

Triggering muscle development -- a therapeutic cure for muscle wastage?

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Scientists in the UK and Denmark have shown that if elderly men were given growth hormone and exercised their legs showed an appreciable muscle mass increase.

Dr. Geoff Goldspink (Royal Free and University College Medical School, UK) says: "This raises the question: Can age-related loss of [muscle strength](#) and increased fragility be ameliorated by the therapeutic application of mechano growth factor (MGF)?" . There is hope that MGF can also help sufferers of diseases such as muscular dystrophy, ALS, renal disease or cancer, for whom intensive [exercise](#) is not an option. It may even prove useful to ameliorate muscle loss resulting from long periods in zero-gravity conditions during space travel. Dr. Mark Lewis (University College London, UK) will present their latest results on how MGF exerts its effects during his talk at the Society of Experimental Biology Annual Meeting in Glasgow on Wednesday 1st July 2009.

When muscles are stretched during exercise, they produce a specific substance known as mechano growth factor (MGF) that activates stem cells already present in the tissue. Once activated, these [progenitor cells](#) begin to divide, creating additional muscle fibres and increasing the size and strength of the muscle. In addition to intensive exercise, muscles need to be stimulated by growth hormone (GH) in order to release MGF. Since there is a natural decrease in the levels of this hormone as we age, this may combine with the lack of intensive physical activity to cause [muscle](#) wasting in elderly people.

"The downside", warns Dr. Goldspink, "is that MGF has great potential for doping in sports. A synthetic version is already available over the internet, and although it is still very expensive, it is expected that new technologies will bring down the price to make it comparable to that of human [insulin](#)".

Source: Society for Experimental Biology

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