

Get pumped!

Can the pumpkin help diabetes? Ong Fangyi, dietitian, NUHS, starts digging up the evidence to set the record straight.

It sounds strange but I get asked this question a lot. Apparently, Jack-O-Lantern is more than just a pretty face on Halloween night.

The sleuth in me got cracking and soon I was poring over journals and pumpkin-related literature for any evidence this mysterious fruit or vegetable could help diabetes. Let's just say I was all not all ready to squash the rumours.

So it appears that several studies on this topic suggest that pumpkin may be helpful in lowering blood sugar. I was pumped!

In fact, both the pumpkin flesh and pumpkin seed may contain beneficial substances. Here's a rundown of the substances:

- D-chiro-inositol (DCI)—this is an important mediator of insulin activity. DCI is also found in buckwheat and may be helpful for polycystic ovarian syndrome (PCOS).
- Pectin – a soluble fibre that helps slow down gastric emptying and therefore may reduce blood sugar spikes post meals.
- Non-pectin polysaccharides and polyamines—exact mechanism unknown yet but possibly by having a protective effect on the pancreas and increasing insulin production
- Zinc, chromium, carotenoids, and other antioxidants- all these may work together in synergy with the above substances to provide further protection.

Do note, however, that most of the studies were done in rats with a couple of small human studies. Researchers usually used pumpkin powder or extracts of pumpkin. Improvements were seen in fasting and post meal blood sugars.

There are many types of pumpkin in the market; the two pumpkin types mentioned in the studies include *Cucurbita moschata* and *Cucurbita ficifolia*.

More large scale human studies need to be done before we can conclude definitely that pumpkin can



lower blood sugar. However, current studies suggest that pumpkin may be helpful and does not cause harm.

Just remember that pumpkin also contains carbohydrates in the form of starch. If you have diabetes, it is important not to take excessive carbohydrates at one meal. 300g of raw pumpkin contains about the same amount of carbohydrates as one rice bowl of rice or noodles.

Instead of eating pumpkin in addition to your usual rice or noodles and increasing your total carbohydrate load, I would suggest *substituting* rice or noodles at your meal with pumpkin instead. Try not to overcook the pumpkin. Just simply steam or bake it and enjoy a tasty and nutritious treat! Bon appétit.

If, like me, you want the evidence, you may wish to check out these articles:

Adams G, Imran S, Wang S, Abubaker M, Kok S, Gray D, Channell G, Morris G & Harding S (2011) 'The hypoglycaemic effect of pumpkins as anti diabetic and functional medicines', Food Research International, Vol. 44 pp. 862-867

Fu C, Shi H & Li Q (2006) 'A Review on Pharmacological Activities and Utilization Technologies of Pumpkin', Plant foods for Human Nutrition Vol. 61 pp. 73-80

Li Q, Fu C, Rui Y, Hu G & Cai T (2005) 'Effects of Protein Bound Polysaccharide Isolated from Pumpkin on Insulin in Diabetic Rats', Plant Foods for Human Nutrition Vol. 60 pp. 13-16

Shi, Y., Xiong, X., Cao, J., & Kang, M. (2003) 'Effect of pumpkin polysaccharide granules on glycemic control in type 2 diabetes', Central South Pharmacy, Vol. 1(5), pp. 275-276.

Xia T & Wang Q (2007) 'Hypoglycemic role of cucurbita ficifolia fruit extract in streptozotocin-induced diabetic rats', Journal of the Science of Food and Agriculture, Vol. 87 (9), pp. 1753-1757

Zhang, Y., & Yao, H. (2002) 'Study on effect of hypoglycemia of different type pumpkin', Journal of Chinese Food Science Vol. 23, pp. 118-120.