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Functional Foods and Health Claims Concerning Body Weight Management

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Body weight stability is under the control of a number of regulatory factors affecting both terms of the energy equation: intake and expenditure. However, inadequate eating patterns and physical inactivity contribute to the increasing rates of obesity prevalence in genetically predisposed individuals. Indeed, the high consumption of energy-dense foods with elevated proportions of fat or refined carbohydrates as well as the availability of motorized devices and the rising time devoted to sedentary pursuits (TV, sitting activities, etc.) are boosting the burdens related to obesity and the associated co-morbidities such as cardiovascular diseases, diabetes, inflammatory disturbances, etc. Body weight management is commonly based on dietary counseling or nutritional education strategies devised to adjust energy or control the macronutrient distribution intake, while pharmacological or surgical approaches constitute other less desirable alternatives. In this context, functional foods concerning the management of excessive weight gain are currently being developed and updated nutritional and health claims for this type of foods are under investigation. A food can be regarded with functional properties concerning obesity if it satisfactorily demonstrated to beneficially affect the appetite (satiety) behaviors or increase the energy expenditure patterns or the substrate metabolism patterns, or to control macronutrient oxidation, showing their effects when consumed as part of a normal diet. The following foods are currently investigated due to a potential application in the management of excessive weight or fat deposition: nuts, fish, legumes, fruits and vegetables, dairy products, whole grains, herbal foods (tea) and low-calorie/fat products. Indeed, some food components with potential functional properties regarding weight control include different non-digestible carbohydrates with different glycemic index (inulin, fiber, oligosaccharides), sweeteners and sugar substitutes, fat replacers, specific fatty acids (conjugated linoleic acid, medium chain triglycerides, diglycerides), some protein and amino acids, as well as some minerals (calcium, chromium, tungstate), antioxidant substances (vitamins, polyphenols) and thermogenic compounds (caffeine, ephedrine, green tea). Nutritional and health claims in this field are being focused for "generic" or well established generally accepted claims and for "innovative" or product-specific claims, seeking to reducing energy intake or increasing energy expenditure (thermogenesis) or substrate utilization efficiency. On the other hand, the substantiation of nutritional and health claims is basically subjected to the characterization of the food/food components with nutritional benefits either by improving the weight status or by reducing the associated risk to obesity. The performance of scientifically valid intervention trials with appropriate markers showing functionality is a compulsory requirement according to newer legislation.