

1 Dr. Kolb - by Plaintiff - Direct  
 2 testifying here in court today for being away from your office?  
 3 A Yes. Absolutely.  
 4 Q What is that fee?  
 5 A \$7,500.  
 6 Q Doctor, are those usual and customary charges of a  
 7 radiologist of your qualifications in this region?  
 8 A Yes.  
 9 Q Do you receive the same fee regardless of the outcome  
 10 of this case?  
 11 A Yes, absolutely.  
 12 Q Can you tell the jury what an MRI is or what magnetic  
 13 resonance imaging is?  
 14 A MRI uses magnetic waves. It is a long tube that you  
 15 lie in in general. It's a magnet around the outside. It pulses  
 16 magnetic waves into the body, and the body feels those waves on  
 17 a very small level and rearranges on a very small level, an  
 18 atomic level. But the point is we have a strong computer that  
 19 can decipher these changes and create an image of the body part.  
 20 So an MRI is a very important test, a standard  
 21 test to use to look at many different body parts.  
 22 Q I will start with the brain MRIs that you reviewed.  
 23 Can you tell us how many MRIs of the brain you reviewed?  
 24 A Two.  
 25 Q Can you tell us what your findings were with regard to  
 26 those MRIs?

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 2 this is the same picture, but everything that is liquid is  
 3 white. And this whiteness here is spinal fluid. We are looking  
 4 at the brain and we're looking at a portion of the brain from  
 5 here. We are taking a picture like this. (Indicating) So this is  
 6 the front of the patients here, this is the front of the brain,  
 7 this is the back of the brain, this is the right side, and this  
 8 is the left side. There's two sides of the brain. The brain is  
 9 divided in half, and each half is symmetric. Each actually  
 10 looks like the other half. They are identical halves, the right  
 11 half of the brain and left half of the brain. We are actually  
 12 looking at the right half here and the left half there.  
 13 So this is spinal fluid. It is in something  
 14 called the ventricles. There is the right ventricle, right  
 15 lateral ventricle, left lateral ventricle, and so on. It is all  
 16 symmetric.  
 17 What is important on this scan here is this  
 18 little white area right here in front of this line here. This  
 19 line here, this whole line here, all these squiggly lines is  
 20 called the insular cortex. You don't have to remember any of  
 21 these names. The point of showing you the scan is right in  
 22 front of the insular cortex is a 4-millimeter, it's around that  
 23 big (indicating), an area of abnormal signal. This is gray  
 24 signal, this is black signal, there is white signal around the  
 25 ventricle. We call the differences in gray and black and white  
 26 "signal." If there is a brighter signal it is darker.

1 Dr. Kolb - by Plaintiff - Direct  
 2 A Yes. The first one was August 12, 2010. There was a  
 3 4-millimeter infarct, 4 millimeter abnormality which is actually  
 4 death of brain cells. "Infarct" means there is not enough blood  
 5 flow going to the brain cells and it actually dies. A specific  
 6 part of the brain will show it, the right side of the brain  
 7 towards the front. The exact place is called the insular cortex  
 8 which we can get into when we see pictures. So that's really  
 9 the major finding on the examination of August 12, 2010.  
 10 MR. MORGAN: Judge, permission to set up the  
 11 easel?  
 12 THE COURT: You may.  
 13 Q Doctor, you also reviewed an MRI from a later date?  
 14 A Yes.  
 15 MR. JOSEPH: May I change positions?  
 16 THE COURT: Yes.  
 17 Q What was the date of the second scan?  
 18 A February 25, 2011.  
 19 Q Doctor, feel free to come down. We have blown up one  
 20 of the scans from that MRI. If you can just explain your  
 21 findings to the jury with regard to the brain MRI taken in 2011?  
 22 A Sure.  
 23 THE COURT: Counsel, what exhibit is that?  
 24 MR. MORGAN: It is 22A, your Honor.  
 25 A So these are two pictures but are really the same  
 26 anatomy. One picture is everything that is fluid is dark. And

