IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA
TAMPA DIVISION

JEFFREY THELEN, Plaintiff, v. SOMATICS, LLC; AND ELEKTRIKA, INC., Defendant.	)	Case No.: 8:20-CV-1724

VOLUME III OF VII (pp. 1 - 243)
JURY TRIAL PROCEEDINGS
BEFORE THE HONORABLE THOMAS P. BARBER
June 2, 2023

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EXHIBITS

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[redacted]

(Jury in at 10:42 a.m.)

THE COURT: Very good. Have a seat. Ready for another witness, yes? Another live witness, yes?

All right. Go ahead and raise your hand for me, please.

(Witness sworn.)

THE COURT: All right. Have a seat and tell us your name and how to spell it, please.

THE WITNESS: My name is Bennet Omalu, B-e-n-n-e-t, Omalu, O-m-a-l-u.

THE COURT: All right. Go ahead whenever you're ready.

BENNET OMALU,

a witness called on behalf of the Plaintiff, being first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ESFANDIARI:

Q. Good morning, Dr. Omalu.

A. Good morning, sir.

Q. All right. Can you please introduce yourself to the jury, telling them where you live and your profession, please?

A. Well, I'm a forensic pathologist and a neuropathologist. I work for Bennet Omalu Pathology, which is a physician practice in Sacramento, California. I'm also a clinical

10:44AM professor of laboratory medicine and medical pathology at the University of California Davis.

Q. All right, Doctor. And you're a medical doctor, correct?

A. Yes, sir.

Q. All right. I'd like to go over your educational background, if that's okay with you.

A. Yes.

Q. All right. Can you please tell us kind of a brief chronology of your educational background starting with medical school as well as anything post -- afterwards?

A. It's quite long.

Q. I know it is.

A. So I went to medical school in Nigeria, in Africa. It is a seven-year medical school curriculum fashioned after the British curriculum. Six years of medical school and one mandated year of clinical internship, whereby you work as a physician, but under supervision. So I worked under departments of pediatrics, obstetrics and gynecology, general surgery, and internal medicine.

I completed that. I began work as an emergency room physician and a general practitioner in Nigeria for about four years, whereby I performed very busy surgeries, delivered about 400 babies, and I tended to all types of patients.

I applied to the World Health Organization to come to the United States in 1994. I came to the University of

Washington in Seattle, Washington at the School of Public Health. I spent about nine months in Washington; then went to New York City to Columbia University at Harlem Hospital Center to do a five-year residency training program in anatomic pathology and clinical pathology. Because of exceptional scholarship, the five years were reduced to four years for me, and I now went in the fifth year to the University of Pittsburgh, Pittsburgh, Pennsylvania, to do a one-year fellowship in forensic pathology. I completed that and again stayed back at the University of Pittsburgh to do another two-year fellowship in neuropathology.

I completed that and again proceeded to the School of Public Health at the University of Pittsburgh to do a three-year program in epidemiology. You got that? Okay. Epidemiology. I secured a masters in public health, and then went back to Carnegie Mellon University to the Tepper -- T-e-p-p-e-r -- the Tepper School of Business to do a three-year program in business administration with a focus on medical management. I completed that.

I sat for board certification examinations in five subspecialties of medicine: In anatomic pathology, clinical pathology, forensic pathology, neuropathology, and medical management, which I all passed. I secured a master's in public health and a master's in business administration.

Since I completed all my trainings, I've worked as an

10:47AM academic pathologist --
Q. Let me stop you right there, Doctor.
A. All right.
Q. So you identified a number of board certifications. I kind of want to go through each one of them, because many of us may not be familiar exactly what they are. So you identified forensic pathology, neuropathology, anatomic pathology, and clinical pathology. What is anatomic -- what is forensic pathology, Doctor?
A. Forensic pathology is a subspecialty of medicine that studies disease and trauma in relation to death and in relation to permanent bodily injury.

Forensic pathologists tend to dead patients and living patients, and we perform analysis to determine cause and mechanism of death, cause and mechanisms of injury, and cause and mechanisms of disease.
Q. And also with regards to neuropathology, what is that, Doctor?
A. Neuropathology is a subspecialty of medicine that deals with all types of brain diseases, all types of brain damage, and all types of permanent brain impairment and dementias. We study anything about the disease of the central nervous system of the brain in both living and dead patients. So the neuropathologist is like the -- the brain specialist in medicine.

10:49AM 1 Q. Thank you. And very briefly, the other two board
10:49AM 2 certifications, anatomic pathology and clinical pathology, what
10:49AM 3 are those, Doctor?
10:49AM 4 A. Clinical pathology is a subspecialty of medicine that
10:49AM 5 deals with disease diagnosis through the test and analysis of
10:49AM 6 all types of body fluids: Blood, urine, bile, cerebral spinal
10:49AM 7 fluid. We perform analysis in the labs to determine disease
10:49AM 8 diagnosis. A very good example, if you go to see your doctor
10:49AM 9 for your annual physical and your doctor sends you to the lab
10:49AM 10 for your fasting blood glucose, your cholesterol level, the
10:50AM 11 doctor doesn't tell you, but he sends your sample to a clinical
10:50AM 12 pathologist so -- who will now determine the levels of
10:50AM 13 substances in your blood and make a recommendation to your
10:50AM 14 doctor.
10:50AM 15 Q. And what about anatomic pathology, Doctor?
10:50AM 16 A. An anatomic pathologist is -- anatomic pathology is a
10:50AM 17 subspecialty of medicine that deals with disease diagnosis
10:50AM 18 through the study of the structure or architecture of disease.
10:50AM 19 A good example is you feel a lump in your breast. You go to
10:50AM 20 your doctor. He takes a biopsy. Though he does not tell you,
10:50AM 21 but he sends it to an anatomic pathologist who will determine
10:50AM 22 if it's cancer or not, what type of cancer it is, and what type
10:50AM 23 of treatment you should get.
10:50AM 24 Q. All right. I'd like to focus your work in the
10:50AM 25 neuropathology and forensic pathology that you talked about,

10:51AM 1 Dr. Omalu.
10:51AM 2 A. Yes.
10:51AM 3 Q. And actually before I get that, you said you're licensed
10:51AM 4 to practice medicine, correct?
10:51AM 5 A. Yes.
10:51AM 6 Q. In how many states, Doctor?
10:51AM 7 A. Four states: Hawaii, Indiana, Pennsylvania, and
10:51AM 8 California, but this year -- I'm getting older. I'm beginning
10:51AM 9 to wind down, so I took down Pennsylvania.
10:51AM 10 Q. All right. In terms of your work as a neuropathologist,
10:51AM 11 can you explain to us what you do, your background in terms of
10:51AM 12 analyzing brain injury, in terms -- because you talked about
10:51AM 13 your educational qualifications. I'm now interested in kind of
10:51AM 14 your experience.
10:51AM 15 A. Oh. Well, I've been working as a pathologist for about 30
10:51AM 16 years. I've examined conservatively about 13,000 brain tissues
10:52AM 17 and specimens. So what I do on daily basis is to study and
10:52AM 18 make a diagnosis of all types of brain diseases, make a
10:52AM 19 determination of what caused the brain diseases and the
10:52AM 20 mechanism. One area where I've emerged as a respected
10:52AM 21 authority is in brain injury, all types of brain injury and the
10:52AM 22 long-term effects of brain injuries in both living and dead
10:52AM 23 patients.
10:52AM 24 Many years ago, about 20 years ago, I performed
10:52AM 25 autopsies on football players, and I made a link that playing

10:53AM 1 football causes brain damage, similar to other types of brain
10:53AM 2 damage human beings suffer.
10:53AM 3 So I receive brain samples from all over the world
10:53AM 4 from the most respected hospitals for my opinion on all types
10:53AM 5 of cases.
10:53AM 6 Q. Thank you, Doctor. And have you had any publications in
10:53AM 7 the peer-reviewed literature on the topics of brain injury,
10:53AM 8 Doctor?
10:53AM 9 A. Yes. So I've quite a number. When I began my career, my
10:53AM 10 target was to have 50 publications. So I've passed that now.
10:53AM 11 I've also published some books and book chapters in medical
10:53AM 12 textbooks.
10:53AM 13 Q. Can you give us the title of a couple of your books,
10:53AM 14 Doctor? Was one of your titles *Truth Doesn't Have a Side*?
10:54AM 15 A. That is my memoir. That was my memoir published in 2017,
10:54AM 16 I believe.
10:54AM 17 Q. Is another one of your books *Brain Damage in Contact*
10:54AM 18 *Sports*?
10:54AM 19 A. Yes, sir.
10:54AM 20 Q. And is that book cited -- cites to the literature and the
10:54AM 21 research on brain injury?
10:54AM 22 A. Yes.
10:54AM 23 Q. Doctor, I have a copy of your CV. It's extensive, lists a
10:54AM 24 number of awards that you've received. Just to keep things
10:54AM 25 moving, in terms of awards, what would you consider one of the

10:54AM awards that you are most proud of or most important to you?
10:54AM A. Well, I've received countless awards from all over the
10:54AM world, but the one I am very proud of, which I received here in
10:54AM Florida, was the highest award any physician in the United
10:54AM States can get awarded by the American Medical Association, the
10:54AM distinguished service award, and I was made to believe that
10:55AM I've been the youngest recipient of the award. I was very
10:55AM humbled.
10:55AM Q. Thank you.
10:55AM A. And then in the past couple of years, I received three
10:55AM honorary Ph.Ds. One specifically I'm very proud of was the one
10:55AM I got from the Royal Colleges of Surgeons of Ireland, and then
10:55AM I've received two other ones from two universities in the
10:55AM United States.
10:55AM Q. All right. And Doctor, you've testified in court
10:55AM proceedings in the past, correct?
10:55AM A. I've testified hundreds of times.
10:55AM Q. And you work both in criminal cases on behalf of the
10:55AM prosecution and the defense as well as in civil cases, correct?
10:55AM A. Yes, sir.
10:55AM Q. All right. Have your given any testimony in front of any
10:55AM governmental bodies, Doctor? By that, I mean, for example, the
10:55AM U.S. Congress or any state --
10:55AM A. Yes, yes. I've testified before committees of the United
10:56AM States Congress maybe three to five times. I've testified

10:56AM 1 before committees of different state houses of assemblies,
10:56AM 2 including the state of Florida, state of New York several
10:56AM 3 times. And then a couple of years ago, I was appointed a
10:56AM 4 member of the traumatic brain injury committee of the state of
10:56AM 5 California to advise the governor and the Department of Health
10:56AM 6 and Rehabilitation on matters relating to brain damage and
10:56AM 7 brain injury.
10:56AM 8 Q. In that -- your role with regards to the state of
10:56AM 9 California and the advisory capacity you had for the governor,
10:56AM 10 did you also provide any -- have any discussion about ECT and
10:56AM 11 its link to brain injury?
10:56AM 12 A. Yes, it came up in some of our discussions, yes.
10:56AM 13 Q. All right, Doctor. So our office retained you to provide
10:57AM 14 expert opinions in this case, correct?
10:57AM 15 A. Yes.
10:57AM 16 Q. All right. And as most experts, you are compensated for
10:57AM 17 your time, correct?
10:57AM 18 A. Yes.
10:57AM 19 Q. All right. What is your compensation when you provide
10:57AM 20 this type of forensic expert work?
10:57AM 21 A. So at Bennet Omalu Pathology, we have a standard fee
10:57AM 22 schedule. Our hourly rate is $700 an hour for a pathologist,
10:57AM 23 and then retainer fee, we charge a flat retainer fee so that it
10:57AM 24 doesn't get exorbitant, a flat flee of $10,000. If it's a big
10:57AM 25 case, $15,000. And then if we testify, one day is $8,000, and

10:57AM then doing depositions, it's $1,000 an hour.
10:57AM Q. All right. And you flew from California yesterday to be
10:58AM with us here today, correct, Doctor?
10:58AM A. Yes. I got in here like at 3:00 a.m.
10:58AM Q. All right. We'll try not to keep you any longer than we
10:58AM need to, Doctor.
10:58AM So what was the assignment I gave in you this case,
10:58AM Doctor?
10:58AM A. Well, you sent me materials on this case of Jeffrey Thelen
10:58AM to do a case-specific differential diagnosis to determine the
10:58AM presence or absence of brain damage and also to determine with
10:58AM a reasonable degree of medical certainty any substantial or
10:58AM significant factor that may have contributed or caused his
10:58AM permanent brain damage.
10:58AM Q. Okay. So use of terms there that may not be familiar to
10:58AM everyone, Dr. Omalu. What is differential diagnosis?
10:58AM A. Well, differential diagnosis is a method every physician
10:58AM in the world adopts to make a determination of disease,
10:59AM diagnosis, and make a determination of the cause of the
10:59AM disease. Like the word says, "differential", so when you
10:59AM encounter a patient, dead or alive, you document the symptoms
10:59AM of the patient. You document the signs. Signs are the
10:59AM evidence you elicit from the patient by talking to the patient,
10:59AM by performing the logical analysis, a laboratory analysis. So
10:59AM when you have the entire evidence before you, you now sit down

