



(T-1) BACKGROUND INFORMATION

MESSAGE FOR THE CONSUMERS

How much sugar do we drink in a day?

Many people are not aware of the liquid calories they consume in a day and the concentrated source of energy a drink might contain. The extra calories can add up over time and contribute to obesity. The sugar in these drinks can affect our teeth and contribute to tooth decay.

A diet high in pop consumption has additional health risks. Research has shown that pop consumption will “bump” other nutritious beverages from the diet, especially milk, which can lead to an increased risk of developing osteoporosis. A higher pop consumption also contributes to a higher caffeine intake.

Children have a smaller stomach capacity. When filled up with sugary drinks, they consume less nutritious foods and beverages in their diet.

The Institute of Medicine recommends that added sugar be used “sparingly in the diet”.⁽¹³⁾ In order to meet these guidelines a nine-year-old child would need to consume less than 10 teaspoons of added sugar per day. A fourteen-year-old child would need to consume less than 15 teaspoons of added sugar per day. (Note: One 355 ml can of pop contains 10 -12 teaspoons or approximately 40 - 48 grams of sugar).

MEET THE RUNNERS

Choose Most Often:

Wonderful Water: Healthy drink choice! Calorie and sugar free! Great for keeping hydrated and sipping throughout the day.

Marvelous Milk: Healthy drink choice! Contains naturally occurring sugar, but also contains nutrients such as protein, calcium, Vitamin A and D.

Choose Sometimes:

100% Juice: Healthy juice choice! Contains naturally occurring sugar, but may also contain nutrients such as Vitamin C, Vitamin A, folate, potassium, antioxidants and more.

Flavoured Milk (chocolate milk): Flavoured milk has just as much nutritional value as white milk (calcium, Vitamin D and protein) however, it does have more calories due to the added sugar.

Choose Least Often:

Sports Drink: Made up of water, sugar, salt and some electrolytes. Intended for use during intense physical activity lasting longer than 60 minutes.

<i>Fruit Drink:</i>	Most fruit drinks contain only a small percentage of juice and some have no juice at all. The majority of flavour comes from added sugar. Some fruit drinks may have added Vitamin C as their only nutrient.
<i>Chocolate Bar Milkshake:</i>	While the nutrients in milk are valuable, these milkshake drinks contain a lot of added sugar and fat.
<i>The BIG One, Pop, Diet Pop:</i>	These drinks have no nutritional value and provide empty calories. Regular pop is made of sugar and water. Although diet pop has almost no calories, it still contains acid (which is harmful to teeth) and sometimes caffeine.

WHY YOU SHOULD CHOOSE SUGARY DRINKS LESS OFTEN?

Sugar and Tooth Decay:

Sugar + bacteria in the mouth = acid. Diet / "sugar-free" drinks also contain acid. Acid breaks down tooth enamel. An acid "attack" lasts 20 minutes and starts again with every sip. Weakened tooth enamel allows bacteria to move in and cause a cavity. Brush with fluoridated toothpaste after eating or drinking. If this is not possible, rinse thoroughly with water to rinse away sugar and acid. Other options are chewing a stick of sugar-free gum (helps to increase saliva flow which naturally neutralizes the acid), or eating a piece of cheese (which helps protect teeth and give them a boost of calcium)⁽⁶⁾.

Nutrient Content:

Drinks such as white milk and 100% fruit juice contain natural sugar. For example, one cup (250ml) of milk contains the equivalent of 3.2 tsp of naturally occurring sugar and one cup (250ml) of 100% fruit juice contains the equivalent of 7.2 tsp of naturally occurring sugar. All sugar is the same to your body whether it is added or natural. However, drinks with added sugar tend to be higher in calories and lack the nutrients that white milk and fruit juice contain. 100% fruit juice will have many additional vitamins and antioxidants and milk contains nutrients such as protein, calcium, Vitamin D and riboflavin.

Obesity:

High-sugar beverages add extra calories with little nutrition. Extra calories can lead to weight gain. There has been a dramatic increase in the prevalence of obesity in Canada over the past 15 years, and the problem is particularly pronounced among children⁽¹⁾. Obesity increases the risk of heart disease, cancer, stroke, Type 2 diabetes and high blood pressure⁽²⁾. Type 2 diabetes used to be referred to as 'Adult-onset diabetes'; however, more and more children and adolescents are now being diagnosed with the disease as a result of the higher weights and lower activity levels of this age group⁽⁵⁾.

Osteoporosis:

Osteoporosis is characterized by a decrease in bone density: the bones are weakened and they become brittle and more prone to fractures. Inadequate calcium and vitamin D in the diet is a major factor in the development of osteoporosis. Peak bone mass development occurs during adolescence. If bone mass development is compromised

during this time, this will place the individual at a higher risk of developing osteoporosis later in life. High sugar beverages often replace nutritious choices and can lead to prolonged displacement of nutrients such as calcium and Vitamin D from the diet. Studies have demonstrated that there is a correlation between a higher pop consumption with a corresponding decrease in bone density among adolescents ⁽³⁾.