1 Dr. Kolb - by Plaintiff - Direct  
 2 Here there is an abnormal area of increased  
 3 signal, abnormal signal, right in front or anterior to this area  
 4 called the insular cortex. And you can see it very nicely here  
 5 as well. This area right here is an abnormality.  
 6 While it may look very small compared to the rest  
 7 of the brain, the brain consists of all the nerves that go to  
 8 our body. All different parts of the brain are exceedingly  
 9 important. And this small area here is an infarct. "Infarct"  
 10 means not enough blood went to the brain at that particular site  
 11 and the brain cells actually died. That's what an infarct is.  
 12 And when brain cells die, this is what it looks like on MRI at  
 13 this size and this location.  
 14 So this is the major finding on this MRI scan.  
 15 Q Doctor, do you have an opinion to a reasonable degree  
 16 of medical certainty on whether or not that finding is  
 17 traumatic?  
 18 A Well, given a little bit of clinical correlation as  
 19 well, in other words you have to know a little about the  
 20 patient. If the patient -- we have to talk about the symptoms  
 21 the patient is feeling as well. If the patient wasn't feeling  
 22 certain symptoms, whatever they may be later on, and wasn't  
 23 going to the doctor and getting treated and having MRI scans,  
 24 and then the patient had a trauma and had an MRI like this and  
 25 had certain symptoms that are referable to this part of the  
 26 brain exactly where this is to the point where the patient

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 2 needed treatment or testing or MRIs to find an abnormality  
 3 localized there; then in that particular case this finding would  
 4 be related to the trauma that to which the patient had symptoms  
 5 afterwards that are related to this area, and it so happens the  
 6 MRI finds something in that area. So the answer would be yes in  
 7 that case.  
 8 Q Thank you, doctor.  
 9 Anything more about the brain you need to discuss  
 10 with the jury?  
 11 A That's the major finding, that abnormality is the  
 12 major finding.  
 13 Q That's there in both the 2010 scan and the 2011 scan?  
 14 A It hasn't changed. It was there in 2010 and didn't  
 15 change in 2011.  
 16 Q Did you also review MRI film of the shoulder?  
 17 A Yes.  
 18 Q Do you have your report for that?  
 19 A Yes.  
 20 Q I am going to put up what has been marked as 21A.  
 21 Hopefully it fits on the easel. Yes, it does.  
 22 Can you use this blow-up to please show the jury  
 23 what your findings were when reviewing the MRI of the shoulder?  
 24 A In the shoulder we have to talk a little more anatomy.  
 25 The shoulder is obviously here (indicating). We are able to  
 26 move our arm around. That's because this round structure is

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 2 this multiple right here to the -- to this bone right here. So  
 3 this tendon, this is the muscle, here is the black tendon that  
 4 comes out, and it is supposed to stay completely black with no  
 5 white in it. This is the supraspinatus tendon. It is one of  
 6 four tendons in the shoulder. This is the supraspinatus muscle.  
 7 This tendon should be completely black but it is not because it  
 8 is completely torn. When a tendon tears, white fluid from the  
 9 shoulder joint gets into it. I will show you a partially torn  
 10 tendon, I will show you how different it looks than this. So  
 11 this tendon, part of the rotator cuff, is completely torn and it  
 12 retracted back, it is in an abnormal position. So this is a  
 13 complete rotator cuff tear from this tendon.  
 14 If you move on to, for example, to 21C, here  
 15 again I am showing you the same round part of the humerus, the  
 16 same triangle here, the glenoid; but we are moving back in the  
 17 joint. The first picture was the front, and now we are moving  
 18 back in the joint. Each picture is just a few millimeters  
 19 thick. There are many, many pictures taken from the front to  
 20 the back. For example, this is the infraspinatus tendon here  
 21 and it is black. It only gets white above it there and as it  
 22 touches the bone. It is nowhere near as completely torn as here  
 23 where you don't see any tendon at all. So this is a way of --  
 24 so you can compare the supraspinatus tendon to the infraspinatus  
 25 tendon. The supraspinatus tendon is completely torn the  
 26 infraspinatus tendon is partially torn. So this is considered a

