Olive Oil May Cut the Risk for Specific Breast Cancer Types

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June 02, 2025

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TOPLINE:

A prospective study found that increased consumption of olive oil was associated with a reduced risk for breast cancer, particularly oestrogen receptor–negative (ER−) and human epidermal growth factor receptor 2–negative (HER2−) breast cancers. A systematic review revealed that case-control studies more frequently reported this protective association, whereas prospective studies did not report any association.

METHODOLOGY:

- Researchers analysed data of 11,442 cancer-free women (mean age, 54.7 years) enrolled in the Moli-sani Study (2005-2010) in Italy.
- Incident cases of breast cancer were ascertained through December 2020 via hospital discharge forms and validated through medical records and histologic reports.
- Total daily intake of olive oil was calculated on the basis of the participant's reported olive oil usage for cooking at home, defined as the number of tablespoons consumed per day.
- A systematic review was also conducted, which included 13 observational studies and one randomised controlled trial that explored the association between the consumption of olive oil and the risk for breast cancer.

TAKEAWAY:

- During a median follow-up duration of 13.1 years, 295 incident cases of breast cancer were reported.
- Compared with women consuming two or more tablespoons of olive oil per day, those consuming more than three tablespoons per day

had reduced multivariable-adjusted hazard ratios (HRs): 0.71 (95% CI, 0.48-1.05) for overall breast cancer, 0.80 (95% CI, 0.28-2.28) for premenopausal breast cancer, and 0.70 (95% CI, 0.46-1.08) for postmenopausal breast cancer.

- Analysis of breast cancer subtypes indicated that each additional tablespoon of olive oil per day was associated with a reduced risk for ER− breast cancer (HR, 0.32; 95% CI, 0.15-0.69) and progesterone receptor–negative (PR−) breast cancer (HR, 0.59; 95% CI, 0.35-1.01).
- A higher intake of olive oil was also associated with a reduced risk for ER− and PR− breast cancer (HR, 0.32; 95% CI, 0.13-0.77) and HER2− breast cancer (HR, 0.54; 95% CI, 0.31-0.96).
- Eight of 11 case-control studies and the sole randomised controlled trial suggested protective effects of olive oil against breast cancer, whereas prospective studies reported no association.

IN PRACTICE:

"If confirmed by high-quality prospective studies and RCTs [randomised controlled trials], these findings could help in shaping evidence-based public health policies to promote olive oil as a component of the traditional MD [Mediterranean diet] in both Mediterranean and non-Mediterranean countries," the authors wrote.

SOURCE:

This study was led by Emilia Ruggiero, Research Unit of Epidemiology and Prevention, IRCCS Neuromed in Pozzilli, Italy. It was published online on May 24, 2025, in *European Journal of Cancer.*

LIMITATIONS:

The observational nature of the Moli-sani study could not lead to the establishment of causality. Dietary data were self-reported, which introduced potential measurement errors and recall and selection bias. Additionally, limited cases of different hormone receptor subtypes existed, which may have affected the statistical power of subgroup analyses.

DISCLOSURES:

This study received funding support from the Italian Ministry of Health and Fondo Crescita Sostenibile. The authors reported no relevant conflicts of interest.

This article was created using several editorial tools, including AI, as part of the process. Human editors reviewed this content before publication.