Normal knee function seen up to 20 years after patients underwent ITB ACL reconstruction as children

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Video Abstract

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Abstract

Over the past several decades, a concerning health trend has emerged among children: ACL injuries are on the rise. That's got clinicians re-thinking the best approach to recovery. Non-operative measures such as physical therapy, bracing, and activity modification used to be the norm. Now, given the concerning statistics, many believe surgical reconstruction could actually be the more conservative approach long term. New findings reported in the July issue of the American Journal of Sports Medicine appear to support that view. They suggest that ACL reconstruction through an iliotibial band technique can restore kinetic and kinematic function in the growing knee—and maintain it well into adulthood. The authors of the study tested the knees of 38 individuals who underwent iliotibial band ACL reconstruction as skeletally immature children. Because individuals enrolled in the study were of different ages, they represented a spectrum of post-surgery follow-up times, ranging from 1 to 20 years. Individuals were assessed by 3D motion analysis as they performed two forms of exercise: a drop vertical jump and a single-limb vertical hop. The authors compared the performance of the surgical limbs versus the non-surgical limbs across 5 different variables: the mean peak knee moments in all three principal directions at landing, the ground reaction force at landing, and—for the single-limb hop alone—the mean peak jump height. Paired t-tests and an equivalency analysis revealed no statistically significant differences in knee moments, ground reaction force, or jump height between operated and non-operated limbs. These results suggest that iliotibial band ACL reconstruction in childhood restores normal, symmetric, kinetic and kinematic function in the knee as soon as 1 year after reconstruction and maintains normal knee function for up to 20 years. The findings also appear to address the criticism that the "non-anatomic" features of this form of ACL surgery might compromise functional outcomes. Larger studies are needed to confirm these results. An in-depth look at these and additional features of reconstructed knees could help clarify the long-term benefits and risks of iliotibial band ACL reconstruction among growing children.