10:59AM 1 and apply all your knowledge, in medical school and in all your
10:59AM 2 training, to rule out every other disease known to mankind and
10:59AM 3 have -- you narrow it down to now a few diseases that are most
11:00AM 4 likely the causes of the patient's symptoms and signs. And
11:00AM 5 then you write it number one, two, three, four. Number one is
11:00AM 6 the most likely diagnosis.
11:00AM 7 Why do we write one, two, three, four? Because there
11:00AM 8 is almost no patient that has one exclusive disease. So a
11:00AM 9 patient could have one, two, three, or four diseases or causes,
11:00AM 10 but each and every disease you enumerate by itself exclusive of
11:00AM 11 all the others is a significant and substantial factor by
11:00AM 12 itself in the causation of the disease.
11:00AM 13 So what that means in differential diagnosis, the
11:01AM 14 presence or absence of any other cause does not in any way
11:01AM 15 mitigate, nullify or annul a disease or a cause of a disease.
11:01AM 16 Does that make sense?
11:01AM 17 Q. I think so, Doctor. So basically if I can understand that
11:01AM 18 is you review all the material available for the patient, which
11:01AM 19 could include the medical records and any studies that have
11:01AM 20 been performed, you get information about the patient, you
11:01AM 21 utilize your extensive training and experience to try to
11:01AM 22 determine what is the likely cause -- first of all, if the
11:01AM 23 person is injured, and what is the likely cause?
11:01AM 24 A. Yes, sir.
11:01AM 25 Q. All right. And for your purposes in this case, what

material did you review? What was the foundation of the material you reviewed and relied upon in helping you formulate your opinions?

A. Well, you sent me quite voluminous medical records of Mr. Thelen, which I reviewed and summarized quite extensively in my report. I documented the manifesting symptoms. The standard of practice in medicine is you never question a patient. If a patient tells you he's having a headache, you don't tell him, "No, you're not having a headache." These are called symptoms as specified by the patient.

So once you've documented the symptoms, you now confirm the symptoms with laboratory evidence or scientific evidence. Then you combine the signs and symptoms, put them together, and arrive diagnosis and causation.

Q. In -- as part of your review, did you also review certain depositions? This is, like, litigation, so there's depositions that you might not normally have as a regular patient. Did you review the depositions of Mr. Thelen and his family members?

A. Yes, sir, but in terms of evidentiary value, the medical evidence supersedes the depositional evidence.

Q. Of course. Of course. The jury has already heard from other experts; for example, Dr. Read. Were you provided with Dr. Read's report, and did you take his opinions into account?

A. Yes, sir. As doctors, we can rely upon reports of another doctor, of scientists. So you provided Dr. Read's report to

11:03AM 1 me. He performed a systematic review of the literature and
11:03AM 2 cited the literature he reviewed, so I relied upon his report.
11:03AM 3 Q. When you read his report, did you have any criticism with
11:03AM 4 any of the opinions he'd reached in his report?
11:04AM 5 A. None that I recall, no.
11:04AM 6 Q. All right. So you mentioned you reviewed the medical
11:04AM 7 records, Doctor. And I want to go through three periods of
11:04AM 8 Mr. Thelen's life. I want to talk about the period prior to
11:04AM 9 his ECT, and then second I want to talk about the period during
11:04AM 10 his ECT which was between May 2014 and July of 2016, and then
11:04AM 11 lastly, I want to talk about after ECT. Is that okay?
11:04AM 12 A. Yes, sir.
11:04AM 13 Q. All right. So let's start with pre-ECT, Doctor. In the
11:04AM 14 medical records and documents you viewed, can you provide us --
11:04AM 15 what did they reveal to you concerning Mr. Thelen's condition
11:04AM 16 prior to his ECT?
11:04AM 17 A. [redacted]
11:04AM 18 [redacted]
11:05AM 19 [redacted]
11:05AM 20 [redacted]
11:05AM 21 [redacted]
11:05AM 22 [redacted]
11:05AM 23 But primarily his major ailment was that of
11:05AM 24 depression, chronic depression. Now, that was years ago.
11:05AM 25 Looking back now, the first they should done for him, if it was

known, is to check his testosterone level because people who have a chronic depression at younger ages science has shown many times is associated low testosterone. So you treat the low testosterone while you're treating the depression, and I met Mr. Thelen this morning, and, lo and behold, a couple of months ago he was diagnosed with low testosterone.

Q. We'll get to that later. Right now I just want to focus on --

A. So those were his main ailments. The depression was recalcitrant, and he was afforded -- given the option of electroconvulsive therapy.

Q. In terms of the -- you would agree with me that his alcohol use pre-ECT was extensive, correct, Doctor?

A. I wouldn't want to use the word extensive because it's multifactorial. You know, his dynamic is what we call genomic or pharmacogenomics. The way drugs behave in human beings are dependent on your genetic makeup.

Why do I say that? When I met Mr. Thelen this morning, I confirmed, he has a genetic confirmation that he is a fast metabolizer. He's homocyclic for a specific enzyme, so he metabolizes alcohol very quickly and other drugs, and people like him are less likely to suffer from the side effects of drugs.

Q. In terms of the medications that he was taking, the pharmaceutical medications, the Prozac, the Wellbutrin and so

11:07AM 1 forth, you agree with me that the medical records indicated
11:07AM 2 that they were not effective in helping with his depression?
11:07AM 3 A. Yeah, so they were not effective. One, partly because
11:07AM 4 he's a fast metabolizer. Any drug you give him, he will
11:07AM 5 metabolize it quickly. Also given that he had low testosterone
11:07AM 6 that was not treated. So his depression was chronic and
11:07AM 7 recalcitrant and non-responsive.
11:07AM 8 Q. And then did the medical records reveal that he eventually
11:08AM 9 underwent ECT starting May 2014?
11:08AM 10 A. Yes, so starting in 2014, he received ECT for
11:08AM 11 approximately two years, 95 electroshocks in total.
11:08AM 12 Q. And the duration appeared to be about once every two
11:08AM 13 weeks?
11:08AM 14 A. Yeah, the records said once or twice a week generally,
11:08AM 15 yes, sir.
11:08AM 16 Q. All right. Is that a significant number of exposures to
11:08AM 17 ECT, Doctor?
11:08AM 18 A. Yes, it was. Yes, sir. Do I explain why?
11:08AM 19 Q. I'm going to ask you in a second. In terms of the medical
11:08AM 20 records pre-ECT, did they have any indication as to his memory?
11:08AM 21 Were they indicating that his memory was disturbed and that he
11:08AM 22 didn't have recall, or were they indicating that his memory was
11:08AM 23 intact?
11:09AM 24 A. Well, from my review of the medical records, prior to his
11:09AM 25 ECT, I did not encounter or suspect that he had any significant

memory impairment. His memory was intact.

MR. ESFANDIARI: Your Honor, permission to publish and admit a medical record. This will be Exhibit 42.

THE COURT: Medical record?

MS. COLE: No objection, Your Honor.

THE COURT: Admitted.

What I should say, if I haven't already, when the lawyers talk about publishing things, it sounds like publishing a book or whatever. It's a legal word for show it to you in court. Anything that is admitted in evidence you'll have a big stack of when you go back to deliberate. You can look at it in more detail then. Some of the stuff they put up here is admitted, and some of it isn't. Only the stuff that's admitted goes to the jury room. The rest of it, you just see in court and that's the end of it, all right? Go ahead.

MR. ESFANDIARI: For the record, Your Honor, this is Exhibit 42.

BY MR. ESFANDIARI:

Q. Dr. Omalu, I'm placing in front of you, this is a medical record dated April 24th, 2014. It's about a month before Mr. Thelen's ECT; is that right?

A. Yes, sir.

Q. All right. And I want to go to the second page where an examination was conducted. Do you see, "Physical exam, psychiatric"?

11:10AM A. Yes, sir.
11:10AM Q. All right. And can you read the highlighted portion there?
11:10AM A. "The patient's recent and remote memory were intact. The patient's judgment and insight were fair."
11:10AM Q. All right. Thank you, Doctor. And that's consistent with your general review of the medical records pre-ECT, that his -- I have a number of other of these documents I can show, but in the interest of time, do you agree with me that the majority of them, if not all of them, indicated that his memory was intact?
11:11AM MS. COLE: Objection. Leading, overbroad.
11:11AM THE COURT: Well, I think it's a good question to save some time. Did you understand his question?
11:11AM THE WITNESS: Yes, Your Honor.
11:11AM THE COURT: What's your answer?
11:11AM THE WITNESS: Yes.
11:11AM THE COURT: Thank you.
11:11AM BY MR. ESFANDIARI:
11:11AM Q. Now I want to focus on the period during ECT, the May 2014 through July 2016. You reviewed those records as well, correct, Dr. Omalu?
11:11AM A. Yes.
11:11AM Q. In terms of memory complaints, what did those records reveal during that period of ECT?
11:11AM A. Well, after ECT seizures, he had transient short-term

memory loss which was stated would be transient and that he was expected to fully recover from.

Q. In terms of when -- the ECT induces a seizure; is that right, Doctor?

A. Yes, sir.

Q. What is a seizure, Dr. Omalu?

A. A seizure is not a normal event in the human brain. A seizure is not a physiological event. As a normal human being, you should not have a seizure ever in your life. So a seizure being abnormal is a symptom manifesting brain injury, manifesting brain damage. Brain damage could be congenital, whereby you're born with an abnormal brain, like in people who have congenital epilepsy, or it may be caused by external factors, external energy being transmitted to the brain, be it kinetic energy, chemical energy, or electrical energy. So whenever any human being suffers a seizure, it is a manifestation of brain injury and brain damage.

Q. Is -- you mentioned epilepsy. What is epilepsy?

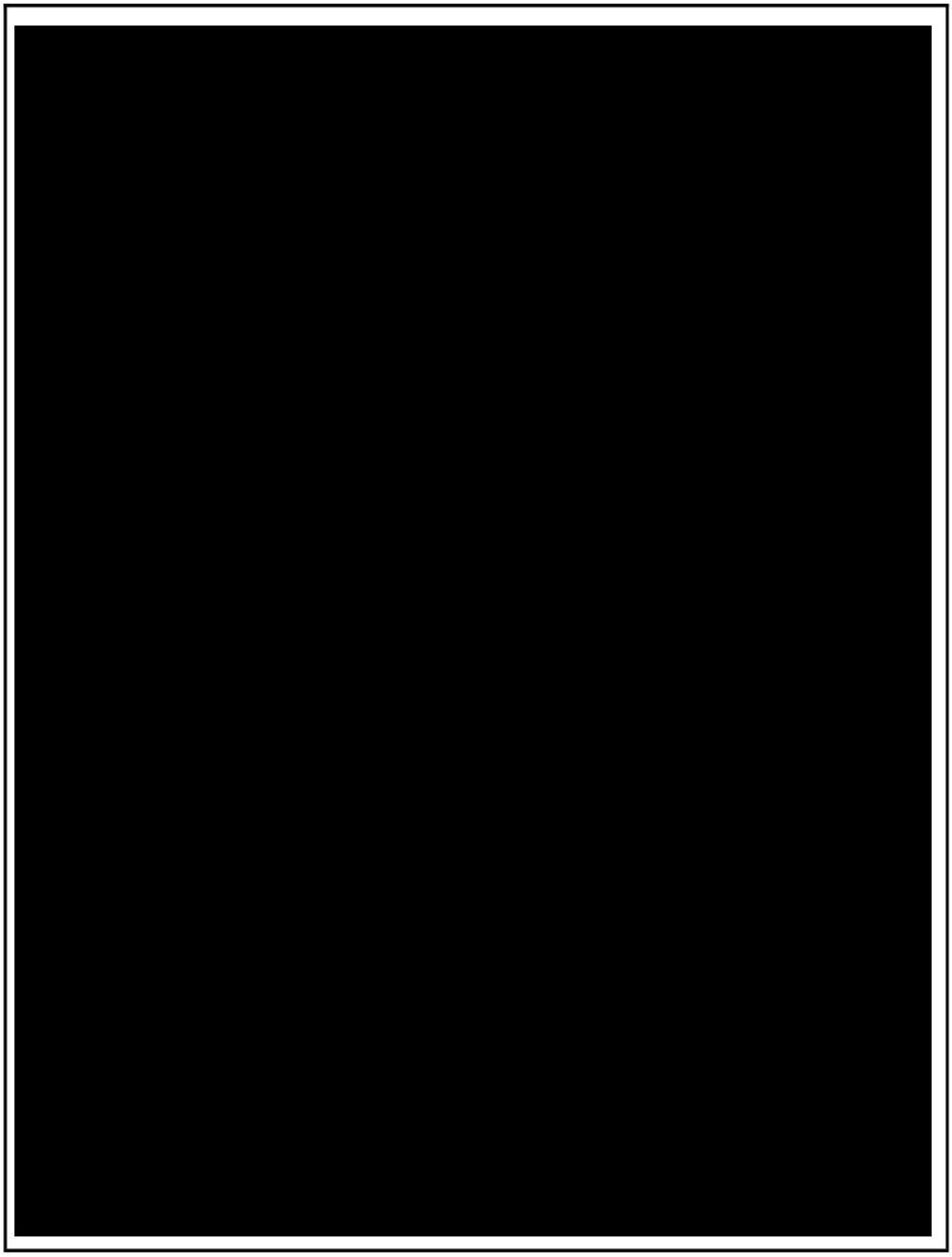
A. Epilepsy?

