Going from strength to strength: effects of growth hormone on muscle

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Growth hormone is used to treat children's growth disorders and has been used by some sports men and women to promote muscle growth and regeneration.

This is because it coordinates skeletal muscle development, nutrient uptake, and nutrient utilization. It is not clear, however, which of these effects are direct and which are indirectly mediated via growth hormone induction of the protein IGF-1.

Now, however, a team of researchers, led by Thomas Clemens, at Johns Hopkins University School of Medicine, Baltimore, has used mice engineered to lack in their skeletal muscle either the molecule to which growth hormone binds or the molecule to which IGF-1 binds to show that growth hormone control of skeletal muscle development is dependent on IGF-1, whereas its control of nutrient uptake is independent of IGF-1.

The authors hope that with additional work, these results will guide more informed use of growth hormone or growth hormone analogs for promoting muscle development and reducing muscle loss.

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