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## New research: Natural chemicals in vegetables cut risk of insulin resistance

In the first study of its kind, research has uncovered another string to the ‘health bow’ of vegetables, showing carotenoids, the natural plant chemicals in vegies, may halve the risk of insulin resistance in adults, a major risk factor for some of the country’s biggest killers.

The new study, published in the Dietitians Association of Australia’s journal *Nutrition & Dietetics*, tracked the eating habits of 938 men and women over three years, and compared their intake of phytochemicals called carotenoids found in vegetables to their risk of insulin resistance.<sup>i</sup>

Researchers found those who ate the most of the carotenoids B-carotene and B-cryptoxanthin (found in many vegies, such as spinach, carrots, red capsicum and pumpkin) had a 58 per cent and 49 per cent lower risk of insulin resistance respectively, compared with those who ate the least.

According to Duane Mellor, spokesperson for the Dietitians Association of Australia: “Insulin is a hormone, and is vital in helping our bodies use glucose (sugars) from the foods we eat. But when people have insulin resistance, our bodies ‘resist’ the hormone, and over time, this can lead to high blood sugar levels.

“So the more we do to help keep insulin doing its job effectively, the more we reduce our risk of type 2 diabetes, Australia’s fastest-growing chronic disease,<sup>ii</sup> as well our risk of metabolic syndrome, cardiovascular disease and Alzheimer’s disease.<sup>iii</sup>”

According to the researchers, the protective effect of some types of carotenoids is most likely because of their antioxidant properties.

Dr Mellor said although studies have shown that antioxidants protect against oxidative stress in the test-tube, the way they seem to stop chronic disease getting a hold in our bodies is a little subtler.

“In simple terms they help our bodies deal with the stress of metabolism by making blood vessels ‘more bouncy’ and our liver better able to deal with what life throws at it<sup>iv</sup>,” said Dr Mellor.

This research backs up the Australian Dietary Guidelines, which recommend most Australians eat a minimum of five serves of vegetables each day.

“Vegetables are packed full of nutrients, including vitamins and minerals, fibre, and these vital phytochemicals, such as carotenoids, that can protect against chronic diseases,” said Dr Mellor.

Dr Mellor, an Accredited Practising Dietitian, points to everyday vegies that are in season over winter, such as carrots, spinach and broccoli, as excellent sources of carotenoids.

“We need to do much better to reap those long term health benefits. Only seven per cent of Australians eat the recommended five serves of vegetables each day,<sup>iv</sup> and eating more of them is such an easy way to help avoid devastating diseases like type 2 diabetes, heart disease, and even some types of cancer,” said Dr Mellor.

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**For further information or to organise an interview with Duane Mellor, contact Felicity Curtain, Dietitians Association of Australia, on 0409 661 920.**

## Background

The Dietitians Association of Australia's top tips for fitting in more vegetables:

- Get a head start in the day by adding some vegies at breakfast – try some avocado, tomato and mushrooms on toast, or add a handful of spinach or kale to your morning smoothie.
- Cook at home more often. Research shows this can help Australians 'up' their vegetable intake by more than half a serve a day<sup>vi</sup>. Aim to fill half your dinner plate with vegetables, including as many colours as possible.
- Bulk up dishes like soups, stews, casseroles, and pasta sauces by adding double the suggested vegetables, experimenting with vegetables such as grated carrot, zucchini, capsicum and celery. Having home-made pizza for dinner? Top with broccoli and mushrooms. Making a risotto? Throw in some spinach.
- Did you know legumes (like chickpeas and kidney beans) count towards your daily vegetable quota? Baked beans on toast are a quick and easy weekday lunch, and canned beans can be added to your usual sandwich or wrap fillings for a tasty and filling twist.
- Snack on raw vegetables between meals. Think carrot, celery or zucchini 'sticks' with tasty dips like hummus or salsa. Try washing, chopping and bagging snack-size amounts on the weekend so they're ready to grab on the go through the week.

## A note about the Nutrition & Dietetics journal

*Nutrition & Dietetics* is the scientific journal of the Dietitians Association of Australia. It's Australia's leading peer-reviewed journal in its field and is published five times a year (February, April, July, September and November) by Wiley. For information on subscribing to *Nutrition & Dietetics*, including receiving new content alerts, visit: [http://ordering.onlinelibrary.wiley.com/subs.asp?ref=1747-0080&doi=10.1111/\(ISSN\)1747-0080](http://ordering.onlinelibrary.wiley.com/subs.asp?ref=1747-0080&doi=10.1111/(ISSN)1747-0080)

To access the abstract of this article, visit: <http://onlinelibrary.wiley.com/doi/10.1111/1747-0080.12244/abstract>

## Pumpkin, Kumera, Cumin & Red Lentil Soup with Yoghourt

### Ingredients:

(Serves 4)

1kg pumpkin, peeled and diced into 2 cm cubes  
750g kumera (red sweet potato), peeled and diced into 2cm cubes  
1 large red onion, peeled and diced  
1 cup (200g) red lentils  
2 litres chicken or vegetable stock  
2 teaspoons ground cumin + extra ground cumin for garnish  
1 cup Jalna Fat Free Natural or Fat Free BioDynamic Organic Yoghourt

### Method:

Put pumpkin, kumera, onion, lentils stock and cumin in a large pot and bring to a boil.  
Reduce heat and simmer 15 minutes or until vegetables are tender.  
Puree mixture with a hand held blender or in a food processor, until smooth.  
Stir yoghurt through soup or dollop on top and sprinkle with extra cumin, and serve with a crusty wholemeal roll.

This recipe is courtesy of **Jalna**.

To access an image, contact Felicity Curtain at DAA on [media@daa.asn.au](mailto:media@daa.asn.au).

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<sup>i</sup> Mirmiran P et al. Association of dietary carotenoids and the incidence of insulin resistance in adults: Tehran lipid and glucose study. *Nutrition & Dietetics* 2016; 73:162-8.

<sup>ii</sup> Diabetes Australia, Diabetes in Australia. <https://www.diabetesaustralia.com.au/diabetes-in-australia>

<sup>iii</sup> Mirmiran P et al. Association of dietary carotenoids and the incidence of insulin resistance in adults: Tehran lipid and glucose study. *Nutrition & Dietetics* 2016; 73:162-8.

<sup>iv</sup> Mellor D & Naumovski N. Effect of cocoa in diabetes: the potential of the pancreas and liver as key target organs, more than an antioxidant effect? *International Journal of Food Science and Technology* 2016; 51(4): 829-841.

<sup>v</sup> Australian Bureau of Statistics. National Health Survey: First Results, 2014-15  
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2014-15~Main%20Features~Daily%20intake%20of%20fruit%20and%20vegetables~28>

<sup>vi</sup> Flego A. Jamie's Ministry of Food: Quasi-Experimental Evaluation of Immediate and Sustained Impacts of a Cooking Skills Program in Australia. *PLOS ONE* | DOI:10.1371/journal.pone.0114673 December 16, 2014.