Q. Yeah.

A. Epilepsy, it's a disease whereby an individual suffers spontaneous seizures, most commonly due to an abnormal brain, a brain that did not ever look well inside the womb or a brain that was damaged early in childhood. So when you have repeated seizures due to a specific known cause that is congenital or

11:13AM 1 begins early childhood, generally we refer to them as epilepsy.
11:14AM 2 There are different types of epilepsy.
11:14AM 3 Q. And in terms of the -- is there a branch of the medical
11:14AM 4 field that tries -- people who suffer from epilepsy, tries to
11:14AM 5 prevent those seizures, correct?
11:14AM 6 A. Yes, sir. The primary objective in managing seizures or
11:14AM 7 epilepsy is you, as the physician, first do no harm. You do
11:14AM 8 all you can to prevent and stop the patient from having a
11:14AM 9 seizure. Even if the patient would have a seizure, let them be
11:14AM 10 spread out as much as possible because a seizure by itself is a
11:14AM 11 manifestation of brain damage, of brain injury, of congenital
11:14AM 12 malformation. A seizure by itself causes brain damage. So --
11:15AM 13 MS. COLE: Your Honor, I'm sorry. I object based on
11:15AM 14 your order and --
11:15AM 15 THE COURT: Yeah, let's take a break.
11:15AM 16 MS. COLE: -- non-responsive to the question.
11:15AM 17 THE COURT: Let's take a five-minute break. Leave
11:15AM 18 your tablets on the chair, please, and we'll see you in just a
11:15AM 19 few minutes. Thank you.
20 [redacted]
11:15AM 21 [redacted]
11:15AM 22
11:15AM 23
11:15AM 24
11:15AM 25

[redacted]



[redacted]

(Jury in at 11:23 a.m.)

THE COURT: All right. Members of the jury, there was a question that was asked right before our break. The question was, "And in terms of the -- is there a branch of the medical field that tries -- people who suffer from epilepsy, tries to prevent those seizures, correct?" And then there was an answer. So you're to disregard that question and that

11:25AM 1 answer, all right? Disregard that question and that answer.
11:25AM 2 Go ahead.
11:25AM 3 BY MR. ESFANDIARI:
11:25AM 4 Q. All right, Doctor. I want to focus back on to the ECT and
11:25AM 5 Mr. Thelen's treatment of ECT during that time period. Do the
11:25AM 6 records as you've reviewed them, do they indicate that he was
11:25AM 7 suffering from short-term memory loss?
11:25AM 8 A. During the ECT, yes. You had asked that, yes.
11:25AM 9 Q. Yes.
11:25AM 10 A. And he was told they were reversible and transient, yes.
11:25AM 11 Q. And so during the period of ECT, no medical doctor ever
11:25AM 12 told him that, "The memory loss that you're suffering from is
11:25AM 13 permanent;" is that correct?
11:25AM 14 A. To the best of my recollection, I did not encounter that
11:25AM 15 in the medical records I reviewed, yes, sir.
11:25AM 16 Q. And then Mr. Thelen stopped ECT July 25th, 2016. You also
11:25AM 17 reviewed the records after his treatment?
11:26AM 18 A. Yes, after that to 2023, yes, sir.
11:26AM 19 Q. All right. And what do the records -- in terms of that
11:26AM 20 one year after ECT treatment, in terms of cognition, what do
11:26AM 21 they reveal about Mr. Thelen and his complaints?
11:26AM 22 A. So the medical records after the ECT therapy indicated the
11:26AM 23 emergence of new symptomatology. Now, in differential
11:26AM 24 diagnosis, there is the concept of temporality, temporality,
11:26AM 25 meaning time association. A good example I give when I teach

11:26AM 1 is if you're suffering from a flu, you are exposed to the virus
11:26AM 2 before your symptoms of flu begin. You don't suffer from flu
11:27AM 3 and then become exposed to the virus that causes the flu.
11:27AM 4 MS. COLE: Objection, Your Honor. Beyond the scope
11:27AM 5 of the question.
11:27AM 6 THE COURT: Why don't you ask the question again,
11:27AM 7 please.
11:27AM 8 MR. ESFANDIARI: I think he was just elaborating.
11:27AM 9 BY MR. ESFANDIARI:
11:27AM 10 Q. But in terms of the post-ECT period, Dr. Omalu, did the
11:27AM 11 memory complaints continue?
11:27AM 12 A. Yes, sir, the memory complaints continued and progressed
11:27AM 13 up until today. So he has permanent and severe memory
11:27AM 14 impairment. I hope I don't get emotional. I met Mr. Thelen
11:27AM 15 this morning, and he exhibited to me what I called the book
11:27AM 16 sign.
11:27AM 17 MS. COLE: Objection, Your Honor. Beyond the scope
11:27AM 18 of the question.
11:27AM 19 THE COURT: Yes.
11:27AM 20 BY MR. ESFANDIARI:
11:27AM 21 Q. I'll get to that, Dr. Omalu.
11:27AM 22 A. Okay. So he to live daily has to carry a book with him --
11:28AM 23 MS. COLE: Objection, Your Honor. Beyond the scope
11:28AM 24 of the question.
11:28AM 25 THE COURT: Well, I don't think there was a question

11:28AM yet. So go ahead and ask a question, and listen to his
11:28AM question carefully and answer the question he asks you. If he
11:28AM wants additional information, he'll ask you an additional
11:28AM question. Go ahead.
11:28AM BY MR. ESFANDIARI:
11:28AM Q. Dr. Omalu, and it's my apologies. I should be asking
11:28AM better questions, but -- and it's a broad question. In terms
11:28AM of after ECT, did Mr. Thelen continue to complain of memory
11:28AM problems? And this is a yes or no actually.
11:28AM A. Yes, sir.
11:28AM Q. All right. Can you explain the memory problems that he
11:28AM was having and also whether he at any point ever received any
11:28AM testing to analyze whether he was having brain injury and so
11:28AM forth?
11:28AM A. So he had symptoms of memory impairment, and I will give
11:28AM you one, two, three, four, five examples of symptoms he was
11:29AM having.
11:29AM One, he cannot remember anything in his activities of
11:29AM daily living if he does not write it down. So wherever he
11:29AM goes, he has this small book he carries to write things down.
11:29AM Otherwise he wouldn't remember.
11:29AM Wherever he goes, for him to get to where he is
11:29AM going, he must use GPS. He lives in a small town, Norfolk.
11:29AM Many times he is going to visit his parents, something he had
11:29AM done all his life, he would get lost. Once -- in his house, he

11:29AM 1 has two or three copies or items of the same thing because he
11:29AM 2 forgets that he has bought a specific kitchen utensil. Once he
11:30AM 3 went to see his doctor. He forgot what he was not wearing any
11:30AM 4 clothes on him.
11:30AM 5 MS. COLE: Your Honor, this is beyond the scope of
11:30AM 6 the question.
11:30AM 7 THE COURT: Overruled.
11:30AM 8 THE WITNESS: Because to engage in positive social
11:30AM 9 interaction, you need to have an intact memory. You remember
11:30AM 10 people's names. He does not have friends today because he
11:30AM 11 doesn't remember, and he says things that are improper because
11:30AM 12 he just cannot remember.
11:30AM 13 BY MR. ESFANDIARI:
11:30AM 14 Q. Dr. Omalu --
11:30AM 15 A. Those are some of the examples of the memory impairment he
11:30AM 16 is having.
11:30AM 17 Q. Was he also complaining of having forgotten past memories,
11:30AM 18 memories of childhood and so forth?
11:31AM 19 A. Yes, sir. He forgot he was married at some point. He met
11:31AM 20 his wife, his former wife, at, I think, a grocery store and
11:31AM 21 could not remember that that was his wife, his former wife. He
11:31AM 22 did not even remember that he was married.
11:31AM 23 Q. Did at some point his medical providers refer him to a
11:31AM 24 neuropsychologist by the name of Dr. Hannappel?
11:31AM 25 A. Yes, sir, his physicians at some point diagnosed the

11:31AM 1 memory impairment to be permanent and progressive and referred
11:31AM 2 him to a neuropsychologist to perform neuropsychological
11:31AM 3 testing to document evidentiary his symptoms. So these are the
11:31AM 4 signs. We call them symptoms and signs.
11:31AM 5 Q. Did the examination performed by Dr. Hannappel -- and the
11:31AM 6 jury has already heard from Dr. Hannappel, but did that reveal
11:32AM 7 neurocognitive decline, Dr. Omalu?
11:32AM 8 A. Yes, neurocognitive decline is a big terminology we use.
11:32AM 9 Cognitive means your intuition, your intelligence, and memory
11:32AM 10 is part of intelligence. So when you hear "neurocognitive", a
11:32AM 11 component, a major, major component of neurocognitive
11:32AM 12 impairment is memory impairment.
11:32AM 13 Q. Do you have any criticism of Dr. Hannappel's report and
11:32AM 14 findings?
11:32AM 15 A. No, to the best of my recollection as I sit here, no. No.
11:32AM 16 Q. And you relied on those -- on his findings along with the
11:32AM 17 other medical records in reaching your decisions and coming to
11:32AM 18 a conclusion?
11:32AM 19 A. Yes, sir, because Mr. -- Dr. Hannappel was part of his
11:32AM 20 treating physicians. He wasn't like a retained expert. It was
11:32AM 21 part of the medical records. I had no reason to suspect that
11:33AM 22 he was playing foul or something, no.
11:33AM 23 Q. And in terms of diagnostic testing in addition to the
11:33AM 24 neuropsych testing, did Mr. Thelen also have what we call an
11:33AM 25 EEG?

