

# 第160回スポーツサイエンス研究会

SGU (文部科学省スーパーグローバル大学創成支援

早稲田大学スポーツ科学学術院 健康スポーツ科学モデル拠点) 協賛

日時 2016年9月13日(火) 16:00より

場所 早稲田大学 所沢キャンパス 100号館 205教室

## 演題

Omega-3 derived lipid mediators, do they have a beneficial role for the patient and the performer ?

Senior Lecturer. Martin R Lindley  
(Loughborough University, UK)

A variety of fatty acids exists in the bloodstream and in the cells and tissues of humans with some being endogenous (non-essential) alongside some important exogenous fatty acids (essential – dietary). Fatty acids can be energy sources or membrane constituents and have biological activities that influence cell and tissue metabolism, function, and responsiveness to hormonal and other signals. Biological activities can be grouped as regulation of ; membrane structure and function, intracellular signalling pathways, transcription factor activity, and gene expression; alongside the production of bioactive lipid mediators. Through these effects, fatty acids influence health, well-being, and disease risk and possibly response to exercise and training. Although traditionally most interest in the health impact of fatty acids related to cardiovascular disease, it is now clear that fatty acids influence a range of other diseases, including metabolic diseases such as type 2 diabetes, inflammatory diseases in general and cancer specifically.

Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are omega-3 (n-3) fatty acids found in oily fish and fish oil supplements. EPA gives rise to eicosanoids that often have lower biological potency than those produced from arachidonic acid (AA) while both EPA and DHA give rise to new families of anti-inflammatory and inflammation resolving mediators called resolvins, protectins and maresins. Identification and structural elucidation of these new families of bioactive mediators in resolution has opened the possibility of diverse patho-physiologic actions in several processes including infection, inflammatory pain, tissue regeneration, neuroprotection-neurodegenerative disorders, wound healing, and others.

This presentation will take us on a journey from dietary supplementation through tissue incorporation and into biological action as linked to both disease and sporting performance.



早稲田大学 スポーツ科学学術院  
Faculty of Sport Sciences, Waseda University

世話人: 正木宏明・枝伸彦  
早稲田大学 スポーツ科学学術院  
E-mail: nob-eda@aoni.waseda.jp