

EU Health Prize for Journalists 2011

The myths surrounding cancer-fighting food

By Luís Silvestre, National nominee for Portugal

It seems that fish might not be as healthy as we thought after all, and that red meat apparently does not cause cancer. But fruit, on the other hand, can be really dangerous. These are the latest scientific revelations.

Forget virtually everything you know about foods that prevent cancer. Over recent years a great deal of scientific research has questioned the impact many products have on disease prevention, and has given the lie to much of what scientists believed. Take carrots, for example, which if consumed in excess may actually stimulate the development of melanoma, and fish, some species of which are so contaminated with chemical carcinogens that they may be more risky than beneficial. So this summer, think twice before you sit down to an al fresco meal of dressed crab, or a piece of grilled salmon or fresh tuna. One of the world's foremost experts in the field, David Khayat, an oncologist who has led the French National Cancer Institute for seven years, recently published a book in Portugal, *O Verdadeiro Regime Anticancro* [The Real Anti-Cancer Diet] (Livros d'Hoje) – already a bestseller in France – and explained some of his most surprising findings exclusively to SÁBADO. 'This book is a result of my comparison and analysis of the most important international research in recent years. Some of the conclusions even surprised me', he says. One of the unexpected findings is that red meat should no longer be demonised, because most previous studies were carried out in the United States. 'Meat of European origin is much healthier, and if eaten in moderation will not have a significant impact on the development of cancer, contrary to what was previously thought.' SÁBADO reveals these new ideas in the following pages.

The dangers of fruit

Experts from the World Cancer Research Fund (WCRF), one of the most renowned anti-cancer scientific institutions, acknowledge that the preventive role of fruit and vegetables has been overstated. This revised position is clearly set out in the Fund's most recent major report, in which WCRF specialists concede that the results of all the studies carried out since 1995 on the anti-cancer effect of fruit and vegetables suggest that the evidence of a link is far less convincing than might be imagined.

There are several exceptions, however, such as plant products that actually help to prevent cancer, like green tea, broccoli, pomegranate and berries. But some may also be associated to the appearance of certain types of tumour. An excess of carrots, for instance, might even contribute towards melanoma. What is more, many of these products are also exposed to chemical contamination as a result of pollution and inappropriate farming methods, with an excess of toxic compounds and fertilisers, and even organic produce is sometimes contaminated too.

David Khayat goes further: 'Most fruit and vegetables are healthy, particularly in preventing cancer, but let's not get carried away.' Khayat says that for most of the population, this produce is also the principal source of food carcinogens, such as

nitrites, nitrates, pesticides and fungicides. The latest data show that vegetables contribute towards 70% of the nitrates consumed in food. Furthermore, a study by the Canadian health authorities has shown that pesticide residues are present in 15% of the fruit and vegetables placed on sale. 'A person who eats the 12 most common fruit and vegetables in the West ingests an average of 10 different types of pesticides a day', Khayat points out.

Is there anything we can do about this? Well yes, there is. According to Paula Ravasco, a doctor and nutritionist at the School of Medicine in Lisbon, one thing people can do is to wash foods well. 'A few drops of bleach in a large bowl of water should do the trick. It's harmless if well diluted, and helps to remove pesticides from food.'

It is also common for apples, pears, nectarines and other fruit produced on an industrial basis to be coated with chemicals so that they look shinier and more appetising. We could peel them, but that removes many of the nutrients in the skin itself. David Khayat also recommends discarding the outer leaves of cabbage or lettuce, or even scrubbing foods such as fruit with mild soap and water. He also advises people to make sure they wash strawberries and raspberries, which are usually heavily treated with chemicals in conventional production methods. Paula Alvito, a researcher at the Instituto Ricardo Jorge in Lisbon, says that fruit with small blemishes caused by fungi should be avoided. 'They contain patulin, a potentially highly carcinogenic toxin generated by mould.'

Maria Leonor Nunes, an Ipimar scientist, sounds a further note of caution: 'Many people are prejudiced against drinking tap water, when in fact it's usually the best quality.' In summer many people take bottles of water to the beach. 'We now know that a plastic bottle exposed to the sun for some time can release potential carcinogens into the water, which people drink without a second thought', she warns.

– What should we do?

Wash fruit and vegetables in five litres of water and two or three drops of bleach, or scrub them with mild soap and rinse in water. Avoid water in plastic bottles exposed to the sun, glass bottles are preferable.

Fish to be avoided

Fish has always been regarded as a healthy food because it contains easily digestible proteins and is rich in vitamins and minerals that help to combat a range of diseases. It is also a source of healthy fats such as omega-3 oils, which are good for preventing cardiovascular diseases and protecting the brain. In terms of nutritional composition, it would be easy in theory to associate this food to the prevention of various types of cancer. In theory. The oncologist David Khayat questions this absolute truth: 'Fish might seem to be a natural food of excellent quality. So does eating it on a regular basis prevent cancer? No, not really, or at any rate, not much.' This specialist analysed the most relevant international scientific research and found that the consumption of fish might reduce a single type of cancer – colon cancer – by a mere 3 to 4%.