11:33AM 1 A. Yes, sir.
11:33AM 2 Q. Can you explain to the jury what is an EEG?
11:33AM 3 A. Again, an EEG is a method we use just like CT scan, MRI.
11:33AM 4 These are what we call translational studies, translational
11:33AM 5 studies. So an EEG was simply invented to study the electrical
11:33AM 6 patterns in the human brain. The human brain functions at
11:33AM 7 negative millivolts, minus 90 millivolts, very infinitesimal.
11:33AM 8 So EEG documents the patterns of electrical activity in the
11:33AM 9 brain. Each disease has an identifiable pattern of EEG. It's
11:34AM 10 called electropathonegenic, electroencephalogram, EEG. So EEG
11:34AM 11 was done and generated --
11:34AM 12 MS. COLE: Objection, Your Honor.
11:34AM 13 THE COURT: What's the objection?
11:34AM 14 MS. COLE: May we come sidebar, please?
11:34AM 15 THE COURT: Yes.
11:34AM 16 [redacted]
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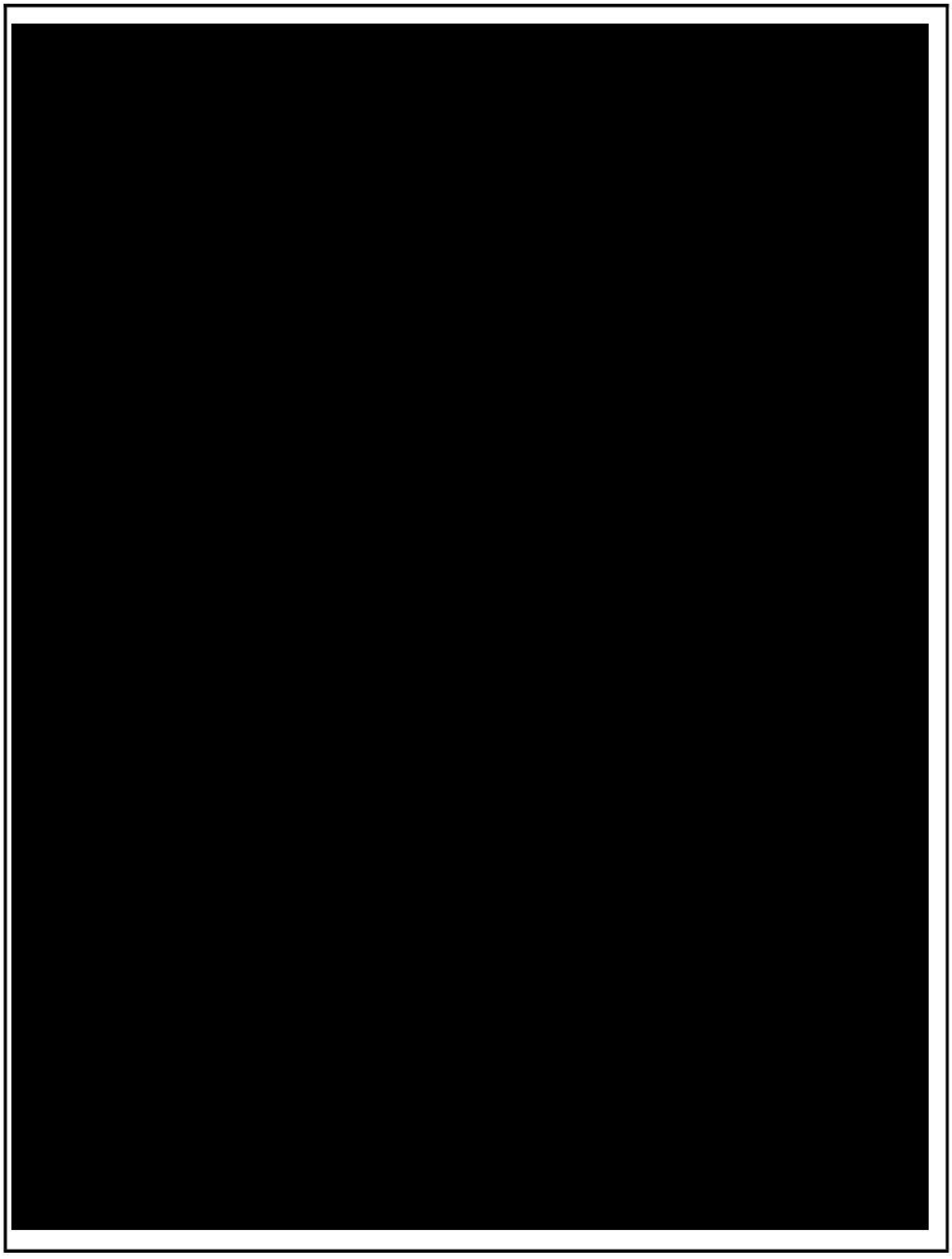

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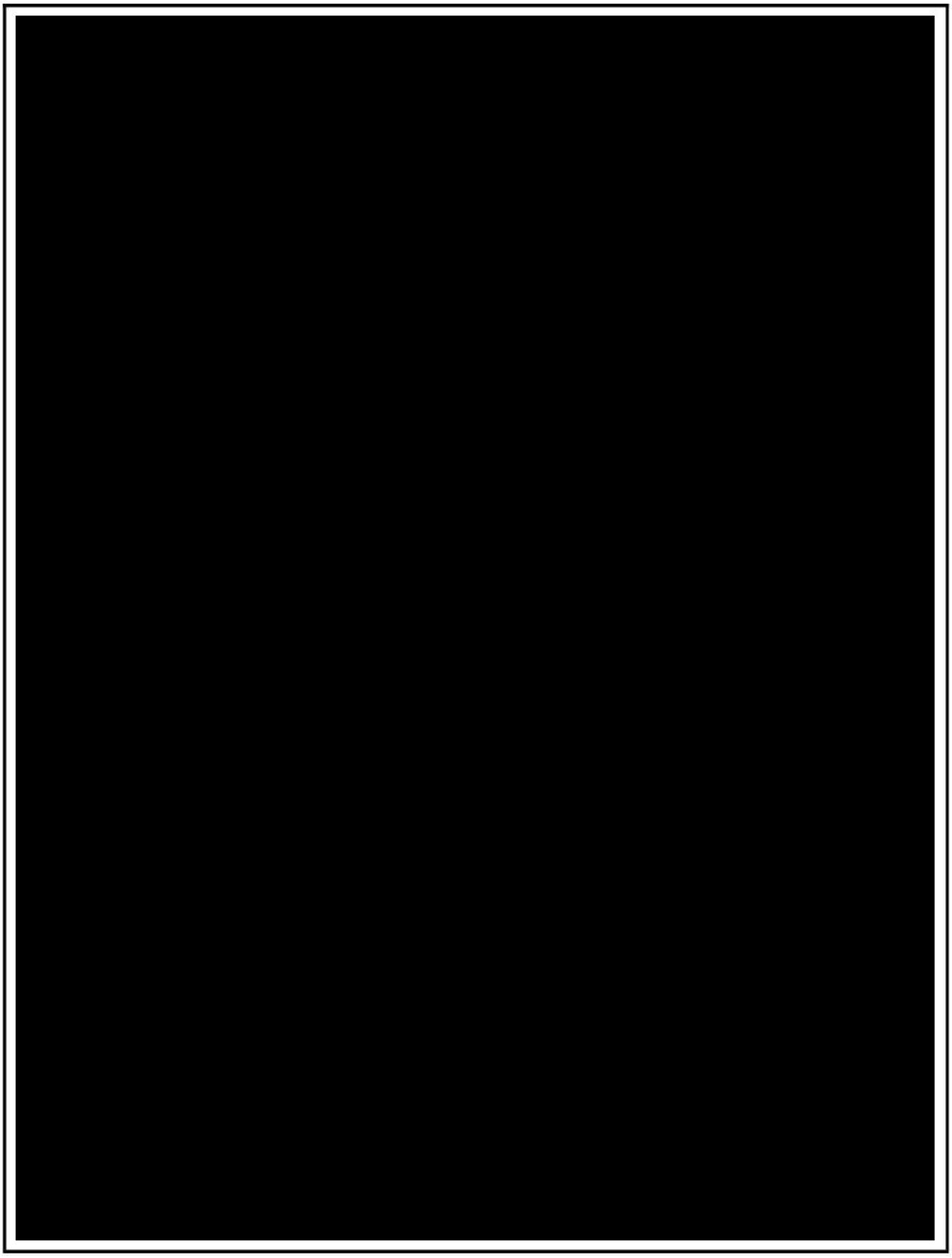


BY MR. ESFANDIARI:

Q. Dr. Omalu, we'll get to the EEG later. So I'm going to switch gears right now.

And in terms of your review of Mr. Thelen's file, depositions, the medical records, Dr. Read's report and everything else that you considered, as well as his background, what -- did you reach a conclusion as to whether or not Mr. Thelen is suffering from brain damage?

A. Yes, I performed differential diagnosis. At the end of my differential diagnosis, my opinion, conclusion, and diagnosis is that Mr. Jeff Thelen suffered brain damage, yes, sir.

Q. And did your differential diagnosis can also reveal what the cause of that brain injury is?

A. Yes, sir. I performed, again, the very analysis of the

11:39AM 1 data before me, and I made a determination of the -- of a
11:39AM 2 substantial and significant factor that caused his brain
11:39AM 3 damage.
11:39AM 4 Q. And what was that?
11:39AM 5 A. Multiple electroconvulsive therapies, yes, sir.
11:39AM 6 Q. All right. And did you -- you know, the jury has heard a
11:39AM 7 lot about Mr. Thelen's alcohol use. Why -- are you saying that
11:39AM 8 the alcohol use and the extensive use of alcohol was not a
11:39AM 9 contributing factor to his brain injury? First of all, did you
11:39AM 10 take alcohol into account?
11:39AM 11 A. Yes, sir. Thank you for asking that, sir. So remember
11:39AM 12 when I described differential diagnosis, I said you must
11:40AM 13 consider every possible disease. So part of the data was that
11:40AM 14 the patient abused alcohol for a long time. Alcohol can cause
11:40AM 15 certain type of brain damage.
11:40AM 16 The three types of alcohol brain damage are four.
11:40AM 17 Part of the jargon. One is called Wernicke, W-e-r-n-i-c-k-e,
11:40AM 18 Wernicke-Korsakoff, K-o-r-s-a-k-o-f-f. Wernicke-Korsakoff
11:40AM 19 encephalopathy. The next one is called Marchiafava,
11:40AM 20 Marchiafava, M-a-r-c-h-i-a-v-a (verbatim) hyphen, Bignami,
11:40AM 21 B-i-g-n-a-m-i. Marchiafava-Bignami encephalopathy. The third
11:40AM 22 cause, it's what we call hydrocephalus and shrinkage of the
11:41AM 23 white matter. Alcohol is a white matter toxin and not a
11:41AM 24 neurotoxin, meaning alcohol doesn't kill the brain cell. It
11:41AM 25 kills -- it damages the fibers of the brain cell. So having

said this, that alter causes diffuse brain atrophy due to the shrinkage of the white matter.

So what do you do when you want to exclude or include alcohol? You look at a CT scan. Luckily in this case, this case specifically, CT scans were done several times. CT scan did not show any evidence whatsoever of Wernicke-Korsakoff encephalopathy, of Marchiafava-Bignami encephalopathy, of hydrocephalus, of diffused white matter atrophy.

So based on the medical evidence, based on the medical evidence in this case, Mr. Thelen does not suffer from alcohol encephalopathy. [redacted] Opioid causes a specific type of encephalopathy called OIL, OIL for short, and OIL means Opioid Induced Leuko, L-e-u-k-o, Leukoencephalopathy. What you see on CT scan, in CT scan, you see patches of loss of myelin, demyelination in white matter, accompanied by enlargement of the hydrocephalus because whenever the white matter is damaged, the ventricles dilate.

