

Don't believe the Daily Express, it takes a lot more than carrots to beat cancer

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Miracle diet suggestions from the Daily Express. Credit: D_Hollingsworth/Twitter

[Another story](#) about how some food holds the cure for cancer is making headlines in the Daily Express. This time the saviour is the humble carrot. But it isn't its first time in the limelight. In March, the Daily Mail [claimed](#) that eating carrots is a way to avoid prostate cancer. But, as is the case more often than not, the scientific study published in the [European Journal of Nutrition](#) reveals that there is little data to make the

claim whether the purported effect was specific to carrots more than any other vegetable.

Many studies suggest that consumption of fruit and vegetables is associated with a reduced risk of a variety of cancers. But the charity organisation Cancer Research UK [stresses](#), "the link between diet and cancer is complex and difficult to unravel". That is an important caveat. There is little chance that the key to preventing one of the world's deadliest diseases has been on our dinner plates the whole time.

What does the lab say

The lead researcher of the new study, Dr. Kirsten Brandt at Newcastle University, has been studying naturally occurring chemicals found in certain vegetables, called polyacetylenes, for many years. They have been shown to [kill leukaemia cells in the laboratory](#). And a compound which can be easily extracted from something as common and cheap as carrots is bound to arouse interest.

This, however, is only the first step in testing any potential new anti-cancer chemicals. In their study, Brandt and her colleagues also used a mouse model – as proxy for humans – which has a genetic mutation that increases the chances of developing intestinal cancer. Mice fed a diet, where a fifth of the food was powdered carrot, had fewer and smaller tumours than mice who were fed a normal diet.

The scientists will now look to see if this tumour-preventing effect is also seen in people by doing a small-scale study involving 20 participants. This, if successful, will have to be followed up by even larger scale trials, before carrots can be considered beneficial in cancer prevention.

Sarah Warner, a PhD student in Brandt's research group, described her

project to me. "I'm going to be looking at whether a portion of carrots consumed per day can affect the risk of someone developing a chronic disease by looking at DNA damage and biomarkers related to intestinal cancer," she said.

All cancers are a result of damaged DNA. So commonly consumed foods that reduce this damage could be a significant step in preventing cancer, especially in individuals who have a genetic predisposition to the disease. But the current results do not imply that they "hold the key to beating cancer".

What is perhaps more interesting is that the preparation of the carrots influences how much polyacetylene actually gets from the food into our bodies. "I'll be investigating how best to prepare the carrots, so that when people eat it they get the most polyacetylenes," she said.

There is no miracle cure, of course

Because of the chemical composition of the polyacetylenes, she predicts that cooking them in fat may cause more to be lost into the fat than preparing the carrots in water by boiling or steaming. As with any plant, carrots are a combination of hundreds of different chemicals, including beta-carotene which has been well described to aid vision in the dark. Dissecting exactly which chemicals in plants are responsible for observed health benefits is notoriously tricky.

"We may be able to figure this out as white carrots are rich in polyacetylenes, but don't contain beta-carotene like orange carrots do," Warner said.

Sarah hopes that contrasting these two varieties of carrots may allow the research team to pinpoint the chemicals that are responsible for their early cancer-protective findings, and make sure that by looking at

polyacetylenes, they are focusing their research on the right chemicals.

Will purified polyacetylene tablets be the next health food trend raved about in celebrity magazines? "Probably not, because polyacetylenes are quite toxic in high concentrations. In the small quantities found in [carrots](#), we think they may be beneficial. If it was to be used more like a drug, we would have to be really careful to get the dose right," Warner said.

While this piece of research is interesting and it may lead to great advances in the fight against cancer, the researchers are not making that claim just yet. But in their desperation to sensationalise headlines, newspapers such as the Daily Mail and the Daily Express end up running stories that [contradict each other](#) – sometimes the same foodstuff can apparently cause and prevent [cancer](#). These stories erode the public's trust in health journalism. When reporting such stories, it would be better to focus on the scientific method and the incremental development than to make bold, hollow claims.

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