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Sarcopenia and muscle functions: the impact of aging and disuse

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Aging is typically associated with inactivity that can quickly result in deconditioning. This often ultimately leads to debilitating immobility. the rapid progression of several degenerative diseases, and the ballooning health care needs. The changes in muscle structure and function strongly affected the capacity of movement playing a central role in the dramatic spontaneous reduction of it. The impact of low grade of every day mobility in the elderly during this downward spiral of events is not well understood. In fact, our understanding has been clouded by what appear to be quite different findings in the old and the very old. From a health system point of view it is imperative that easily achievable and effective countermeasures be determined to better protect the elderly and the increasing number of them actually overcoming the threshold of 80/90 years old.. Therefore, this presentation will focus upon exercise efficiency in the old, and the very old, providing in vivo and in vitro data on how the lack of even a minimal usual movement can lead to a impressive modifications in muscle structure and function. Finally, a muscle-specific countermeasure that can target both the decreased exercise efficiency and greater fall prevalence associated with aging will be discussed.

References

[1] Venturelli M., et al. (2015) In vivo and in vitro evidence that in oldest-old humans intrinsic upper- and lower-limb skeletal muscle function is unaffected by ageing and disuse. Acta Physiologica 215 pp. 58-71.

Keywords

Ageing, physical activity, muscle structure and function, sarcopenia, disuse