Contribution ID: **87** Type: **Oral**

The companionship of lean mass and fat mass revisited: towards novel concepts in human body composition autoregulation

Current explanations about how body weight is regulated generally center on control systems operating via energy intake and energy expenditure. The role played by control system(s) operating through energy partitioning between lean mass and fat mass is, however, rarely invoked. Yet, in the late 1970's and 1980's, the control of the body's lean-fat partitioning was embodied in the classic work of Gilbert Forbes on human body composition during weight loss and weight gain - leading to his famous quote that 'lean body mass and body fat mass are in a sense companions'. A control of lean-fat partitioning also constitutes a cardinal feature of the Payne-Dugdale 'dynamic equilibrium'model of weight regulation in which an intrinsic partitioning characteristic between lean and fat tissue - which they referred to as the P-ratio. This presentation will first revisit the concepts and hypotheses about an intrinsic (or endogenous) control of lean-fat partitioning, its sensitivity to initial adiposity during weight loss and weight gain, and its role in the dynamics of lean mass and fat mass recoveries during weight regain. It will then focus upon the outcome of interactions between this intrinsic control of lean-fat partitioning with other intrinsic control systems or extrinsic factors, and which have led to more recent concepts of the 'thrifty catch-up fat phenotype'and 'collateral fattening'–with implications for research directed at understanding the mechanisms by which developmental programming, dieting and sedentariness predispose to obesity and cardiometabolic diseases.

Country

Switzerland

Institution

Department of Medicine, University of Fribourg

Author: Prof. DULLOO, Abdul (Department of Medicine, University of Fribourg, Switzerland)

Presenter: Prof. DULLOO, Abdul (Department of Medicine, University of Fribourg, Switzerland)

Session Classification: Oral Abstract Presentations - Undernutrition

Track Classification: Biology