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Drinking Water Before Meals Increases Weight Loss

Increasing daily water consumption is recognized as a weight loss strategy by the general public. Yet there is little data to support this practice. Researchers at Virginia Tech and Ferrum College designed a study to see if drinking water before meals would lead to greater weight loss in older overweight and obese people on a weight loss diet.

Overweight or obese (BMI 25-40) men and women between the ages of 55-75 years were recruited for the study. To be accepted in the study, people needed to be weight stable and non-smokers. People were excluded from the study if they reported a history of depression, eating disorders, diabetes, uncontrolled high blood pressure, heart, lung or kidney disease; cancer, food allergies/intolerances to items used in the laboratory test meals; or current use of medications known to alter food intake or body weight. Participants were not told the purpose of the study. They were told that the study involved examination of dietary factors believed to influence weight loss.

Study participants completed laboratory assessments. They were instructed on how to record their food and beverage intake for 4 days, which included 3 week days and 1 week end day. Dietary energy density was calculated from the food and beverage records.

Participants were randomly assigned to 2 diet groups for 12 weeks: 1. a hypocaloric diet and 16 oz. bottled water prior to each of three daily meals or 2. a hypocaloric diet alone. Participants were provided with cases of bottled water. The non-water group was offered water, but not given instructions or recommendations. Both groups were provided with additional food items that would fit in their meal plans. Eating these items was not mandatory. Both groups were provided with individualized meal plans by a RD (men: 1,500 calories and women: 1,200 calories). Both groups were encouraged to eat fruits, vegetables, lean protein, low fat/nonfat dairy products and whole grains. Both groups were instructed to cut back on high fat snack foods, sweetened beverages and alcohol.

Following the intervention, participants repeated all baseline measurements and food and beverage intake records.

Weight declined significantly over the 12 week period for both groups. However the water group showed a 44% greater decline (greater rate of weight loss) over the 12 weeks than the

non-water group. Reductions in Body Mass Index, waist circumference, systolic and diastolic blood pressure, total cholesterol, LDL cholesterol, and triglycerides were observed over the 12 week intervention, but there were no group differences in these outcomes. The reduction HDL cholesterol was smaller in the water group.

Average weekly water intake compliance among water group participants was reported to be 90 plus or minus 2%. An objective indicator of compliance, urinary specific gravity, declined over time as compared to the non-water group. Overall ED (energy density) decreased significantly more in the water group than the non-water group.
Obesity (2010) 18,300-307
To get a copy of the article go to http://www.nature.com/oby/index.html and search for doi:10.1038/oby.2009.235

Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes

According to a meta-analysis of 11 published articles, regular consumption of soda pop and other sugar-sweetened beverages is associated with a consistently greater risk of metabolic syndrome and Type 2 diabetes.

Sugar sweetened beverages contain sucrose, high-fructose corn syrup or fruit juice concentrates. All of these sweeteners have similar metabolic effects. The consumption of sweetened beverages such as soft drinks, fruit drinks, iced tea, energy drinks and vitamin water has increased around the world.

According to recent research in the journal of Physiology & Behaviour, in the U.S. between the late 1970's and 2006 the per capita consumption of sugar sweetened beverages has more than doubled from 64.4 to 141.7 calories per day.

The researchers involved in the meta-analysis identified 3 studies for metabolic syndrome and 8 for Type 2 diabetes, which provided data from almost 350,000 people. For people with Type 2 diabetes, those in the highest category of intake had a 26% greater risk of developing diabetes than the lowest intake category. In general, larger studies with longer durations of follow-up tended to show stronger associations between sugar-sweetened beverage intake and the risk of diabetes.

The researchers state these data provide empirical evidence that intake of sugar sweetened beverages should be limited to reduce obesity-related risk of chronic metabolic diseases. Although sugar sweetened beverages increase the risk of metabolic syndrome and Type 2

diabetes, in part due to their contribution towards weight gain, there may be other mechanisms involved. High levels of easily absorbed added sugars in drinks have a high glycemic load, which is known to induce glucose intolerance and insulin resistance.

Diabetes Care, volume 33, number 11 pages 2477-2483
Physiology & Behaviour (published online ahead of print)
DOI:10.1016/j.physbeh.2009.12.022
Patterns of beverage use across the lifecycle
Author: Popkin, B

Long-Term Metformin Raises Risk for B12 Deficiency

Metformin is the most commonly prescribed drug prescribed for Type 2 diabetes. Metformin interferes with the absorption of vitamin B 12. It can raise the risk for vitamin B 12 deficiency. In a multicenter randomized trial, Dutch researchers assessed risk for B 12 deficiency, low vitamin B 12 levels, and elevated homocysteine levels in patients with Type 2 diabetes who were taking metformin.

In the study 390 patients received metformin or a placebo 3 times a day for 4.3 years. Metformin was associated with a 19% decrease in vitamin B 12 concentration when compared to those taking a placebo. The absolute risks for vitamin B 12 deficiency and low vitamin B level were significantly higher in the metformin group than in the placebo group. Homocysteine were significantly elevated. The effect of metformin on lowering B 12 levels increased with the duration of therapy.

B12 deficiency can result in anemia, neuropathy, and cognitive changes. Elevated homocysteine is a risk factor for heart disease. For these reasons the authors recommend routine monitoring of B 12 levels in patients who receive metformin. Whether B 12 supplementation prevents B 12 deficiency in patients taking metformin is unknown.

de Jager J et al. Long term treatment with metformin in patients with Type 2 diabetes and risk of vitamin B-12 deficiency: Randomised placebo controlled trail. BMJ 2010 May 20; 340:c2181. http://dx.doi.org/10.1136/bmj.c2181

Websites:

www.onlineconversion.com This website has more information that you ever wanted to know. On the home page click on Most Popular Conversions; some that could be useful are length, temperature, weight and cooking.

www.nat.uiuc.edu

www.nutritiondata.com These are free programs that can be used for the nutrition analysis of recipes.

Online Health advice you can trust (from Consumer Reports GreenerChoices.org)

www.BestBuyDrugs.org This is from Consumer Reports and is free. More information is available with a subscription.

www.MayoClinic.com This site is good for looking symptoms and what you can do; it also has disease and condition guides.

www.MedlinePlus.gov (U.S. National Library of Medicine, National Institutes of Health) This site has information on a large number of diseases and wellness topics. It is easy to look up medications with entries for side effects and possible drug interactions. Click on the Clinical tab on the home page to find drug and treatment studies from around the world.

www.UpToDate.com/patients Use this site to learn more about a medical condition, better understand management and treatment options, and have a better dialogue with health care providers.

Clinical 1 nutrition classes at Kansas State University have developed an information portal for diabetes related resources and cardiac related resources. The students verify that the resources/links presented are reputable and valid sources of health information. Each semester, the next class checks all links to ensure that the sight stays up-to-date and relevant.

For the diabetes resource portal, please visit:
<http://diabetesweightresources.pbworks.com/w/page/532837/FrontPage>

For the cardiac resources portal, please visit:
<http://cardiacresources.pbworks.com/w/page/30366055/Heart-Health>

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