

Carrots cooked whole contain more anti-cancer compound

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Chopping up your carrot after it has been cooked boosts its anti-cancer properties by 25 per cent, scientists at Newcastle University have found. The study, carried out by Newcastle University's Dr Kirsten Brandt and researcher Ahlam Rashed, found that 'boiled-before-cut' carrots contained 25 per cent more of the anti-cancer compound falcarinol than those that were chopped up first.

The naturally occurring sugars which are responsible for giving the carrot its distinctively sweet flavour were also found in higher concentrations in the carrot that had been cooked whole.

Presenting the work at a conference in Lille, Dr Kirsten Brandt said this meant the 'boiled-before-cut' carrots not only had a higher nutritional value but also tasted better.

"Chopping up your carrots increases the surface area so more of the nutrients leach out into the water while they are being cooked," explained Dr Brandt, based in Newcastle University's School of Agriculture, Food and Rural Development and the Human Nutrition Research Centre.

"By cooking them whole and chopping them up afterwards you are locking in both taste and nutrients so the carrot is better for you all round."

The study

The health benefits of falcarinol in carrots were first discovered four years ago by Dr Brandt and colleagues at Newcastle University and the University of Southern Denmark.

The team showed that rats being fed on a diet containing carrots or on isolated falcarinol were a third less likely to develop full-scale tumours than those in a control group.

These early experiments were carried out on raw carrots and since then the Newcastle University team has been investigating whether certain types of carrots are better than others and what the effects of cooking are on the compound.

These latest findings show that when carrots are heated, the composition changes. The heat kills the cells, so they lose the ability to hold on to the water inside them, increasing the concentration of falcarinol as the carrots lose water.

However, the heat also softens the cell walls, allowing water-soluble compounds such as sugar and vitamin C to be lost via the surface of the tissue and resulting in the leaching out of other compounds such as falcarinol. Since the carrot loses water and sugar, the weight per carrot is also reduced.

If the carrot is cut before being boiled, the surface area becomes much greater and so also the loss of nutrients and taste compared with one that is whole when it is boiled.

The team also carried out a blind taste test on almost 100 people comparing the taste of 'boiled-before-cut' versus 'cut-before-boiled' carrots. The response was overwhelming with more than 80 per cent

saying that carrots cooked whole tasted much better.

Dr Brandt added: “We all want to try to improve our health and diet by getting the right nutrients and eating our five-a-day. The great thing about this is it’s a simple way for people to increase their uptake of a compound we know is good for you, all you need is a bigger saucepan.”

Source: Newcastle University

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