according to its anatomic location.
In the lower back there are five lumbar vertebra. The lumbar vertebra ends with the tailbone, which is what we sit on, which is the sacrum and if I said L1-L2 it means the space between the first and second lumbar vertebra. The word L means lumbar.
And between each vertebra we have a disk which functions as a shock absorber.
This is the back portion of the spine. If you touch -- take your fingers, touch the back of your neck, you're touching your spinous process. This is the back portion.
And right inside the spinal canal runs the spinal cord. The spinal cord runs all the way from high in the neck and goes to the lower back and usually ends between L1 and L2.
It then continues with branches of what is called the caude equina, which are horsetail branches of nerve roots, and these nerve roots occupy inside this spinal canal. All the nerves that go down your legs, they originate from a branch of this nerve root, okay?
So if you have lack of sensation or muscle power, weakness in the leg, the course is determined by only one way, by an EMG to see if it's coming from the actual nerve root or a peripheral nerve, which means a branch of this

nerve root.
Now, once we have the formation, the union, of L2, L3, L4 they unite and they make a big trunk. That is called the L2 to L4 lumbar plexus.
The word plexopathy means damage to this plexus which is a network of nerves all meeting one another.
And then you have further branches of nerves which comes off these nerves. It's exactly like a big tree. You have a big branch, you have smaller branches, you have other smaller branches, so on and so forth.
Now, the femoral nerve is a nerve which runs off a branch of the lumbar plexus from L2, L3 and L4. When these three nerve roots unite they form a trunk and a division of that is the femoral nerve.
The function of a femoral nerve -- femoral nerve is a motor nerve.
We have two types of nerves; sensory serves that control sensation and we have motor nerves which controls movement.
The function of the femoral nerve is it causes the quadriceps to extend itself, okay?
So if the femoral nerve is damaged you will have weakness of knee extension, you'll have numbness and tingling from here to here.
Q Indicating from the knee --

A From the hip to the knee and if you have damage to the obturator nerve, which is also a branch of L2-L4, which is the anterior division, the division in the front, that controls hip rotation towards inside which is called hip adduction, okay?
So EMG is what doctors do to find out what's causing the problem; is it coming from a nerve root or is it coming from a peripheral nerve?
Q Why -- let me stop you for a moment.
Why isn't an MRI definitive?
A MRI is not a test for nerve damage. X-ray is not a test for nerve damage. Ultrasound is not a test for nerve damage.
There's only one test for nerve damage. That is an EMG.
An EMG has three components, motor study, sensory study and the actual needle EMG.
The actual needle EMG checks the nerve roots. The motor and sensory checks the peripheral nerves. This is how guesswork stops.
When a patient has weakness or a problem doctors usually have a differential diagnosis which means not really sure what the exact cause is. They have this possibility, they have this possibility. They have this possibility, which is referred to in the medical field as rule out.

So, once we do the definitive tests it confirms your working diagnosis.
MRI checks the soft tissues, the disks and the things around the vertebra, the nerve roots, the spinal cord, so on and so forth.
But if you want to check for nerve damage the only test is an EMG.
Q Okay. The MRI that was done on May 7th, '99 indicated a moderate herniated disk at L5-S1?
A Yes, sir.
Q And some mild stenosis at L4-L5.
Of what significance, if any, are those -- is that pathology in understanding Mrs. Delandro's complaints postoperatively?
MR. LYDDANE: Judge, my only objection is that it was on January the 7th and not May.
MR. SCHMEIZER: I'm sorry, I misspoke,
Q On January 7th?
A Of zero consequence for a variety of reasons.
Q Would you explain to us those reasons?
A First of all, the L5-S1 nerve root distribution -- may I use this diagram?
Q Yes, it's in evidence.
A Would you be kind enough to hold this?
Q Yes, I will.

