



The Truth about Sweeteners, Sugar Substitutes and Sodium in Foods



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Regional Health Education, Health Promotion and Women's Health Department
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- Always seek the advice of your physician or other qualified health care professional with any questions you may have regarding medical symptoms or a medical condition.
- Never disregard professional medical advice or delay in seeking it based on information contained in this presentation.

About your instructor

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Agenda for today



Learn the basics of sugar, sugar substitutes and sodium.

Learn about the health effects of sugar and sugar substitutes.

Learn about the safety of sugar substitutes.

Learn tips to help reduce sugar and sodium intake.

Resources to help you

Types of sugars in American diets



- **Naturally occurring sugars**
 - found naturally in foods such as fruit (fructose) and milk (lactose)

- **Added sugars**
 - Sucrose (table sugar)--low-sugar beet juice or sugar cane
 - Raw sugar--evaporated sugar cane
 - Brown sugar--sugar crystals from molasses syrup
 - Confectioner's sugar (powdered sugar) --finely ground sucrose
 - Turbinado sugar --unrefined and made from sugar cane juice

Types of sugars in American diets



- **Added sugars**
 - High Fructose Corn Syrup (HFCS)
 - Controversial
 - We need to eat less of both sugar and HFCS
 - Greater environmental impact - Government-subsidized growing of corn requires large amounts of fertilizer and pesticides, and depletes the soil of nutrients.

Types of sugars in American diets



- Added sugars (cont.)

- Natural sweeteners

- some are processed and refined
 - they have calories
 - vitamin and mineral content similar to sugar
 - used to sweeten drinks such as tea and cocktails, in desserts, as pancake and waffle toppings, on cereals, and for baking

- Examples

- Agave nectar
 - Date sugar
 - Fruit juice concentrate
 - Honey
 - Molasses
 - Maple syrup

Health effects of sugars

- Nutritional deficiencies
- Tooth decay
- Obesity
- Heart disease



What is a sugar substitute?



- Chemically-made or processed substances used in place of sweeteners with sugar or sugar alcohols
 - sweetens foods and beverages without adding extra calories
 - maintains freshness and product quality
 - preserves jams and jellies, and enhances flavor in processed meats
 - provides fermentation for breads and pickles, bulk to ice cream, and body to carbonated sodas

What is a dietary supplement?



- As defined by Congress in the Dietary Supplement Health and Education Act, which became law in 1994, a dietary supplement is a product (other than tobacco) that:
 - is intended to supplement the diet;
 - contains one or more dietary ingredients (including vitamins; minerals; herbs or other botanicals; amino acids; and other substances) or their constituents;
 - is intended to be taken by mouth as a pill, capsule, tablet, or liquid; and
 - is labeled on the front panel as being a dietary supplement.

Regulation of sugar substitutes



- **Dietary Supplement Health and Education Act of 1994 (DSHEA):**
 - requires manufacturers of a dietary ingredient to ensure product safety prior to marketing for sale

- **Food and Drug Administration (FDA)**
 - regulates all artificial sweeteners that are sold or used in prepared foods in the United States
 - takes action against any unsafe dietary supplement product after it reaches the market
 - sets an acceptable daily intake (ADI) -- the amount that can be safely eaten each day over a person's lifetime

Types of sugar substitutes

- Artificial sweeteners
- Sugar alcohols
- Novel sweeteners



Understanding artificial sweeteners and other sugar substitutes



■ Artificial sweeteners

- synthetic sugar substitutes, but may be derived from naturally occurring substances, including herbs or sugar
- intense sweeteners because they are many times sweeter than regular sugar

■ Examples

- Acesulfame potassium (Sunett, Sweet One)
- Aspartame (Equal, NutraSweet)
- Saccharin (SugarTwin, Sweet' N Low)
- Sucralose (Splenda)

Understanding artificial sweeteners and other sugar substitutes



■ Sugar alcohols

- carbohydrates that occur naturally in certain fruits and vegetables; also can be manufactured
- contain calories, but less than calories in regular sugar
- found in many processed foods and other products, including chocolate, candy, frozen desserts, chewing gum, toothpaste, mouthwash, baked goods and fruit spreads, usually replacing sugar on an equal basis

■ Examples

- Erythritol , hydrogenated starch hydrolysate, isomalt, lactitol, maltitol, mannitol, sorbitol, and xylitol

Understanding artificial sweeteners and other sugar substitutes



- **Novel sweeteners**

- combinations of various types of sweeteners
- used to sweeten drinks such as tea and cocktails, in desserts, as pancake and waffle toppings, on cereals, and for baking

- **Examples**

- Stevia extracts (Pure Via, Truvia)
- Tagatose (Naturlose)
- Trehalose

Health effects of sugar substitutes



- Possible health benefits of artificial sweeteners
 - Tooth decay and cavities
 - Weight control
 - reduces calories
 - Diabetes
 - blood sugar levels do not increase

Sugar substitutes and cancer



■ Saccharin

- Studies show bladder cancers in rats
- Human studies show no association with bladder cancer in humans

■ Aspartame

- 1996 report—increase in brain tumors from 1975 to 1992 possibly linked to aspartame
- Later analysis of data failed to establish a clear link between aspartame use and brain tumors

Source: <http://www.cancer.gov/cancertopics/factsheet/Risk/artificial-sweeteners>, last visited 3/22/13.

