The nutritional benefits generally recognized for the consumption of extra virgin olive oil (EVOO) are based on a large number of dietary trials of several international populations and intervention studies. Unfortunately, many authors in this field used questionable analytical methods and undefined commercial kits that were not validated scientifically to evaluate the complex bioactive constituents of EVOO and lipid oxidation and decomposition products. Many questionable antiradical methods were commonly used to evaluate natural polyphenolic antioxidants. Extensive differences were observed in experimental design, diet control, populations of different ages and problems of compliance intervention, and questionable biomarkers of oxidative stress. Analyses in many nutritional studies were limited by the use of one-dimensional methods to evaluate multifunctional complex bioactive compounds and plasma lipid profiles by the common applications of commercial kits. Although EVOO contains polyphenolic compounds that exhibit significant in vitro antioxidant activity, much more research is needed to understand the absorption and in vivo activity. Many claims of in vivo human beneficial effects by the consumption of EVOO may be overstated. More reliable protocols and testing methods are needed to better validate the complex nutritional properties of EVOO.

Keywords:
Extra virgin olive; nutritional benefits; methods