



## **SATIATION, SATIETY AND THE CONTROL OF FOOD INTAKE** Theory and practice

*Blundell, J. – Bellisle, F. (Eds.)*

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The current period is a challenging time to discuss the questions of satiation, satiety and appetite control. An increasing part of the world's population can be described as possessing excess body fat incompatible with optimal health. Can human appetite be managed to produce more healthy lives and what we need to know to bring this about? With growing concerns about the rising incidence of obesity, there is an increasing interest in understanding how the human appetite contributes to energy balance and how it might be affected by the foods we consume, as well as by other cultural and environmental factors. The book *Satiation, satiety and the control of food intake* addresses various aspects of the rich investigation of satiation and satiety mechanisms.

The book includes 5 parts with 20 chapters written by an international team of expert contributors.

Part one introduces the concepts of satiation and satiety, which are major components of the satiety cascade. It discusses how these concepts can be quantified, and analyses the strengths and weaknesses of the various methods currently used in research. Specifically, subjective and objective tools for measuring meal size, microstructure of the meal, meal request and intermeal intervals are described.

Chapters in part two focus on biological factors of satiation and satiety. Various brain and peripheral manifestations of satiation and satiety are described in

the context of genetics and metabolism. The role of stomach, some gastrointestinal neuropeptides and peptide hormones that are released after food intake is discussed. It is reviewed how short- and long-term mechanisms operate in concert to provide appropriate regulation of satiety, focused to the emerging knowledge on adipokines in energy homeostasis. The role of different genes in hunger and satiety signalling as well as reward and food-motivating behaviour are discussed.

Part three moves on to explore food composition factors. The impact of energy density and portion size on satiation and satiety is presented, as well as the role of proteins, fats and carbohydrates in satiety. The specific influence of the physical state of the ingested substances (liquid or solid), the impact of portion size and the potential benefits of functional agents on satiation and satiety are discussed.

Food choice and energy intake are often motivated by the expectation or experience of pleasure. Chapters in part four deal with hedonic, cultural and environmental factors of satiation and satiety. The impact of food liking and wanting on control of food is presented. An insight into the influence of satiety on intake as it occurs in the complex, multi-determinant environments is presented, and the issues of sensory-specific satiation and satiety are discussed.

Part five is devoted to public health implications, given the importance of satiation and satiety in prominent issues such as weight regulation and obesity. The importance of individual factors such as the "low satiety phenotype" is addressed, as well as the potential development of health claims associated with the satiating power of foods or consumer understanding of satiation, satiety and related health claims.

The book represents a compilation of research in the area of satiation and satiety, and provides a concise and authoritative overview of appetite regulation. The editors apparently did not intend to force a consensus of opinion if one was not emerging, hence some of the views expressed in the chapters may be in conflict with the others. In an area of research as multi-faceted and complicated as the control of human appetite, there is not always a 100% consensus. The book serves to demonstrate the current status of science in this field and it can be expected that it will stimulate further thinking and research.

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