So in my differential diagnosis, based on the scientific evidence, Mr. Thelen is not suffering from alcoholic encephalopathy or isn't suffering from opioid-induced encephalopathy. Mr. Thelen does not have any damage to his liver. Before alcohol would damage your brain, it will first damage your liver because the liver is the primary organ that metabolizes alcohol in a human being. So you are expected to have chronic liver damage, specifically fatty liver disease, or

11:43AM 1 cirrhosis of the liver.
11:43AM 2 So based on the clinical evidence and based on a
11:43AM 3 competent differential diagnosis as a physician with a
11:44AM 4 reasonable degree of medical certainty, Mr. Thelen does not
11:44AM 5 suffer from alcohol-induced encephalopathy or opioid-induced
11:44AM 6 encephalopathy. One of the reasons why is that genetically he
11:44AM 7 is a fast metabolizer.
11:44AM 8 Q. I'm going to stop you right there, Doctor. So that
11:44AM 9 explanation you just gave then ruled out alcohol and any
11:44AM 10 medications that Mr. Thelen might have been taking as to the
11:44AM 11 cause of his brain damage, correct?
11:44AM 12 A. Yes, sir.
11:44AM 13 Q. All right. And then you were about to talk about him
11:44AM 14 being a fast metabolizer, I believe you mentioned?
11:44AM 15 A. Yes. I forgot something else, if I may?
11:44AM 16 Q. Of course.
11:44AM 17 A. Symptom-wise, meaning the symptoms the patient presents
11:44AM 18 with, people with alcohol damage of the brain present with what
11:44AM 19 is called confabulation, confabulation. Because the issue is
11:45AM 20 with the white matter, not the brain cell, they have
11:45AM 21 difficulties -- their memory is intact, but they have
11:45AM 22 difficulties putting memory together to give you a valid
11:45AM 23 answer. So they confabulate. They keep on going round and
11:45AM 24 round and round, and when they cannot connect their stories,
11:45AM 25 they make up fake stories. That is not a part of memory

11:45AM impairment I saw in the medical records I reviewed.
11:45AM And so the objective review of the medical records, the medical evidence, does not in any way suggest or indicate that he's suffering from alcohol brain damage or opioid-induced brain damage. Not everybody who drinks alcohol excessively develops brain damage or even liver damage.
11:46AM Q. The imaging studies that you indicated were negative when it came to looking for alcohol encephalopathy, but if they're negative, doesn't that also mean then he doesn't suffer any -- from any brain damage either from ECT if they are negative?
11:46AM MR. BENKNER: Objection. Leading.
11:46AM MR. ESFANDIARI: I'm doing the cross-examination.
11:46AM THE COURT: I'll allow it. It's not cross-examination.
11:46AM BY MR. ESFANDIARI:
11:46AM Q. Go ahead, Doctor. So did you understand the question? I'm sorry. So you mentioned that the CT scans were negative, and therefore that helps you rule out alcohol?
11:46AM A. Yes, sir.
11:46AM Q. But why doesn't that also help you rule out ECT?
11:46AM A. Oh, thank you. So in science, there is what we call significant negative findings. So for you to make the diagnosis of some diseases, certain clinical tests must be negative. And for you to make a diagnosis of neurocognitive impairment from brain damage, CT scans are the so-called

11:47AM 1 conventional. CT scans and MRIs have to come back negative to
11:47AM 2 rule out other causes, other possible causes of a memory
11:47AM 3 impairment, like we have done now with alcohol and opioids. So
11:47AM 4 you must do a CT scan to rule out other possible causes of the
11:47AM 5 memory impairment. That is why you need the CT scan and MRI
11:47AM 6 which have to be negative. Why?
11:47AM 7 Just like in other types of dementia, the brain
11:47AM 8 damage here is on the cellular level, subcellular level, that
11:48AM 9 you can only see with the microscope. The microscope has up to
11:48AM 10 1,000 times magnification. Sometimes when you do some
11:48AM 11 specialized microscopic studies you can get up to 1,000,000
11:48AM 12 times magnification of the cells. CT scan, MRI has a
11:48AM 13 resolution capacity of 0.5 millimeters. Meanwhile on the
11:48AM 14 cellular level, you're talking about nanometers, "nano" meaning
11:48AM 15 nine times, 0.0000 nine times.
11:48AM 16 So a CT scan and an MRI as a translational study
11:48AM 17 cannot identify such microscopic findings. You can only see
11:48AM 18 them with the microscope, and these types of brain damage are
11:48AM 19 not just on the cells themselves, but on the dendrons, the
11:49AM 20 subcellular structures inside the cells.
11:49AM 21 MS. COLE: Objection. Beyond the scope.
11:49AM 22 THE COURT: Yeah, we need to tighten this up a little
11:49AM 23 bit. He's going to ask you questions. Answer the questions
11:49AM 24 only that he asks you, and it's a back and forth. Question and
11:49AM 25 answer. Not one question and a long, long answer.

11:49AM 1 THE WITNESS: All right.
11:49AM 2 THE COURT: All right? Go ahead.
11:49AM 3 BY MR. ESFANDIARI:
11:49AM 4 Q. So if I understood that correctly, Dr. Omalu, is the type
11:49AM 5 of brain damage where we have memory loss from various trauma
11:49AM 6 or whatever the case may be and it's on a cellular level, that
11:49AM 7 would not be picked up by an MRI or a CT scan usually; is that
11:49AM 8 correct?
11:49AM 9 A. Yes, sir. And, again, I apologize with some professorial.
11:49AM 10 I teach, so --
11:49AM 11 Q. It's also my fault. My questions need to be a little bit
11:49AM 12 more crisp, so I will take the blame on that, Dr. Omalu.
11:49AM 13 But the type of damage that alcohol does, as you
11:50AM 14 explain in the white matter, white gray matter, that would show
11:50AM 15 up on a CT scan?
11:50AM 16 MS. COLE: Objection. Leading.
11:50AM 17 MR. ESFANDIARI: I'm trying to tighten it up,
11:50AM 18 Your Honor.
11:50AM 19 THE COURT: I think it's helpful to lead right there,
11:50AM 20 yes. Go ahead.
11:50AM 21 MR. ESFANDIARI: Thank you.
11:50AM 22 BY MR. ESFANDIARI:
11:50AM 23 Q. Is that correct, Dr. Omalu?
11:50AM 24 A. Yes.
11:50AM 25 Q. So the type of damage, brain damage, that alcohol causes,

11:50AM 1 that would reveal itself on a CT scan; is that correct?
11:50AM 2 A. Yes, sir.
11:50AM 3 Q. And, again, the reason is -- just in like one or two
11:50AM 4 sentences, what is the difference between the type of brain
11:50AM 5 damage that is caused by alcohol versus a brain damage caused
11:50AM 6 by other trauma that causes the CT scan for one to be negative
11:50AM 7 and the other one to be positive?
11:50AM 8 A. Alcohol is a white matter or fiber toxin. Doesn't affect
11:50AM 9 the brain cells. Cognitive impairment is a disease with the
11:50AM 10 brain cells, and in alcohol encephalopathy, there is actual
11:51AM 11 physical destruction of the brain that you will see. In
11:51AM 12 Wernicke encephalopathy, you will actually -- in addition to
11:51AM 13 the loss of white matter, you will see hemorrhages, bleeding,
11:51AM 14 microscopic bleeding inside the brain that CT scan and MRI will
11:51AM 15 show you.
11:51AM 16 So each and every disease has a specific feature.
11:51AM 17 The features in this case are inconsistent with alcohol-induced
11:51AM 18 brain damage now.
11:51AM 19 Q. And someone who is suffering from a trauma that is causing
11:51AM 20 memory loss like the symptoms that Mr. Thelen has, you talked
11:51AM 21 about brain cells being damaged. Is there a specific part of
11:51AM 22 the brain that -- whose cells are being damaged?
11:51AM 23 A. In what?
11:51AM 24 Q. From trauma from memory. Like in terms of memory, what
11:51AM 25 part of the brain is associated with memory is what I'm asking.

11:52AM A. In trauma-induced encephalopathy, you're dealing with kinetic energy, gathered destruction of the skeleton, the skeleton of the fibroids of the brain cell. So the patterns, we call it the topographic distribution, meaning -- topographic, topographic -- meaning because of the axonal sharing of blunt force trauma, there are specific regions of the brain that are damaged; for example, the mid brain, okay? The central structures, because the brain floats freely inside the skull -- stop me if I'm going too far.

So when you have blunt force trauma, your brain rotates around itself, so the structures in the midline are damaged, and you will see that on MRI.

Q. I wasn't asking about that. What I'm asking about is in terms of memory, right, is there a specific part of the brain -- the hippocampus, the hypothalamus -- what part of the brain focuses on memory and this type of --

A. Oh, sorry. Thank you. Thank you. So if I may explain?

Q. Of course.

A. Because if I just say the words, it doesn't mean anything. The human brain functions in what we call multidomain, d-o-m-a-i-n.

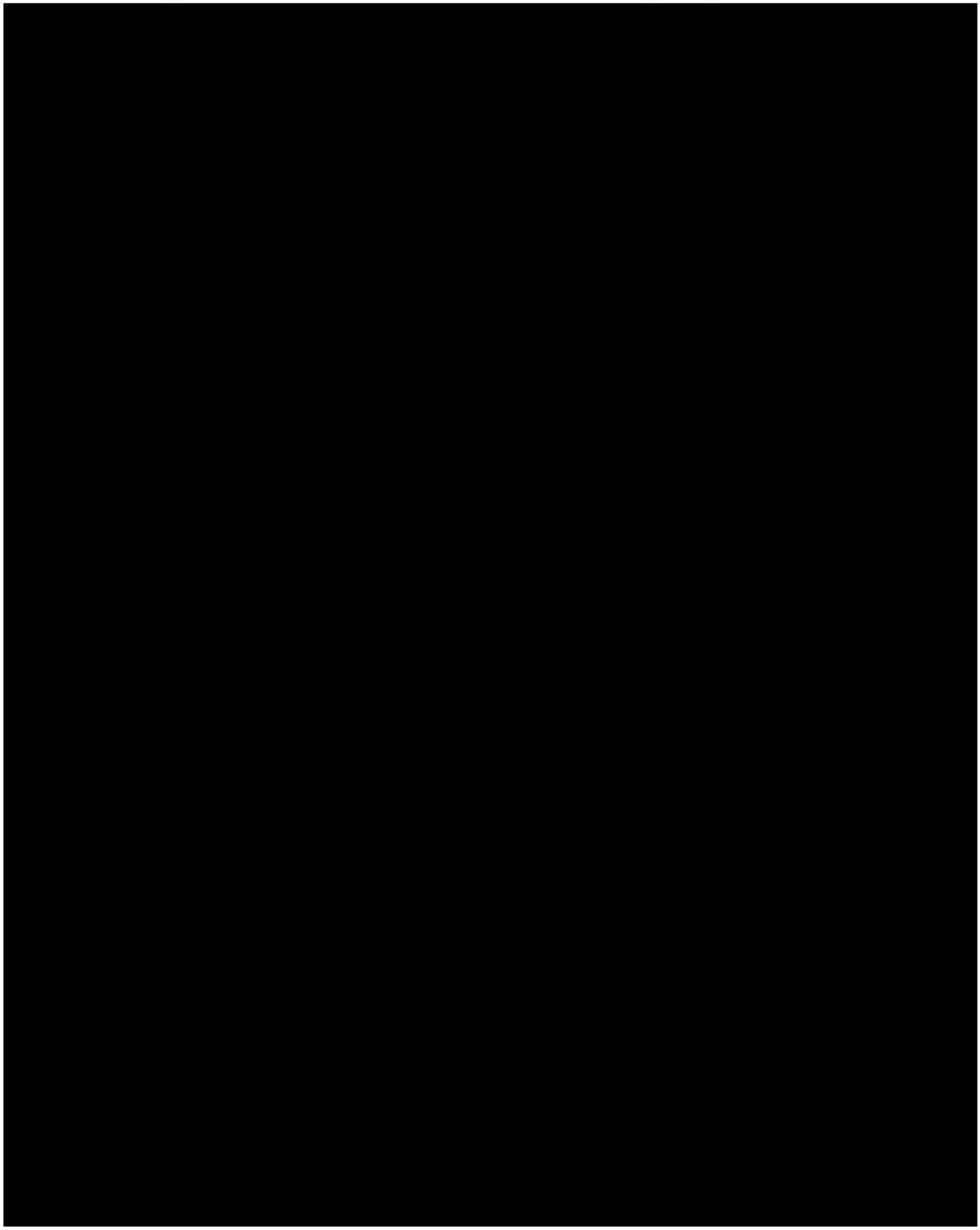
MS. COLE: Objection. General causation, Your Honor.

