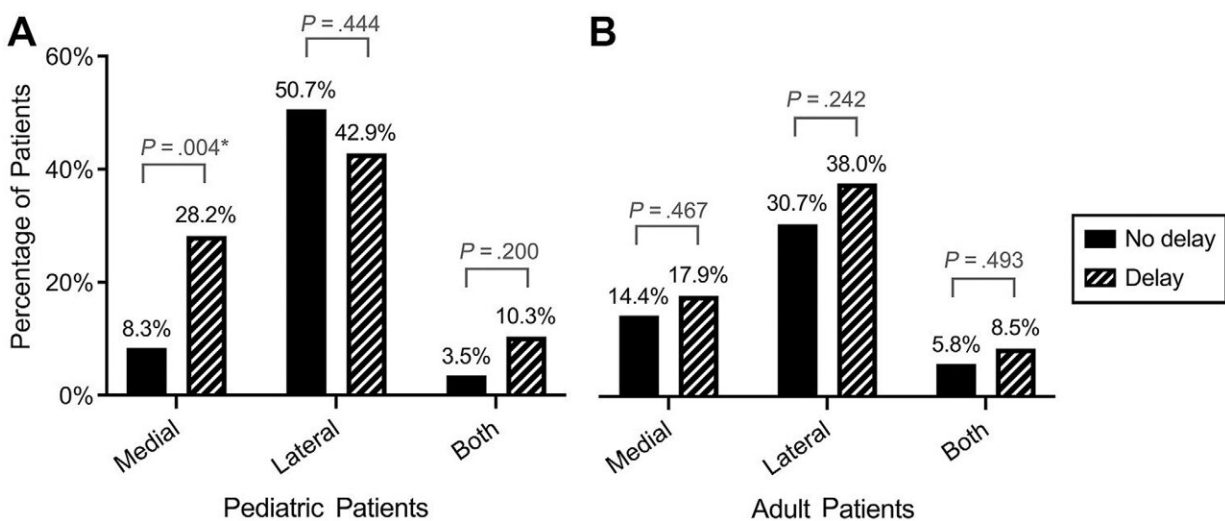


# Study finds delayed ACL surgery may be safe for many adults, less so for some children

October 10 2023



Incidence of new meniscal tears for (A) pediatric patients and (B) adult patients, by operative delay. \*Statistically significant difference between groups (P Orthopaedic Journal of Sports Medicine (2023). DOI: 10.1177/23259671231203239

A Johns Hopkins Children's Center study of medical records concludes that delaying surgical treatment of the anterior cruciate ligament, or ACL, in some children is associated with a higher risk of new tears in the meniscus and cartilage after the initial injury to the ligament, which helps join the thigh bone to the shin bone. Adults with the same type of

so-called ACL injury generally showed no significant increase in such risk, investigators say.

The likely explanation, the researchers say, is that adults are more likely to dial back physical activity and comply with calls for restrictions from a doctor, while children are more likely to continue strenuous sports and other play, and experience further [knee](#) damage that may not at first be obvious.

"What we have shown with children is that the longer you wait, the more damage may be done to the knee," says R. Jay Lee, M.D., senior author of the study and a pediatric sports medicine specialist at the Children's Center.

In the [study](#), described Oct. 6 in the *Orthopaedic Journal of Sports Medicine*, the Johns Hopkins investigators worked to establish the risk of tears to the meniscus, a C-shaped pad of cartilage in the knee, in pediatric and adult patients.

They did so by comparing the presence of new meniscal tears discovered during arthroscopy—a minimally invasive surgical procedure to repair the knee tissue using a camera—and tears present during an MRI taken around the time of an initial ACL injury.

The researchers say the findings reinforce the need for timely surgical treatment in [pediatric patients](#) to prevent ongoing damage to the knee, while older patients' surgical treatment may be safely delayed.

ACL tears, often experienced as a "popping" sensation in the knee, are especially common in children and adults who play sports that involve sudden, sharp changes in direction, such as football, soccer, lacrosse and basketball.

Research [estimates that](#) between 100,000 and 200,000 people each year tear their ACL in the United States. Historically, physicians have recommended that ACL reconstruction be delayed in younger patients until the child is finished growing. However, in people of all ages, ACL tears leave the knee unstable and more prone to further injury.

For the new study, Lee and his team searched electronic [medical records](#) and identified 542 patients (173 pediatric patients and 369 [adult patients](#) ) who underwent ACL reconstruction between 2013 and 2022 at Johns Hopkins Medicine.

They found that, overall, most patients (66%), both children and adults in the group studied, had a meniscal tear that was observed arthroscopically, but almost one-third of the tears, 32%, were new injuries not present on an initial MRI. In all, there were 36 new medial meniscus tears (tears on the inside of the knee joint) and 97 new lateral meniscus tears (tears on the outside of the knee). Some 17 patients developed both medial and lateral tears by the time of surgery.

Among those who showed no meniscal tears on their initial MRI, arthroscopy found new medial meniscal tears in 15% of pediatric patients and 16% of adults. But 48% of pediatric patients had new lateral meniscus tears, compared with 34% of adults.

The researchers say adults were more likely than pediatric patients overall to delay ACL reconstruction, but that among adults, the delayed reconstruction was not associated with a higher risk of meniscal tears at the time of injury or at the time of surgery. Researchers believe these findings suggest that delayed ACL reconstruction may be acceptable in adults.

The investigators say their study was limited by the potential for so-called "selection bias," in which surgeons may have been more likely to

operate soon after injury in those with more severe knee injuries. Additionally, the level of a person's [physical activity](#) after ACL injury is likely a major contributor to the development of further knee damage, but its specific contribution is challenging to measure. Lastly, meniscal tears that were missed on the initial MRI could have led to an overestimation of the incidence of "new" meniscal tears in some cases.

However, the researchers say they hope their findings will help inform decisions when adults and caregivers of children who experience ACL injuries are deciding when to have surgery. The researchers will continue their investigation, particularly looking at whether restricting patients' mobility has an effect on new meniscal tears.

**More information:** Arjun Gupta et al, Is Delayed Anterior Cruciate Ligament Reconstruction Associated With a Risk of New Meniscal Tears? Reevaluating a Longstanding Paradigm, *Orthopaedic Journal of Sports Medicine* (2023). [DOI: 10.1177/23259671231203239](https://doi.org/10.1177/23259671231203239)

Provided by Johns Hopkins University School of Medicine

Citation: Study finds delayed ACL surgery may be safe for many adults, less so for some children (2023, October 10) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-10-delayed-acl-surgery-safe-adults.html>

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