

# Olive oil and olive leaf extracts consumption: A survey on consumer's attitudes

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## Introduction

Olive oil is the basis of the Mediterranean diet, which is considered one of the best diets in terms of preventing modern-day diseases (high blood pressure, increased triglycerides, cholesterol, obesity and diabetes). Olive oil consists primarily of triacylglycerols and about 0.5%-1.0% nonglyceridic constituents (Pierfrancesco et al., 2021; Kelli et al, 2002) but it is also a valuable source of different phenolic compounds (Rodríguez-López et al, 2021). Many of phenolic compounds contribute to the resistance of olive oil to oxidative rancidity and is also beneficial for human health (Rodríguez-López et al, 2021; Suvarna and Sharma., 2021). Numerous reports have shown that olive oil phenols are potent inhibitors of LDL oxidation in vitro (Visioli et al., 1995) and it is known that the oxidation of LDL is linked to the formation of atherosclerotic plaques (Visioli et al., 1995). In human randomized controlled trials, olive oils rich in phenolic compounds have shown to protect against oxidative damage and inflammation and to improve the quantity of cholesterol transported by high-density lipoprotein and also the lipoprotein quality (Torre et al., 2021). The olive leaves are also rich source of bioactive compounds such as oleuropein, verbascoside, apigenin, luteolin and the triterpenoids i.e., oleanolic and maslinic acids (Nenadis et al., 2021). Regarding bioactivities, effects related to cardiovascular and respiratory diseases, cancers or diabetes are pointed for olive leaf extracts (Nenadis et al., 2021; Manna et al., 1997).

## Materials and methods

The survey was conducted in the period of May to August 2021 in Novi Sad, Serbia, on a sample of 233

respondents (25 - 65 years old; 78.1% female and 21.9% male). As for the level of education, the majority of respondents are highly educated (50.6%), 38.6% have secondary education, 9.4% of respondents possesses specialization, master or doctoral degree. Only 1.3% have primary education. Respondents who suffer from a chronic disease were in a significantly smaller percentage (24%) than respondents who answered on the same question negatively (76%). Additionally, the questionnaire included the following questions: Is the diet important for the respondents? What type of diet do they use dominantly? Which oil do they use the most in their diet? Do the respondents use olive oil and in what quantity? How familiar are the respondents with the positive effects of olive oil on human health? Did the respondents apply olive oil for therapeutic/health purposes?

## Results and discussion

Our survey confirmed that the diet habits are very important for our respondents and they connect it with health. The traditional way of eating is mostly represented (76.8%), followed by the Mediterranean (14.6%), while vegetarian (6.4%) and fast food (1.7%) are represented in a smaller percentage. As expected, the consumption of fast food is most common among the younger population, but the trend of switching to better quality food is already noticeable in the 30 to 35-year-old group, which was the most numerous in the survey. Based on the respondents' answers, the highest consumption is recorded for sunflower oil (60.1%), followed by olive oil 36.1%, grape seed oil 3% and coconut oil 0.9%. This trend is probably largely influenced by economic reasons as well as eating habits in our region. Most respondents answered that they use olive

oil in their diet (85.8%), while only 14.2% do not use olive oil at all. The majority stated that olive oil should be used regularly in the diet (94.4%). The quantities used by respondents is mostly less than 500 mL per month (38.9%), while 31.7% of respondents use 500 mL per month, 14.4% use more than 500 mL per month, and 14.9% use 1 L or more. In this research, 91.8% of respondents were aware of the positive effects of olive oil. Of the health benefits that they know, respondents stated that olive oil contains unsaturated fatty acids, has a preventive effect on cardiovascular diseases, that it is strong antioxidant, that lowers the level of LDL cholesterol in the blood, as well as that it is an elixir of youth and has beneficial effects on skin. As many as 73.8% of respondents believe that with the continuous use of olive oil and the Mediterranean diet, it is possible to reduce the risk of CVD while 25.3% of them are not convinced in that. On the other hand, only 32.2% of respondents had the opportunity to use olive oil for therapeutic purposes, locally in the form of skin care preparations or orally in combination with St. John's wort. As for the olive leaf, it was observed that respondents (61.4%) have the information that olive leaves are used for preventive and therapeutic purposes, as well as that olive leaf extracts are ingredients of some herbal products and nutritional supplements. Only 19.3% respondents answered that they have more detailed knowledge about health effects of olive leaf and its extract and preparations while 19.3% answered that they did not know about olive leaf preparations. Of our respondents, 86.7% never used olive leaf or preparations with olive leaf extract, while 13.3% of participants answered that they used a dietary supplement with the olive leaves extract for the purpose of lowering slightly elevated blood pressure.

## Conclusion

Olive oil is a rich source of nutrients that have a beneficial effect on human health, while epidemiological studies pointed out that the Mediterranean way of eating can reduce the risk of cardiovascular diseases, from which a significant number of people suffer today. During our survey we collected data about consumption of olive oil and dietary habits of our respondents together with their knowledge about other beneficial olive parts i.e., olive leaf. A higher consumption of sunflower than olive oil in the diet of our respondents was observed. This could be due to economic reasons as the sunflower oil is much more affordable. On the other hand, most respondents agreed that the consumption of olive oil should be increased in the diet as well as for therapeutic purposes due to its

beneficial effects on the human body. As for the olive leaf, (61.4%) respondents have the information that olive leaves are used for preventive and therapeutic purposes. In addition, it is necessary to work on further education of the population about the importance of healthy nutrition and the benefits that plant products can provide to human health.

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