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Flavonoids from fruits and vegetables may help with weight maintenance

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Eating fruit and vegetables that contain high levels of flavonoids, such as apples, pears, and berries, may be associated with less weight gain, suggests findings from a study published in *The BMJ* today.

Dietary flavonoids are natural compounds found in fruits and vegetables. These have been linked to weight loss, but most studies have looked at a particular flavonoid found in green tea, and have mostly been limited to small samples.

So a team of researchers examined the association between the dietary intake of seven flavonoid subclasses and weight change in a large study of 124,086 men and women based across the US over 24 years.

They tracked participants who were part of three prospective cohort studies: the Health Professionals Follow Up Study, Nurses' Health Study, and Nurses' Health Study II.

Participants self-reported their weight, lifestyle habits, and any recently diagnosed diseases via questionnaire every two years, between 1986 and 2011. In addition, they self reported their diet every four years.

Findings revealed that increased consumption of flavonoid subclasses was associated with less weight gain.

The greatest association was found for anthocyanins, flavonoid polymers, and flavonols: each greater standard deviation of daily intake

was associated with 0.16 to 0.23 lbs (equivalent to 0.07- 0.10 kg) less weight gained over four year intervals.

Blueberries and strawberries were the main source of anthocyanins, and flavan-3-ols and their polymers were mainly derived from tea and apples. Orange juice and oranges were the main sources of flavanone and flavones, and tea and onions were the main sources of flavonols.

The study adjusted for a range of dietary and lifestyle factors that may have influenced the results, such as smoking status and physical activity. Results were consistent across men and women, and different ages.

This is the first study to examine the associations between consumption of seven flavonoid subclasses and weight gain in a large sample size.

It is an observational study so no definite conclusions can be made, and several limitations exist due to the design of the study. Nevertheless, the authors say that the findings "may help to refine previous dietary recommendations for the prevention of obesity and its potential consequences."

In addition, they say that losing or preventing even small amounts of weight can reduce risk of diabetes, cancer, hypertension and cardiovascular disease. They add that the results can provide guidance on which fruits and vegetables to choose for preventing weight gain.

In the US, for example, most people consume less than one cup of fruits, and less than two cups of vegetables daily. The authors suggest that this should be increased to two cups of fruits, and two and a half cups of vegetables.

Furthermore, they add that people may be able to maximize the health benefits of eating fruit and vegetables by choosing those with high levels

of flavonoids, such as apples, pears, and berries.

More information: Dietary flavonoid intake and weight maintenance: three prospective cohorts of 124, 086 US men and women followed for up to 24 years, www.bmj.com/cgi/doi/10.1136/bmj.i17

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