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Food Deconstructed

Session Description:

Learn simple ways to read the food label that you can share with your clients. Hear about food additives that may be contributing to numerous chronic diseases. Gain a deeper knowledge of the ingredients that are in popular energy bars and powders, and foods that your clients are eating.

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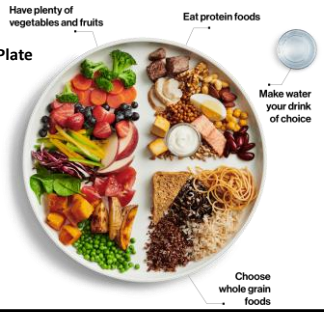
Canada's Food Guide Plate



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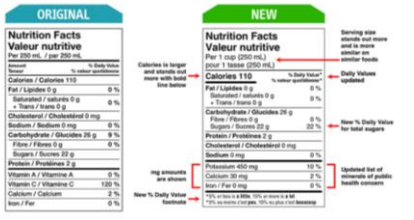
Nutrition Facts Table Changes



Source: https://www.canada.ca/en/health-canada/services/food-labelling-changes.html

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- **Percent (%) Daily Value**
  This section tells you how the nutrients in one serving of the food contribute to your total daily diet. Use it to choose foods that are high in the nutrients you should get more of, and low in the nutrients you should get less of.

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Use the Label Rule as a Label Tool!

- Use the % Daily value column
  - If a nutrient is 15% or higher, then the food has a lot that nutrient (ex. 30% sodium Yikes!) (ex. 30% calcium Yea!)
  - If a nutrient is 5% or lower, then the food is low in that nutrient (ex. 2% saturated fat Yea!) (ex. 2% fiber Yikes!)

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Nutrients to note

Use % DV to choose products that are:

- Higher in the nutrients you might want more of:
  - fibre
  - vitamin A
  - calcium
  - iron
- Lower in the nutrients you may want less of:
  - saturated and trans fats
  - sodium

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Helpful Resources for Additives

Chemical Cuisine, Center for Science in the Public Interest Website
- https://cspinet.org/eating-healthy/chemical-cuisine

PubMed https://www.ncbi.nlm.nih.gov/pubmed

Canadian Food Inspection Agency:

http://www.inspection.gc.ca/food/requirements-and-guidance/labelling/industry/food-additives/eng/1468420159039/1468420338039

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Microbiome

The genes of the ecosystem of microorganisms that inhabit your body primarily in your intestines.

Emulsifying agents may contribute to obesity and inflammation by negatively affecting the mucous layer that lines your intestines.

-*Nature*, 2015

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"An increase in ultraprocessed foods consumption appears to be associated with an overall higher mortality risk…"

- 2019 JAMA

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What are we coloring our food with?

Colors

Use: Increases eye-appeal, often in junk food

Concern: Cancer in animals, hyperactivity, sensitivity

Food it May be Found in: Candy, beverages, baked goods, orange skins, meat

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Allura Red or Red #40

- CSPI lists as a food dye to avoid:
  - Red 40 can cause allergy-like reactions.
  - High doses caused adverse reproductive effects in rats
  - One of the chemicals used in the processing of Red #40, p-Cresidine, caused bladder, nasal and liver cancer in mice.

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Tartrazine (Yellows #5) and Sunset Yellow (Yellow #6)

Tartrazine: can cause allergy/asthma-like hypersensitivity, hyperactivity in some children. May contain cancer-causing chemicals or chemicals that become cancer-causing in the body.

Sunset Yellow: animal tests found adrenal gland and kidney tumors. Contaminants of this dye are carcinogens or convert to them in the body, may cause allergic reactions. Workers in Yellow #5 and #6 plants have gotten cancer through occupational exposure.

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Brilliant Blue and Indigotine (Blue #1 and #2)

Brilliant Blue: May cause allergic reactions, may be carcinogenic, may affect neurons. Has produced malignant tumors by injection and ingestion in rats

Indigotine: May cause brain cancer in male rats. Has produced malignant tumors by injection in rats. May cause hypersensitivity.

