

Relationship between Mediterranean Dietary Polyphenol Intake and Obesity.

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Obesity is a multifactorial and complex disease defined by excess of adipose mass and constitutes a serious health problem. Adipose tissue acts as an endocrine organ secreting a wide range of inflammatory adipocytokines, which leads to systemic inflammation, insulin resistance, and metabolic disorders.

The traditional Mediterranean diet is characterized by a high phenolic-rich foods intake, including extra-virgin olive oil, nuts, red wine, vegetables, fruits, legumes, and whole-grain cereals. Evidence for polyphenols' effect on obesity and weight control in humans is inconsistent and the health effects of polyphenols depend on the amount consumed and their bioavailability.

The mechanisms involved in weight loss in which polyphenols may have a role are: activating β -oxidation; a prebiotic effect for gut microbiota; inducing satiety; stimulating energy expenditure by inducing thermogenesis in brown adipose tissue; modulating adipose tissue inhibiting adipocyte differentiation; promoting adipocyte apoptosis and increasing lipolysis.

Even though the intake of some specific polyphenols has been associated with body weight changes, there is still no evidence for the effects of total polyphenols or some polyphenol subclasses in humans on adiposity.

