

# Is playing violin as dangerous as football?

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Cincinnati Symphony Orchestra Concertmaster Timothy Lees, has the privilege of using a 1720 Stradivarius violin.

*(Photo: The Enquirer/Kareem Elgazzar)*

Timothy Lees will never forget a rehearsal last spring with the Cincinnati Symphony Orchestra. Lees, who is concertmaster – the first-chair violinist and arguably the most important musician besides the conductor – remembers that they were playing Mendelssohn’s Symphony No. 4.

“I got half an hour into rehearsal, and my left hand started to feel really weak and like it was locking up a bit,” he said. “I thought, this is new. It was not functioning as it used to. I went straight to the personnel manager and said 'I need to see a doctor because this doesn’t feel right.’ ”

Now, nearly a year later – after myriad tests, traction, physical therapy and eventually, surgery on his cervical spine (neck) – [Lees is back onstage with the symphony and Pops.](#)

His goal was to be back in shape in time for [a two-week tour to Hong Kong, China and Taiwan](#), which is launching this weekend. But there was no guarantee that Lees would be back on the concert stage at all.

Sports fans know that professional athletes get injuries from years of intense physical activity. Office workers can experience pinched nerves from peering down into their computers. Typing may cause carpal tunnel syndrome. And "texting thumb" is the term describing the injury from texting into a smartphone or from extended periods of playing video games.



Concertmaster Timothy Lees, center, is back in his first chair of the Cincinnati Symphony Orchestra at the Taft Theatre. The violinist is making his return to the group following surgery. (Photo: The Enquirer/Kareem Elgazzar)

The concert hall may not be the first place people think of for stress injuries. But the repetitive strokes of a bow, a mallet, and even a maestro's baton can cause injuries such as nerve damage, joint, muscle or tendon problems. A 2012 [University of Sydney study](#) found that 84 percent of Australian symphony musicians suffered injuries during their lifetime and half were playing hurt.

In Lees' case, two of his fingers in the left hand – the hand that fingers the notes – were sticking together. Signs pointed to something called dystonia or "musician's spasm," a neurological movement disorder that ended the performing careers of several renowned musicians. The disorder affects 1 to 2 percent of all professional musicians, according to the Dystonia Society.

Lees' neurosurgeon, Dr. Jonathan Borden, worried about dystonia, but after ordering tests determined that a bone spur in Lees' neck might be the culprit. He had performed thousands of cervical disc procedures in the past. Still, he didn't know whether Lees' surgery would work until he was midway through it in the operating room.

"I monitored the nerves electrically during his surgery. We put the electrodes on, and the left hand was firing away, and the nerve was discharging abnormally. When I pulled the bone spur off the nerve, it got better immediately," Borden said. "I felt wonderful. At that moment I knew he was going to get better."

### **'I didn't think anything of it at the time'**

As with athletes, injuries can creep up on a player. Lees, 47, began experiencing "muscle fatigue" more than a year ago, and withdrew from performing as the soloist in the Barber Violin Concerto.

"I was working extra hard on many things at the time. I just felt I can't do this anymore. I've had that before, just from practicing and playing a lot. I didn't think anything of it at the time," he said.

So began a litany of treatments, doctor appointments and a frustrating lack of answers.

He first sought help from his wife, Catharine Carroll Lees, professor of viola and chair of the string department at the University of Cincinnati College-Conservatory of Music. She has a background in the [Alexander Technique](#), a method emphasizing awareness of tension in the body, and how to release it.

I've dealt with a lot of students with injuries, who came here with tendinitis," she said. "People are more aware of physiology, the way the body works, whereas, in the past, you might fight or push through it."



CSO concertmaster Timothy Lees and wife Catharine Carroll Lees *(Photo: Provided)*

Lees got some relief from stretching and relaxing. Then came that worrisome rehearsal of Mendelssohn last April. He called Borden, who suggested that he first see a hand specialist. A gamut of tests showed that his hand was perfect, with not a hint of arthritis.

The violinist was starting to panic. What was wrong? He had played since he was 7 – for 40 years. Would he ever play again? He wanted answers.

“I’m like a little bit desperate here,” Lees said.

An MRI (magnetic resonance imaging) revealed that a nerve was affected in his neck. Borden suggested traction and physical therapy to relieve the pressure. By September, about five months later, Lees felt better. He was ready to return for the new symphony season at the Taft Theatre.

“I was feeling great, going gung-ho at the Taft,” he said.

### **In the operating room on Halloween**

In the fourth week back at work, Lees started to wake up with numbness. His surgeon ordered a CT scan (computerized tomography, also called a CAT scan), indicating that the study might show a more detailed picture of his neck.

It turned out that two discs in his cervical spine had deteriorated “to the point where the bone spurs were growing to support the disc that wasn’t there and putting pressure on the nerve,” Lees recalled.

He was diagnosed in mid-October and was in the operating room on Halloween.

"His diagnosis wasn't very clear in the beginning," said Borden, who initially thought it might be something simple, such as a trigger finger.

Most people with disc problems have pain shooting down their arms, weakness and numbness – of which Lees had little. He chiefly complained that he was having trouble separating his fingers on his left hand while he played, the doctor said.