A This is a model of the distribution of the dermatomes, which means these are the branches of sensory nerves that occupy different parts of the legs.
This area, in the thigh, is covered from the L1 nerve root distribution. This portion comes off the second lumbar nerve root distribution, third, fourth, fifth so on and so forth.
S1 means the sacrum, which is the tailbone, which we sit on. It's the very, very last nerve root after the L5 nerve root.
The front of the leg, from the hip to the knee, is primarily L1, L2, L3, L4.
The L5-S1 does not begin, that's the key, does not begin until way below the knee. Look where the L5-S1 begins, below. Below the knee is mostly L5. The outer portion of the some slight S1, L5-S1. S1 is mostly the back.
Here's L5, the posterior portion of the buttock and hamstring area.
And even then it's mostly S1, S2, very little in the back of the leg.
So the L5-S1 does not cover the proximal thigh. That's covered mostly lie L1 through L4.
L5-S1 begins below.
And the second portion to your question is the EMG which is shown right here. This is the first EMG and the EMG

indicates that -- reveals a left femoral neuropathy and which there may be mild compressive left tarsal tunnel syndrome and a mild left peroneal neuropathy secondary to a left lower extremity swelling.
Suggest follow up EMG and nerve conduction studies in one month if clinically warranted.
So his major diagnosis is was femoral neuropathy with possibly other branches and the second EMG really hones in on the key as to what goes on.
This was done very recent to the surgical procedure.
Q You notice the diagnosis is peripheral neuropathy.
What does that mean?
A Peripheral neuropathy means damage to the peripheral nerves, not the nerve roots.
Nerve root damage is called radiculopathy.
When you have multiple nerve roots combined that's called plexopathy.
So, the first one was done on January 27, '99. This is done May 6th, about four and a half months later.
Nerve injuries, the full picture of a nerve injury, takes at least three weeks to manifest itself. You could see some evidence of early nerve damage. Neuropraxia you could see as early as two three days from an injury.
But the full picture takes minimum three weeks and sometimes longer. That's why you have to repeat the EMG down

Page 26

the road.
Now, in this study what was found is and the word that's used here is severely, severely abnormal EMG of the left lower extremity in the distribution of the left femoral obturator and sciatic nerves with normal nerve conduction velocities coupled with left lumbar plexopathy.
So here the true picture is shown. There are several things going on. You have a traction injury to the femoral nerve, obturator nerve and the lumbar plexus L2 to L4.
This is not caused by an L5-S1 herniation. If this was caused by an L5-S1 disk herniation the disk will completely tear, the disk material will leak out and pinch the nerve like so at L5-S1 and the EMG findings of radiculopathies you have to have a criteria.
At the level of L5-S1 you must see evidence of increased insertional activity. You must see evidence of positive sharp waves or fibrillation potentials.
If you don't see these abnormalities it cannot, it cannot by definition, be a radiculopathy.
So let's go to the EMG studies that was done. We go to the left lumbar L3-L4.
Insertion activity is normal. Positive sharp waves, zero.
Fasciculation potentials, which is another criteria

Page 27

for abnormality, is zero.
Polyphasic potentials, normal.
The rest is within normal limits so at L3-L4 the paraspinal levels, normal study.
Next, L4-L5. Again, everything is normal right across the board.
Next, lumbar -- L5-S1, at this level.
Normal insertional activity, positive sharp waves, normal or zero positive sharp waves, fasciculation potentials zero, polyphasics normal. The rest is within normal limits.
So this, by definition, by criteria for diagnosis, cannot be and L5-S1 radiculopathy. It cannot be an L4-L5 radiculopathy. It cannot be an L3-L4 radiculopathy, as alleged, caused by a disk herniation.
How we know this, the EMG confirms it.
What is the cause of it?
Let's see what the cause of it is.
We see abnormal findings -- you have the nerve conduction section?
Q We don't have it blown up, but it's in evidence.
A So basically on the nerve conduction that was abnormal conduction for the femoral nerve, which checks the quadriceps, the obturator nerves which checks the adductor muscle, sciatic nerve which checks the gluteal muscles and some of the hamstrings that show abnormalities.

Page 28

So when you put it all together the picture is one of exactly what it states, not an L5-S1 radiculopathy from an alleged disk herniation or from a spondylolisthesis, which means a slippage of one vertebra over another one. That is not causing any nerve damage here whatsoever.
Q Thank you, doctor, you can resume the stand.
A Thank you.
(Witness resumes the stand.)
Q Doctor, I want to move on to a different area of inquiry.
I would like to turn to your chart?
A Okay.
Q Did there come some point in time where you met Mrs. Delandro for the first time?
A Yes.
Q And when did you meet her for the first time and what were the circumstances?
A October 18th, 2000 she was referred by Dr. Jeffrey Ben Zvi, a gastroenterologist for the purposes of rehabilitation and physiotherapy.
Q Would you tell us a little bit about this?
She wasn't referred by her attorneys?
A No, from Dr. Jeffrey Ben Zvi. I have the referral from Dr. Zvi.
Q And could you tell us what the circumstances were?

