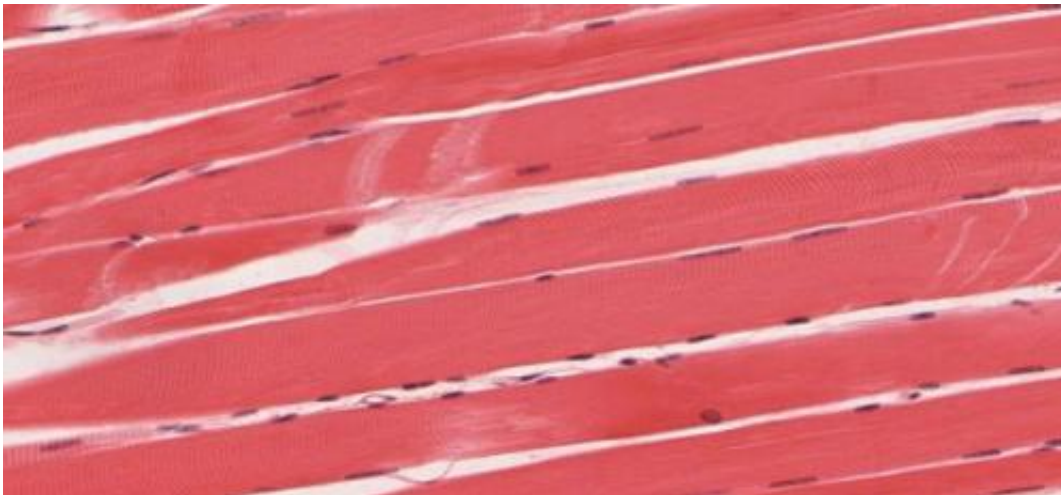


Extended rest between weight lifting sets could help muscle growth

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Skeletal muscle tissue. Credit: University of Michigan Medical School

Researchers from the University of Birmingham have found that extended rest intervals between sets of weight-lifting could help with muscle growth.

The findings, published in *Experimental Physiology*, go against the conventional belief that favours shorter periods of [rest](#). The study highlights that short rest intervals may actually impair the processes that control muscle growth.

16 [males](#) completed [resistance exercises](#) interspersed by either one

minute or five minutes of rest. Muscle biopsies were obtained at 0, 4, 24 and 28 hours post-exercise and analysed to determine myofibrillar protein synthesis (MPS) and intercellular signalling.

In the early part of recovery, the increase in MPS from resting levels was two-fold greater in those with longer rest periods. They saw a 152% increase, versus 76% increase in those with short rest intervals.

Dr Leigh Breen, from the University of Birmingham, explained, "With short rests of one minute, though the hormonal response is superior, the actual muscle response is blunted. If you're looking for maximised muscle growth with your training programme, a slightly longer interval between sets may provide a better chance of having the muscle response you're looking for."

The team recommend that novices starting out on weight training programs should take sufficient rest, of at least 2-3 minutes, between weight lifting sets.

Dr Breen added, "Over time, they may need to find ways to push beyond the plateau of muscle building that commonly occurs, and so may gradually decrease their rest periods. For experienced lifters, it's possible that they may not experience the same blunted muscle building response to short rest intervals, particularly if they have trained this way for a prolonged period and adapted to this unique metabolic stress. Nonetheless, similar recommendations of 2-3 minutes between sets should help to ensure maximal [muscle growth](#) in well trained individuals".

The research team are currently following up the investigation with a longer term study to see effects over a number of months, and further research into how individuals can maximise their training outcomes by manipulating variables, such a rest, in their training.

More information: James McKendry et al, Short inter-set rest blunts resistance exercise-induced increases in myofibrillar protein synthesis and intracellular signaling in young males, *Experimental Physiology* (2016). [DOI: 10.1113/EP085647](https://doi.org/10.1113/EP085647)

Provided by University of Birmingham

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