For individuals who do not consume milk products, achieving daily calcium and vitamin D requirements will be more difficult. Calcium fortified beverages (eg soy beverage, calcium fortified orange juice), canned salmon with bones, tofu made with calcium or set in calcium salts or almonds are non-dairy sources of calcium. Non-milk sources of vitamin D are limited. Consultation with a doctor and registered dietitian is recommended for individuals who avoid milk and/or dairy products.

Calcium Requirements:

Canada’s Food Guide to Healthy Eating:

Age Group	# Servings of Milk Products per Day
Children 4-9 years	2-3
Youth 10-16 years	3-4
Adults	2-4
Pregnant and breastfeeding women	3-4

1 serving is equal to:	
-	1 cup (250 ml) of milk
-	¾ cup (175 g) of yogourt
-	50 g cheese (2 slices of processed cheese or a block 3”x1”x1”)

Calcium Dietary Recommended Intake (DRI) in Milligrams:	
-	9-18 yrs – 1300 mg Ca/day
-	19-50 yrs – 1000 mg Ca/day
-	50+ yrs – 1200 mg Ca/day
-	(1 serving of milk products typically has 300 mg of Ca)

Increased Caffeine Consumption:

Some pop (*such as Coke, Pepsi, Barq’s Root Beer, Jolt, Dr.Pepper*) and some energy drinks contain caffeine. Caffeine is a stimulant to the central nervous system. Caffeine intake can cause nervousness, irritability, difficulty sleeping, rapid heartbeat and can lead to a caffeine dependency. When caffeine intake is stopped abruptly, some people experience headache, fatigue and drowsiness.

Moderation is the key when consuming caffeine. The effect of caffeine is dependent in part on body weight. For example, only 355 ml (12 oz) of cola (*one can*) may have the same effect on a young child as four cups of coffee would on an adult.

Recommendations

- Be a role model and teach children to make healthy choices early in life.
- Choose water between meals to quench thirst.
- Travel with a water bottle or keep a bottle of water on your desk to sip on throughout the day.
- Drink milk or water at meal times as part of a healthy daily diet.
- Select fresh fruit as your best option.
- Select only 100% fruit juice.
- Read labels to see if you are getting 100% fruit juice. Avoid added sugar in the ingredient list (*may appear as glucose and/or fructose*).
- To prevent cavities, rinse with water or brush with fluoridated toothpaste *immediately* after a sweet drink.

Tips and suggestions for community involvement

- Be a role model. Select 100% juice, milk, or water as beverage choices more often.
- Advocate for your school to supply only water, fruit juice and milk in the drink vending machines and cafeteria.
- Discuss among teachers / principal whether students could keep water bottles on their desks. This increases hydration throughout the day, and avoids excessive thirst / dehydration.
- Advocate for your school to link with Alberta Milk and become involved in one of the School Milk programs. <http://www.albertamilk.com>

References:

- (1) Tremblay MS, Katzmarzyk PT, Wilms JD. *Temporal trends in overweight & obesity in Canada*. International Journal of Obesity related Metabolic Disorders. 2002 April;26(4) 538-43.
- (2) Dietz WH. *Health consequences of obesity in youth; childhood predictors of adult disease*. Pediatrics. 1998;101:518-25.
- (3) Frary CD, Johnson RK, Qi Wang M. *Children and adolescents' choices of foods and beverages high in added sugars are associated with intakes of key nutrients and food groups*. Journal of Adolescent Health. 2004; 34(1): 56-63.
- (4) University of Illinois McKinley Health Center. *Caffeine*. 2002.
- (5) Rosenbloom AL. *Increasing Incidence of Type 2 Diabetes in Children and Adolescents: Treatment Considerations*. Pediatric Drugs, 2002; 4(4): p.209.
- (6) Moynihan PJ, Ferrier S, Jenkins GN. *The cariostatic potential of cheese: cooked cheese-containing meals increase plaque calcium concentration*. The British Dental Journal. 1999;187(12).
- (7) Majewski RF. *Adolescent caries: a discussion on diet and other factors, including soft drink consumption*. J Mich Dent Assoc. 2001 Feb;83(2):32-4.
- (8) Marshall TA, Levy SM, Broffitt B, Warren JJ, Eichenberger-Gilmore J, Burns TL, Stumbo PJ, *Dental caries and beverage consumption in young children*. Pediatrics, 2003 Sep;112(3 Pt 1): e 184-91.
- (9) Li Su, School Health Committee, *Soft Drinks in Schools*, Pediatrics Vol.113 No. 1 January 2004, pp. 152-154.
- (10) Erickson, PR, Alevizos, DL, Rindelaub, DJ, *Soft Drinks: Hard on Teeth*, Minnesota Dental Association, Mar-Apr. 2001. Pp. 15-19.
- (11) Minnesota Dental Association, *Sip All Day – Get Tooth Decay*, pamphlet.
- (12) Fraunhofer A, Rogers M, *Dissolution of dental enamel in soft drinks*, General Dentistry/Operative Dentistry, Jul-Aug 2004, pp. 308-312.
- (13) Institute of Medicine, *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*, The National Academy of Sciences. 2002. Pp 6-1 – 6-42.