Page 29

Why was she referred to you?
A She had weak --
MR. LYDDANE: Object that, your Honor. He can't speak for the operation of someone else's mind.
THE COURT: You may answer.
THE WITNESS: May I, Judge?
THE COURT: You may answer?
A Yes, she was -- she came to see me for the purposes of rehabilitation. She complained of left leg weakness with numbness and tingling, left hip pain, lower back pain, left knee pain and difficulty ambulating.
So she came for rehabilitation evaluation and therapy.
Q At the time that she came to see you were you still director of Maimonides Hospital Rehabilitation Center?
A Yes, sir.
Q And did you examine her?
A Yes, sir.
Q Would you tell us, without me going through each question separately, would you tell us what your examination consisted of and what were your findings?
A Yes, the examination showed the highlights. There was well-healed abdominal surgical scar. The left knee was tender. The back showed diffuse tenderness. Range of motion was normal. Straight leg raising on the left was abnormal.

Page 30

Normally it's 90 degrees or better. In this case it was 50 degrees.
Q Is that significant?
A Without lower back pain. Without lower back pain it could be a hip problem or a different problem.
If there was back pain it would be significant for origin from the lower back.
Q Go on?
A The muscle power testing for the entire left leg and quadriceps was three grades weaker than normal.
Q What does that mean?
A That was weak and the muscle, the quadriceps muscle, the thigh muscle had atrophied, which means that the size had shrunk again.
Muscle atrophy usually indicates two possibilities, nerve damage or lack of proper use or a combination of both.
In this case it was a combination of both.
And the range of motion to the left foot was decreased and sensation to the entire left thigh and left calf was severely diminished, her gait was antalgic, which means she walked with a limp.
Q You just mentioned sensory deficit.
Where was that deficit?
A A left thigh and left calf.
Q Okay. Please go on?

Page 31

A And that was essentially the pertinent abnormal physical exam findings.
Q And what was your prognosis or plan and assessment at that time?
A The plan was to obtain all the pertinent past medical records, to start her on a course of physical therapy and hydrotherapy at Maimonides Medical Center.
Q What was the goal -- what was the plan -- what was the purpose of physical therapy?
Was it to restore nerve function or to keep the muscles from atrophying further or something else?
A The purpose of physical therapy in this case was manifold.
One, to diminish her pain, to improve muscle power, to improve the atrophy to the quadriceps by strengthening the muscles, to improve her gait and diminish the pain in her back and the left leg.
Q Was it ever the plan or prognosis that physical therapy would cure the neurodeficit?
A The purpose of physical therapy is not designed to cure. That is not the function of physical therapy and, in fact, as we can see today there has been no cure for this problem. She's been left with a permanent injury.
Q Let's go on to your visits.
You said you referred her for physical therapy at

your institution?
A Yes, sir.
Q What was the -- what did the physical therapy consist of and when did you see her for the next time?
A The physical therapy consisted of hot packs, electrical stimulation, interferential current, high volt, low volt.
The purpose of electrical stimulation is, one, to diminish -- to secrete endorphins from the body's skin receptors. Endorphins are the body's natural stimulation.
Two, electrical stimulation forcibly contracts muscle fibers thereby strengthening the muscles preventing atrophy, bringing back as close to normal size as possible.
And the purpose of therapeutic exercises is to strengthen weakened areas. She had all of that.
She also had hydrotherapy. At Maimonides we had a heated pool at a height of four feet and when you exercise in a heated pool at a height of four feet gravity is 90 percent eliminated. At a height of three feet 50 percent of gravity is eliminated. So four feet is the ideal height to exercise in the water.
By eliminating gravity you get tremendous flexibility, tremendous strengthening, because in the water you do rapid eccentric contractions.
There's two types of types of strengthening. You

have concentric contractions, which is towards the body, eccentric is away from the body.
Fastest way and best way to build power and flexibility is eccentric contractions, away from the body. That is what is mostly done in the water.
Also, by walking in the water, water is all around you, protects the joints, allows you to strengthen the weakened muscles.
By this combination it's the ideal environment to strengthen this type of injuries.
Q Just want to move along if I may, Dr. Guy.
When is the next time you personally saw Mrs. Delandro?
A 3/1/01.
Q And, again, could you tell us what was significant as far as your examination, what was your prognosis or plan?
MR. LYDDANE: Your Honor, may we approach the bench on that?
(Discussion held at the bench, off the record.)
THE COURT: Objection is sustained.
MR. LYDDANE: Thank you.
Q Doctor, without going into the dates how many times did you see Mrs. Delandro?
MR. LYDDANE: Objection.
THE COURT: You may answer.

