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# Rowing: as a promising geroprotector for senior people

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Both aerobic and resistance exercise have been recommended for senior people to prevent metabolic syndrome (high blood sugar, blood lipid abnormality, and high blood pressure) and locomotive syndrome (low bone mineral density, and low muscle mass and strength). Rowing is one of the oldest sports in the world, and it offers a combination of both aerobic and resistance exercise. Rowing is practiced on a seat, less impact is placed upon the knee joints, making it safe for senior people. Masters rowers have higher cardiorespiratory fitness and a lower risk of metabolic and locomotive syndromes than age-matched sedentary individuals.

Our joint study performed together with Waseda University and Hungarian Sport Science University for senior rowers, who participated in World Rowing Masters Regatta in Hungary, 2019, suggested that senior rowers have higher anti-oxidative capacity than sedentary controls. Our search for the mechanisms suggested that habitual rowing exercise is associated with lower oxidative stress and higher anti-oxidative capacity compared with sedentary controls. In addition, trained rowers demonstrated favorable fatty acid profiles, including lower n-6/n-3 and AA/EPA (Arachidonic acid/Eicosapentaenoic acid) ratios, together with altered interrelationships between telomere length, epigenetic aging markers, and chronological age,

suggesting enhanced biological resilience against aging processes.

Oxidative stress and anti-oxidative capacity were evaluated using the d-ROMs (derivative-Reactive Oxygen Metabolites) test and BAP (Biological Antioxidant Potential) test, which are widely utilized redox biomarkers for assessing systemic oxidative balance in clinical and sports science research. The seminar will also introduce the scientific background and practical applicability of these redox assessments as accessible tools for monitoring physiological responses to exercise and healthy aging.

Collectively, these findings support the concept that lifelong rowing exercise may contribute to the maintenance of redox homeostasis and healthy longevity. These observations further highlight the potential value of rowing as a multimodal lifestyle intervention targeting biological aging pathways. Therefore, rowing exercise could be expected as a promising geroprotector to delay biological aging associated with lengthening of health lifespan for the senior people.

## References


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Prof. SUZUKI
Informed consent
Prof. RADAK
Prof. HIGUCHI
Dr. SEKI


Experimental scene
Blood sampling