1 Dr. Kolb - by Plaintiff - Direct  
 2 part of the long bone of our arm called the humerus. This is  
 3 the humeral head. There are two bones you really have to know  
 4 about. One is the humerus, a long bone that goes like that.  
 5 You can feel the top here. The second bone is the bone that the  
 6 humerus, this bone, connects to, this other gray structure which  
 7 is a triangle on this particular picture and this is called the  
 8 glenoid.  
 9 Now, when we move our arm, this will go like that  
 10 (indicating). It will go up or out. We can move our arm in any  
 11 direction, pretty much. That's because this is like a ball and  
 12 socket. This holds it in place, and this rotates all around.  
 13 Why doesn't the humerus just fall right out of  
 14 the shoulder? What holds the humerus in place? Well, the  
 15 humerus like all joints of the body have muscles around it.  
 16 These gray structures are the muscles. The muscles -- you can  
 17 feel your muscles in the shoulder and front and the back and the  
 18 side. There are four major muscles that connect to the bone so  
 19 that the bone doesn't slip out of place. Each one of these  
 20 muscles has -- its connection to the bone is with a tendon. So  
 21 the tendon is connected to the bone. There are four tendons.  
 22 Four muscles, four tendons. To bring this home to you, this is  
 23 what the rotator cuff is. The rotator cuff is in the shoulder.  
 24 When you talk about the rotator cuff, a pitcher or somebody  
 25 else, an athlete, those are the four tendons in the shoulder.  
 26 These tendons on an MRI, this tendon connects this shoulder,

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 2 complete tear. That's a complete rotator cuff tear and it has  
 3 to be fixed. That's the major finding of the tendons. And this  
 4 one is a very obvious one. There is a big tear of the rotator  
 5 cuff.  
 6 There are also smaller tears of what is called  
 7 the labrum which is the cartilage that cushions these two bones  
 8 as well.  
 9 So the major finding on the MRI of the shoulder  
 10 is a complete rotator cuff tear. There is some pulling back of  
 11 the tendon out of the position so that the tendon would have to  
 12 be pulled back out to be affixed to the bone in order for this  
 13 shoulder to have mobility again. And then there is a large  
 14 joint effusion, meaning water in the joint. And there are tears  
 15 of the labrum as well. But the major finding is that.  
 16 Q Doctor, in a 55-year-old construction worker, would  
 17 you expect to find some degenerative changes within the  
 18 shoulder?  
 19 A It would not be unlikely.  
 20 Q As you look at this shoulder do you see any evidence  
 21 of degenerative changes?  
 22 A Nothing in the area of the tear itself. There are no  
 23 degenerative changes that are associated with the tear.  
 24 Q Do you have an opinion with a reasonable degree of  
 25 medical certainty as to whether or not the complete rotator cuff  
 26 tear suffered by Mr. Barra on August 5, 2010 was related to the

1 Dr. Kolb - by Plaintiff - Direct  
 2 trauma he sustained when he fell off the crane?  
 3 A Well, since it is a pretty severe injury I would say  
 4 just by looking at the film it is extremely likely it would be  
 5 just due to the fall itself because this is a pretty severe  
 6 injury right here. Again, you want to see did the patient have  
 7 shoulder pain, was he incapacitated before the injury, did it  
 8 occur after the injury. Then that would pretty much clinch it  
 9 and you would know for sure.  
 10 But this in and of itself is a pretty severe  
 11 severe tear, severe abnormality. So with reasonable certainty  
 12 it is due to a trauma.  
 13 Q Are you done with the shoulder MRI?  
 14 A Yes.  
 15 Q Did you also review an MRI of the lumbar spine?  
 16 A Yes.  
 17 Q Doctor, I am going to show you --  
 18 MR. MORGAN: Can I have this marked for  
 19 demonstrative purposes?  
 20 THE COURT: Yes. Exhibit 24.  
 21 (Exhibit marked for identification  
 22 as Plaintiff's Exhibit 24.)  
 23 Q Doctor, would this model of the spine help you to  
 24 describe the anatomy of the spine to the jury?  
 25 A Yes.  
 26 Q Can you just take a moment and describe the anatomy of

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 2 ligaments run from the back, ligaments run in the front, and  
 3 ligaments run around each disc as well. An important ligament  
 4 is called the annulus. So that holds it in place.  
 5 Back here are the nerves that go to your legs.  
 6 At the bottom of your spine you have nerves that go to the  
 7 buttocks and down your legs into your feet, and on each side the  
 8 nerve comes out. So if I want to talk about the disc between  
 9 the fifth bone and the first bone, it will be also L5-S 1. And  
 10 each side nerve root would come out and go to a particular place  
 11 in your leg.  
 12 So we can actually see where the pain is in the  
 13 leg and can say, Oh, it must be the left L5 nerve root that is a  
 14 problem. Look at the MRI and see if there is something pushing  
 15 on it. And commonly what pushes on these nerves are disc  
 16 herniations.  
 17 Disc herniations are when there is a tear of that  
 18 annulus that holds a disc in place. So, for example, if this is  
 19 the disc and this is the ligament that holds it in place, if  
 20 there is a partial tear of the ligament, then the disc will push  
 21 through a little bit and start getting a little pointy like  
 22 that. That's a disc bulge, a partial tear. If there is a  
 23 complete tear of the ligament, the disc will go completely  
 24 through. That's a disc herniation.  
 25 It is actually easy to be able to tell what a  
 26 disc herniation is looking on an MRI that we will look at

