



HEALTH CAPSULE | No.58 | 2018

Nutrition Month – March

The role of calories

A calorie is a unit that measures the amount of energy contained in foods. Basically, one calorie is the amount of energy needed to raise one gram of water by 1° Celsius. As such, calories represent the energy necessary for the survival of the human body.

For a same weight, the number of calories contained in food depends on the nature of the food.

For example:

- 1 gram of carbohydrates contains 4 calories;
- 1 gram of lipids contains 9 calories;
- 1 gram of proteins contains 4 calories;
- 1 gram of alcohol contains 7 calories.

One key concept is calorie density. It refers to the food calories relative to its weight (calories ÷ food weight in grams = calorie density). A low calorie density means fewer calories per portion. Generally speaking, foods with low calorie density contain more nutrients. Interesting fact: the body will feel more satiated after having ingested a large amount of food low in calorie density than a small amount of food high in calorie density.



For example, you will be more satisfied with 250 ml of carrots (50 calories) than 80 ml of chips which also has the same number of calories.

Sources: Diabetes Québec, Université de Sherbrooke



True or false: five statements on vaccines

1. Vaccines stimulate and strengthen the immune system.

True. The main ingredients of vaccines are killed or weakened viruses or bacteria or their parts. These are called antigens and they train the immune system to recognize and defend rapidly against vaccine preventable infections before illness can occur.



2. Multiple injections overwhelm the immune system.

False. In fact, our immune system needs to be challenged continually to stay vigorous. Every day our bodies come into contact with millions of germs, causing our immune system to work continuously to protect us. For example, infants can respond to about 10,000 different antigens at one time. The numbers of antigens contained in vaccines are much lower in comparison.

3. Natural infections provide better immunity than vaccines.

False. Immunization is one of the safest and most effective health interventions to protect against a vaccine preventable disease. Over the past 50 years, immunization has saved more lives in Canada than any other health intervention. Vaccines interact with the immune system to produce an immune response similar to that produced by the natural infection, but they do not cause the disease or put the immunized person at risk of its potential complications. In contrast, the price paid for getting immunity through natural infection might be fatal: birth defects from rubella, liver cancer from hepatitis B virus, or death from complication due to measles.

4. Vaccines are extremely safe and effective.

True. The vaccines used in Canada are extremely safe and are among the safest medical products available. They are developed to meet the highest standards and are continually monitored for safety and effectiveness before they are approved for use and after they are on the market. Most vaccine reactions are usually minor and temporary, such as a sore arm or mild fever. In the rare event a serious side effect is reported, it is immediately investigated.

5. Vaccines contain harmful traces of additives or residuals.

False. Additional substances may be required in vaccines to ensure effectiveness and safety or during the manufacturing process – these substances are safe. Below are two examples:

- Thimerosal is a preservative added to prevent the growth of other microbes in the vaccine. This organic compound contains a minute amount of one form of mercury which does not accumulate in the body and poses no health risks.
- Formaldehyde may be used to kill or weaken the virus or bacterium used to make a vaccine and is removed during the manufacturing process. Any trace amounts that may remain in the vaccine are safe. Formaldehyde is produced naturally in the body and helps with metabolism. There is approximately ten times the amount of formaldehyde in an infant's body at any time than there is in a vaccine.

Sources: Canadian Immunization Guide, Immunize Canada, World Health Organization

