Information Sheet 3: Olive Oil

Key Points

- Buy extra-virgin olive oil stored in dark bottles
- Consume within 12 months from bottling (not from purchase)
- Best eaten raw with salad or cooked vegetables
- Not recommended for frying because high temperatures reduce nutritional value

Introduction

Olive oil consumption is associated with a lower risk of heart disease and certain cancers including breast and colorectal cancer. However, evidence regarding the relationship between olive oil and prostate cancer is more sparse and inconclusive [1, 2].

Antioxidant Properties of Olive Oil

There is particular interest in the general health benefits of olive oil because of its antioxidant properties. Antioxidants are substances which protect the body against damage from harmful free radicals produced from normal body processes and exposure to sunlight, pollution and cigarette smoke. Olive oil is an example of a food source high in antioxidants and has been suggested to have a protective role against cancer by protecting the body against free radical damage [3].

Types of Olive Oil

There are three varieties of olive oil available: refined, virgin and extra-virgin. Each variety has different antioxidant activity, and hence, different potential health benefits [4].

Unprocessed extra-virgin olive oil has the greatest antioxidant activity and is the recommended type for raw consumption and cooking at low temperatures. For cooking at higher temperatures, other oils such as canola oil are recommended [5].

Cooking

The smoke point is the temperature at which chemical breakdown occurs and the nutritional value of the oil decreases. Therefore, oils with a higher smoke point are more suitable for high-temperature cooking processes such as frying [5].

Olive oil has a relatively low smoke point (210^{o}C) compared to other oils such as canola oil (240^{o}C). Although the optimal temperature for frying is 180^{o}C and is below the smoke point of olive oil, higher temperatures are often reached and can degrade nutrients in olive oil [5]. Hence, to preserve the unique nutrients found in extra-virgin olive oil, it is best eaten

raw such as in salad dressings and with cooked vegetables [4].

It may be useful to know that even though the nutritional value of olive oil deteriorates at high temperatures, there is minimal production of harmful substances. This is because of the low saturated fat and high antioxidant content in olive oil [6].

Buying and Storage

Extra-virgin olive oil has unique nutritional properties including antioxidants such as tocopherols, phenols and carotenoids [7]. Degradation of these nutrients can occur over time from factors including oxygen, light and temperature [8]. Since olive oil is produced during crop season (autumn) and then sold throughout the year, the packaging and storage conditions are very important [7].

Olive oil is particularly sensitive to exposure to light. A study found that extra-virgin olive oils exposed to light had a significantly lower content of certain nutrients (eg. tocopherols, carotenoids, chlorophyll) compared to oils stored in the dark. Extra-virgin olive oil exposed to light had a significantly reduced shelf life and could no longer be considered as 'extra-virgin' after only 2 months of light exposure [9].

Therefore, to reap maximum benefits from olive oil, it is recommended to buy extra-virgin olive oil stored in dark bottles and consume within 12 months from bottling [7, 9].

Summary of Research

There are no studies specifically studying the relationship between olive oil and prostate cancer. However, some evidence is available from studies which investigate olive oil as part of a monounsaturated fatty acid (MUFA) intake or as part of the Mediterranean diet (olive oil makes up 95% of added fat in the Mediterranean diet) [4]. Most studies did not differentiate between plain olive oil, which is most commonly used, and extra-virgin olive oil, which has the highest antioxidant properties [2, 4].

An example of a study investigating the relationship between MUFA intake and prostate cancer is a case-control study conducted in New Zealand. In this study, higher consumption of vegetable oils rich in MUFA (eg. olive oil, canola oil, peanut oil) was associated with a reduced risk prostate cancer. However, no association was found between total MUFA intake and prostate cancer risk. This suggests that the beneficial effects of vegetable oils involve other factors other than high MUFA content [10]. One such factor may be the antioxidant effects of olive oil.

References

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