Sugar substitutes and cancer



- **Acesulfame potassium and Sucralose**
 - FDA reviewed over 100 safety studies, including studies to determine cancer risk
 - Approved because no evidence supporting cancer risk

- **National Cancer Institute**
 - no clear evidence that the artificial sweeteners available commercially in the United States are associated with cancer risk in humans

Health benefits of sugar substitutes



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Sugar substitutes and weight gain



■ San Antonio Heart Study¹

- examined 3,682 adults over a seven- to eight-year period in the 1980s
- showed that drinkers of artificially sweetened beverages consistently had higher BMIs at the follow-up, with dose dependence on the amount of consumption

■ American Cancer Society²

- included 78,694 women of similar age, ethnicity, and socioeconomic status
- One-year follow-up showed that 2.7 percent to 7.1 percent more regular artificial sweetener users gained weight compared to non-users

1. Source: Fowler SP, Williams K, Resendez RG, Hunt KJ, Hazuda HP, Stern MP. *Fueling the obesity epidemic? Artificially sweetened beverage use and long-term weight gain*. Obesity (Silver Spring, Md.) 2008;16:1894–1900.
2. Source: Artificial sweetener use and one-year weight change among women. Stellman SD, Garfinkel L. Prev Med. 1986 Mar; 15(2):195-202.

Moderation is the key with sugar substitutes

- **FDA establishes Acceptable Daily Intake (ADI)**
 - Maximum amount considered safe to eat each day during your lifetime
 - ADIs are intended to be about 100 times less than the smallest amount that might cause health concerns

- **ADI of common sweeteners**
 - **Acesulfame-K** (packet=50 mg)
 - 15 mg/kg body weight/day
 - **Aspartame** (packet=35 mg)
 - 50 mg/kg of body weight/day
 - **Saccharin** (packet=40 mg)
 - 5 mg/kg of body weight/day
 - **Sucralose** (packet=5mg)
 - 5 mg/kg of body weight/day



Tips for reducing sugar in the diet



- **U.S. Dietary Guideline for sugar intake**
 - Women—100 calories (6 teaspoons)/day
 - Men One teaspoon (9 teaspoons)/day

- **Major sources of added sugars in American diets**
 - regular soft drinks → 12 oz. can=132.5 sugar calories
 - cakes, pies, and cookies → cake donut= 74.2 sugar calories
 - dairy desserts and milk products → half cup vanilla ice cream=48.0 sugar calories
 - grains → 4in. Bagel=12.8 sugar calories
 - fruit drinks → 12 oz. can=62.1 sugar calories

Tips for reducing sugar in the diet



Read labels

- **Sugar-Free** – less than 0.5 g of sugar per serving
- **Reduced Sugar or Less Sugar** – at least 25 percent less sugars per serving compared to a standard serving size of the traditional variety
- **No Added Sugars or Without Added Sugars** – no sugars or sugar-containing ingredient such as juice or dry fruit is added during processing
- **Low Sugar** – not defined or allowed as a claim on food labels

Tips for reducing sugar in the diet



- **Read labels to find added sugars**
 - Sugar (raw, brown, malt, invert)
 - Corn sweetener
 - Fruit juice concentrates
 - Honey
 - Molasses
 - Dextrose, fructose, glucose, lactose, maltose, sucrose
 - Syrup

Tips for reducing sugar in the diet



- Remove sugar, syrup, honey and molasses from the table
- Limit added sugar to foods
- Buy sugar-free or low-calorie beverages
- Buy fresh fruits or fruits canned in water or natural juice. Avoid fruit canned in syrup, especially heavy syrup
- Add fresh or dried fruit to oatmeal, yogurt, and ice cream

Tips for reducing sugar in the diet



- Enhance foods with spices instead of sugar; try ginger, allspice, cinnamon or nutmeg
- Substitute unsweetened applesauce in equal amounts for sugar in recipes
- Add zero-calorie sweeteners such as aspartame, sucralose or saccharin in moderation

Understanding sodium



- 2010 U.S. Dietary Guidelines recommend limiting sodium to less than 2300 mg (1 tsp.) for most adults.
- People who should limit their sodium to 1,500 mg a day are:
 - People who are 51 years or older
 - African Americans
 - People with high blood pressure
 - People with diabetes
 - People with chronic kidney disease

Source: <http://health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>, last visited 07/25/14.

Understanding sodium

Top sources of sodium in U.S diet:

- Breads and rolls
- Cold cuts and cured meats
- Pizza
- Fresh and processed poultry
- Soups
- Sandwiches-cheeseburgers, subs
- Pasta dishes
- Mixed dishes—meatloaf and tomato sauce
- Snacks-chips, pretzels, and popcorn



Source: <http://health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>, last visited 07/25/14..

Tips for reducing sodium



- Buy fresh, plain frozen, or canned "with no salt added" vegetables.
- Use fresh poultry, fish, and lean meat, rather than canned or processed types.
- Use herbs, spices, and salt-free seasoning blends in cooking and at the table.
- Cook rice, pasta, and hot cereals without salt. Cut back on instant or flavored rice, pasta, and cereal mixes, which usually have added salt.

Tips for reducing sodium



- Choose "convenience" foods that are lower in sodium. Cut back on frozen dinners, pizza, packaged mixes, canned soups or broths, and salad dressings — these often have a lot of sodium.
- Rinse canned foods, such as tuna, to remove some sodium.
- When available, buy low- or reduced-sodium, or no-salt-added versions of foods.
- Choose ready-to-eat breakfast cereals that are lower in sodium.

Thinking about it...

- What are some reasons for keeping things the same, and not making changes?



Thinking about it...

- What are some reasons for making lifestyle changes to reduce sugar and salt in my diet?



What one change
might I
consider?



Readiness ruler



Not ready

Ready

Ask yourself...

- 0 – 3
 - What would need to happen for me to consider this in the future?
- 4 – 6
 - What might be my next steps?
- 7 – 10
 - What's my plan? What will help me be successful?



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For a copy of this presentation

Please visit the State of Maryland Wellness website

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