop three months after a rear-end accident that's not seen within the first month on MRI?

A. Again, a herniation can always develop at any time after an accident and after an MRI. That does not make it causally related.

Q. But can there a causal relation where someone has a partially herniated disk, like Mr. Christy's shown disk protrusion/herniation in 2014, then he gets into an automobile accident where he's rear-ended in May of 2017, and then maybe three months later that same disk shows to be herniated even more; could the accident cause that to happen?

A. No.

Q. Why not?

A. Because that's not Mr. Christy's scenario. Mr. Christy's scenario is he had what was described as an inconsequential disk herniation, part of the degenerative process in 2014. He did not even have a disk herniation visible in 2017 that had well since been resorbed or the degenerative process had essentially consumed it with further bulging of the disk. And his later herniation many months later is not related to the accident specifically in question.

Q. Now, you reviewed the records from the date of the accident, I understand; is that correct?

A. I believe I did, yes, from Vassar Brothers Medical Center.

Q. And you saw photographs of the damage to Mr. Christy's vehicle from being rear-ended by a tractor trailer; correct?

A. I may have. I don't recall.

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Q. Well, it says in your report that you reviewed four photographs that were provided to you showing the auto accident damage; right?

A. If it says it then I did. It's faster than me finding it on my report.

Q. I'm going to share my screen with you and show you a photograph taken immediately following Mr. Christy's car being rear-ended by a tractor trailer. And it's one of the photographs that was provided to you by defense counsel that you say you looked at in your report.

Do you see it on my screen, sir, the back of a Honda Civic?

A. Yes.

Q. And do you see how it's crushed in and the back windshield is blown out and the fender is off?

A. Yes.

MR. OBREGON: Note my objection to form.

Q. Fair to say that this is evidence of a severe impact?

MR. OBREGON: Objection to form.

A. No, I don't think it's fair to say. It's evidence of an impact, not necessarily severe.

Q. Well, you wouldn't think that a light impact caused this; would you?

MR. OBREGON: Objection to form.

A. It's a Honda Civic, so I think it could.

Q. Would you anticipate that if a belted driver was in the front seat of this vehicle and was hit in the rear by a tractor trailer such that it caused this damage that that could cause some problems to the spine of the driver?

MR. OBREGON: Objection to form.

A. Yes, it could.

Q. And would you agree that if the driver of this vehicle had some degenerative disk disease at the time that the tractor trailer rear-ended this vehicle, if he was belted and sitting in the front, that such an impact could aggravate that disk degenerative disease?

A. No, it would cause a muscular lumbar strain or a whiplash to the back, and more likely than that.

Q. Do you not agree that an impact like this from a tractor trailer rear-ending a vehicle of a belted driver would aggravate any preexisting back injury?

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MR. OBREGON: Objection to form.

A. A preexisting back injury, I mean, it could.

Q. What about a preexisting back condition such as the 2014 MRI, would you agree that an impact like this could affect the driver's spine in such a way that it could become more symptomatic?

A. Again, I believe it would be symptomatic based on a muscular strain or whiplash, not based on a degenerative disk.

Q. What's your basis for that opinion?

A. My expert knowledge of over 27 years of being a spine surgeon.

Q. Would you expect there to be any changes in an MRI of the lumbar spine following a rear-end impact such as the one that we're looking at now?

A. There certainly could be.

Q. And what would cause that; would it be the force of the impact that could cause that?

A. Yes.

Q. What would you expect to see, if anything, in a subsequent MRI compared to the 2014 in Mr. Christy if an MRI was taken after this accident?

A. If there were structural injury resulting from the accident you might see a fracture, you might see tearing of the ligaments that support the spine. You might see an acute traumatic disk herniation.

Q. Anything else like a bulge or further desiccation?

A. Bulge is a degenerative finding. It's really not a traumatic finding. Desiccation, again, not a traumatic finding. It's a degenerative finding.

Q. So trauma can't cause a bulge?

A. Trauma does not cause a bulge.

Q. Could a rear-end accident, such as the one that Mr. Christy had, cause him to be symptomatic in the lumbar spine if prior to the accident he was not symptomatic?

A. Yes.

Q. In fact, doesn't the record that you reviewed reveal that to be case, that he went to being symptomatic in his lumbar spine following this accident?

A. Yes.

Q. And would you agree that the symptoms that he expressed in all of the records that you reviewed with regard to pain in his lumbar spine would be causally related to this rear-end accident?

A. At least initially, yes.

Q. And for how long would you expect it to be causally related?

A. Typically, the symptoms of a lumbar muscular strain last maybe three to six months at the outset.

Q. And then you would expect within six months he would be fine?

A. He would be better, yes.

Q. Would he be fine though without symptoms?

A. Not everybody is fine. Every case is different.

Q. Do you have any reason to dispute that the pain that Mr. Christy made complaints of in the lumbar spine area and all the records you reviewed were as a result of this rear-end impact?

A. No, at least not until the herniation.

Q. So up until the point where you believe there was evidence of a herniation in the lumbar spine, is it fair to say all that treatment up until that point you would agree is causally related to this accident?

A. No. I'm not going back to where we were an hour earlier.

Q. Well, you have no reason to dispute causal connection; correct?

MR. OBREGON: Objection.

A. I have no known reason, correct.

Q. And the only point you get to where you start to dispute any causal connection is with finding of a herniation at L5-S1 later on after the accident; correct?

A. That's correct.

Q. Now, let's look at the MRI -- well, first of all, there's no dispute that Mr. Christy was consistent with his treatment for his back pain following this accident; right?

A. I'm not sure what you mean by consistent.

Q. It's not like he had this accident and then started to get treated a year or so later. It's very consistent from the time of the accident that he continued to report pain stemming from this accident; correct?

A. Yes.

J. SPIVAK, M.D

Q. I'm going to show you the emergency room note. And I believe you reviewed this as part of your review; correct, the emergency room note from the date of the accident?

A. Yes.

Q. Do you see it up on my screen, at the top it says, Vassar Brothers Medical Center admit date, May 26, 2017. Do you see that, Doctor?

A. Yes.

Q. And do you see where it indicates that on May 26, 2017 at 15:10 EDT, the chief complaint was that he was rear-ended by a tractor trailer at 70 miles an hour?

A. Yes.

Q. Do you see where I've highlighted lower on in the history that he complains of back pain; do you see that?

A. Yes.

Q. And is it fair to say that this is the very first and only record you have reviewed in this case that indicates back pain from any time of May 26, 2017 or earlier?

A. No. We just looked at an MRI report complaining of back pain from 2014. Other than that, yes.

Q. Okay. Now, you're aware that he went to see an orthopedist named Dr. Dassa following the accident?

A. Yes.

Q. I'm going to share my screen with you again. Do you see this, Doctor, where it says, Gabriel Dassa at the top?

A. Yes, I do.

Q. He's a board certified orthopedic surgeon; correct?

A. That's what the record says.

Q. Now, this date is June 13, 2017, about two weeks after the accident; correct?

A. Yes.

Q. And do you see here in the highlighted sections where Mr. Christy's evaluated for pain in his lumbar spine status post the motor vehicle accident of May 26, 2017 where he was rear-ended by a tractor trailer?