1 Dr. Kolb - by Plaintiff - Direct  
 2 the spine and what you look for in the MRI?  
 3 A Okay.  
 4 So we are going to talk about the lumbar spine  
 5 first, which is the lower back. And there are five bones in the  
 6 lumbar spine. There are five bones in all of us. Male, female,  
 7 tall, short; we all have the same anatomy. So there are five  
 8 bones. This is number 5, 4, 3, 2, 1. We call them L for lumbar  
 9 because it is the back. There are other parts of the back like  
 10 the upper back which we will talk about, the cervical spine. So  
 11 we call these here L1, L2, L3, L4, L5. AND when we get to the  
 12 bottom, after the Ls we get into the S, the sacrum. So if I  
 13 want to talk to you about these things here, and these are the  
 14 discs, these tan structures between the bones. And it is very  
 15 bad in the body, whether a shoulder or back or neck, for bones  
 16 to touch bone. That's a very painful occurrence. We are all  
 17 born with discs. Discs are like shock absorbers between the  
 18 bones in the back. So when you jump up and down and move  
 19 around, the bone doesn't crush into the bone next to it. That  
 20 would be very painful. So these shock absorbers are gelatinous  
 21 like jelly, they have fluid in them so they spring. So when  
 22 you jump up and down they compress and come back out again so  
 23 the bones don't touch each other.  
 24 Now, how do these stay in place? Why don't these  
 25 discs just fall out if they are like jelly? Why don't they just  
 26 fall out? Because they are held in place by ligaments,

1 Dr. Kolb - by Plaintiff - Direct  
 2 together because the ligament is very, very tightly applied to  
 3 the bone. So if there is a tear and if disc material comes out,  
 4 you will see -- if there is no tear, the disc material will go  
 5 to the margin of the bone and stop. It will go to the margin of  
 6 the bone and the ligament will hold it in place. If you see  
 7 disc material beyond the margin of the bone, that by definition  
 8 means the ligament has torn and the disc is herniated. So if we  
 9 look at the pictures of the MRI, it will be clear to you.  
 10 This is 21B now. Do you see the squares here?  
 11 Each of these squares -- we are looking at the spine from the  
 12 side, all right? Here is the spine. You are looking at me from  
 13 the side. Here is the spine from the side. And we are taking,  
 14 again, a thin slice, a few millimeters, very thin slices going  
 15 across the spine from right to left or from left to right. So  
 16 in the middle is one long picture, and then on one side you will  
 17 have pictures here and pictures there. But you are looking from  
 18 the side. And here is the side view. The bones look like  
 19 squares. These tan structures, the discs between the bones, you  
 20 can see are these, all right? You kind of get the idea of that.  
 21 This is three-dimensional, and these are two dimensional though  
 22 we have many pictures to look at.  
 23 These squares here are the bones, and these  
 24 objects between the bones are the discs. Look at, for example,  
 25 L1 and L2, the first bone and second bone of the lumbar spine.  
 26 Look at the disc. It comes right to the edge of the bone.

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 2 Where is the edge? Right there. See these two squares? It  
 3 goes to the edge and stops. The disc above it also goes to the  
 4 edge and stops. Why? Because there is a ligament that comes  
 5 down and around that holds the disc in place. That's what  
 6 normal looks like. This is normal. Normal. Normal.  
 7 What happens here? Obviously there is an  
 8 abnormality here at 2-3. What has happened here? This disc  
 9 material has ruptured through the torn ligament and now is  
 10 beyond the -- here is the margin of the bone here, and here is  
 11 the margin of the bone here, and all this has gone through a  
 12 hole in the ligament like that and it is pushing out.  
 13 Why is it important? Because this is the spinal  
 14 cord coming down, this gray structure is the spinal cord. And  
 15 nerve roots, these yellow structures here -- here is the spinal  
 16 cord on the side. The nerve roots come out through holes on the  
 17 side of the spine. You can see here these lines, gray lines are  
 18 the nerve roots coming down from the spinal cord. And if I show  
 19 you the pictures from the side they will come out to the left  
 20 side and the right side. And why this is important is because  
 21 this is a tiny space. Each one of these lines, between this  
 22 line and this line, is a very small -- it is not marked here on  
 23 the ruler, but it is a very tiny space. So between here and  
 24 here is just a few millimeters. So you can imagine when this  
 25 disc here at 2-3 is herniated and you actually you see it  
 26 pushing on a nerve root here, you see how tight this space is,

