

## **Programma Visiting Professor: Seminari prof. Analiza M Silva, University of Lisbon, Portugal**

Nell'ambito del programma Visiting Professor, finanziato dalla LR 7/2007 della Regione Autonoma della Sardegna, la Prof. Analiza M Silva terrà i seminari descritti di seguito.

21-06-2022, 12:00 – 13:00, aula 16, blocco G, Cittadella di Monserrato

### **Why is it so difficult to lose and so easy to gain it back**

Although apparently simple, energy balance regulation is a dynamic process that requires a better understanding of evidence-based and realist interventions. In fact, to understand and explain conditions such as obesity, the energy balance components, and respective interactions during a certain time period and the magnitude and potential success of exercise and/or diet interventions require further examination. For instance, it is recognized that weight loss slows over time as energy needs are attenuated, but the time required for this dynamic process is difficult to achieve. In this regard, the extent to which humans adapt to changes in food intake through adaptive thermogenesis or metabolic adaptation--by turning down the rate of heat production during energy deficit (so as to conserve energy) or turning it up during overnutrition (so as to dissipate excess calories)--has been one of the most controversial issues in nutritional sciences. This lecture will explore the metabolic and behavioral compensations that occur during weight loss and maintenance to conserve energy, thus compromising weight management.

23-06-2022, 12:00 – 13:00, aula 16, blocco G, Cittadella di Monserrato

### **Structural and functional body components in athletic health and performance**

Advances in body composition assessment enable detailed body composition analyses and the respective organization at different levels.

Sports-related professionals are interested in understanding how and which body components are relevant for improving performance, preventing injury risk, and monitoring athletic health. The aim of this presentation is to propose an integrative model that links performance, injury risk, and athletic health with body components, and to report their cross-sectional and longitudinal associations. Cross-sectional studies reveal that endurance athletes with higher fat mass (FM) show a longer race time, whereas a higher fat-free mass benefits power and strength-related tasks.

Longitudinal studies indicated that increases in intracellular water, assessed through dilution techniques, were associated with power and strength improvements, independently of weight and lean-soft-tissue changes. Currently, reference values for body composition assessment using anthropometry and DXA are available for a few sports, according to sex.

More research is needed to develop a functional body composition profile according to sports-specific requirements.

Analiza M Silva, PhD, is Associate Professor at the Department of Sport and Health of the Faculty of Human Kinetics, University of Lisbon

Her main research lines are:

- Energy balance regulation in response to exercise/sedentary behavior and/or diet-induced weight-loss trials: metabolic and behavioral compensations;
- Cellular and extracellular hydration in performance and health: from dilution techniques to bioelectrical impedance analysis;
- Interaction between body composition, fitness and metabolic markers;
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