Last Word from Michael B. Reid, Andrew R. Judge and Sue C. Bodine

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A fruitful debate

‘You’ve got to go out on a limb sometimes because that’s where the fruit is.’ (Will Rogers)

We are honoured to have participated in this debate with Drs Phillips and McGlory and are delighted by the response it yielded. The number of comments received by The Journal of Physiology is among the most ever in the CrossTalk series. More importantly, the authors are prominent scientists and recognized authorities on disuse atrophy of skeletal muscle.

Many comments highlighted the biological factors that modulate disuse atrophy. These include age of the organism, differences among muscles, intracellular signalling mechanisms, and time dependence of atrophy. The latter variable was emphasized in multiple comments, illustrating its perceived importance. A number of authors also focused on technical challenges that limit our understanding, especially the methods used to measure protein breakdown rates in humans.

Several fundamental themes emerged across the comments. First, there appeared to be no loser in this debate. Both viewpoints were generally accepted. Second, there was no winner. Neither viewpoint disproved the other. This leads to the third and most widely expressed sentiment: protein synthesis and breakdown are integrated processes in muscle and both are essential for disuse atrophy. The fourth and concluding theme logically follows: any argument that disuse atrophy is primarily regulated either by protein synthesis or by protein breakdown is not justified.

We heartily agree.

Additional information

Competing interests

None declared.