1 Dr. Kolb - by Plaintiff - Direct  
 2 Q Can you show us what the degenerative changes are?  
 3 A Well, all of this -- you see this disc material here  
 4 how it goes to the front? Well that is away from the nerves,  
 5 away from the nerves in front of the spine. It is here on this  
 6 side. The action in the spine is here where the spinal cord is  
 7 and the nerves are. And what I am showing you is the front here  
 8 away from the nerves. This is all arthritic. These are all  
 9 little osteophytes or bone spurs so that the bones keep their  
 10 alignment and don't get too close to each other or move. So  
 11 these are bone spurs in front of the spine, and that's  
 12 arthritic.  
 13 The loss of height, for example, look how high  
 14 this disc is here. That's normal. This disc here is shorter  
 15 than that, and this is shorter than that. So they have lost  
 16 height. L2-3 and L4-5 discs have lost height. That could be  
 17 either arthritic or it can be from the trauma or rupture of the  
 18 ligament with the disc material spurting out here. It lost its  
 19 height.  
 20 So there are arthritic changes related to the  
 21 disc levels but there aren't any arthritic changes that are  
 22 significant that are at the site of the disc herniation here in  
 23 the back.  
 24 (Continued on next page)  
 25  
 26

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 2 you can see how a patient can feel symptoms.  
 3 So if you want to go level by level, this is  
 4 normal between 1 and 2. Between 2 and 3 there is a big  
 5 herniation here. Between 3 and 4 it is also pushing through but  
 6 it is not completely through. See how if you draw the line here  
 7 it is beyond but it is not completely through like these others.  
 8 And this is a bulge which is a partial tear of the ligament.  
 9 That's between 3 and 4. Between 4 and 5 you can see that this  
 10 entire piece is through just like 2-3. So there is a herniation  
 11 at 4-5 through a torn ligament. And at 5-1 look how much  
 12 material is also through it. All of this between the lines is  
 13 also a herniation. So you have disc herniations at 2-3, 4-5 and  
 14 5-1.  
 15 When you go out to the sides on different  
 16 pictures you can see that these holes that contain the nerve  
 17 roots are also being pressed on by the herniation. So the  
 18 herniation goes to the back and also to the sides where the  
 19 nerves are coming out at these levels. L2-3, L4-5, and L5-S1,  
 20 and a bulge at L3-4.  
 21 Q Now, doctor, the same question with regards to  
 22 55-year-old construction worker who has been working 30-plus  
 23 years. Would you expect to see degenerative changes in such a  
 24 person's spine?  
 25 A Yes. And there are degenerative changes shown on this  
 26 MRI.

1 T. Kolb - by Plaintiff - Direct  
 2 Q. Can you just describe for us what degenerative disk  
 3 disease is. Do you see that in this MRI? Can you explain?  
 4 A. Yes, you do. You do see arthritis or degeneration in  
 5 the spine. There's three different things that happen when your  
 6 spine becomes arthritic. The first is that you lose the  
 7 springiness or the ability of these disks to be like little  
 8 shock absorbers. The water that is in them dries out; that's  
 9 called desiccate. So you lose the water.  
 10 The water here is the white area in the center, and you  
 11 kind of -- for example in this disk, 3-4, you've lost it. At  
 12 4-5, there isn't much either. So they dry out.  
 13 The second thing that happens is once your disks dry  
 14 out, they become brittle. They can't spring back and forth like  
 15 they used to, so you lose height. And you see that here, also.  
 16 That 2-3, 4-5, these disks have lost their height. That's the  
 17 second part of arthritis in the spine of the disk levels.  
 18 And the third part is, the third manifestation of  
 19 degeneration of the spine are these osteophytes in the front.  
 20 So this patient has, no question, degeneration or arthritis of  
 21 the spine.  
 22 Q. A 55-year old construction worker with arthritic  
 23 changes in his spine like this, is he more or less likely to  
 24 sustain herniations when he falls from a height?  
 25 A. If somebody has disks that are just held in place by  
 26 the ligaments but have become brittle and lost their height,