

IGF1 gene is essential to adult tendon growth, animal study shows

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Tendon injuries are among the most common injuries seen in athletes at all levels, from weekend warriors to professional basketball players. For those who rupture their tendons, returning to the same level of physical activity they enjoyed before the injury is rare.

Not a lot is known about how tendons adapt, or how they recover when injured. A recent animal study in *The FASEB Journal*, however, identified that a molecule called insulin-like growth factor 1 (IGF1) plays an important role in allowing tendons to adapt to physical activity, and is required for tendons to grow properly.

Using advanced genetic techniques in a [mouse model](#), researchers removed the IGF1 gene from tendons and monitored how the mice responded to [physical activity](#). They found that removal of IGF1 prevented the tendons from growing and adapting like they normally would. The researchers performed further studies in tendon cells to determine how IGF1 was working to cause tendons to grow.

"We are excited about the findings of this study, which shows the critical role of IGF1 in tendon growth," said Christopher Mendias, Ph.D., Associate Professor, Hospital for Special Surgery, and Adjunct Associate Professor of Orthopaedic Surgery, University of Michigan. "These findings provide important scientific rationale for pursuing IGF1 and the related human growth hormone in the treatment of tendon disorders."

Human growth hormone, or HGH, is an available drug that acts by increasing the levels of IGF1 in the body. Data from this and several other studies suggests that HGH might be beneficial in improving the treatment of [tendons](#) by helping restore them to pre-injury levels of functionality and minimizing scar tissue formation.

Provided by Federation of American Societies for Experimental Biology

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