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Propyl Paraben

Use: Preservative

Concern: May impair fertility and speed up growth of breast cancer cells

Food it May be Found in: tortillas, muffins, food coloring

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What's in Your Bread?

Dough Conditioners

Use: Improves volume and uniformity

Example: DATEM: Makes a stronger gluten network in bread

Problem: myocardial fibrosis, endometrial hyperplasia, renal and adrenal lesions in rats

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Whole Grains

Whole grain: Three components of a grain kernel (bran, germ, and endosperm) are included in the final product

1. Bran: Outer layer, B vitamins, and antioxidants, fiber-rich
2. Germ: Oily area, often milled away to add storage life. Rich in Vitamin E. Has B Vitamins, minerals, and protein.
3. Endosperm: Starchy area, what's left when bran and germ milled away. Not as nutrient-rich. It is the essence of refined white flour

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Whole Grains

- Consuming whole grains can reduce your risk for heart disease, stroke, cancer, diabetes and obesity
- Shopping Tip: When shopping for whole grain products, look for the key word "whole grain" on the label, and in the ingredient list
- In Canada, when wheat is milled, up to 5% of the germ may be removed. So, whole wheat may not be whole grain.

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Whole Grains

Whole Grains: Amaranth, Barley, Brown Rice, Buckwheat, Corn Grits, Einkorn Wheat, Farro, Polenta (Corn) Grits, Millet, Popcorn, Quinoa, Sorghum, Oat, Rye, Spelt, Teff, Triticale (wheat/rye hybrid), Whole Wheat, Wild Rice

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What's in Your Salad Dressings and Energy Bars?

Emulsifiers

Use: To stabilize products and make more consistent

Foods: cakes, creamers, salad dressings, ice cream, etc.

Examples:

- Polysorbate 80
  - May facilitate pathogens across intestinal walls, and increase intestinal permeability
  - Made from sorbitol

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Lecithin: Why is it in so many foods?

- Uses:
  - Emulsifier: holds water and fat together
  - Texturization
  - Reduces clumping of powders
- Foods: margarine, confections, baked goods, dairy, energy bars, almond milk
- Hexane used in the processing to extract components, such as soy lecithin used in processed foods

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What's in your oil?

- Hexane: Used in extraction of oils and proteins from seeds and soybeans, also an ingredient in gasoline, jet fuel, known as a hazardous air pollutant by the EPA
- "No studies were located regarding cancer effects after oral exposure to n-hexane in humans or animals." –US Dept of Health and Human Services
  - We are the lab rats
- Inhalation effects:
  - Humans: nervous system malfunction, numbness in extremities, muscle weakness, blurred vision and fatigue
  - Rats: neurotoxicity, lesions in respiratory tract

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What's in Your Ice Cream and Almond Milk?

Texturizers and Thickeners

- Use: Thicken or add texture to processed foods
- Example:
  - Carrageenan: made from seaweed, in animal tests, harmful to colon, may cause intestinal inflammation
    - In chocolate products, cheese, ice cream, candy and other processed foods

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What's in Your Cereal and Crackers?

Butylated Hydroxytoluene (BHT)

Use: Preservative

Concern: Associated with cancer in animals, developmental and behavioral effects. Banned in other countries

Food it May be Found in: cereals, crackers, chewing gum, potato chips, oils

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What's in Gum?