In fact, his symptoms mimicked dystonia. That condition caused two of America's most brilliant pianists, [Leon Fleisher](#) and [Gary Graffman](#), to lose control of their right hands. Fleisher has partly regained the ability to play with both hands. It caused violinist Peter Oundjian to resign as [first violinist of the famed Tokyo Quartet. He now has a career as a conductor.](#)

The surgeon was puzzled. Was it dystonia? However, there was that CAT scan, which showed a bone spur that was impinging on a nerve.

"String musicians tend to hold their head left as they're playing. So the musician's spasm occurs when you're playing, tilting your head to the left, and that pushes the bone spur directly into the nerve," Borden explained. "I was confident that it was the bone spur, but having the fingers stick together is classic for musician's spasm."

To ensure that Lees would be able to tilt his head and hold the violin, Dr. Borden performed a new surgery using artificial discs which allow normal range of motion, rather than using discs made of bone.

The surgery was a success, causing Borden to wonder whether the bone spur condition in musicians is more common than realized.

When Lees made his return to the CSO last month, his surgeon was in the audience.

For Lees, coming back from his injury also means building back stamina – both physical and mental.

"From a leadership standpoint, confidence and stamina go hand in hand," the violinist said. "For me, getting the stamina back up means that confidence comes back up because then I know I can do it."

He's never forgotten how to play the violin, but he is subtly changing his hand, neck and arm positions, and the mechanics of how he uses his fingers. He is focused on being completely relaxed. He started back at work slowly, returning for a Pops concert, then a CSO concert, taking a week or two off in between.

It is his livelihood, but playing the violin is also his life.

"Livelihood is one issue, but more than that, I love what I do," he said. "I could find other ways to be fulfilling in music, such as teaching. I could be perfectly happy, and functional. It's more about passion than anything else."

## **Musician injuries: Even conductors are not immune**

Musicians spend hours in the practice room, followed by hours of rehearsal before the final performance. So injury from overuse can occur with any instrument – including brass, keyboard, percussion, strings or woodwinds – as well as in singers and dancers.

"We spend our time crunching our shoulders forward and creating that sort of concave body shape, where the shoulders are hunched forward. We're sitting that way for hours," said CSO clarinetist Ixi Chen.

She is on a regimen to strengthen her neck and back. She sees a Pilates therapist and because she has neck issues, uses traction to stretch her neck at home. During rehearsals, if the maestro is working with other players, she'll put a lacrosse ball between her shoulder blades and chair to work the muscles.

For years, musicians hid their injuries. But in recent decades, organizations such as the Performing Arts Medicine Association (PAMA) have shed light on preventing and treating injuries. [PAMA's 35th annual symposium](#) in June is entitled "No Gain with Pain: Preventing and Overcoming Physical and Emotional Pain in Performing Artists."

"More arts health care professionals in all disciplines are taking an interest in the performing arts, in musicians as well as dancers and music theater," said Dr. John Chong, former president of PAMA, medical director of the Musicians' Clinics of Canada and faculty member at McMaster University and the University of Toronto.

Chong has been studying the area since 1986. Currently, he is quantifying muscle activity in motion when playing a violin, using a computer video setup. Information from EMG sensors on the neck and arms of the performer is sent to the computer at the same time as position and motion data. A graphic of the skeleton in real time illustrates position with a simultaneous display of muscle activity.

"We can check disorders of alignment. If there's too much flex or rotation, there's stress on the cervical spine or the shoulder, or the forearm and hand," he said. "So we can quantify joint movement, stress and strain."

Research in the performing arts still lags behind sports, believes voice pathologist Wendy LeBorgne, adjunct assistant professor of musical theater at CCM.



Eckart Preu, music director of the Cincinnati Chamber Orchestra, says even conductors can get repetitive motion injury. (Photo: Provided)

She consults with vocal students at CCM and also works with Broadway stars, notably in the current touring production of the hit show “Hamilton.”

“If you’re a female soccer player under age 18, we know the most common injury is a torn ACL. In the performing arts world, we don’t have as much information related to injury,” LeBorgne said.

Her most common question at CCM is, “Is it safe for me to perform?”

“Just like a runner or a dancer on a sprained ankle, they can get through it and nobody’s going to be the wiser. You can sing around the injury, but if you sing eight shows a week – and that happens often for Broadway performers -- the challenge is how can you do what you have to do safely? And when is it time to call out for a performance?”

Conductors are not immune, either, says [Eckart Preu](#), the newly-appointed music director of the Cincinnati Chamber Orchestra.

“I don’t think the body is built for you to have to move your arms for up to six hours a day in the same way,” Preu said.

Preu points out that some prominent maestros have big muscles in their arms from working out, such as Yannick Nézet-Séguin (music director of the Philadelphia Orchestra) and Esa-Pekka Salonen (conductor laureate of the Los Angeles Philharmonic).

Preu, 47, started a workout regimen two years ago because, he said, "I felt I was not able to keep doing that. If you do a wrong motion in a big climax, and you go (he grimaces in pain), all of a sudden, you feel like an old man pulling your hip. There's nothing you can do, and then you're out for a while."