Spread enriched with plant sterols as an example of a new functional food

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Functional food is a new frontier in food and nutrition science that is developing rapidly. A functional food is best defined as a food with a *health claim* based on clear scientific evidence such as epidemiological and animal studies but most importantly, intervention clinical trials in humans. Furthermore, a functional food must be safe within a wide range of intake in target and vulnerable groups.

An example of a recent successful functional food is the incorporation of esterified plant sterols/stanols in vegetable oil spreads. Plant sterols occur naturally in our diets. The average daily intake of plant sterols in adults (non-vegetarians) ranges between 150 and 600 mg/day (3-6 mg/kg/body weight) and mostly constituted of β-sitosterol, campesterol and stigmasterol (1). Plant sterols lower serum cholesterol levels by decreasing both dietary and biliary cholesterol absorption in the small intestine, with a consequential increase in faecal excretion of cholesterol (2). Vegetable oil spread enriched with plant sterols has been scientifically proven to lower blood cholesterol levels in a series of human clinical trials conducted to strict criteria. These randomised clinical controlled trials addressed the efficacy of the product in lowering blood cholesterol levels, the dose response relationship, the food carrier and finally the interaction with dietary changes (3,4). The results demonstrated that plant sterol/stanol enriched vegetable oil spreads reduce total- and LDL-cholesterol levels around 10 to 15% on a daily intake equivalence of about 1.6-2.0 g of plant sterols/stanols.

In conclusion, plant sterols/stanols enriched vegetable oil spreads are a clear example of a functional food established according to rigorous criteria. This new innovation could contribute significantly to improving the blood cholesterol profile of the mildly to hypercholesterolemic groups (5).

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