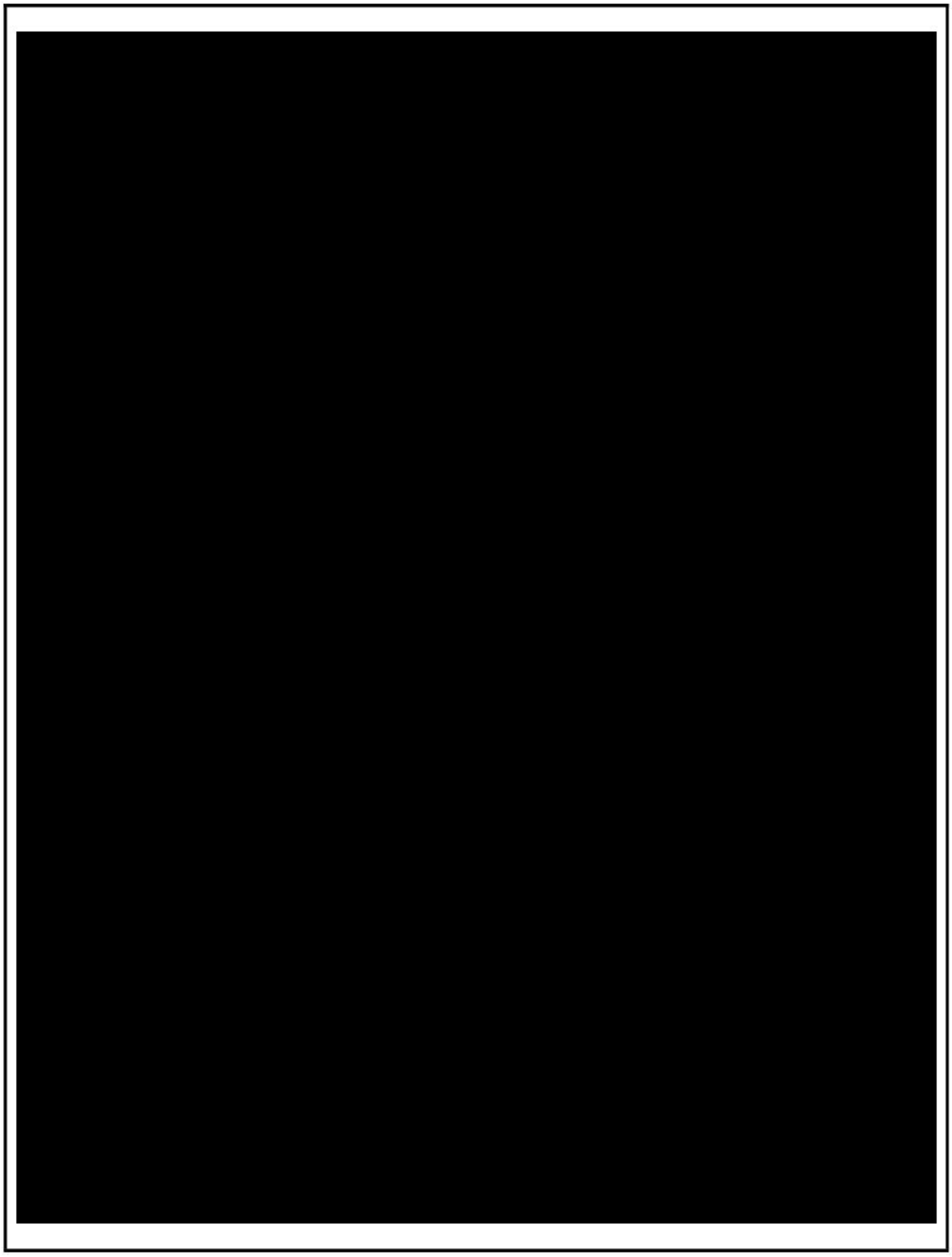
THE COURT: Okay. We'll break for lunch now. Members of the jury, leave your tablets on the chair, and we'll see you back at 1:00. 1:00. All right? Thank you.

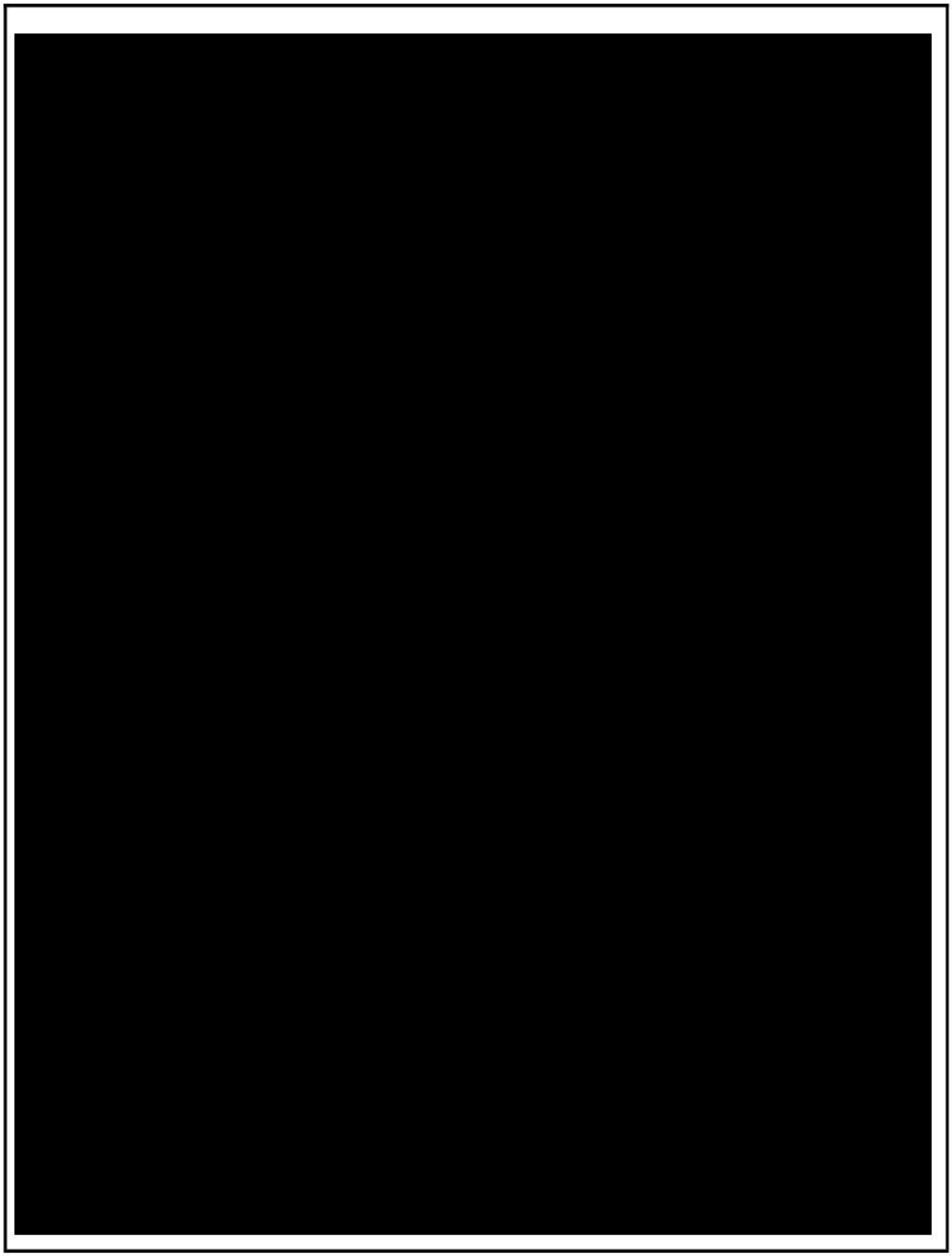
(Jury out at 11:53 a.m.)

[redacted]

(Recess from 11:55 a.m. to 1:03 p.m.)







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[redacted]

(Jury in at 1:08 p.m.)

THE COURT: Okay. Have a seat, everybody. Welcome back. We have our Friday afternoon session. That's always the best session, Friday afternoon. All right? That's when everyone is really, really paying careful attention, all right? Go ahead.

MR. ESFANDIARI: All right.

BY MR. ESFANDIARI:

Q. Dr. Omalu, we're home stretch. All right. So just want to talk about a couple of final items. [redacted]

Q. All right. And then in terms of the -- did the medical records reveal any instances of head trauma prior to ECT, prior to 2014, that you can remember?

A. Well, there was one episode that wasn't well described in detail where he may have suffered some type of blunt force trauma with some transient loss of consciousness.

Q. Was that incident corroborated? In any other records was that incident corroborated?

1:11PM A. I don't remember. My answer would be no, I didn't see it
1:11PM quite extensively, no.
1:11PM Q. But even assuming that that one incident occurred, this
1:11PM one incident of unspecified head trauma well before ECT, did
1:12PM you also take that into account in doing your differential
1:12PM diagnosis?
1:12PM A. Yes, sir.
1:12PM Q. All right. And we talked about Dr. Hannappel, the
1:12PM neuropsych report that he did, and the jury also heard from
1:12PM Dr. Bilder earlier this morning. Is neuropsych, is it a
1:12PM subjective or an objective test? How would you describe
1:12PM neuropsych testing, Dr. Omalu?
1:12PM A. Neuropsych testing, it's not an objective test like CT
1:12PM scan, MRI, or an objective test like testing your cholesterol
1:12PM level. Neuropsych testing, it's an abstractual evaluation of
1:12PM behavior. Behavior is not quantifiable, so what scientists
1:12PM have done over the years is to synthesize artificial
1:12PM statistically-based measurable indices. That -- it's not as
1:13PM objective as you would want it to be, and no doctor would treat
1:13PM a neuropsychiatric test result.
1:13PM Q. Is the findings of a neuropsych report impacted by --
1:13PM given that it's objective, by the doctor who is analyzing the
1:13PM data and interpreting the data?
1:13PM MS. COLE: Objection, Your Honor. Outside the scope
1:13PM of this expert, this witness's expertise. He's a pathologist.

1:13PM THE COURT: Well, yes. Rephrase the question and see if you can establish it's within his zone of expertise.
BY MR. ESFANDIARI:
Q. Dr. Omalu, you -- you are a neuropathologist, correct?
A. Yes.
Q. You are an expert in the brain, correct?
A. Yes.
Q. You're also an expert in terms of diagnostic tools that are used to ascertain brain injury, right?
MS. COLE: Objection, Your Honor. He's leading the witness into what he wants -- counsel is testifying.
THE COURT: That's fine. I agree with that. Don't lead the witness.
BY MR. ESFANDIARI:
Q. And you have a prior understanding of neuropsych testing, Dr. Omalu?
MS. COLE: Objection. Leading.
THE COURT: Overruled. Go ahead.
MR. ESFANDIARI: Thank you, Your Honor.
THE WITNESS: Yeah, so neuropathology is one of the neurological sciences, so we are very well trained and versed in all types of neurological testing.
BY MR. ESFANDIARI:
Q. So my question is simply -- so you brought up, for example, like a cholesterol level test?

1:14PM 1 A. Yes.
1:14PM 2 Q. It has a level, and everybody can see the level?
1:14PM 3 A. Yes.
1:14PM 4 Q. Whereas -- is my understanding correct that with
1:14PM 5 neuropsych, the person, the doctor interpreting the data, one
1:14PM 6 doctor may reach one conclusion, and another doctor may reach a
1:14PM 7 different conclusion?
1:14PM 8 A. Definitely.
1:14PM 9 Q. All right. You -- in your review of the medical records,
1:15PM 10 did you also see any evidence of Mr. Thelen undergoing an EEG?
1:15PM 11 You recall we discussed that previously?
1:15PM 12 A. Yes.
1:15PM 13 Q. All right. And I think you testified previously to the
1:15PM 14 jury what an EEG was, but it was well before lunch. Can you
1:15PM 15 very quickly explain what is an EEG again, Doctor?
1:15PM 16 A. Well, an EEG is an electrical test that studies the
1:15PM 17 patterns of electricity in the brain. Over the centuries,
1:15PM 18 scientists have been able to identify specific patterns that
1:15PM 19 are consistent with a reasonable degree of certainty with
1:15PM 20 specific disease diagnosis.
1:15PM 21 Q. Did Mr. Thelen have an EEG study performed after ECT?
1:15PM 22 A. Yes.
1:15PM 23 MR. ESFANDIARI: All right. I'm going to -- moving
1:15PM 24 into evidence, Your Honor, Exhibit 152. And permission to
1:15PM 25 publish?

1:16PM THE COURT: Go ahead.
1:16PM MR. ESFANDIARI: Thank you, Your Honor.
1:16PM BY MR. ESFANDIARI:
1:16PM Q. Dr. Omalu, this is Plaintiff's Exhibit 152, and it is an
1:16PM EEG test that was completed on June 26th, 2018. Do you see
1:16PM that, Doctor, on the --
1:16PM A. Yes, sir.
1:16PM Q. All right. And what were the findings of this EEG study,
1:16PM Dr. Omalu?
1:16PM A. Well, the areas you have highlighted with the yellow ink,
1:16PM final diagnosis, frontal lobe and executive function deficit.
1:16PM Executive function, frontal lobe, those are the centers of
1:16PM your --
1:16PM MS. COLE: Objection. Goes beyond the scope of the
1:16PM question. He was just asked to read it.
1:16PM THE COURT: Yes. What were the findings of this
1:16PM study?
1:16PM BY MR. ESFANDIARI:
1:16PM Q. Go ahead and identify the findings, and then I'll ask you
1:16PM to explain, Doctor. What were the impressions?
1:16PM A. "Frontal lobe and executive function deficits. There is
1:17PM evidence of significant changes in the following neuronal
1:17PM processing centers: Attention, working memory. There is
1:17PM evidence of mild changes in the following neuronal processing
1:17PM centers: Sensory. Abnormal study. Based on a comprehensive

digital analysis of this task-specific EEG, there is electrophysiologic evidence of dysfunction in neuronal processing circuits responsible for attention network."