A. Yes.

Q. And you see where Mr. Christy reports to Dr. Dassa that since his accident he's been having persistent pain, burning, numbness, and tingling radiating down to his extremities?

A. Yes.

Q. And you see that he denies any prior injuries?

A. Yes.

Q. Do you have any reason to dispute the accuracy of the information contained in this paragraph that we are looking at?

A. No.

Q. And then do you see the examination of the lumbosacral spine where Dr. Dassa measures flexion, extension, and so on?

A. Yes.

Q. Any reason to dispute his measurements here?

A. No.

Q. Then at the end do you see where in the discussion Dr. Dassa says, the patient was injured on the above date and that the symptoms and findings were directly caused by this accident?

A. Yes, I see that.

Q. Do you have any reason to disagree with Dr. Dassa's opinion at this point?

A. No.

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Q. And indicates for treatment physical therapy and a lumbar spine brace for support and some MRIs; do you see that?

A. Yes.

Q. He doesn't recommend surgery; correct?

A. That's correct.

Q. He doesn't recommend epidurals; correct?

A. That's correct.

Q. Seems to be a reasonable recommendation of treatment in your opinion?

A. Yes. I'm not sure I'd agree with bracing, but it's certainly reasonable.

Q. Okay. Now, you reviewed the records from Community Primary Care and many of them are noted by Ralph Gargiulo, PA; correct?

A. Yes.

Q. And do you see them up on your screen here where I have the September 26, 2017 note?

A. Yes.

Q. And you reviewed all of these visits as part of your review; correct?

A. Yes.

Q. Do you see then that on September 26, 2017, this is a followup. The reason for the appointment, Workers' Compensation. Date of accident, May 26, 2017; correct?

A. Yes.

Q. And where it indicates the result is an exacerbation of lower back pain; do you see that?

A. Yes.

Q. Any reason to dispute that he was there for a followup from the accident that we're talking about and that he's having low back pain that's been exacerbated from this accident?

A. Again, the word exacerbation isn't appropriate, but the low back pain is still associated with that accident.

Q. Why do you disagree with the word exacerbation?

A. Because there's no evidence to suggest that at any time immediately beforehand, as you mentioned, that he had low back pain.

Q. But does this note --

A. He had back pain, but I don't know -- exacerbation would imply that it's sort of a chronic condition that comes and goes and that the accident brought it about, and there's no evidence to support that.

Q. Well, this is evidence; isn't it? You're looking at records and you've referred before to some notes you saw, the phone call, and that was evidence in your mind of prior narcotic use. Now, we're looking at a note of his Primary Care Group that's referring to him having an exacerbation of low back pain. Isn't this evidence to consider?

A. It's certainly all worth considering. I just think the PA is using the word exacerbation incorrectly. That's all.

Q. So you disagree with the PA's terminology?

A. I would just say resulting in low back pain. Exacerbation of is just not appropriate use there.

Q. Well, there's obviously a reason that he chose to use exacerbation; right?

A. You would have to ask him. I have no idea.

Q. Right. And you take these records when you review them at face value as part of your review, don't you?

A. I'm not sure what you mean by at face value. I don't -- if someone says something that's incorrect, I don't necessarily take it at any value.

Q. Yeah, but you have no independent basis for saying this is incorrect; do you?

A. I'm talking about right now.

Q. Right. Do you right now have any independent basis for disputing that Community Primary Care, Mr. Gargiulo is saying that Mr. Christy had back pain that was exacerbated from this accident?

A. It's caused by the accident. Exacerbated is the wrong word. That's all I'm trying to say. I don't agree with the word exacerbated, and that won't change.

Q. Now, on December 5, 2017 he refers to the reason for the appointment, the accident of May 26, 2017. He's following up. He's in back pain. And he states the pain is getting worse. Do you see that?

A. Yes.

Q. Do you have any reason to dispute this?

A. No.

Q. Now, on January 5, 2017 here's a medical doctor, Chandra Naik. Do you know Dr. Naik?

A. No.

Q. Do you see it says, Workers' Compensation, date of accident, May 26, 2017, lower back injury?

A. Yes.

Q. And you have no reason to dispute that the reason for his visit was following up for a lower back injury related to the accident of May 26, 2017; correct?

A. It says the reason for the visit was for a medication refill.

Q. Right, related to a lower back injury for May 26, 2017; right?

A. At this point related to a chronic use of medication that maybe isn't appropriately being used, but needs to be refilled or there are consequences to the patient who is on too much narcotics.

Q. Okay. I'm not asking for your commentary on what you perhaps think it was going on here. I'm asking your commentary on what the records are indicating that you relied upon on your review, okay.

And, specifically, when you reviewed

chart, did you see that he showed up on January 5, 2018 for a medication refill for a lower back injury related to the accident of May 26, 2017?

A. Yes.

Q. Do you see that Dr. Naik took a social history; correct?

A. I'm not sure what you mean by social history.

Q. Do you see where it says, social history?

A. Now I see that, yes.

Q. And surgical history and hospitalization and medical history; do you see all of that?

A. Yes.

Q. Now, again on March 19, 2018, do you see that he goes back to the center indicating a chronic pain followup, date of injury, May 26, 2017, chronic pain; do you see that?

A. Yes.

Q. And do you see he came back on April 9, 2018. Again, patient complains of severe pain in right glute down leg, date of incident, May 26, 2017; do you see that?

A. Yes.

Q. And do you have any recent to dispute that he went in April of 2018 to his doctors and complained of pain since the date of the accident?

A. He complained of pain. I'm not sure what you mean by since the date of the accident. I think his right glute pain and right leg pain was new.

Q. Well, here it says that Workers' Compensation - date of incident, May 26, 2017, patient complains of severe pain in right glute down leg. Do you see that?

A. Yes.

Q. Do you see anything on here to indicate it's something new from something other than the automobile accident?

A. No, it's the difference from the prior notes.

Q. And do you see in here where it says, patient continues to experience severe pain in the lumbar spine. Which leg, down the right leg -- probably a typo. He was recently seen by Dr. Rema who's now anticipating using epidural injections. Do you see that?

A. Yes.

Q. And is there anything in here to indicate

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that the pain that he's complaining of, the severe pain, is anything other than continuing pain that's gotten worse from the date of this accident?

A. There's the new complaint of pain in the right leg. That's all. There is continued additional pain reported.

Q. And do you have any reason to dispute that his complaints of pain at this appointment relate to the automobile accident?

A. Yes.

Q. And what's your basis for that?

A. I believe prior to this appointment he had herniated the disk on the right side at L5-S1, which is not related to the accident specifically.

Q. When do you think he herniated his disk at L5-S1?

A. I believe -- I would have to look back, but probably between this note and the note before.

Q. So between April 9, 2018 and March 9, 2018 you think that he herniated a disk?

A. Yes.

Q. So do you think that his pain that's referred to on March 19th of 2018 that says, under today's visit on date of this note, comes to refill pain medication for lumbar disk disease resulting from Workers' Compensation injury from May 26, 2017, you think that somehow something changed where then in 2018, a month later, April 9th in that month he had something new happen, a new herniation and that made his pain worse completely unrelated to the accident?

