Butter and your heart: the facts

There's growing evidence that our favourite fat can be good for you. Nutrition expert Dr John Briffa reports

Most of us treat butter as a guilty pleasure because we are warned that it raises our risk of heart disease via an elevating effect on cholesterol. Butter has been damned by official health bodies, so we often have less tasty lower-fat spreads instead.

This week, however, an article in the *British Medical Journal* went against this view. Dr Aseem Malhotra, the cardiology registrar at Croydon University Hospital, London, said that the "mantra that saturated fat must be removed to reduce the risk of cardiovascular disease has dominated dietary advice and guidelines for almost four decades". He argued that evidence shows that butter and unprocessed fats may actually be good for you, lowering your blood pressure and protecting your heart. It's time, he said, to "bust the myth of the role of saturated fat in heart disease".

So, are our beliefs about the "heart-healthy" properties of low-fat spreads built on solid scientific foundations, or just the result of slick marketing and misinformation?

Butter

While the saturated fat that makes up the bulk of butter might boost cholesterol levels in our blood, studies have shown that this effect is, in fact, irrelevant. It's the impact it has on health that counts. All the most recent, major scientific reviews of the evidence fail to find any link between intakes of saturated fat and the risk of heart disease. Malhotra pointed to a recent study that indicated that 75 per cent of acute heart attack patients had normal cholesterol concentrations.

These "epidemiological" studies fail to impugn saturated fat, but cannot be used to determine causality (whether or not saturated fat causes heart disease). It is more useful to look at studies in which the health outcomes of people who cut back on saturated fat or replace it with supposedly healthier fats are compared with those who do not make these changes.

A comprehensive review of the literature encompassing almost 50 such studies was published by researchers from the respected Cochrane Collaboration in 2012. Reducing or modifying fat in the diet did not reduce the risk of heart disease (or stroke, or any other chronic disease) at all. Life expectancy was not extended by a single day either. The evidence as a whole strongly suggests that our belief that saturated fat causes heart disease and has broadly harmful effects is a myth. The next most plentiful fat in butter is monounsaturated in nature. This type of fat is found in foods such as olives, olive oil, nuts, seeds and avocado, and is associated with improved heart health.

Butter also contains small amounts of what are known as trans fats, which can be formed during the processing of fats and are strongly implicated in heart disease. However, the trans fats found in butter and those found in industrially produced fats (such as those found in some margarines) have a different chemical nature. Crucially, there is evidence that while industrially produced trans fats do indeed have links with heart disease, those that occur naturally in the diet do not.

Spreads, margarine and low-fat butters

If a product has at least 80 per cent oil or fat, it can be called a margarine. A spread has less than 80 per cent fat. Margarine, olive-oil spreads and low-fat butters are often considered the healthy option. Margarine's principal ingredient comes in the form of "vegetable" oils such as sunflower, corn or safflower oil. These oils are rich in so-called omega-6 fats, one of the two main forms of "polyunsaturated" fats. Omega-6 fats are vigorously promoted as "healthy", but have been found to promote inflammation and blood clotting — two things that would be expected to raise heart disease risk.

Some margarines also contain omega-3 fats that have beneficial anti-inflammatory and anti-clotting properties. However, this will generally be in small amounts and in a form (alpha-linolenic acid) that may not confer the health benefits ascribed to the omega-3 fats found in oily fish, Eicosapentaenoic acid (EPA) and Docosahexaenoic acid (DHA).

Vegetable or olive oil-based spreads

> "An olive oil spread is a far cry from extra virgin olive oil"

may sound healthier, but it's important to consider what happens to natural liquids that turns them into spreads. Vegetable oils are liquid at room temperature, and need to be solidified to make them suitable for spreading. This can be done through chemical processing such as "hydrogenation" or "interesterification". The end result will be at least some fats that are unknown in nature.

For me, adding processed fats to butter to make it "lite" or spreadable risks adulterating it from both a nutritional and taste perspective.

Certain spreads have supposed added value for health by being based on monounsaturated fat-rich olive oil. However, as with other margarines, olive oil-based spreads will generally have other processes inflicted on them, including bleaching, deodorising, colouring and flavouring. An olive oil spread is a very far cry indeed from the extra virgin olive oil we may use for roasting vegetables or as the basis of a salad dressing.

The evidence for the benefits of spreads is scant. There are, for instance, two epidemiological studies in which the relationship between butter and margarine consumption and risk of cardiovascular disease was assessed. In neither study was butter consumption found to be associated with increased risk. However, it was a different story for margarine: both studies linked its consumption with worsened health.

This sort of evidence cannot prove causality, but there were some worrying findings in what has become known as the Sydney Diet Heart Study (published in 1978). Here, men were split into two groups. In one, men ate their normal diet, while in the other the men were instructed to eat a diet rich in safflower oil, including safflower oil-based margarine. The men on this "heart-healthy" diet actually ended up being 74 per cent more likely to die of heart disease.

Cholesterol-reducing spreads

Recently, several so-called cholesterol-reducing spreads have appeared on our supermarket shelves. It's often assumed that cholesterol reduction is beneficial to heart health. However, several cholesterol-modifying drugs have not been found to deliver on their promise, and some have been found to harm heart health. Plus, overall, taking dietary steps to reduce cholesterol has not been found to have broad benefits for health.

Again, the effect that a foodstuff has on cholesterol levels should not be our focus, but the impact it has on health. What evidence do we have that cholesterol-reducing margarines reduce the risk of heart disease, heart attack or overall risk of death? Not one single study of this nature exists in the scientific literature.

Some cholesterol-reducing margarines contain "plant sterols" that partially block absorption of cholesterol from the gut. However, sterols may make their way into the bloodstream too, and evidence links higher levels of sterols in the blood with increased risk of cardiovascular disease.

Perhaps worse still, there are several studies that show sterols have the ability to damage tissue and induce worse health outcomes in animals.

While the British Heart Foundation and many doctors support the use of sterols, the National Institute for Health and Care Excellence (NICE) explicitly advises against their routine use.

I am a practising doctor and the author of several books on nutrition, and in more than 20 years I have not bought a single tub of margarine. Nor have I consciously limited butter in my diet. There's little doubt in my mind tha butter is better, and not just in terms of how it tastes. To my mind, it need not be a guilty pleasure at all, but just a pleasure.

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