Q. Let me ask you, Dr. Omalu, what does that all mean?

A. It means that Mr. Thelen -- I believe that this was for him -- had electrophysiologic evidence or electrical evidence of neurocognitive impairment.

Q. Does this further corroborate your opinions that Mr. Thelen is suffering from brain damage?

A. Yes.

Q. We -- before lunch, we talked about the brain images studies and how some could show positive while for other diseases they may not appear on images. Do you recall that, Dr. Omalu?

A. Yes, sir.

Q. Okay. And what portion of the brain is responsible for memory primarily, Dr. Omalu?

MS. COLE: Asked and answered.

THE COURT: Sustained.

MR. ESFANDIARI: I don't know if it was answered, Your Honor, before lunch.

THE COURT: I think that's been covered.

MR. ESFANDIARI: All right. Very well.

THE COURT: Ask a different witness what that is, but we need to move forward.

MR. ESFANDIARI: There's like two questions left, and that's the foundation for the next one, if I may?

THE COURT: Two questions, and you're done?

MR. ESFANDIARI: I believe so, yes.

THE COURT: Okay. Then I'll change my ruling and allow it. Two questions.

MR. ESFANDIARI: Three.

THE COURT: Three. All right.

MR. ESFANDIARI: Thank you.

BY MR. ESFANDIARI:

Q. What portion of the brain is responsible for memory, Dr. Omalu?

A. It's called the limbic system, and the hippocampus is the major component of the limbic system.

Q. Okay. And in people who are suffering from memory loss caused in that region, would that show up on a CT scan or MRI?

A. No.

Q. All right. And can you give us other examples of cognitive diseases that would not show up on a CT scan or an MRI?

A. Well, Lewy Body disease, L-e-w-y, Lewy Body disease; frontal temporal degeneration; Parkinson's disease; Alzheimer's disease; a concussion; and a traumatic encephalopathy. That's all I can come up with off the top of my head now.

Q. And those diseases --

1:20PM THE COURT: Ah, ah, ah, ah.
1:20PM MR. ESFANDIARI: Did I hit my three?
1:20PM THE COURT: Yes, you did. Thank you.
1:20PM MR. ESFANDIARI: All right. Dr. Omalu, thank you very much. Ms. Cole has some questions for you.
1:20PM THE COURT: Cross-examination?

CROSS-EXAMINATION

BY MS. COLE:

1:20PM Q. Good afternoon, Dr. Omalu.
1:20PM A. Good afternoon, ma'am. How are you?
1:20PM Q. I'm good. How are you?
1:20PM A. Wonderful, thank you.
1:20PM Q. Dr. Omalu, you're a pathologist?
1:20PM A. Yes, ma'am.
1:20PM Q. A pathologist looks at tissue or slides under the microscope and does autopsies?
1:20PM A. Yes, yes, ma'am.
1:20PM Q. Did you do any examination of the tissue of Mr. Thelen?
1:21PM A. No, ma'am.
1:21PM Q. Did you do -- obtain -- do any sort of an examination of --
1:21PM A. Is it possible to speak out?
1:21PM Q. And I'm a short person, so this mic doesn't always work for me. Sorry.
1:21PM Did you do any sort of an examination of Mr. Thelen?

1:21PM A. I examined him -- met with him this morning.
1:21PM Q. This morning?
1:21PM A. Yes, ma'am.
1:21PM Q. And you just talked to him this morning?
1:21PM A. No, I performed what we call a clerkship,
1:21PM c-l-e-r-k-s-h-i-p.
1:21PM Q. I can't --
1:21PM A. Clerkship.
1:21PM Q. Excuse me, Doctor. I can't discuss with you anything that
1:21PM you did with him this morning in front of the jury.
1:21PM Did you -- have you ever reviewed yourself his MRIs?
1:21PM A. No, I'm not a radiologist, but I reviewed the autopsy
1:21PM report -- the radiology reports.
1:21PM Q. Autopsy reports are something pathologists look at all the
1:22PM time?
1:22PM A. The radiology reports, sorry.
1:22PM Q. Mr. Thelen had no changes on his MRIs at all from before
1:22PM he had ECT after until -- until last week? No changes on his
1:22PM MRIs throughout the whole duration, right?
1:22PM A. Such questions if he had no changes, I don't have the
1:22PM reports in front of me. I don't memorize, but my recollection
1:22PM is that he did not have any significant changes.
1:22PM Q. Mr. Thelen had a series of CT scans, both before ECT and
1:22PM after ECT, yes?
1:22PM A. Yes, ma'am.

1:22PM Q. No changes on the CT scans?
1:22PM A. No significant changes, yes, ma'am.
1:22PM Q. You talked some about an EEG or electroencephalogram with
1:22PM Mr. Thelen, and the one you looked at I believe was dated
1:22PM June -- what was the date on that?
1:23PM A. 26th, 2016 -- sorry, 2018.
1:23PM Q. June 26th of 2018?
1:23PM A. Yes, ma'am.
1:23PM Q. What was happening in Mr. Thelen's life during that period
1:23PM of time? Was he in the process of undergoing a series of TMS
1:23PM treatment, Transcranial Magnetic Stimulation?
1:23PM A. As I sit here, I don't have the report in front of me, but
1:23PM the EEG was before he began the TMS, yes, ma'am.
1:23PM Q. Are you sure about that?
1:23PM A. Sorry?
1:23PM Q. Are you sure about that?
1:23PM A. Like I answer, I said as I sit here, I don't have the
1:23PM documents in front of me, but I believe it may be before.
1:23PM Q. Let's take a look, Dr. Omalu, at the report by Dr. Duffy,
1:23PM that same doctor, completed on November of 2017, which is quite
1:24PM a bit before that analysis that you looked at, right?
1:24PM A. Could you repeat the question again? I didn't get the
1:24PM last part. Sorry.
1:24PM Q. Look at the date. You've got a screen right in front of
1:24PM you.

1:24PM A. Yes, ma'am.
1:24PM Q. Look at the date of the EEG that I'm putting up on the screen there. Do you see it?
1:24PM A. Yes, ma'am.
1:24PM Q. Is that -- is that 2017 date before or after the 2018 date that you interpreted for Mr. Esfandiari?
1:24PM A. Yes, ma'am.
1:24PM Q. It's before?
1:24PM A. Yes, ma'am.
1:24PM Q. So this one was done before he had transcranial stimulation -- TMS?
1:24PM A. I believe so. As I sit here, I don't remember the exact date he began his TMS.
1:24PM Q. Okay. But this study, which was done before, was an EEG, and it showed, "Nonspecific findings suggestive but not diagnostic of dysfunction in neuronal processing circuits responsible for attention, revealed by significantly faster processing speed, moderately reduced synchronization, working memory revealed by moderately reduced amplitude speed, and significantly slower processing speed. Otherwise remaining aspects of the sensory processing, attention, and working memory network are unremarkable." Right? That's what it says?
1:25PM A. That's what it says, but look at the final diagnosis. It says, "Mild cognitive impairment".
1:25PM Q. Yes, sir. We're talking here about memory. Cognitive

impairment includes more than just memory, true?
A. Yes, yes.
MS. COLE: Thank you. I'd like to enter this document into evidence, Your Honor.
MR. ESFANDIARI: No objection, Your Honor.
THE COURT: Go ahead. It's admitted.
MS. COLE: I've been in the dark all my life. It's okay.
THE COURT: There we go.
BY MS. COLE:
Q. In looking through the medical records, Dr. Omalu, you didn't find any of Mr. Thelen's health care providers that used the -- that found the diagnosis "brain damage" in Mr. Thelen; did you?
A. As I sit here, I cannot remember everything said in thousands and thousands of pages of medical records, so I'm not -- I don't know. I don't remember.
Q. I see. Any testing -- are you aware of any testing done on Mr. Thelen to diagnosis his neurocognitive state?
A. I don't understand your question.
Q. Let me rephrase the question. I'll put it in simpler words. The kind of testing that Dr. Hannappel did and that Dr. Bilder did, neurocognitive assessments --
A. Yes.
Q. -- did you see any of those kinds of tests that were done

on Mr. Thelen before he underwent ECT?
A. Before he -- no, no. You don't do tests if there is no clinical indication.
Q. In order to compare his cognitive functioning before ECT to his cognitive function after he had ECT, you need something to compare it with, true?
A. No, no. As doctors, you don't just order tests. That is unethical. There has to be a clinical indication for a test. Like now, I've never had a CT scan in my life because there's not been any indication. So when we start having new symptoms and then his doctor made the judgment --
Q. I think, Doctor, that you've answered my question which was a yes/no question.

Would you agree, sir, that there is no way to determine Mr. Thelen's amount of cognitive functioning before receiving ECT without some sort of a neurocognitive test having been performed on him, true?
A. No, no, that's false. That's absolutely false. The absence of symptoms indicates a normal human being, and remember when you say the word "normal", the foundation of mathematics means he is within, plus or minus, two standard deviation of normal.
Q. Mr. -- Doctor, Mr. Thelen suffered from major depression all of his life?
A. Yes.

1:28PM 1 Q. Mr. Thelen's cognitive functioning was affected by his
1:29PM 2 depression all of his life?
1:29PM 3 A. In my review of the medical records, I did not see that.
1:29PM 4 Depression does not typically cause neurocognitive impairment.
1:29PM 5 Q. I see. That's your opinion, and you're entitled to your
1:29PM 6 opinion.
1:29PM 7 I want to ask you, now, sir, about head trauma.
1:29PM 8 A. Yes.
1:29PM 9 Q. Mr. Thelen saw -- Mr. Thelen worked in and around trees
1:29PM 10 when he was working as a -- for a job, right? He was an
1:29PM 11 arborist?
1:29PM 12 A. I don't remember as I sit here. I'm sorry.
1:29PM 13 Q. Mr. Thelen gave a history of multiple head trauma or being
1:29PM 14 hit in the head and sometimes losing consciousness when he saw
1:29PM 15 Dr. Heller, right?
1:30PM 16 A. I don't remember seeing that. The one I recollect was the
1:30PM 17 single episode of blunt force trauma. Another -- another thing
1:30PM 18 I remember as I sit here was he said he doesn't remember. I
1:30PM 19 don't remember exactly.
1:30PM 20 Q. I see. All right. Let's take a look. This is a record
1:30PM 21 from Dr. Heller, who he saw right before he started ECT. Do
1:30PM 22 you recall him saying to Dr. Heller in the middle there, "He
1:30PM 23 denies prior seizure history or alcohol use earlier in the day
1:30PM 24 after he" -- let me start at the beginning. "Patient thinks he
1:30PM 25 had a seizure on July 31st, 2013. The patient is here because

he is unable to remember about 12 hours yesterday." Did I read that right?
A. Yes.
Q. Is that a seizure?
A. Sorry?
Q. Is that a seizure?
A. I don't get the question. What -- he denies prior seizure history. What is your question? Sorry.
Q. "Patient is here because he is unable to remember about 12 hours yesterday. Patient thinks he had a seizure. He was at home watching TV while it was light out. The next thing he remembers, it's dark out, and he doesn't know what happened. He has new onset of headache starting a couple of months ago. Describes it as generalized." Does that describe a seizure to you, sir?
A. It doesn't typically describe a seizure, no.
Q. Okay. Going on, he says, "He has frequent injuries to the head, occasionally losing consciousness, due to his work. He was last hit in the head without loss of consciousness on Monday. He estimates that he last had a loss of consciousness event due to head trauma more than six months ago."
Doctor, isn't that a history of frequent head trauma?
A. You could say yes or no. This is not substantiated, but the patient said he had multiple histories of -- in my review of the medical records, it was not substantiated, no.

