

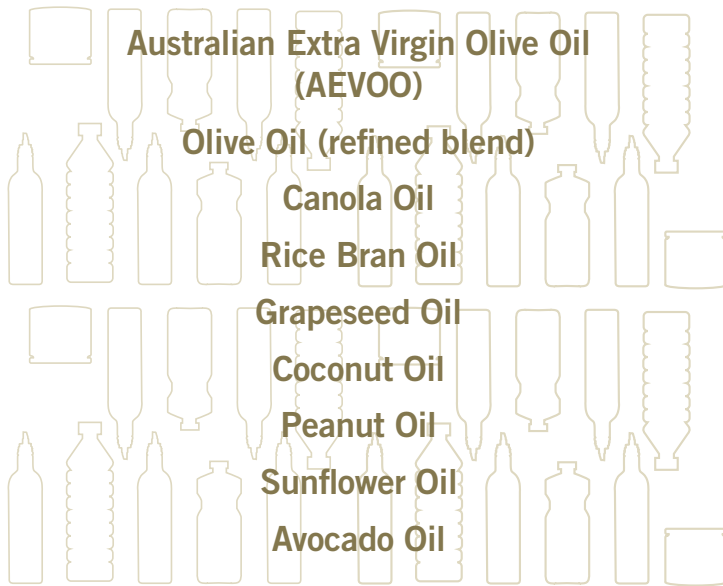
Is it Safe to Cook with Extra Virgin Olive Oil?

AIM:

To assess the most common supermarket cooking oils, and determine which is the safest to use when cooking at standard domestic temperatures and times.



OILS TESTED:



Australian Extra Virgin Olive Oil (AEVOO)

Olive Oil (refined blend)

Canola Oil

Rice Bran Oil

Grapeseed Oil

Coconut Oil

Peanut Oil

Sunflower Oil

Avocado Oil

STANDARD DOMESTIC COOKING TEMPERATURES:



Pan frying (sauté)

on stove top heat
120°C



Deep frying

160–180°C



Oven baking

below 200°C

WHAT HAPPENS WHEN YOU HEAT COOKING OILS?



Chemical changes

(e.g. oxidation, hydrolysis) – this can lead to the production of potentially harmful compounds (e.g. polar compounds) that are linked with negative health outcomes.

Commercial kitchens regularly assess the levels of **polar compounds** in cooking oil – on average,

25% of polar compounds is the limit to ensure the oil is safe for continued use.

Physical changes

(e.g. thickens, foams).





Oils heated gradually
(over 20 minutes)
from 25 to 240°C.

HIGHER THAN
DOMESTIC COOKING
TEMPERATURES



**Oils heated
at 180°C**
for 6 hours.

LONGER DURATION THAN
SLOW COOKING METHODS IN
A DOMESTIC KITCHEN

KEY RESULTS:

AEVOO was the most stable oil of those tested – in both tests, AEVOO yielded lower levels of polar compounds and trans fats when compared with other oils – Canola oil, Grapeseed Oil and Rice Bran Oil performed the worst and produced very high levels of polar compounds and trans fats.

This shows that AEVOO is the safest and healthiest oil to cook with



WHY?



This research showed that **cooking oil smoke point is NOT the best predictor** of oil stability and suitability for cooking at domestic temperatures.

It showed that the best predictors of an oil's stability and safety when cooking are the **oxidative stability**, the amount of **poly-unsaturated fatty acids** (PUFA) (more prone to oxidation than mono-unsaturated fatty acids (MUFA)) and saturated fatty acids, the natural content of antioxidants, and the **level of refining** that has occurred in the oil production process.



Results showed that AEVOO performed best when compared with other common cooking oils.



After heating AEVOO contained only trace levels of trans fats, retained a high level of antioxidants and had a better fatty acid profile compared with all other cooking oils tested.



After heating, AEVOO was highest in antioxidants and low in PUFA (high in MUFA) = High oxidative stability (and will not produce high levels of harmful oil products).



These positive results for AEVOO were achieved despite using temperatures and cooking times above those commonly used in domestic kitchens.