There is worse: fish is one of the foods that have been most seriously affected by the increasing pollution of the sea, so for that very reason, eating fish – or at least some species of fish – may even contribute to a rise in the incidence of certain forms of tumour.

Portuguese specialists confirm that much recent scientific research has debunked some myths and has alerted Portuguese consumers to new threats. Black scabbardfish from Madeira, which is seriously contaminated with heavy metals, is the most high-profile example, but there are others: a recent study by Ipimar, the Portuguese marine and

fisheries research institute, reveals that most crab meat and innards consumed so widely in Portugal contain high levels of toxins and carcinogens. 'One of the most popular delicacies in summer is dressed crab, but the risks involved suggest that people should eat no more than a tablespoonful', warns António Marques, an Ipimar researcher.

A report by the AFSSA, the French food safety agency, showed that fish is one of the principal contributors to the exposure of food to carcinogenic organic pollutants, to the tune of 30% in the case of dioxins and 50% in the case of arsenic. Industrial toxins in the environment accumulate easily in some marine species, particularly the predators that top the food chain. Salmon, tuna, swordfish, eel, dogfish and red mullet are some of the most contaminated varieties at world level. 'Avoid them, even though they're rich in other substances that could bring health benefits', Khayat affirms.

He cites a study published in the journal *Science* and co-ordinated by Ronald Hites, a US scientist at the University of Indiana who analysed 700 samples of wild and farmed salmon from 40 different locations around the world. In their conclusions the researchers recommend that salmon should be eaten no more than once a month. Khayat adds that raw salmon, traditionally used in sushi, and its skin, which are becoming increasingly popular in Portugal, are particularly likely to be contaminated. And surprisingly, no major differences in contamination are observed between farmed and wild fish, showing that the false security of consumers who opt for the latter is illusory. Everything depends on the species and the place of origin.

Heavy metals, such as mercury, cadmium and lead, are some of the most harmful carcinogens because they tend to accumulate in biological tissues. A World Health Organisation report even suggests that 99% of methylmercury (one of the most dangerous forms which is easily absorbed by the organism) essentially enters the human food chain via fish and related foods. 'Meal after the meal, these not very biodegradable toxins accumulate in our organs – the liver, brain, blood and fatty tissue. If ingested regularly, they may eventually lead to the development of cancers', warns this French specialist.

Khayat argues in his book that consumers should not banish fish from their diet, but they must be careful to avoid fish from potentially polluted areas, and he highlights a number of strategies to mitigate the problem: 'I'm a glutton for fish myself, it's rich in phosphorus, selenium, iodine and other fundamental substances in the food chain that help to prevent cancer. But I never eat tuna, for example. I prefer sardine, a traditional Portuguese dish, especially in summer, and mackerel, bream, bass and plaice, because they're less exposed to contamination.' He also includes shellfish such as shrimps, and molluscs such as clams – healthy foods which are less prone to contamination. Maria Leonor Nunes, an Ipimar researcher, corroborates this, adding that 'the smallest fish in the food chain are generally far less contaminated. And tinned fish are actually subject to greater health control, so they're safer to eat.'

- What should we do?

Remove the skin and innards, which is where most of the polluting carcinogens accumulate. Eat tinned fish, since the health controls are more stringent. Eat fish from the bottom of the food chain (e.g. sardines, mackerel and plaice). Avoid dressed crab (no more than a tablespoonful a week), and fish from polluted areas.

Misconceptions about meat

For many years the perceived wisdom among the scientific community was that eating red meat increased the risk of colon cancer. According to David Khayat, this is not

necessarily true. 'Everything depends on the meat and the way it's cooked', he explains. Khayat analysed the various international nutritional studies published in recent times, and concluded that virtually all of them, at least the most widely publicised, were based on North American eating habits. 'We know that the nutritional composition of cattle and the way they are reared is very different in France and in Europe as a whole. We're not Americans, and that makes all the difference', he argues.

Then he collated several international studies, comparing vegetarian and non-vegetarian consumers, encapsulating a total of 76 000 volunteers. While on the one hand the data indicated that vegetarians had fewer heart attacks, it emerged on the other that the risk of colon cancer was the same as for non-vegetarians. So does this mean that all the other studies that pointed to red meat as a carcinogen were wrong? When Khayat analysed the data in detail, it turned out that the problem was the basic raw material. While 100g of North American beef contains 300 calories, beef of European origin contains an average of only 150. Beef in Europe contains 28% protein on average, compared to 16% for North American beef. The greatest difference, however, lies in the lipids (fats): 4% for European beef, 24.9% for North American beef. 'When we eat meat, we really do not eat the same thing on different sides of the Atlantic'.