Concern: Chewing gum is loaded with a witch's brew of ingredients:

Gum base: mix of polymers, plasticizers, softeners, texturizers and emulsifiers

Colors

Flavors

Preservatives

Sweeteners

Wax

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Titanium Dioxide

Use: To whiten and brighten

Foods: candies, chewing gum, white sauces, icing

Problem: Titanium Dioxide nanoparticles are associated with intestinal inflammation and cancer

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Propyl Gallate

Use: Preservative

Concern: Stomach, skin irritation, associated with cancer in rats

Food it May be Found in: products that contain fats, sausage, lard, may also be used as an ingredient in gum base

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Artificial Sugars

- Acesulfame Potassium (or Acesulfame-K)
- Advantame
- Aspartame
- Neotame
- Saccharin
- Sucralose (Splenda)

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Artificial Sweeteners

- Some animal studies have suggested a link to cancer.
- 2012 study found those who drank diet soda every day were 44 percent more likely than non-drinkers to suffer a heart attack or stroke.
- 2017 study found association between diet soda and stroke and dementia
- 2016 Italian study found dose related response to sucralose which caused malignant tumors in mice.
  - Sucralose is in Splenda

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What are other gums?

- Xanthan Gum-thickening, emulsifying, and stabilizing agent
  - It is a coating that the bacteria grows after ingesting sugar, then turned into a powder
  - Comes from same bacteria that causes black rot in broccoli and cauliflower
    - Yummy infographic on xanthan gum: http://www.msi.harvard.edu/events/science_of_xanthan.pdf
      - Bon Appetit!

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Gellan Gum

- a secretion from a bacteria
  - discovered in the laboratory
  - substitute for agar in the petri dish
  - food additive- stabilizer and thickener
- produced from S. elodea bacteria through fermentation "purified" by recovery with isopropyl alcohol. Residual isopropyl alcohol in the gellan gum must not exceed 0.075 percent. - USDA
- In dog and cat food the residual allowed is .4%

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What's in our soda?

Phosphates

Use: Emulsifiers, add texture, leaven baked goods, and improve moisture

Concern: May affect heart health by damaging blood vessels

Food they May be Found in: Beverages, baked goods, processed foods

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What's in Your Potato Chips and French Fries?

Acrylamide

Use: Has no use! Forms when certain foods are cooked to a high temperature

Concern: human carcinogen

Foods of concern are:

French fries, potato chips, roasted coffee beans. Cookies, crackers, and bread also pose a risk.

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What else is in your protein powder besides protein?

- Artificial Sweeteners
- Gums
- Soy Lecithin
- Flavors

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Canada Organic

"Organic" products contains minimum of 95 percent organic ingredients.

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Organic vs. Conventional

Vitamin C, iron, magnesium and antioxidant phytochemicals higher in organic foods.

-Alternative Medicine Review 2010

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These tips will help you reduce pesticide residues (as well as dirt and bacteria) on the food you eat:

•First, eat a *variety* of fruits and vegetables to minimize the potential of increased exposure to a single pesticide.
•Thoroughly wash all produce, even that which is labeled organic and that which you plan to peel.
•Wash your produce under running water rather than soaking or dunking it.
•Dry produce with a clean cloth towel or paper towel when possible.
•Scrub firm fruits and vegetables, like melons and root vegetables.
•Discard the outer layer of leafy vegetables, such as lettuce or cabbage.
•Peel fruits and vegetables when possible.
•Trim fat and skin from meat, poultry, and fish to minimize pesticide residue that may accumulate in the fat.

Source: National Pesticide Information Center

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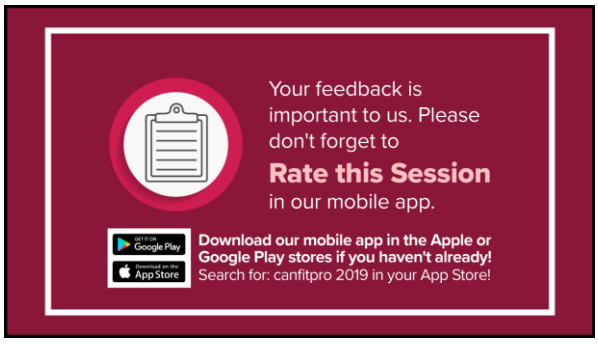

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