Dear Colleagues

Recent innovations in technology have been changing both our living environments and lifestyles. When lifestyle changes are drastic, they can often suppress daily physical activity. Skeletal muscle is highly plastic and adapts to various extracellular and intracellular stimuli associated with physical activity. An increased mechanical load on the skeletal muscle induces hypertrophy, whereas inactivity and unloading induce atrophy.

Aging, like inactivity, causes a degenerative loss of decreased skeletal muscle function and mass, a process known as sarcopenia, and impairs physical function as a result. Reduced physical function leads to physical inactivity, which increases obesity, osteoporosis, frailty, and various other lifestyle-related diseases. To mitigate the rising costs of healthcare, the maintenance of skeletal muscle function is regarded as a priority task in most countries with populations composed of large shares of adults aged 65 years and older. This task poses challenges, however, as the molecular mechanisms of both inactivity- and aging-associated reductions in skeletal muscle mass remain unclear.

This Special Issue of the Journal of Physical Fitness and Sports Medicine, “Aging and Skeletal Muscle Atrophy,” features a collection of original research articles and reviews covering the molecular and cellular aspects of skeletal muscle physiology and biology. We believe that these articles will help guide future research.

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