

Aiming For Gold

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How Lindsey Vonn can compete with a ruptured ACL

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By Michal Ruprecht



Lindsey Vonn after crashing in the women's downhill race in the FIS Alpine Ski World Cup 2025-2026, in Crans-Montana, Switzerland, on January 30. (Fabrice Coffrini/AFP/Getty Images)

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Lindsey Vonn wiped out in a downhill race on January 30. She got up limping, then was airlifted from the course. The diagnosis: a ruptured ACL — a season-ending injury for most.

But the three-time Olympic medalist announced on Tuesday she would go on to compete in her fifth Games.

For anyone who's hobbled off the field, it's hard not to ask: How?

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“It is a big deal to tear your ACL,” said Lindsey Lepley, an associate professor of athletic training at the University of Michigan. “And doing anything while being ACL-deficient is a big deal.”

Vonn, 41, who is set to be the **oldest** Alpine skier to race at a Winter Olympics, has an extensive history of knee injuries and surgeries, including **two prior** ACL injuries. Dr. Martin Roche, a surgeon at the Hospital for Special Surgery, says Vonn’s **first injuries** date back to the beginning of her professional career in the 2000s.

She’s had problems with both knees, but her left was the “stronger” one, according to Roche, who **performed** a partial knee replacement on the Olympian’s right knee in 2024. After Friday’s crash, her left knee is now injured — a new turn in Vonn’s long injury saga.

What is the ACL and why is it important?

The ACL — also known as the anterior cruciate ligament — is a ligament that connects the bones of the knee, stabilizing the joint and preventing one bone from sliding in front of the other.

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“The knee is not a joint that is completely stable,” Dr. Anthony Petrosini, an orthopedic surgeon at Hackensack Meridian Health, said. “The ligaments play a great role in keeping the knee in position.”

Petrosini, who has torn his own ACL, says the structure is easily injured because it has a hefty responsibility in controlling the knee’s rotational stability. It’s the most **common** knee injury, **affecting** more than 200,000 people per year in the United States.

Weight-bearing and high-speed activities, particularly those involving sudden twists and stops, place the greatest burden on the ACL.

And skiing fits that bill. It’s among the **highest-risk** sports for ACL injuries. **Vonn’s sex** and prior injuries further increase that risk.

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When injured, the ACL can be partially torn, also known as a tear, or fully separated, referred to as a rupture. The terms are frequently used interchangeably, as Vonn did on Tuesday.

What happens when the ACL is injured?

A jolt of pain is felt when the ACL is first injured. Some people also feel a pop or instability in the knee. Fluid then accumulates in the joint, causing swelling and stiffness. The inflammatory response can also cause a locking sensation and reduced range of motion.

For many, that means trouble standing on the injured knee and continued pain.

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The structures above the knee also feel the pain. Lepley studies how muscles of the upper leg shut down after a knee injury — a process called muscle inhibition.

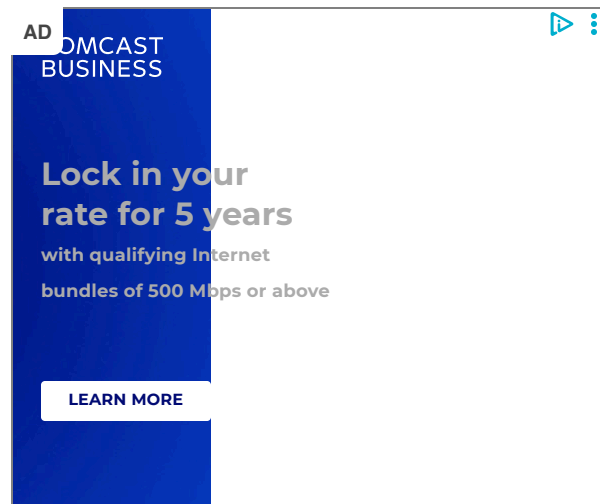
“It’s sort of this unique forgetfulness that happens between the brain and the muscle,” Lepley said.



Vonn clutches the back of her knee after crashing in the women's downhill in Crans-Montana on January 30. (*Fabrice Coffrini/AFP/Getty Images*)

The injury also travels up to the brain, **triggering** a fear response. “People are going to have fear of re-injury,” Lepley explained, noting the psychological component can cause someone to change movement patterns.

