

THE EFFECTS OF HIGH-POLYPHENOL EXTRA VIRGIN OLIVE OIL ON ENDOTHELIAL FUNCTION IN ADULTS AT RISK OF TYPE 2 DIABETES

Yale-Griffin Prevention Research Center



There is tremendous interest in, and lively debate about, the health effects of oils, including olive oil. Such debates should be resolved with data, and this study makes an important contribution by highlighting the relevance of not just the type of oil, but also its quality. We have added to an impressive weight of evidence indicating diverse health benefits from genuine extra virgin olive oil.

Dr. David Katz
Co-investigator



WHAT IS THE PROBLEM?



280 Australians develop diabetes every day. That's one person every five minutes.



An additional **2 million Australians** have prediabetes.

People with diabetes, or who are at risk of diabetes, are more likely to develop other chronic health problems including **heart disease, stroke and high blood pressure and have a higher chance of premature death.**

WHAT DID THE RESEARCHERS DO?

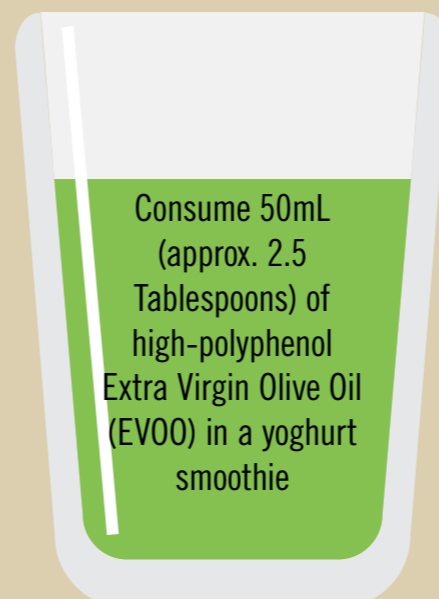


20 adults at risk of Type 2 Diabetes Mellitus (with prediabetes)



Randomised, controlled, double-blind crossover trial

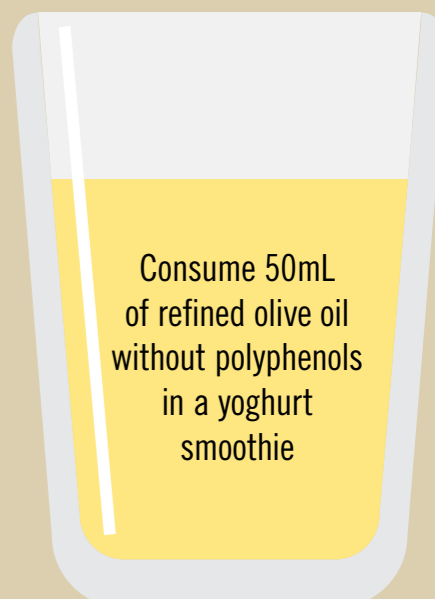
Two intervention types with one week washout period between interventions:



Consume 50mL (approx. 2.5 Tablespoons) of high-polyphenol Extra Virgin Olive Oil (EVOO) in a yoghurt smoothie



Endothelial function was evaluated before and 2 hours after ingestion of assigned olive oil treatment



Consume 50mL of refined olive oil without polyphenols in a yoghurt smoothie

WHAT WAS THE OUTCOME?

100% of participants completed the trial.

Consumption of high-polyphenolic EVOO, relative to refined olive oil without polyphenols, improved endothelial function among individuals at risk for Type 2 Diabetes Mellitus.

Endothelial function was measured via Flow Mediated Dilation (FMD) with the results showing an absolute **improvement of 4.8%.**

Based on endothelial function guidelines, an improvement in FMD of just **1.5% is considered clinically significant.**

The endothelium is a layer of cells that line the inside of the heart and blood vessels, and can control the relaxation and contraction of the heart.

Endothelial function is a measure of overall blood vessel elasticity, and how well blood vessels expand as blood flows through.

WHAT IS ENDOTHELIAL FUNCTION?

The endothelium is prone to damage through oxidative stress, meaning **antioxidant-rich foods in particular can have a positive impact** on endothelial function.

Poor endothelial function long term can cause high blood pressure and blockages within arteries, which can lead to heart disease.

HOW DO REFINED OLIVE OIL AND EXTRA VIRGIN OLIVE OIL DIFFER?

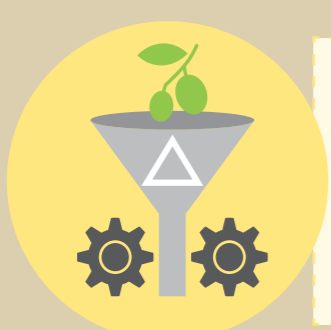
Extra Virgin Olive Oil:

- Simply the fresh juice of olives
- Higher in natural antioxidants
- Higher levels of polyphenols
- Higher levels of Vitamin E and Squalene



Refined Olive Oil:

- Has been refined by methods including bleaching, neutralisation and degumming
- Lacks important antioxidants
- May contain trans fats



WHAT ARE THE PRACTICAL IMPLICATIONS OF THE RESEARCH?

The ingestion of high-polyphenolic Extra Virgin Olive Oil may reduce cardiovascular risk in those at risk for Type 2 Diabetes Mellitus.

Healthcare professionals

should recommend including a high quality Extra Virgin Olive Oil in the daily diet of those at risk of Type 2 Diabetes Mellitus, at a quantity of **at least 2 ½ Tablespoons.**