

Peanut Oil: The Facts

The purpose of this Factsheet is to help people with peanut allergy to understand whether they face any risks through exposure to peanut oil. Throughout the text you will see brief medical references given in brackets. More complete references are published towards the end of this Factsheet.

Will peanut oil cause allergic reactions for people with peanut allergy?

Research has shown that **refined** peanut oil will not cause allergic reactions for the overwhelming majority of people who are allergic to peanuts and if anyone does suffer a reaction it is likely to be mild. However, **unrefined** (crude) peanut oil is more likely to cause symptoms.

The first major research on this subject was published in the British Medical Journal (BMJ) in 1997. Under strict medical surveillance, 60 adults with peanut allergy were fed refined peanut oil and also unrefined (crude) peanut oil. As a result, six of them suffered allergic reactions to the crude oil, but these were only mild reactions. None reacted to the refined oil (Hourihane et al, 1997).

The research was part-funded by the London-based Seed Crushers and Oil Processors Association (SCOPA), and carried out by a team of independent researchers based in Southampton. All papers published in the BMJ are subject to thorough scrutiny by peer groups.

Where is refined peanut oil used?

Refined peanut oil could be used in a wide range of manufactured food products such as biscuits, cakes, crisps and ready meals. It could also be present in food bought in catering establishments such as restaurants, hotels, takeaways and other places where food is served. However, the oilseed industry has told us that peanut oil is expensive at present (August 2017) and that manufacturers are more likely to use other, similar refined vegetable oils such as rapeseed, sunflower or soya.

Peanut oil has unique properties; its stability and long life can make it a preferred choice for frying. Some fish and chip shops choose refined peanut oil because it performs well at high temperatures and lasts well.

Being a stable oil, it is used as a base in some pharmaceutical products.

Where is unrefined oil used?

Unrefined oil may be blended with refined oil to provide a peanut flavour. This would be sold in **bottled form** as peanut oil or groundnut oil. Where unrefined oil is present in bottled oil, a code of practice accepted by the UK and European oilseed industry states this will be indicated on the label.

According to the oilseed industry, the use of unrefined oil in **pre-packed food products** is rare but it could be used to impart peanut flavour.

A more common use for unrefined peanut oil is in **ethnic foods** in restaurants, such as Indian or Oriental, or food sold in small ethnic shops. Typical dishes would be Thai or Chinese dishes including stir fries where the peanut flavour can be a characteristic of some recipes.

Does peanut oil have to be declared on food labels?

European legislation lists 14 major allergens that must be declared and highlighted whenever they are used as ingredients in pre-packed food. Those allergens include peanuts and products thereof. The regulation still applies to the UK even though we have left the EU.

Some ingredients derived from allergens will not cause an allergic reaction because they have been highly processed (for example fully refined soya oil or wheat glucose syrups) and they are therefore exempt from compulsory labelling, following an assessment by the European Food Safety Authority (EFSA).

Although the Southampton research showed that refined peanut oil is highly unlikely to trigger allergic reactions, peanut oil must always be declared – whether refined or unrefined – following EFSA assessment.

Does this mean refined peanut oil is unsafe for people with peanut allergy?

According to the oilseed industry, the way peanut oil is refined has not changed. Many scientific experts believe the Southampton conclusions are still valid. In the experience of the Anaphylaxis Campaign, reports of allergic reactions allegedly caused by refined peanut oil have been few and far between – in fact our helpline staff cannot recall a single confirmed case. Many of the medical experts we consult agree that refined peanut oil is unlikely to present a problem. But it is up to individuals with peanut allergy (or their parents or guardians, in the case of young children) to weigh the evidence and make up their own minds.

Who took part in the Southampton research?

Sixty adults; all were known to be allergic to peanuts and 36 of them had suffered severe symptoms such as breathing difficulties. In the study, each person was fed refined peanut oil and, on a separate occasion, each was fed unrefined peanut oil. This was a “blind study”, meaning that participants did not know which of the oils they were being given and neither did the staff who were giving the oils.

Did anyone have an allergic reaction?

None of the 60 people tested had a reaction to the refined oil. Six people had a reaction to the unrefined oil.

Why did these six people react to the unrefined and not to the refined oil?

Unrefined peanut oil contains small amounts of peanut protein (the part of the peanut which causes the allergic reaction), but these are believed to be removed during the refining process.

Is there any protein left in refined peanut oil?

If any protein solids are left, the amount is so small as to be undetectable by standard laboratory methods.

So, is refined peanut oil 100 per cent safe for people with peanut allergy?

To prove this would mean testing everybody with an allergy to peanuts, which is impossible. The sample of 60 people proves to a high level of statistical probability that refined peanut oil is safe for people with peanut allergy.