That’s why, Lepley says, Vonn was likely **performing** box jumps after the injury. “They’re sort of testing that fear,” Lepley said, noting the exercises can also help fight off muscle inhibition. “If you can’t jump and stabilize yourself on solid ground, that’s a good indication that somebody has too much hesitation.”



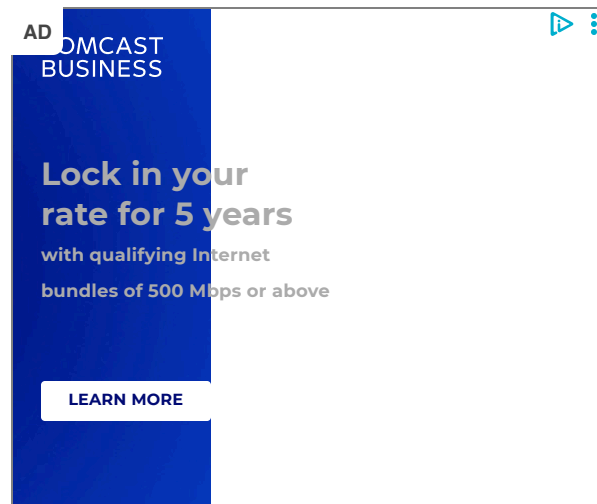
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In a video posted on Instagram on Thursday, Vonn squats with weights, lunges from side to side and does fast kicks against a ball.

How to treat an injured ACL

Once the ACL is torn, it doesn't regenerate in the same way that bone does. "Unfortunately, we're not like lizards," Lepley said.

Most people undergo surgery to reconstruct the ligament, and nearly all athletes get the procedure after the injury, according to Roche.



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While a surgical approach doesn't speed up recovery time, it can stabilize the knee, reduce the risk of further injury and allow for return to high-demanding activities like skiing. Some data suggests surgery can also reduce the risk of osteoarthritis — a common long-term concern after ACL injury — though the evidence is conflicting.

Regardless of whether someone has surgery, months of rehab are standard. Those who don't opt for surgery stick to pain control and rehab, learning to live without a functioning ACL.

Vonn said on Tuesday that surgery “hasn't been discussed.”

“It's not really on my radar screen right now. The Olympics are the only thing that I'm thinking about,” she said. “We're doing everything to make sure I am making smart and safe decisions.”

Has anyone ever skied on an injured ACL?

Yes, some of Vonn's teammates said they've done it. Other skiers, like Slovakian Veronika Velez-Zuzulová have done it, too. And Vonn says she's done it before.



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“It’s possible,” Roche said. But other parts of the leg need to compensate.

“When that ligament is gone, your muscles have to step up to help stabilize the joint,” Lepley said.

All the experts CNN spoke with emphasized that an immediate return to competition is far from the norm — and not recommended. Far more often, athletes do the opposite. Hitting the slopes would expose Vonn to substantial risk of further injury.

Plus, there was more to her injury. She also reported bone bruising and meniscal damage, both common companions to ACL injuries. These additional injuries raise the risk further, making her return to racing even more dangerous. The good news, though, is that Vonn didn't report any significant bone fractures, Roche said.

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Roche, who knows Vonn's medical history well, says it comes down to the athlete.

"She knows her body better than anyone," Roche said. "She'll be able to determine if she can overcome any injury to her knee quickly or if it's going to set her back."

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Training runs are scheduled for Friday and Saturday, and Vonn is set to begin racing on Sunday.

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“I don’t think she’s going to be able to perform at 100%,” Lepley said. “But I think she’s going to be able to make the best of a bad situation.”

Parts of the course that put more stress on one knee could be especially risky. Lepley says the Olympian might lack symmetry as she compensates.

The biggest concern is Vonn’s meniscus, which acts as a shock absorber and helps the knee move smoothly. Without a functioning ACL, the structure is more vulnerable and, if injured, it’s **notoriously difficult** to heal.

At the finish line, three things will matter most, Lepley says: a medical exam to check for any additional damage, close monitoring of pain and swelling and a renewed focus on restoring normal motion and walking. And if her knees are on her side, a medal.

“She’s in good hands,” Petrosini said. “To be able to pull off what she’s attempting is really remarkable.”



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