A. The right leg pain is completely unrelated to the accident.

Q. And the disk herniation that you're saying must have happened between these two visits sometime in March to April of 2018 was completely unrelated to the accident as well?

A. Yes.

Q. And none of the sequela from the impact caused his spine to further herniate a disk in the lumbar spine?

A. Not in this case, no.

Q. And he did have a herniation back in 2014; right, at L5-S1?

A. Yes.

Q. And then you're saying this is a new herniation in 2018, not the same one?

A. That's correct.

Q. Same disk though; right?

A. Same disk level, that's correct.

Q. So you're saying sometime between 2014 and 2018 the disk moved back into place and then moved back out?

A. No. That's not how it works.

Q. How does it work?

A. Between 2014 this very small reportedly inconsequential disk herniation essentially resolved. What happens is the disk can fortify and strengthen. The small protruded fragment can dry out and shrink. And the disk degeneration progresses so that by 2017 when the injury MRI is done there's no visible disk herniation whatsoever. This is two separate unrelated disk herniations.

Q. Did you compare the two films?

A. Which films?

Q. Of 2017 and 2018.

A. Yes.

Q. And did you compare the films of 2014 with 2017 and 2018?

A. No.

Q. Let's look at the 2017 MRI for a moment. All right, Doctor, I have up on the screen MRI from

Vassar Brothers Medical Center. It says Nuvance Health at the top. July 28, 2017. Do you see that?

A. Yes, but I also want to point out that we're not looking at MRIs. We're looking at MRI reports.

Q. Okay. Looking at the MRI report. And previously we were looking at the MRI report for 2014; right?

A. Yes. You just said earlier let's compare the MRIs, but we're not comparing MRIs. That's --

Q. Right, we're comparing MRI reports. Thank you for the clarification.

On here it says, patient was hit by a truck, May 26, 2017. Clinical history. Complains of legs going numb, weakness in legs, and pain in lower back; right?

A. Yes.

Q. Now, you're saying the legs going numb, the weakness in his legs has nothing to do with the accident?

A. No, I'm not saying that at all.

Q. So would you agree that his complaints at the time of this MRI of his legs going numb and weakness in his legs and pain in his lower back were caused by the accident?

A. Yes.

Q. And how does that anatomically work that his legs are going numb and he has weakness in his legs as a result of this accident?

A. Something may have irritated the nerves even back, I think, in 2014. The report may have indicated -- we're losing track, that he had foraminal stenosis, and that certainly could have been temporally sort of instantly exacerbated, and that's an exacerbation of the stenosis causing a new symptom. The symptom of legs going numb and weakness in the leg.

Q. So this would be an exacerbation of spinal stenosis is what would cause the legs to go numb and the weakness in his legs?

A. It would be a transient increase in the foraminal stenosis at L5-S1 based on the whiplash to the back causing some irritation of the nerves and the subsequent symptoms.

Q. Would it mean the disk is in connection at all with the thecal sac or the nerves?

A. The foraminal is on the side. It's

unrelated to the thecal sac. Simply the exiting nerves.

Q. Now, here where it says, severe pain in the right glute down leg on the April 9, 2018, you're saying this is a new finding; right?

A. Absolutely.

Q. But in the MRI where he's talking about complaints in his legs, going numb, and weakness, and pain in his back, that is connected; right, to the accident?

A. Yes.

Q. Now, when we look at this MRI report from July of 2017 there's some new findings on this report from the 2014 one; correct?

A. There are new reported findings, correct.

Q. New reported findings.

Do you have any reason to dispute these new reported findings?

A. Yes.

Q. And what is your basis for disputing these reported findings?

A. My review of the images, so I agree with my findings, whatever they would be, whether or not these findings say what they say.

Q. What were your findings from your review of this MRI in 2017?

A. I'm going to quote from my notes. I reviewed the images of the study which show a broad disk bulge at L5-S1 with retrolisthesis resulting in right greater than left recess and foraminal narrowing. There was also moderate stenosis at L3-4, and mild stenosis at L4-5 with moderate bilateral facet arthrosis at L3-4, L4-5, and L5-S1.

Q. So what specifically do you disagree with from the radiologist's findings in this MRI report of July 2017?

A. Please scroll down for a minute.

I actually believe there is a stenosis at L3-4, at least according to my review, and mild at L4-5. And I don't really see a discussion -- maybe lower down there is of foraminal -- of facet arthritis.

Q. And you think there's facet arthritis in your review?

A. Yes.

Q. But that's not indicated on here?

A. Not that I can see unless you can point it out.

Q. What about the findings at L1-L2 and L2-L3 where these are new findings now, according to this MRI report, from the 2014; would you agree with that?

A. I would have to look at the study again. I didn't comment on those levels in my review.

Q. Okay. So, first, let's look at this and then I'll pull up the 2014 MRI. So here on the July 2017 MRI following the accident, a few months after the accident, it has a broad based disk bulge at L1-L2. Do you see that?

A. Yes.

Q. Do you dispute that finding?

A. I'd have to review the images to know whether I agree or not with it.

Q. As you sit here today, do you have any reason to dispute it?

A. No.

Q. And at L2-L3, moderate disk bulge causing mild to moderate bilateral foraminal narrowing and mild spinal stenosis, that's a new finding as well; right?

A. It's a new reported finding compared to the 2014 MRI. Agreeing that it's a new finding would mean that I agree with the report, and I have to review the images to let you know if I actually agree with the report or not.

Q. Right. And when you wrote in your chart that the 2017 MRI is reported as unchanged from 2014, you would have to agree now that that is not accurate, that it is changed; right?

A. Say that again.

Q. I'm putting on the screen page ten of your report.

A. Yes.

Q. Do you see on the highlight where it says, the MRI is reported as unchanged from a prior 2014 scan; do you see that?

A. I do see that.

Q. Would you agree that that's not accurate, that it is changed, the MRI report from 2017 is changed from the 2014?

A. I think there's a typo there. I don't know how I could have said that because at the time of writing that report I'd never seen the scan or report from 2014.

Q. So it's either a typo, or in any event, it's not accurate; correct? Your statement in your report that the MRI is reported as unchanged from a prior 2014 scan, that's not accurate?

A. I would have to see the MRI -- can you go back to the 2017 MRI report?

Q. Yes, I can.

So we just looked at how there's new findings at least at L1-L2 and L2-L3 from 2014; right, these are new findings?

A. Could you scroll down? I want to answer your question.

It's the slight progression since the prior study, that's from the impression.

Q. Okay.

A. That was the basis of that statement, I assume.

Q. All right, but your statement is not about a slight progression. Your statement in your report says, the MRI is reported as unchanged from a prior 2014 scan; correct?

A. That's what it says, correct.

Q. And that is not accurate; correct?

A. It's poorly worded. I would give you that.

Q. Other than poorly worded, it is not

accurate; correct?

A. It's poorly worded.

Q. It's wrong; right, Doctor? It's not just poorly worded. It's wrong?

MR. OBREGON: Objection.