Since the Southampton study was done, more information has become available about the amounts of allergen to which peanut-allergic people react and how they vary. A recently published report confirms that the probability of any reaction to refined peanut oil is remote (Blom et al, 2017).

Were people who had suffered the most extreme form of allergy – anaphylactic shock – included in the Southampton study?

This would not have been ethical. However, the researchers believe refined peanut oil is highly unlikely to trigger allergic reactions in people with peanut allergy, even if their reactions to peanut solids have been anaphylactic.

Doctors have now learned how to safely test people who have experienced very severe reactions, including anaphylaxis. Recent studies on peanut have included people at risk of anaphylaxis (where they have agreed, of course). Results confirm that the amounts of protein found in refined peanut oil do not trigger reactions in people who have experienced very severe reactions (Blom et al, 2017).

Are there differing degrees of oil refinement?

Not as far as we know. The European oilseed industry (FEDIOL) agreed a common refining standard in 1999 based on the earlier UK SCOPA standard, which itself was inspired by the results of the Southampton study. It is our understanding that all refined peanut oil is processed in the same way, going through the stages of degumming, neutralising, bleaching, filtration and deodorisation. According to the oilseed industry, there is no such thing as “partially” or “less” refined peanut oil. In March 2020, FEDIOL revised its Code on refining, which applies to all botanical origins, and is available on the FEDIOL website.

What are the risks in restaurants?

Based on the Southampton research, if a restaurant uses **refined** peanut oil, it is likely to be safe for the vast proportion of people with peanut allergy and if anyone does suffer a reaction it is likely to be mild. We would advise you to check with the staff whether the food you have chosen contains peanut oil, and whether it has been refined; if you are left in any doubt, it is best to make a different choice.

Bear in mind that if refined oil has been used previously to fry a nutty product – for example, peanut cutlets or spring rolls – then this oil might be contaminated with peanut allergens. This therefore might **not** be safe for people with peanut allergy.

Incidentally, the same holds true if an oil has been used to cook any allergenic food. For example, an oil used to fry fish would not be safe for someone with fish allergy.

Has anyone died from eating peanut oil?

As far as we know, no deaths have been proven to be caused by peanut oil.

Peanut oil (labelled as arachis oil) is present in some skin preparations (for example, eczema creams). Is that a problem?

A few researchers have suggested that there may be a link between the use of these creams and the development of peanut allergy in some children (Strid et al, 2005). This may be because tiny residues of peanut protein are present: not enough to cause allergic reactions but enough, in some cases, to “set up” an allergy to peanuts if the cream is applied to damaged skin (e.g. to alleviate eczema). We believe that skin preparations, cosmetics and pharmaceutical products (for example, ear drops) known to contain arachis oil (peanut oil) are best avoided by families in which there is a history of allergy.

References

Blom WM, Kruizinga AG, Rubingh CM, Remington BC, Crevel RWR, Houben GF, 2017. Assessing food allergy risks from residual peanut protein in highly refined vegetable oil. Food Chem Tox 106, 306-313.

Hourihane JO; Bedwani SJ; Dean TP; Warner JO. Randomised, double blind, crossover challenge study of allergenicity of peanut oils in subjects allergic to peanuts. BMJ 1997 Apr 12;314(7087): 1084-8.

Strid J, Hourihane J, Kimber I, Callard R, Strobel S, 2005. Epicutaneous exposure to peanut protein prevents oral tolerance and enhances allergic sensitisation. Clin Exp Allergy 2005; 35:757-766.

Reviewers

The content of this Factsheet has been Peer Reviewed by **Prof John Warner**, Professor of Paediatrics Imperial College London; early years theme lead for CLAHRC NW London; Hon Professor University of Cape Town. Prof Warner was a leading author of the Southampton research paper quoted above.

This Factsheet was also checked for accuracy by Angela Bowden of the Seed Crushers and Oil Processors Association (SCOPA), which is the trade association for companies engaged in oilseed extraction and oil/fat processing in the UK. SCOPA part-funded the Southampton research.

Disclaimer

The information provided in this Factsheet is given in good faith. Every effort has been taken to ensure accuracy. All patients are different, and specific cases need specific advice. There is no substitute for good medical advice provided by a medical professional.

About the Anaphylaxis Campaign

The Anaphylaxis Campaign is the only UK wide charity to exclusively meet the needs of the growing numbers of people at risk from severe allergic reactions (anaphylaxis) by providing information and support relating to foods and other triggers such as latex, drugs and insect stings. Our focus is on medical facts, food labelling, risk reduction and allergen management. The Campaign offers tailored services for individual, clinical professional and corporate members.