A Me personally, twice.
Q Twice.
And when was the last time?
A 3/1/01, and I saw her this morning outside for a brief evaluation.
Q Doctor, do you have an opinion with a reasonable degree of medical certainty as to whether Mrs. Delandro's injuries sustained on January 5, 1999 has resulted in permanent injury?
A Yes, sir, it has.
Q What is -- and what is your opinion?
A That, yes, it has.
Q And what is the basis of your opinion?
A She has been left with the injuries as we explained earlier. She still has the deficits in her left leg, although she's able to walk better with the brace. She still has the weakness in the left leg. She still has the loss of sensation and now it's approximately five years later. Anything that lasts in the medical field for more than two years is considered permanent. Certainly four, five years is definitely permanent, so it is permanent.
Q Would you go -- outline for this court and jury, perhaps using yourself as a model, what it is that you're finding to be considered permanent aftereffects as consequences of Mrs. Delandro?

A Yes, she has the femoral nerve injury. She has the obturator nerve injury. She has the lumbar plexopathy.
Q Could you explain what that affects as far as numbness or weakness or --
A Yes.
Q Using yourself as an illustration?
A May I step down?
Q Yes, please?
MR. SCHMEIZER: With the court's permission?
THE COURT: Yes.
A The patient still has numbness in this portion of the inner thigh, outer thigh and slightly to the calf. It's mostly inner and outer thigh.
She still has weakness of knee extension.
She still has weakness of hip flexion.
She still has weakness of adduction and slightly abduction and there's still atrophy of the quadriceps bulk.
Q And, doctor, in your opinion these conditions, this sequelae, is permanent?
A Yes, sir, they are permanent.
Q Now, doctor, there is mention made in your records of Mrs. Delandro having low back pain and some pain radiating down her left extremity.
A Yes.
Q Could you explain to the court or jury what, in your

opinion, is the cause of that low back pain and pain radiating down her extremity?
A It could be the sciatic nerve because that last EMG also showed some damage to the sciatic nerve. The sciatic nerve controls the nerves in the back of hip and hamstrings and calves so that's one possibility.
It could also be caused by radiculopathy damage to the nerve root, but in this case we know that is not the case because the EMG ruled out that possibility.
So, in this case it's the sciatic nerve injury.
Q Doctor, what role, if any, does ambulating with an antalgic gait using a knee stabilizer and/or cane affect insofar the complaints of low back and radiating pain?
A May I step down to answer that question?
MR. SCHMEIZER: With the court's permission?
THE COURT: Yes, you may.
(Witness steps down.)
A Normal gait pattern is as you walk your feet are together, you pick up your leg, heel strike is first, then a toe lands.
Then the opposite foot the toes lift off, you have the swing-through phase of normal gait, then it lands with heel strike first and foot down.
Next one, the toes goes up, you have the swing-through phase, lands with a heel strike.

That is a normal gait. When you have normal gait the stress to the structure is normal.
When you have an abnormal gait because of weakness in the hip you can't pick up your leg properly. When you land you don't land with proper balance because your sensation is affected, your muscle power is affected, your balance is affected.
So you put more stress on the knee and on the hip as such was the case here. In fact, she had to be referred for an MRI of the left knee to see if anything was damaged.
Next, the quadriceps muscle controls the proper landing mechanism of the foot, controls the quadriceps and knee extension. So, if this is weak you don't have proper swing-through gait and you have improper landing of the foot.
What this does, it causes extra stress to the foot, ankle mechanism, the knee mechanism, the hip mechanism and the lower back. It starts to stress these structures, especially the lower back.
Then the body tries to compensate by walking with a limp or walking with your foot slightly externally rotated as such and as a result this side starts to get more of the stress by overloading, by over use.
So, this side gets overloaded, this starts to hurt, the patient tries to unload this side and overload this side

again which was previously injured. It's called a compensatory mechanism; overloading, unloading, reloading, overloading, unloading.

MR. SCHMEIZER: Your Honor, I think, let me just check my notes, I think we've reached that point.

THE COURT: We'll take a five-minute recess, members of the jury.

Please don't discuss the case.

(Jury exits.)

(Recess.)

(Jury enters.)

THE COURT: Please be seated.

Members of the jury, this is cross-examination by Mr. Lyddane.