A. Similarly changed is essentially unchanged. So I think it's poorly worded. I wouldn't say it's wrong.

Q. You won't concede that your statement that the MRI is reported as unchanged from a prior 2014 scan is wrong? You won't concede that?

A. I think it's poorly worded.

Q. Okay. And, Doctor, you're specifically hired to focus in on areas of whether there are changes or not from different MRIs; correct?

A. No. I'm specifically hired to review the case in its entirety, not -- not for what you just specifically said.

Q. Are you aware as an orthopedic surgeon who's hired to come in as an expert and give testimony as far as what is causally related and not, that a statement by you in your report saying that an MRI is reported as unchanged from a prior 2014 scan carries the weight of anybody reading it to believe that there is no change from the 2014 to the 2017 MRI reports?

A. It's simply missing the word, essentially unchanged, which would make it correct. That's all I'm saying. And, in fact, if it does change with more degenerative changes between 2014 and 2017 it actually helps the defense, so I'm sorry I worded it incorrectly, but it should say as essentially unchanged. I'm not sure why you're harping on it.

Q. Okay. Either way there were new findings in his spine as reported in the 2017 MRI report from the 2014 report; will you agree with that?

A. Could you go to the bottom of the report, please? Could you go to the 2014 report, please?

Q. Yes, I can. I'm now sharing with you the 2014 MRI.

A. Could you go to the bottom of the report, please?

Q. Yes.

A. Okay. Can you go back?

Q. While we're still on this report I just want to clarify.

In this report at L1-L2 and L2-L3 this report is saying that at those levels they're not finding any significant foraminal stenosis and they're not identifying any disk bulges; would you agree with that?

A. It's not reported. That's correct.

Q. Okay. And in the MRI, which I'm turning to now of 2017, following the accident, at L1-L2 it's a mild broad based disk bulge and mild bilateral foraminal narrowing and mild spinal stenosis, that is a new finding in this report following the accident that did not exist as being reported in 2014; would you agree with that?

A. Yes.

Q. And would you agree that the finding at L2-L3 of a moderate disk bulge causing mild to moderate bilateral foraminal narrowing and mild spinal stenosis is a new finding being reported after this accident from the MRI report taken in 2014?

A. Yes.

Q. Now, in 2017 they're stating that there is a mild broad based disk. It doesn't say whether it's a bulge or a herniation or anything here. It just says, mild broad based disk. Do you understand what that means?

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A. Yes.

Q. What does that mean?

A. I understand -- you're right. It's missing a description on that. That's what I understand.

Q. Okay. And it could be a profusion as existed in 2014 that's not indicated; correct?

A. I believe you mean protrusion.

Q. I'm sorry, protrusion, yes.

A. Yes.

Q. Which would be a herniation; correct?

A. If the radiologist meant to use the word protrusion that would be another word for a type of herniation.

Q. Is there evidence that you see from this report that the protrusion or herniation as we discussed in 2014 at L5-S1 has resolved on its own and that there's no longer a herniation at L5-S1?

A. From the report, no.

Q. Then if we go to the report in 2018, I'm now sharing with you the May 14, 2018 report ordered by Dr. Rema, clinical history, motor vehicle accident, May 26, 2017, has had two recent epidurals with --

A. Excuse me, you're reading and I'm seeing you. You're not showing me anything.

Q. I apologize. I thought I was sharing the screen.

Okay. Now I have up on the screen, again, from the same radiology facility at Vassar Brothers, May 14, 2018. This was ordered by Dr. Rema. Do you know Dr. Rema?

A. No, I don't.

Q. You reviewed his records though; correct, as part of your analysis in this case?

A. Yes, I believe so.

Q. Do you see here that he's ordering this report on May 14, 2018, and he gives a clinical history as in the reason for this report as a motor vehicle accident, May 26, 2017. Do you see that?

A. Yes.

Q. Does that indicate to you that Dr. Rema is ordering this MRI in connection with treatment he has been rendering to Mr. Christy for back pain from a motor vehicle accident stemming from May 26, 2017?

A. I can't read Dr. Rema's mind. That would be a question for him.

Q. Well, reading this report, when you look at the clinical history, which we did back in 2014, which you said you relied upon in determining that he had back pain at that time, isn't it equally fair to rely upon this clinical history when you're reviewing records to say that Dr. Rema is sending him for an MRI in connection with a motor vehicle accident of May 26, 2017?

MR. OBREGON: Objection to form.

A. No. He's sending him there because of the reason for exam, which was radiculopathy, and the clinical history, which is right-sided sciatica. Pain into toes. That's a new finding why he was sent for this new updated MRI.

The clinical history of the motor vehicle accident, I can't speak to why Dr. Rema put that in there or not or what his opinions are. That would be something he would speak to, not me.

Q. When you're reviewing the records in Mr. Christy's case I notice that some of the things you take at face value that you read, such as the fact that there was a report of prior narcotic use, you take that at face value in forming your opinion, but then you see something like here, which would normally be taken at face value when a clinical history of motor vehicle accident of May 26, 2017, and you say you're not so sure about that; correct?

A. No, I'm not ignoring the history of the motor vehicle accident --

MR. OBREGON: Objection to form.

A. -- I'm simply stating that it's part of his overall history, but the reason for the exam is the new right-sided radiculopathy and sciatica.

Q. Now, at L1-L2, L2-L3, these findings are generally reported to be the same as the July 2017 MRI; correct?

A. Yes.

Q. Now, there appears to be a report of a disk bulge at L3-L4. Do you see that?

A. Yes.

Q. Do you know how it is that that bulge could be reported as seen on this MRI, but not reported as seen in the prior two?

A. It could either be just simply a progression of the degenerative process, most likely, or it could be the same as the previous one read by a different radiologist. I don't know. I haven't scrolled down to know who read it or it could just be something that is a matter of opinion that's correct or incorrect.

Q. Again, at L5 there's a mild disk bulge being reported here. Do you see that?

A. Yes.

Q. And then at L5-S1 it says, there's a right-sided paracentral moderate sized disk herniation. Do you see that?

A. Yes.

Q. This is referring to the same disk that was reported as being herniated in 2014; right?

A. Same disk level, that's correct.

Q. Same general area, right, maybe a little more to the right here as reported in 2014?

A. No, it's focal and to the right. It's a different herniation.

Q. And what do you mean when you say, a different herniation; it's in a different area?

A. It's a new acute herniation on the right side causing this new sciatica how ever many more months closer to -- nine/ten months later.

Q. How did this new herniation, as you call it, develop?

MR. OBREGON: Objection to form.

A. That's what we call a theological question. That's a question asking for an answer like I'm God that I would be able to give the answer. Herniations, as I said before, more commonly than not develop as part of the degenerative process without any accident or incident.

Q. Would you agree, Doctor, that an accident or incident can move forward the degenerative process?

A. No.

Q. Would you agree, Doctor, that an accident or an incident can cause sequela that can ultimately cause a herniation in the lumbar spine?