One of the reasons why red meat is said to be a cancer risk may be connected to how it is cooked. In the North American studies, most consumers ate grilled or fried meat. These cooking methods may burn the surface, forming highly cancerous polycyclic hydrocarbons, particularly when traditional steak is eaten very well done. With roasts, boiled meat or stews, the risk is considerably less. And what is eaten as an accompaniment must also be factored in. 'People who eat a lot of red meat don't tend to eat a great deal of fruit and vegetables. They prefer chips and fattening sauces, which are traditionally associated to American fast-food, the latter in particular being potentially carcinogenic', Khayat explains.

Another way of reducing the risks linked to red meat is to avoid the blood. The key issue here is haemoglobin, which is rich in iron and is associated to the formation of cancerous compounds such as nitrates and free radicals, and to inflammatory processes of the organism which are also linked to the disease. Iron is also responsible for forming abnormal blood vessels that tend to foster tumours. The trick is to let the meat rest and let the blood drain. Another tip for people who like their steak rare is to eat a calcium-rich food (such as dessert yoghurt) or a calcium supplement after the meal, since this 'helps to counteract the action of the blood on the intestinal mucous membranes', says Khayat.

As for 'white meats', such as pork, chicken and turkey, this French oncologist is convinced that they are not linked to cancer (provided the blood is drained and fatty skin is removed). The same goes for eggs: 'from the point of view of the cancer risk, they're neutral. Don't be afraid to eat as many as you like.'

– What should we do?

Drain the blood to avoid excess iron, which is potentially cancerous. Wash the meat before cooking, or take a calcium phosphate supplement after eating products with a high blood content (e.g. black pudding) to cancel out the effect of the iron. Eat meat which is roasted, stewed or boiled. Avoid over-grilled meat (particularly the burnt areas) that has been exposed to smoke (tip: use smoke-free grills).

What milk does to men

In terms of preventing cancer, milk products are not all equal, and the link between these foods and cancer is not as simple as was once thought. The milk itself may have different characteristics – whole, semi-skimmed, skimmed, supplemented, etc. – and that can make all the difference. Cheeses and yoghurts also vary considerably in the degree of fat and fermentation (and even the type of bacteria and yeast used to produce them), giving rise to different effects on the organism.

While milk products were regarded as being roughly equal not that long ago, nowadays specialists recommend different types and amounts according to the consumer.

The most recent international studies have confirmed that milk products are beneficial for children and women, since they are good for bone formation and combat osteoporosis. But for men over 50 years of age, they may increase the likelihood of prostate cancer, which is why David Khayat advises men of this age to consume them in moderation, opting instead for cheeses and yoghurt precisely because they contain ‘prebiotic’ and ‘probiotic’ elements (starter cultures, for example), with some protective effect (a yoghurt and banana milkshake, for instance). He also recommends eating foods with antioxidant characteristics at the same time, such as fruit and vegetables, green tea or pomegranate juice, which help to eliminate potential toxins formed by digesting milk.

– What should we do?

Consume milk and milk products with fruit (e.g. milkshakes) and green tea, avoiding the very fatty types.

Fats are not bad

Hong Kong Chinese women have one of the highest lung cancer rates in the world, yet curiously, only 36% of those affected were smokers. It transpired that the main cause of this kind of tumour – one of the most aggressive and difficult to treat – was neither tobacco nor pollution. The solution to the mystery lay in the cooking, or rather, in the way these housewives prepared food for their families. Most meals were cooked in a wok, a type of concave frying pan which is becoming increasingly popular in the West, and which heats cooking oils to extremely high temperatures, producing deadly carcinogens. This was what these women were often breathing in and putting on the family plate.

Recent scientific studies on fat have given the lie to some of the myths, beginning with the labels ‘good’ and ‘bad’ fats. Everything depends on how they are used. Firstly, people need to realise that they should not be proscribed, since many essential anti-cancer vitamins are liposoluble, which means that they have to be dissolved in a fat to be absorbed by the organism. It should also not be forgotten, however, that olive oil, lard and butter are essentially 100% fat, which means that when ingested in excess, they contribute to obesity, one of the factors most commonly associated to the development of various types of cancer. ‘People believe that plant oils are healthier than butter or lard, but there’s no evidence to support this in relation to cancer’, says this French oncologist.

Not long ago, omega-3 fatty acids, present in olive oil, nuts and fish, for example, were thought to have a preventive effect against cancer. But the most recent study by the World Cancer Research Fund failed to identify a link. Their worst property is that when they are exposed to light they degrade easily, producing the characteristic rancid taste, a sign of the formation of ‘lipid peroxides’, one of the substances with the greatest potential to degrade DNA and bring about cancerous mutations in our cells. Khayat

signs off with a piece of advice as to how consumers can protect themselves: always keep these oils (or products that contain them) sheltered from the light and use them quickly, buying them in small containers.

But the greatest problem is actually excess temperature. In this respect too, fats are not all equal. Olive oil and peanut oil are more tolerant to high temperatures (e.g. with frying), while others (e.g. rape oil) degrade, producing carcinogens.

– What should we do?

Eat fats cold (use them to dress salads, for example). Avoid fats from fried foods, but if you do fry, use olive oil or peanut oil.