Rennes 2 University

Movement, Sport and Health Sciences Laboratory (M2S)

Description succinte

Presentation

The main objective of M2S is to explore the effects of physical activity on human health and sports performance. The research unit is particularly interested in understanding the pathophysiology of physical inactivity and the potential effects of physical activity on the development of cancer and diabetes. It also studies physical activity in terms of sports performance where the prevention of pathological risks and the optimization of training procedures – involving new technological tools (e.g. virtual reality) – are major issues. The results of this research are intended to improve athletic performance while preserving athletes' physical integrity. With this dual goal, the M2S research centre adopts a multidisciplinary approach based on tools and methodology derived from cell biology, physiology, biomechanics and computer science.

Research Topics

M2S aims to study physical activity and sport from a life science perspective. The purpose of the research carried out is to gain a better understanding of the mechanisms of human adaptation to exercise using innovative tools and methods based on a physiological and biomechanical approach. This scientific theme is divided into two research topics: *Sport and Health and Sport and Performance*.

The objective of the **Sport and Health** research topic is to understand, through a translational approach combining clinical and experimental studies, how inactivity and physical activity impact health to:

1. prevent the development of chronic pathologies linked to physical inactivity, and
2. optimize the management of chronic pathologies (cancer, metabolic diseases, arteriopathy, motor pathologies) through adapted physical activities.

The **Sport and Performance** research topic addresses the relationship between physical activity and health from a sport performance perspective. The main objective of this research topic is to identify and model the physiological and biomechanical criteria allowing the athlete to combine both the optimization of their training process and the maintaining of their physical integrity. It is divided into three main research themes:

1. quantification of physical activity
2. training load
3. material and environment interactions

Key Figures: 19 lecturer-researchers / 3 engineers / 20 PhD students registered at Rennes 2

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