A. I don't even understand the question. What do you mean by sequela?

Q. Now, before this MRI we know that Mr. Christy was undergoing a lot of treatment for the accident; right?

A. Yes.

Q. We know that he had physical therapy; correct?

A. Yes.

Q. Could this herniation have been related to --

A. By the way, when you said for the accident, it was for the pain, but, yes.

Q. So the physical therapy was treating him for his pain from the automobile accident; correct?

A. At that point it's possible that it was just -- I would say yes.

Q. Okay. You'll concede that?

A. It's not a concession. It's a yes.

Q. Okay. And during physical therapy, could that cause the L5-S1 disk to herniate?

A. Anything can cause a disk to herniate. A sneeze commonly causes a disk to herniate. Bearing down in the bathroom causes a disk to herniate. I can't say for certain that any one thing does not cause -- did not cause a disk to herniate.

Q. Okay. So put it another way, you have no reason definitively to say that his physical therapy didn't result in this herniation, do you?

A. Yes, I do.

Q. And how can you say that?

A. It would be a case report. It's essentially an event that does not happen.

Q. So physical therapy cannot cause a

herniation of a disk?

A. I just told you. I didn't say it cannot. It just almost routinely forever does not. It's much more common that he had a bad sneeze one morning and herniated his disk. That would be much, much, much more common.

Q. Okay. So it's your opinion that there's no way the physical therapy that he was undergoing from this accident could have caused this herniation; is that correct?

MR. OBREGON: Objection.

A. No. My opinion is there's nothing to suggest that any physical therapy caused this disk herniation.

Q. Right, but is it your opinion -- is it reasonable that it could have occurred --

A. No.

Q. -- during the physical therapy?

A. It's that uncommon of an event that it's not a reasonable conclusion.

Q. What about the epidural injections, injecting into the area of the L5-S1, could that cause a disk to herniate?

A. No.

Q. What about injections of Bupivacaine in the area of the L5-S1, could that lead to a herniation?

A. No.

Q. What about a patient compensating for back pain in the manner of walking or moving to try and compensate for the pain, could that cause a herniation?

A. No.

Q. What about if Mr. Christy was moving his body in a certain way to try and compensate for his pain either in the performance of his work or his activities of daily living, could that cause the L5-S1 to herniate?

A. No.

Q. But a sneeze could?

A. Yes.

Q. I'm going to go back. We left off at April 9, 2018 with his Primary Care. And then you saw after April 9, 2018 he went back on May 9, 2018. You saw that?

A. Yes.

Q. You see under today's visit it says, has WC injury. Do you know what that refers to?

A. Yes.

Q. Workers' Compensation, meaning on-the-job injury?

A. Yes.

Q. And you're aware he was on the job at the time of this automobile accident and that's what it's referring to?

A. Yes.

Q. So it's saying here, has WC injury and has been seeing Dr. Rema with epidural injections and recently a short course of oral steroids. He continues to be in pain. Scheduled for MRI by Dr. Rema. Do you see that?

A. Yes.

Q. Is it reasonable from reading this note of May 9, 2018 to presume that this is why Dr. Rema referred him for the 2018 MRI?

MR. OBREGON: Objection to form. You can answer.

A. What's the this? This is why? I don't know what you mean by that.

Q. The statement in today's visit of this note of May 9, 2018 that he has a Workers' Compensation injury for which he's been seeing Dr.

Rema with epidural injections and a short course of steroids, he continues to be in pain, and he's scheduled for an MRI by Dr. Rema.

By reading that, does that indicate to you that that is why he was going for the MRI because of his continued pain despite Dr. Rema's treatment for this accident?

A. No. We know from the note prior that he was sent for the MRI for the new sciatica in the right lower extremity. The new right leg pain.

Q. Okay. He goes back on June 12, 2018. Again, it indicates a Workers' Compensation injury, May 26, 2017. Had back surgery May 31st. Had recent surgery due to Workers' Compensation injury of the lumbar area to fix a sciatic condition. Comes for refill of pain meds. Do you see that?

A. Yes.

Q. And you dispute this statement that his surgery was due to his Workers' Compensation injury of the lumbar area?

A. I'm not disputing the statement. This is a statement of a physician assistant of a medical doctor. This is not an orthopedist physician's assistant even. And the statement simply could be referring to the insurance that everybody is getting paid for, which is Workers' Compensation. And it was this PA's opinion that this is there, but that does not imply that this PA actually has the opinion that the need for surgery was based on a Workers' Comp injury or the motor vehicle accident earlier because that would be completely overstepping the PA's fund of knowledge. So you're harping on this really doesn't make sense to me.

MR. SMILEY: Can we pause for two minutes, please. I have to address something very quickly.

MR. OBREGON: Sure.

(Brief recess was taken.)

Q. You see he went on July 17, 2018 and the reason for the appointment is also followup for back pain, date of incident, May 26, 2017?

A. Yes.

Q. Do you see that he goes regularly to this facility monthly to be checked out all the way through at least October of 2019, and that in every one of these notes it references that his back injury is related to the car accident; correct?

A. It doesn't relate it. It just mentions the fact that he had a Workers' Comp injury and was there for followup and refill of pain medicine because this seems to be the facility that would provide Mr. Christy his pain medicine.

Q. Now, you also reviewed records of his orthopedic surgeon; correct?

A. Who are you referring to?

Q. Dr. Neubardt.

A. Yes.

Q. And are you aware that Dr. Neubardt has opined that the need for the surgeries was as a result of the car accident?

A. I don't know of that opinion.

Q. Well, you reviewed his records; right?

A. Yes.

Q. And did you review them to see whether or not the surgeon who actually performed the procedures believed them to be a result of the accident in this case?

A. I thought you were referring to some narrative report later on where he actually had a legal opinion, so I don't know what you're specifically referring to, but I'm happy to have you refer me to it.

Q. Okay. So I have up on the screen a note that you were provided in the records that you were given from Dr. Neubardt. It's dated July 2018. Do you see this here? It has his name at the top and it says copy.

A. Yes.

Q. It says, diagnosis, status post microlumbar diskectomy. Surgery was performed on May 31, 2018. Restrictions "patient is able to work four hours per day due to past spinal surgery due to an injury he sustained at work on May 26, 2017." And it's signed by Dr. Neubardt who performed the surgery. Do you see that?

A. Yes.

Q. And you reviewed this note as part of your review in this case; correct?

A. I assume I did.

Q. And so you see here that Dr. Neubardt certainly connects and puts in writing that the surgery of the microlumbar diskectomy was due to the injury he sustained on May 26, 2017; right?

A. We both read it just now. I see what's written.

Q. You didn't comment on this in your report at all, did you?

A. No, I did not.

Q. Do you disagree with Dr. Neubardt --

A. Yes.

Q. -- when he says that it was sustained because of this?

A. He sustained an injury, but I don't think that's the cause of the herniation which required the surgery. And depending on what Dr. Neubardt really means by that, and I'd have to ask him, I might disagree with that.

Q. Do you know Dr. Neubardt?

A. No.

Q. Do you know of his reputation at all?

A. Yes.

Q. And what do you know of his reputation?

A. I choose not to answer that question.

Q. Well, do you know him to be of a bad reputation?

A. I know of a mixed reputation. And that's all I'm going to say about that, so move on.

Q. Well, respectfully, Doctor, I'm allowed to ask you questions. You can't tell me to move on.

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A. And I don't have to answer.

