Drinking one 12oz sugar-sweetened soft drink a day can increase the risk of type 2 diabetes by 22 percent

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Drinking one (or one extra)* 12oz serving size of sugar-sweetened soft drink a day can be enough to increase the risk of developing type 2 diabetes by 22%, a new study suggests. The research is published in *Diabetologia* (the journal of the European Association for the Study of Diabetes) and comes from data in the InterAct consortium**. The research is by Dr Dora Romaguera, Dr Petra Wark and Dr Teresa Norat, Imperial College London, UK, and colleagues.

Since most research in this area has been conducted in North American populations, the authors wanted to establish if a link between sweet beverage consumption and type 2 diabetes existed in Europe. They used data on consumption of juices and nectars, sugar-sweetened soft drinks and artificially sweetened soft drinks collected across eight European cohorts participating in the European Prospective Investigation into Cancer and Nutrition (EPIC study; UK, Germany, Denmark, Italy, Spain, Sweden, France, Italy, Netherlands)***, covering some 350,000 participants.

As part of the InterAct project, the researchers did a study which included 12,403 type 2 diabetes cases and a random sub-cohort of 16,154 identified within EPIC. The researchers found that, after adjusting for confounding factors, consumption of one 12oz (336ml) serving size of sugar-sweetened soft drink per day increased the risk of type 2 diabetes by 22%. This increased risk fell slightly to 18% when

total energy intake and body-mass index (BMI) were accounted for**** (both factors that are thought to mediate the association between sugar-sweetened soft drink consumption and diabetes incidence). This could indicate that the effect of sugar-sweetened soft drink on diabetes goes beyond its effect on body weight.

The authors also observed a statistically significant increase in type 2 diabetes incidence related to artificially sweetened soft drink consumption, however this significant association disappeared after taking into account the BMI of participants; this probably indicates that the association was not causal but driven by the weight of participants (i.e. participants with a higher body weight tend to report higher consumption of artificially sweetened drinks, and are also more likely to develop diabetes). Pure fruit juice and nectar***** consumption was not significantly associated with diabetes incidence, however it was not possible using the data available to study separately the effect of 100% pure juices from those with added sugars.

The authors say the increased risk of diabetes among sugar-sweetened soft drink consumers in Europe is similar to that found in a meta-analysis of previous studies conducted mostly in North America (that found a 25% increased risk of type 2 diabetes associated with one 12 oz daily increment of sugar-sweetened beverage consumption).

Dr Romaguera concludes: "Given the increase in sweet beverage consumption in Europe, clear messages on the unhealthy effect of these drinks should be given to the population."

More information: Notes:

*The increased risk of 22% is for each extra 12oz sugar sweetened drink, so would apply to someone who had 1 drink versus someone who had 0, or someone who had 2 drinks versus someone who had 1, etc.

**The InterACT consortium is investigating, among other things, nutritional factors and physical activity to study the association of nutritional, dietary and physical activity behaviours with incident diabetes in the nested case-cohort study and to contribute to the analysis of gene-lifestyle interaction. It is a sub-division of the EPIC study, which was designed to investigate the relationships between diet, nutritional status, lifestyle and environmental factors and the incidence of cancer and other chronic diseases.

***The centres involved were France, Italy, Spain, Denmark, UK (Oxford, Cambridge), Netherlands (Bilthoven, Utrecht), Germany (Heidelberg, Potsdam), Sweden (Umea, Malmo)

****Extra info from Dr Romaguera: The 22% figure is used as the top line because it is widely accepted by the scientific community that these models should not be adjusted for BMI. In the meta-analysis comparison with other studies from the USA, the risk is those studies is NOT adjusted by BMI. That makes it possible to compare the two sets of results (25% increased risk in North American studies versus 22% in Europe).

*****nectars (UK and USA definition) are fruit juices that have been diluted to some extent and may contain additives (sugar or sweeteners)

Provided by Diabetologia