CROSS-EXAMINATION

BY MR. LYDDANE:

Q Dr. Guy, am I correct in saying that you did not receive a degree when you entered Queens College?

A That is correct.

Q Okay, but then you did go to the Dominican Republic and you completed medical school there, is that right?

A Yes, sir.

Q And that was in 1981, right?

A That is correct.

Q And then you started an internship at Mt. Sinai in

July of 1982, right?

A There's no longer internships, it's called residency.

That's correct.

Q Okay, so it was the first year of postgraduate training ordinarily called an internship, but you can call it PGY1 right?

A Yes, PGY1 residency.

Q All right, so the -- what were you doing between the time you graduated from the Dominican Republic Medical School in July of 1981 and when you started your first training in this country in 19 -- in July of 1982?

A I was applying for residency acceptance. Once I was accepted I started my residency a little bit earlier as a volunteer to become acclimated with the hospital and get extra training.

Q Okay. So, now, this medical residency that you entered was a four-year program, is that correct?

A Which one?

Q The internal medicine program?

A Internal medicine is three years.

Q Three years, okay.

And you actually completed one year of that before going to Cabrini Hospital for a surgical training program?

A And then I went back, I did another six months.

Q All right, just do one at a time.

A Yes, that's correct.

Q You did one year internal medicine at Mt. Sinai, right?

A Yes.

Q You didn't complete that residency program because you went to Cabrini and did a year of surgery, right?

A That's correct.

Q The surgery program that you went into, the residency is a four-year program, right?

A It depends if you if you want to become a general surgeon -- it's five years. Many people don't need to complete --

Q That's okay.

MR. SCHMEIZER: No, let him finish his answer. Excuse me, objection.

MR. LYDDANE: My question is how many year program is it and he said five years.

MR. SCHMEIZER: No, he said if you want to be a general surgeon it's five years and then you stopped him.

A And many residents just need one basic year of general surgery. They don't stay for the full five year program because many people don't want to be a general surgeon.

That was not my intention, to become a general surgeon.

Q So you didn't finish your general surgery residency?

A I never wanted to complete a general surgery. I just needed the one year prerequisite.

Q You did not complete a general surgery residency, am I correct?

A That is correct.

Q You served one year whereas a general surgery residency the whole residency would be five years, right?

A To become a general surgeon, yes.

Q You didn't complete the medical residency at Mt. Sinai, you did a year and a half out of three years, correct?

A That's correct because I wanted to go into physical medicine.

Q Okay, so then you started a physical medicine and rehabilitation residency --

A No, you left out I went back to Mt. Sinai to do another six months of internal medicine.

Q Okay. All right, so you did a year at Mt. Sinai internal medicine, a year at Cabrini in surgery?

A Right.

Q Six months at Mt. Sinai?

A Internal medicine.

Q Internal medicine.

And then you started physical medicine and rehabilitation program for two years, right?

A Three years.

Q Three years?

A Yes.

Q Okay. Now, in all those three medical specialties the only one where you qualified to take any board examinations was physical medicine and rehabilitation, right?

A That's what I wanted to specialize in, yes.

Q Okay, that's because you didn't complete the residency training and you didn't qualify to take the boards in either of the other two specialties, correct?

A That's because I never wanted --

Q I don't care why, it's because it's true, isn't it?

A To the way you phrased the question, it is true, yes.

Q Now, there are physiatrists who have board certification in physical medicine and rehabilitation, but also in either internal medicine or surgery or both, isn't that correct?

A I don't know any such physiatrist.

Q Don't know them?

A I don't know any such physiatrist.

If you know somebody, please share that knowledge

with me.

Q Okay. Since from 1989 until 1992 you practiced as a physiatrist, isn't that right?

A Yes, sir.

Q And you saw many trauma patients during that period of time, right?

A I still do, that's correct.

Q Okay, and you went to court approximately once or twice a year in the period of time 1989 through 1992, isn't that right?

A I don't remember exactly, but it could be correct.

Q Okay, you've testified to that period of time before --

A I may have.

Q Now, after 1992 you were still a physiatrist, right?

A I'm still a physiatrist, yes.

Q You were still at the same hospitals you were between 1989 and 1992, right?

A Wrong, not correct, except for Maimonides from '97 to July of 2002.

Q Okay, all right, so that was in 1997, right.

But I'm talking about the period of time between 1989 and 1992 and the period of time between 1992 and 1997 your practice was at the same locations, right?

A Yes, sir, correct.