Q. Well, you kind of do.

A. I'm not going to disparage another surgeon, so I'm not going to say anything more.

Q. Do you think that you're in a better position having reviewed the records and spending some time at once with Mr. Christy to determine whether or not a surgery performed was caused by his accident more so than the surgeon who was treating him for his condition and actually did the surgery?

A. I'm in a much better position to make that opinion having reviewed everything than Dr. Neubardt had on that day when he wrote the note.

Q. Okay. So you disagree with him; correct?

A. Depending on what he's actually saying I probably disagree with him.

Q. Well, it says "past spinal surgery due to an injury he sustained at work on May 26, 2017." That's pretty clear; right?

A. You just read it. I don't know what he really means by that. I'd have to ask him or you could ask him.

Q. Well, reading this document it says that

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--

A. It doesn't say it's causally related. It's not a real legal type opinion document, so I don't know what you mean.

Q. Okay.

A. I can't really comment any further.

Q. Did you review the reports of the Workers' Compensation independent medical exam doctors?

A. I may have some of them, yes. I don't recall.

Q. And you don't do Workers' Compensation evaluations, do you?

A. I don't think I -- no, I do -- I guess the answer to your question is no. I don't really know what that means, but no.

Q. Well, what it means is when you fill out forms for Workers' Compensation and you are asked to evaluate records and propose treatment and give an opinion on whether you think the treatment is causally connected to the workplace injury and should be approved by Workers' Compensation to pay for that treatment; are you aware of that?

A. Yes.

Q. And do you do that?

A. No. Only for my own patients.

Q. Right. So you're aware that there are doctors that are hired specifically on behalf of the Workers' Compensation Board to evaluate treatment and proposed treatment and to render an opinion as to whether or not a workplace accident was causally connected to that treatment? You're aware of that; correct?

A. Correct.

MR. OBREGON: Objection to form.

Q. And you were given the reports of two doctors that saw Mr. Christy on multiple occasions and rendered reports; correct?

A. Yes.

Q. One was Dr. Hausmann and the other was Dr. Sawyer. Do you know them?

A. I know Dr. Sawyer from the past. I don't know Dr. Hausmann.

Q. So I'm going to share my screen with you. This is a report recently of December 3, 2020 from Steven Hausmann, M.D. Do you see this on your screen?

A. Yes.

Q. And you reviewed this as part of your analysis of this case that you were hired for; correct?

A. Yes.

Q. And you see that in addition to December 3, 2020 that Dr. Hausmann examined Mr. Christy on July 5th of 2020 and on February 2nd of 2020? You see that; right?

A. Yes.

Q. And he did prior reports relating to those evaluations that you were provided with and you reviewed as well; correct?

A. Yes.

Q. So he evaluated him three times and he reviews the prior medical history and he lists all the review of records in each report similar to the way you reviewed a list of your review of all the records; right?

A. He lists what records he reviewed, yes. I don't know about the word all, but yes.

Q. In a similar way to you he was asked to evaluate Mr. Christy with an actual exam, to review all the reports, and to render an opinion on causation; correct?

A. I don't know that this would be for causation, but he was rendering an opinion. Workers' Compensation evaluations I thought typically were to -- whether further treatment requested were appropriate, but I could be wrong.

Q. So let me scroll down. All right.

And do you see under diagnosis where it says, work related low back injury, status post lumbar laminectomy and recent lumbar decompression and fusion under diagnosis. Do you see that?

A. Yes.

Q. Do you see where it says, where I've highlighted, relative to the lumbar spine he would have a marked temporary partial degree of disability. If he returned to work he would require a sedentary job, no lifting over ten pounds, no repetitive bending or stooping. He could stand and walk two to three hours per day and sit the remainder of the time he's not working. Do you see that?

A. Yes.

Q. Do you see where it then says, the above diagnosed conditions are causally related to the date of the injury for this claim. Do you see that?

A. Yes.

Q. And you disagree with Dr. Hausmann; right?

A. Yes.

Q. You think he's wrong in his opinion; correct?

A. I disagree. I don't think it's a fair characterization to say he's wrong.

Q. Okay. Well, you have your opinion, he has his opinion; right?

A. And they're different, that's correct.

Q. Doesn't mean you're right and he's wrong or he's right and you're wrong; correct?

A. That's correct.

MR. OBREGON: Objection to form.

Q. You're just doctors that disagree, have different opinions; right?

A. We have different opinions.

Q. Okay. But he's an orthopedist; right?

A. I don't know him to be a spine specialist in any way. I know Dr. Sawyer is not a spine specialist and has never operated on a spine as far as I know, but I don't know Dr. Hausmann's record and career as an orthopedic surgeon, what he does. I would be a very bad person to opine on somebody's hip or knee problem, but somebody who does hips and knees would be a very bad person to opine on somebody's spine problem.

Q. Okay. So you're saying to really opine on Mr. Christy's case you need to be a surgeon, and if you're a board certified orthopedist alone that the opinion wouldn't be as credible as yours on a causation issue like this?

A. I believe I would have more expertise on an opinion regarding a spinal issue than an orthopedic surgeon who's board certified who has never really taken care of any spine patient in an operative fashion.

Q. Would you agree that --

A. And I don't know, Dr. Hausmann may be a spine surgeon. I'm not disputing that. I just don't know.

Q. Okay. All right. Now, I'm bringing you to Dr. Sawyer's IME evaluation of October 9, 2018. Do you see that on the screen?

A. Yes.

Q. And he's a board certified orthopedic surgeon. Do you see that?

A.   Yes.

Q.   And he evaluated him on May 1, 2018. Do you see that?

A.   Yes.

Q.   And also again October 2018?

A.   Yes.

Q.   And you reviewed this record as part of your review; correct?

A.   Yes.

Q.   And similar to you, he examined him, he took a history, and he reviewed records, he lists a lot of the records that he reviewed, and then he forms an impression and opinion.

In his causal relationship, which I have for you, he says "the above diagnosis is causally related to the work-related injury of May 26, 2017." Do you see that?

A.   Yes.

Q.   And the diagnosis he's referring to is lumbar sprain with aggravation of congenital spinal stenosis, status post L5-S1 microlumbar diskectomy and aggravation of low back pain postoperatively. Do you see that?

J. SPIVAK, M.D

A. Yes.

Q. So he's an orthopedic surgeon that has causally connected this first surgery, because this was before the second one, to this accident; correct?

A. In his opinion, correct.

Q. It's his opinion?

A. Yes.

Q. And you didn't reference this in your report that this was his finding; correct?

A. Excuse me?

Q. You didn't reference his finding in your report, did you?

A. This is not part of his medical care. It's listed as something reviewed, but it's not part of his active medical care to be listed.

Q. But it was part of your review to review this record; right?

A. It's in my record review, yes.

Q. And conceivably there's a reason that you charge money to review this record prior to rendering your report; right?

MR. OBREGON: Objection to form.