1:32PM Q. So what the patient said was not substantiated by somebody else who wasn't there said? Is that what you're telling us?
A. Well, remember -- yeah. Remember what I had said earlier, that when a patient presents with symptoms, you validate the symptoms with signs, okay?
Q. Thank you, Doctor. That answers the question.
MS. COLE: I would like to enter into evidence Thelen Exhibit Number 1026.
MR. ESFANDIARI: No objection, Your Honor.
THE COURT: Admitted.
BY MS. COLE:
Q. Doctor, head trauma can cause memory loss, yes?
A. No. Not as you said it. I've received head trauma. I'm not having memory loss. So you need to quantify it, qualify it.
Q. Doctor, head trauma which does cause a -- which causes a loss of consciousness can cause memory loss, true?
A. Yes, if you receive it multiple times, and if it causes -- the key word is if it causes diffused axonal injury, and the technical jargon for it is if you suffer subconcussions and concussions. Not every blow to your head would cause axonal injury. Otherwise all of us would be walking around with dementias.
Q. Doctor, if a person has suffered a structural injury to his brain, there are ways to tell that he has had a structural

injury to his brain, true?
A. Yes, CT scan will show you structural damage to the brain, yes, ma'am.
Q. And imaging is generally used to show that, CT and MRIs, right?
A. Yes, ma'am.
Q. Mr. Thelen didn't have CT evidence or MRI evidence of any structural injury to his brain, true?
MR. ESFANDIARI: Your Honor, asked and answered.
THE COURT: It's cross-examination. I'll allow a little leeway.
MR. ESFANDIARI: I mean, she's asked and answered already, but that's fine.
THE COURT: Thank you. Objection is overruled.
THE WITNESS: He -- the CT scans or MRIs, like I have said earlier, did not show any evidence of structural damage to the brain.
BY MS. COLE:
Q. Sometimes structural damage can give off certain enzymes when brain cells are injured or dying, true?
A. No. When you talk of enzymes, you're no longer talking about structure. Remember the distinction I made about anatomy and clinical pathology. So enzymes, its function --
Q. It was a yes/no question, Doctor. I'm sorry. I'm trying to get everybody out of here, including you. I know you have a

1:35PM plane. So if you could just answer my questions, we'll get this done, okay?
A. Like I had said, some of these questions I cannot answer yes or no. That would be against scientific principles. That was why I said yes and no, and if you let me to explain, I will explain.
Q. Doctor, when brain cells are -- is it your interpretation, Doctor, that brain damage involves the death of brain cells?
A. No, I never said that, no.
Q. Brain damage in Mr. Thelen that you are opining about, are you saying that his -- the brain -- what you're calling brain damage, we can't prove that it involved any death of brain cells?
A. I don't understand the question. Hold on. Let me repeat it. That the brain damage does not involve the loss of brain cells?
Q. In Mr. Thelen.
A. The answer to that is yes or no. I'll explain. It's not a yes or no answer, but I will explain.
Q. Do we have evidence of brain cell death in Mr. Thelen?
A. Okay. You cannot have evidence on MRI or CT scan if you've not lost sufficient numbers of brain cells. There are over 200 billion brain cells in your head. By the age of 53, you start losing your brain cells. So when it becomes significant and you start having symptoms is when you've lost a

1:36PM 1 significant number in specific regions of your brain. So that
1:37PM 2 was why I said the answer to that is yes or no. It's not a yes
1:37PM 3 or no answer.
1:37PM 4 Q. You are diagnosing Mr. Thelen with what you call brain
1:37PM 5 damage because he has given a history of loss of memory that he
1:37PM 6 believes is permanent, and it happened after ECT; is that
1:37PM 7 right?
1:37PM 8 A. No.
1:37PM 9 Q. What objective evidence are you using to diagnose brain
1:37PM 10 damage in Mr. Thelen?
1:37PM 11 A. The objective evidence I'm using, I am using a multiple.
1:37PM 12 It's not just one. Number 1, he was exposed to 95
1:37PM 13 electroshocks. Number 2, he developed new neurocognitive
1:37PM 14 symptoms, especially memory impairment which is progressive.
1:37PM 15 Number 3, CT scan and MRIs are negative. Number 4, his
1:38PM 16 treating physicians, his treating physicians who were treating
1:38PM 17 him as a patient, had a high index of suspicion that this
1:38PM 18 individual is manifesting symptoms of brain damage.
1:38PM 19 Q. Where in the medical records by his treating physicians
1:38PM 20 does it say "brain damage," sir?
1:38PM 21 A. Memory impairment is a symptom of brain damage.
1:38PM 22 Q. So what you are calling brain damage is equivalent in your
1:38PM 23 mind in Mr. Thelen's case to loss of memory?
1:38PM 24 A. Not in my mind. It is a fact. The patient --
1:38PM 25 Q. Yes, sir.

A. Let me -- if I may explain?
Q. I don't need you to explain. It was a yes or no question.
A. All right. All right.
MS. COLE: And I don't have any more questions for you.
THE WITNESS: Thank you.
MS. COLE: Thank you very much.
THE WITNESS: God bless you. Thank you, thank you.
THE COURT: Redirect?

REDIRECT EXAMINATION

BY MR. ESFANDIARI:

Q. Dr. Omalu, I'd like to give you an opportunity to explain that last answer.
A. You know, science sometimes can be paradoxical. So because we cannot crack open somebody's head to see damage, we use markers, what we call biomarkers, of damage. For example, if somebody suffers brain injury from any cause, that patient could seize. A seizure is a biomarker of brain injury. A patient who is having a fever is a biomarker of an infection. The fever is what we can use. We cannot open the person to look for the bacteria. So in this case, a person is exposed to repeated, 95, electroshocks, okay?
MS. COLE: Your Honor --
THE WITNESS: And then --
MS. COLE: Your Honor, your order on causation, sir.

1:40PM 1 THE COURT: Okay. Come on up.
1:40PM 2 THE WITNESS: I should go up?
1:40PM 3 MR. ESFANDIARI: No.
1:40PM 4 (At sidebar on the record.)
1:40PM 5 [redacted]
1:40PM 6
1:40PM 7
1:40PM 8
1:40PM 9
1:40PM 10
1:40PM 11
1:40PM 12
1:40PM 13
1:40PM 14 (End of discussion at sidebar.)
1:41PM 15 BY MR. ESFANDIARI:
1:41PM 16 Q. Dr. Omalu, sorry that your response was interrupted.
1:41PM 17 Please continue.
1:41PM 18 A. Uh-oh. Can you help me -- remind me where I start?
1:41PM 19 Q. Okay.
1:41PM 20 A. I'm sorry.
1:41PM 21 THE COURT: Here was the question: "Dr. Omalu, I'd
1:41PM 22 like to give you an opportunity to explain that last answer."
1:41PM 23 That was the question.
1:41PM 24 THE WITNESS: Oh, okay. I was talking about fevers.
1:41PM 25 Okay.

1:41PM 1 BY MR. ESFANDIARI:
1:41PM 2 Q. Fevers, and then you were also talking about the fact that
1:41PM 3 a person who has had 95 --
1:41PM 4 A. Yes. So a patient, a human being who has had 95
1:41PM 5 electroshocks, okay? And then after a while, while he was
1:41PM 6 having the electroshocks, he begins to manifest memory
1:41PM 7 impairment. Then after a while, a short period, the memory
1:41PM 8 impairment becomes more prominent, becomes too aggressive, and
1:41PM 9 begins to incapacitate his activities of daily living. By the
1:42PM 10 temporal standard and the central limit theorem standards of
1:42PM 11 science, you can determine with a reasonable degree of medical
1:42PM 12 certainty that the electroshocks were substantial and
1:42PM 13 significant contributory factors to his new symptomatology,
1:42PM 14 given the exclusion of other possible causes, negative CT scan
1:42PM 15 and negative MRI.
1:42PM 16 Q. Thank you. And, Dr. Omalu, you were asked about certain
1:42PM 17 references to head trauma prior to ECT. Did any of the --
1:42PM 18 prior to ECT, did any of Dr. Thelen's (verbatim) medical
1:42PM 19 providers deem it necessary for him to get a neurocognitive
1:42PM 20 exam?
1:42PM 21 A. No. When these treating doctors evaluated him, there was
1:42PM 22 no significant finding or indication of a repetitive -- we call
1:43PM 23 it a repetitive traumatic brain injury. We all encounter head
1:43PM 24 trauma in our lives. Coming out of your car, you bump your
1:43PM 25 head. We all suffer memory impairment. No. So it has to pass

1:43PM 1 the threshold of substantial and significant.
1:43PM 2 Q. And, indeed, the first time that Mr. Thelen had a
1:43PM 3 neuropsych examination was after ECT, correct?
1:43PM 4 A. Yes, sir.
1:43PM 5 Q. All right.
1:43PM 6 A. But having said that, in the standard of medicine,
1:43PM 7 hypothetically speaking, like I said earlier, differential
1:43PM 8 diagnosis. As soon as he had --
1:43PM 9 THE COURT: Excuse me. Objection is sustained. All
1:43PM 10 right? You answered his question, and then you went on. All
1:43PM 11 right? So I think we're about to the end, right?
1:43PM 12 MR. ESFANDIARI: Do we have -- it's -- I don't want
1:43PM 13 to delay for the document.
1:43PM 14 BY MR. ESFANDIARI:
1:44PM 15 Q. Dr. Omalu, have all of the opinions that you've given here
1:44PM 16 today been to a reasonable degree of medical certainty?
1:44PM 17 A. Yes, sir, all my opinions are with a reasonable degree of
1:44PM 18 medical and scientific certainty and probability, yes, sir.
1:44PM 19 Q. And in -- to summarize your opinions in one sentence, what
1:44PM 20 would it be, Doctor?
1:44PM 21 A. That Mr. Thelen was exposed to 95 electroshocks and
1:44PM 22 developed brain damage, as manifested by progressive and
1:44PM 23 permanent neurocognitive impairment, specifically memory
1:44PM 24 impairment.
1:44PM 25 Q. As a result of the ECT?

[redacted]

A. Yes, electroshock, yes, sir.

MR. ESFANDIARI: All right. Thank you, Dr. Omalu.

THE WITNESS: Thank, sir. Bless you.

THE COURT: Thank you. You're free to go.

THE WITNESS: Thank you, Your Honor.

(Witness excused.)

[redacted]

[redacted]

[redacted]

THE COURT: Turn the lights on, please, Sonya. All right. Members of the jury, we started early today. I wasn't sure how long the live witnesses were going to take. I wanted to make sure we had enough time. We have. I said we'd get out

3:57PM 1 early. We're even getting out before 4:00, two minutes before
3:57PM 2 4:00, but we've had enough for the day. I know you have also,
3:57PM 3 and we'd would like you to come back on Monday, at 9:00 a.m. on
3:57PM 4 Monday.
3:57PM 5 Now, particularly important over the weekend, because
3:57PM 6 you've given us three days of your lives, and your friends and
3:57PM 7 family are going to want to know what the heck is going on,
3:58PM 8 right? They think you're going to be in some trial they're
3:58PM 9 watching on TV tonight or whatever. And just be very careful.
3:58PM 10 No conversations with people. You can tell them once this
3:58PM 11 thing is over with, they take you out for dinner, you'll tell
3:58PM 12 them everything they ever wanted to know about ECT and
3:58PM 13 everything else, all right? But until that happens, do not
3:58PM 14 have any conversations and do not gather any information.
3:58PM 15 Don't Google this stuff, don't ask a friend or neighbor to help
3:58PM 16 you out with legal concepts. Nothing like that. Everybody
3:58PM 17 good with that? Okay. Leave your tablets on the chair. We'll
3:58PM 18 see you at 9:00 on Monday. Thank you for your time these last
3:58PM 19 three days.
20 (Jury out at 3:58 p.m.)
3:59PM 21 [redacted]
3:59PM 22
23
4:19PM 24
4:19PM 25

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[redacted]

(End of proceedings.)

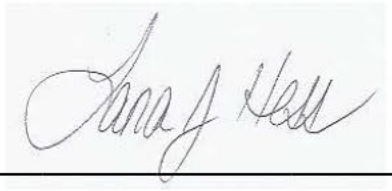
* *

UNITED STATES DISTRICT COURT

MIDDLE DISTRICT OF FLORIDA

REPORTER TRANSCRIPT CERTIFICATE

I, Tana J. Hess, Official Court Reporter for the United States District Court, Middle District of Florida, certify, pursuant to Section 753, Title 28, United States Code, that the foregoing is a true and correct transcription of the stenographic notes taken by the undersigned in the above-entitled matter (Pages 1 through 243 inclusive) and that the transcript page format is in conformance with the regulations of the Judicial Conference of the United States of America.



Tana J. Hess, CRR, RMR, FCRR
Official Court Reporter
United States District Court
Middle District of Florida
Tampa Division
Date: June 12, 2023