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Resumo	Obesity is a health problem worldwide, and energy imbalance has been pointed out as one of the main factors responsible for its development. As mitochondria are a key element in energy homeostasis, the development of obesity has been strongly associated with mitochondrial imbalance. Polyphenols are the largest group of phytochemicals, widely distributed in the plant kingdom, abundant in fruits and vegetables, and have been classically described as antioxidants owing to their well-established ability to eliminate free radicals and reactive oxygen species (ROS). During the last decade, however, growing evidence reports the ability of polyphenols to perform several important biological activities in addition to their antioxidant activity. Special attention has been given to the ability of polyphenols to modulate mitochondrial processes. Thus, some polyphenols are now recognized as molecules capable of modulating pathways that regulate mitochondrial biogenesis, ATP synthesis, and thermogenesis, among others. The present review reports the main benefits of polyphenols in modulating mitochondrial processes that favor the regulation of energy expenditure and offer benefits in the management of obesity, especially thermogenesis and mitochondrial biogenesis.
Fomento	