A. Could you repeat that question about me charging money?

Q. Yes. So you charge money, you get paid for your review of medical records as part of your medical exam service; right?

A. That's correct.

Q. So you get paid to review this report; right?

A. Yes.

Q. So there's obviously a reason that you charge money to review this report, you feel that it's somehow connected with your work in evaluating the claim; right?

A. I review all the records that are sent to me. I don't decide what records to be sent to me or not.

Q. So, so far we can agree that you disagree with Dr. Hausmann and Dr. Sawyer, both who reviewed medical records, examined Mr. Christy, and give an opinion that all the treatment and surgeries are causally connected to the accident? You disagree with them; right?

MR. OBREGON: Objection to form.

A. That's correct.

Q. Did you review the report of Dr. Jeffrey

Perry?

A. Yes. I'm sorry, from the beginning, that was another report that was sent to me last week.

Q. Do you know who Dr. Perry is?

A. Yes, I know him very well.

Q. Okay. And do you have an opinion as to him and his reputation in his area of practice?

A. No.

Q. Do you find him to be a credible physician?

A. Credible, yes.

Q. And you reviewed his report, so you're aware that he reviewed all of the records that you reviewed; correct?

A. Yes.

Q. And he also evaluated Mr. Christy; correct?

A. You have to scroll and show me, but that would not surprise me.

Q. Okay. He does his range of motion?

A. Yes.

Q. And let's look at his impression. That Mr. Christy was in his usual state of health until May 26, 2017, at which time he was in a motor vehicle collision sustaining significant and permanent injuries to his lumbar spine, which has required a course of physical therapy as well as narcotic analgesics and opioids as well as a diskectomy, as well as a lumbar fusion. Do you see where he says that?

A. Yes.

Q. Then do you see where I've highlighted he says, "it can be stated within a reasonable amount of medical certainty that the competent producing cause of his current condition and the treatment that he has received thus far with respect to bodily injuries to his neck, shoulders, and low back are as a direct consequence of the injuries sustained in the accident of May 26, 2017." Do you see that?

A. Yes.

Q. So now he is the third surgeon -- third physician's report that we've looked at who causally connects all of the treatment and procedures to the accident; correct?

MR. OBREGON: Objection to form.

A. I'm not -- with each of the others I have disagreed with their conclusion. I don't know that they're direct causally related as much as this. This is directly causally relating it and I disagree with the conclusion.

Q. Okay. And you're right and he's wrong or are you saying you just differ?

A. I come to a different conclusion.

Q. Now, you've testified before today under oath like this; correct?

A. Yes.

Q. Approximately how many times have you testified under oath at a deposition prior to today?

A. At a deposition that isn't related to my own medical malpractice?

Q. No, any time that you were questioned under oath at a deposition. Approximately, how many times has that happened?

A. It's happened twice for IMEs. This is the second time. And probably for other unrelated work in my medical practice, four or five times.

Q. And I understand that you have had lawsuits brought against you for malpractice prior to today?

A. Yes.

Q. Were you deposed in connection with any of those lawsuits?

A. I just said about four or five of them.

Q. And are any of those cases still pending?

A. Yes, one case is pending.

Q. What's the name of the plaintiff in that case?

A. Bruce Schiffrin, S-C-H-I-F-F-R-I-N, I believe.

Q. Where is that case pending?

A. I don't know.

Q. Do you know what county it's in?

A. No.

Q. Have you been deposed in that case?

A. No.

Q. Have all of the other cases been resolved?

A. Yes.

Q. Have all of them been dismissed as they relate to you?

A. No, there's been one settlement.

Q. And what case was that where there was a settlement?

A. I'm trying to remember the name.

Sometimes you choose to put names out of your head on purpose. I can get it for you, but I don't know the name offhand.

Q. Was it Spiegel; was that the name?

A. There was a Phyllis Siegel, which I was dropped from. Spiegel, no.

Q. Okay.

A. It's an Israeli name. I just don't remember. I can find it for you. I'm not hiding anything.

Q. Okay. And, generally speaking, did that case involve a spinal surgery that you performed?

A. No, actually. I performed three spinal surgeries on that case, but he was ultimately paralyzed by a pain specialist trying a procedure, and they sued the pain specialist who didn't have a deep enough pocket so they then chose to sue me and NYU as well.

Q. Did you consent to the settlement of the cause of action against you?

A. I don't have the choice of consenting or not. NYU had the choice.

Q. And NYU settled the claim brought against you in that case?

A. Yes.

Q. Did you testify in that case?

A. Yes.

MR. SMILEY: Counsel, we would just ask for that case to be identified, please. And we'll follow up in writing.

MR. OBREGON: Thank you.

DOCUMENT/INFORMATION REQUESTED:

Q. Doctor, approximately how many independent medical exams do you perform on behalf of defense law firms on a given year?

A. I would say somewhere between 70 and 80. Maybe 75.

Q. And I saw your billing statement. It indicates that for an IME your base rate is $7,000, which includes evaluation of materials and an evaluation of the plaintiff; is that correct?

A. Yes.

Q. So that's a $7,000 fee you charge?

A. Yes.

Q. So is it fair to say that if you do 75, approximately a year, at $7,000 that you make approximately $525,000 a year performing evaluations of injured plaintiffs and writing reports for defense law firms?

A. Yes.

Q. What percentage of your practice do you devote to performing IMEs?

A. Time wise I spend two hours a week doing it. The remainder of the week is my clinical practice.

Q. In this specific case, am I correct then that you would have charged Mr. Obregon's law firm $7,000 to examine Mr. Christy, review the records, and write a report?

A. Yes.

Q. And that, I believe, you sent an additional bill for additional records reviewed in March for an additional $2,375; does that sound right?

A. That may very well be. If it takes more than two hours it's an extra charge.

Q. So fair to say that just on this case alone the work you were hired to do you've billed out Mr. Obregon's firm $9,375?

A. Yes.

Q. And with the fee that I paid to you to appear today for a two-hour deposition, you've generated $14,675 as a result of work in connection with this case?

A. Yes.

Q. Will you be sending any additional bills to Mr. Obregon for any time or review of records you spend in preparation for today's deposition?

A. No.

Q. How much time did you spend examining Mr. Christy?

A. I don't recall specifically.

Q. Did you make a note of it?

A. No.

Q. Where did you examine him?

A. In an office in Manhattan on 2nd Avenue.

Q. The day that you examined him, were you performing any other examinations of injured plaintiffs as well?

A. I don't recall. If I did, it was one more. It's either one or two.

Q. Generally, how long do you spend in your physical examination of injured plaintiffs?

A. Typically, the visit will take, depending on how complex it is, somewhere between half an hour and 50 minutes.

Q. And do you know with Mr. Christy if it was closer to the half hour or closer to the 50 minutes that you spent in your exam of him?

A. He had a lot of kind of history to go through, so I would assume it's somewhere in the middle of that, but I don't recall specifically.

Q. Was anybody present with you and Mr. Christy during the examination?

A. Probably not. Not directly with us. I have a secretary who leaves when the claimant is all set to go back to the hospital office.

