

247th WPI-IIIS Seminar

Total energy expenditure and body composition using stable isotope dilution methods in humans

This seminar provides new findings from energy expenditure and body composition studies, which are vital for health and athletic performance. It will introduce unique stable isotope methods, such as the Doubly Labeled Water technique, to accurately measure daily energy expenditure under free-living conditions. These techniques have revealed surprising findings, such as how metabolism changes across our lifespan and the energy compensation phenomenon, where high activity doesn't always increase total energy expenditure. The presentation will also cover new methods, such as D3-creatine dilution, for precisely assessing skeletal muscle mass, providing key insights for healthy weight management and optimizing athletic strategies.



Dr. Hiroyuki Sagayama

Institute of Health and Sport Sciences
University of Tsukuba

Date: **Wednesday, February 18, 2026**

Time: **10:30 – 11:30**

Venue: **1F Auditorium, IIIS Building**

*** On-site participation only**



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