

Lingonberries halt effects of high-fat diet

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Lingonberries almost completely prevented weight gain in mice fed a high-fat diet, a study at Lund University in Sweden has found - whereas the 'super berry' açai led to increased weight gain. The Scandinavian berries also produced lower blood sugar levels and cholesterol.

The Lund University research team used a type of mouse that easily stores fat and therefore can be regarded as a model for humans who are overweight and at risk of diabetes.

Some of the mice were fed a low-fat diet, while the majority of the animals were fed a diet high in fat. They were then divided into groups, where all except a control group were fed a type of berry – lingonberry, bilberry, raspberry, crowberry, blackberry, prune, blackcurrant or açai berry.

When the mice were compared after three months, it could be observed that the lingonberry group had by far the best results. The mice that had eaten lingonberries had not put on more weight than the mice that had eaten a low-fat diet - and their [blood sugar](#) and insulin readings were similar to those of the 'low-fat' mice. Their cholesterol levels and levels of fat in the liver were also lower than those of the animals who received a high-fat diet without any berries.

According to the Lund University researchers, this is the first study of this kind using lingonberries.

"That is probably because lingonberries are mainly eaten in Scandinavia.

At international conferences, I always have to start by explaining what they are, and showing the audience a jar of them", says Lovisa Heyman, a PhD student in Experimental Medical Science.

Blackcurrants and bilberries also produced good effects, although not as pronounced as the lingonberries. The açai berries, on the other hand, came last, although they had actually been included in the study for the opposite reason – the researchers wanted to see how well the Nordic berries would do in comparison with the Brazilian 'super berry'.

"Instead, the opposite happened. In our study, the açai berries led to [weight gain](#) and higher levels of fat in the liver", said Karin Berger, diabetes researcher at Lund University.

She believes that açai berries are primarily used as an energy supplement in their homeland Brazil. It is in the US and Europe that açai has been marketed as a 'super berry' with many health benefits, including weight loss.

The good results from lingonberries may be due to their polyphenol content, according to the researchers. They will now continue to work on understanding the molecular mechanisms involved in the effect of the lingonberries. They will also see whether the effect can be observed in humans.

"Up to 20 % of our mice's diet was lingonberries. It isn't realistic for humans to eat such a high proportion. However, the goal is not to produce such dramatic effects as in the 'high-fat' [mice](#), but rather to prevent obesity and diabetes by supplementing a more normal [diet](#) with berries", said Karin Berger.

However, the Lund researchers do not recommend people start eating large quantities of lingonberry jam. Boiling the [berries](#) can affect their

nutrient content and jam contains a lot of sugar. Frozen lingonberries on cereal or in a smoothie are considerably better.

"If anyone wonders – yes, we now eat lingonberries on a regular basis!" said Lovisa Heyman.

More information: Lovisa Heyman, Ulrika Axling, Narda Blanco, Olov Sterner, Cecilia Holm, and Karin Berger, "Evaluation of Beneficial Metabolic Effects of Berries in High-Fat Fed C57BL/6J Mice," *Journal of Nutrition and Metabolism* , vol. 2014, Article ID 403041, 12 pages, 2014. [DOI: 10.1155/2014/403041](https://doi.org/10.1155/2014/403041)

Provided by Lund University

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