

第73回スポーツサイエンス研究会

グローバルCOEプログラム「アクティヴ・ライフを創出するスポーツ科学」

日時 12月8日(火) 17時30分～18時30分

場所 早稲田大学 所沢キャンパス 100号館第一会議室

特別講演

Zsolt RADAK, Ph.D.

Semmelweis University, Budapest, Hungary

Exercise and Hormesis

Physical inactivity leads to increased incidence of a variety of diseases and it can be regarded as one of the end points of the exercise-associated hormesis curve. On the other hand, regular exercise, with moderate intensity and duration, has a wide range of beneficial effects on the body including the facts that it improves cardio-vascular function, partly by a nitric oxide mediated adaptation, and may reduce the incidence of Alzheimer's disease by enhanced concentration of neurotrophins and by the modulation of redox homeostasis. In addition, it appears that oxidation of guanine in DNA, RNA and telomere can also be described by hormetic dose response. Exercise-induced repair of DNA damage varies in nucleus and mitochondria, which could have special role in oxidative stress related adaptation. Single bouts of exercise increase, and regular exercise decreases the oxidative challenge to the body, whereas excessive exercise and overtraining lead to damaging oxidative stress and thus are an indication of the other end point of the hormetic response. Based upon the genetic setup, regular moderate physical exercise/activity provides systemic beneficial effects, including improved physiological function, decreased incidence of disease and a higher quality of life.



早稲田大学 スポーツ科学部
School of Sport Sciences, Waseda University

世話人：彼末 一之・後藤 一成
早稲田大学 スポーツ科学学術院
E-mail: kanosue@waseda.jp