Chapter 3

Recent Trends in Functional Foods for Obesity Management

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ABSTRACT

Obesity is a medical condition caused by the accumulation of excess fat in the body. The main causes of obesity are lifestyle, less physical activity, and increased health problems. Overweight and obesity have increased over the past 20 years in many regions of the world, particularly the prevalence of obesity in childhood. It is not only a problem of developed countries but also becoming a growing burden for the developing countries. Functional foods might play important role in prevention or treatment of overweight. Functional foods for obesity influences the energy balance equation regulated by the control of energy intake or of energy dissipated as heat (thermogenesis).

INTRODUCTION

Obesity is a medical condition in which accumulation of excess body fat deposits in adipose tissues. As a condition, obesity is associated with reduced life expectancy and increased health problems (Haslam, & James, 2005). Obesity not only triggers diabetes but it is also associated with reduced life expectancy and many other health problems. Numerous studies indicate that higher levels of body fat are associated with an increased risk of many adverse health conditions. The problem of obesity arises from an energy imbalance whereby energy intake exceeds energy expenditure.

Dealing with obesity by either prevention or treatment requires modification of one or both components of energy balance. It is a multifactor disease where several factors cause its onset like heredity, metabolic, behavioural, environmental, cultural etc. All these factors may play together in different grades of contribution, which may differ between patients and may influence treatment objectives in each individual. Low BMR is a risk factor for later obesity (Griffiths, Payne, Stunkard, Ribers, & Cox, 1990; Ravussin, & Swinburn, 1993). Astrup et al. (1996) reported that formerly obese (post-obese) patients have a 5- fold higher risk of having a low BMR than the never obese.

Weight loss is increasingly recognized as bringing major health benefits to overweight people and is linked with increases in life expectancy of people having obesity-related complications (Rayalam, Della-Fera, & Baile, 2008). Overweight and obesity have increased over the past 20 years in many regions of the world, particularly the prevalence of obesity in childhood. Obesity is not only restricted to the developed world; it is also becoming a growing burden for the developing countries (Martorell, Kettel Khan, Hughes, & Grummer-Strawn, 2000). Data from the International Obesity Task Force (IOTF, 2005) indicates that worldwide, over 20 million children under the age of six are obese. Obesity is a multi-factorial problem and its development is due to multiple interactions between genes and environment.

Worldwide obesity has become a serious problem. Use of drugs in obesity management affects one of the fundamental processes of the weight regulation in human body and causes serious side effects which overcome over their beneficial effects. Now the clinical and non-clinical researchers are facing a challenge to search for non-pharmacological alternatives for the prevention and treatment of obesity. Diet modification, use of functional foods & nutraceuticals and changes in the life style are some options to prevent obesity. This chapter focuses on the importance and use of functional food ingredients for obesity management and various problems associated with it.

Since long time the fight against obesity and food manufactures has offered many food products like dietetic foods in which fat and sugars are substituted by artificial sweeteners and fat replacers, respectively. Recently many products are available in the market with low energy density, products with bioactive compounds, functional foods and nutraceuticals that are effective in obesity management. The main points in the evaluation of functional foods would be the safety and efficacy, thereby avoiding misleading advertisements to the consumer. The new European regulation regarding food labelling, may encourage the food industry to carry out more investment in research and in the determination of the effectiveness of the functional products launched to the market at biochemical, molecular, genomic and psychological levels.

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