Q. Now, you say you took handwritten notes of the examination?

A. Yes.

Q. And you still have those notes?

A. Yes, I do.

Q. Would you please provide a copy of those to Mr. Obregon?

A. Sure.

Q. And we'd request a copy of the notes of that examination, please.

A. It's a single page, but I would be happy to provide it to you.

MR. OBREGON: We ask that any requests be made in writing and we'll respond appropriately.

MR. SMILEY: Thank you.

Randi, if you could index the request for me, please.

DOCUMENT/INFORMATION REQUESTED:

Q. Did you review the medical records before your physical examination of Mr. Christy?

A. Yes.

Q. And did you write any of your report before you started to examine him in person?

A. No.

Q. Do you have anybody assist you in the preparation of your reports?

A. Yes.

Q. Who assists you?

A. In the preparation of my reports, no, nobody assists me.

Q. Do you have anybody assist you in your examination?

A. No.

Q. Do you actually type up the reports yourself?

A. No, I dictate it. It gets sent, I

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believe, to India where it gets transcribed and then I edit the report.

Q. The section where you talk about the records reviewed, do you dictate all of that or do you have a staff member that does that section for you?

A. I dictate it.

Q. So everything contained within your report was actually dictated by you?

A. Yes.

Q. And everything contained in your report was proofread by you for accuracy?

A. Yes.

Q. Do you know Adam Bender, a physician?

A. I know the name, but I don't know that I know him personally by any experience, no.

Q. Do you agree that the surgical procedures performed by Dr. Neubardt, specifically the laminectomy and the fusion, were medically reasonable procedures to perform?

A. Yes.

Q. If Dr. Bender -- withdrawn.

Dr. Bender, a neurologist, was also hired by Mr. Obregon's firm to evaluate Mr. Christy, and he said that in his report that the medical need for lumbar fusion and the laminectomy is questionable. Do you agree with that statement?

A. I'm not sure what he's questioning, so I don't agree or disagree. You would have to ask him.

Q. Do you know Dr. Sinha? Does that name sounds familiar?

A. The first name.

Q. I think it's Rubin?

A. No, I don't. I take it back. The Sinha I know is a financial analyst. So I don't know a Dr. Sinha.

Q. You said in your report that he should be able to work full time; is that true?

A. If that's what I said in my report then it's true.

Q. What type of work can he do full time in your opinion?

A. I believe he can do his job full time.

Q. Do you know what's involved in his job?

A. I know it involved a fair amount of driving and sales and looking and assessing situations.

Q. And is it your opinion that he's not in pain even though he states that he is?

A. No, that's not my opinion.

Q. Do you have any reason to dispute Mr. Christy's statement that he is still in significant pain in his lumbar spine?

A. Do I have reason to dispute it, yes, I have reason to dispute, but I don't dispute it.

Q. You don't dispute it?

A. You asked me if I had reason to dispute it. There is reason to dispute it.

Q. Do you dispute it?

A. I don't dispute it or not dispute it. The reason to dispute it would be, again, drug seeking behavior because nobody is taking him off of narcotics. So he needs to be in pain to get more narcotics, but I'm not disputing anything. I don't know him well enough and haven't spent enough time with him to dispute it or not dispute it.

Q. Are you aware that he stopped working at his job due to pain?

A. Yes.

MR. OBREGON: Objection.

A. That's his claim that he stopped working.

I don't have a reason why.

Q. Are you aware that he reduced his hours of work to part time for a period of time due to pain?

A. Yes.

Q. And are you aware that he was fired because he wasn't able to work full time?

A. I believe that's in the note somewhere.

MR. OBREGON: Objection to form.

Q. And do you believe that the reason he's not working is so that he can get narcotic medication?

A. No. I think he claims pain potentially because of that. I think he's maybe not working until this lawsuit gets settled.

Q. What is your basis for saying that?

A. Because that's a common motivation of plaintiffs in lawsuits. If they work and do full time they can't get -- achieve the same benefits of a lawsuit. That's a possible motivation for him not to work. That's all. I'm not saying it is. I'm just saying it's possible.

Q. And do you think that he had the laminectomy surgery because of his lawsuit?

J. SPIVAK, M.D

A. No, he had the laminectomy surgery because of an acute disk herniation which occurred nine months after his accident.

Q. Do you believe he was in significant pain such that he chose to undergo the laminectomy?

A. Yes.

Q. And what about the lumbar fusion, do you agree that he was in significant enough pain to undergo the lumbar fusion?

A. I believe so.

Q. And do you think he was able to work full time before the laminectomy despite --

A. I didn't know him beforehand. I can't really comment on that.

Q. So prior to your examination you don't have an opinion as to whether his inability to work from the date of the accident up until your examination was connected to pain from this accident; do you?

MR. OBREGON: Objection to form.

A. Can you repeat the question?

Q. Sure. You're aware that he limited his work hours and that he was unable to work full time as he claims due to the pain in his back from this accident; correct?

A. Yes.

Q. Do you dispute that he was unable to work due to pain from his accident?

A. No.

How much longer are you planning because I do -- I did plan two hours for this.

Q. Yep, we're at 12:31. I'm just wrapping it up, Doctor.

Doctor, have you ever performed a lumbar fusion on one of your patients following an accident where they were rear-ended by another vehicle?

A. I can't think of one specifically, but I certainly may have.

Q. In your review of all of the records including Mr. Christy's deposition and your questioning of him, did you come across any reference to any other accidents that Mr. Christy had either before or after the motor vehicle accident of May 26, 2017?

A. I don't believe so. I don't recall any specific ones.

Q. And is it fair to say that you don't have a belief that he had sustained an injury to his back from some unknown accident unrelated to the May 26, 2017 car accident?

MR. OBREGON: Objection.

A. I had no information that would suggest that.

Q. I thank you for your time. I have no further questions for you, Doctor.

MR. OBREGON: Thank you, Doctor.

A. My pleasure.

(Time noted: 12:33 p.m.)

____

JEFFREY MICHAEL SPIVAK, M.D.

Subscribed and sworn to before me

this ______ day of _____________ 20__.

____

NOTARY PUBLIC

---------------- I N D E X -----------------

WITNESS	EXAMINATION BY	PAGE
JEFFREY MICHAEL SPIVAK, M.D.	MR. SMILEY	6

------------- DOCUMENT REQUEST -------------

PAGE		
	8	Billing statements
	11	Correspondence from Mr. Obregon or his law firm
	101	Copy of the notes from examination

-------- INFORMATION TO BE FURNISHED -------

PAGE		
	97	Name of settled case to be identified

----------------- EXHIBITS ----------------

(None)

RULINGS

PAGE	LINE

(None)

oOo

CERTIFICATE

I, Randi Vecchione, a Shorthand Reporter and Notary Public of the State of New York, do hereby certify:

That, JEFFREY MICHAEL SPIVAK, M.D., the witness whose examination is hereinbefore set forth, was duly sworn, and that such examination is a true record of the testimony given by such witness.

I further certify that I am not related to any of the parties to this action by blood or marriage; and that I am in no way interested in the outcome of this matter.

____

Randi Vecchione

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