

NFS284H:

Winter 2021

Basic Human
Nutrition

Week 1-2



OVERVIEW OF HUMAN NUTRITION

How Healthy is the Canadian Diet? (加拿大人吃的健康吗?)

1. **Human nutrition** is the studies of interaction between human health and food / nutrients
2. Canadian Community Health Survey (CCHS)
 - 2004-CCHS-Nutrition
 - 2015-CCHS-Nutrition
 (looked at the adherence of Canadian diets to Canada's Food Guide)

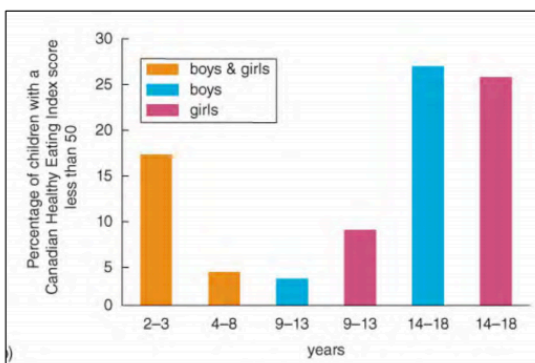
a. Canada's Food Guide (CFG)

2007 vs. 2019 CFG

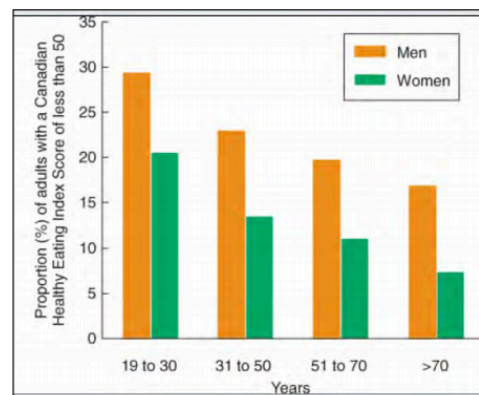
b. Canadian Healthy Eating Index (CHEI)

- measures adherence to CFG
- CHEI = 100: perfect adherence 👍
- CHEI = 0 : no adherence 🙄

CHILDREN



ADULT

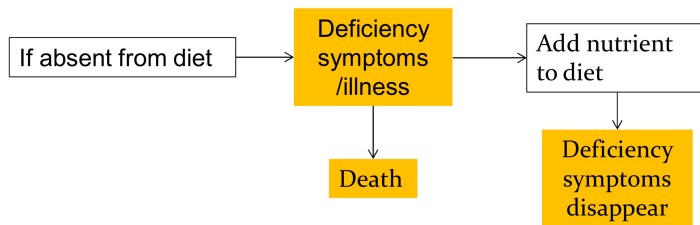


- Trend: Younger children & elderly are eating better than young & adult

3. Good nutrition can reduce risk of chronic disease (Diabetes, heart disease, hypertension, obesity, cancer, stroke, osteoporosis, neurodegenerative disease, etc.)

ESSENTIAL NUTRIENTS

- Must be provided by diet (cannot be biosynthesized in sufficient quantities)
-



MACRONUTRIENTS

- required in very large amounts by our body
- carbohydrates, lipids & proteins

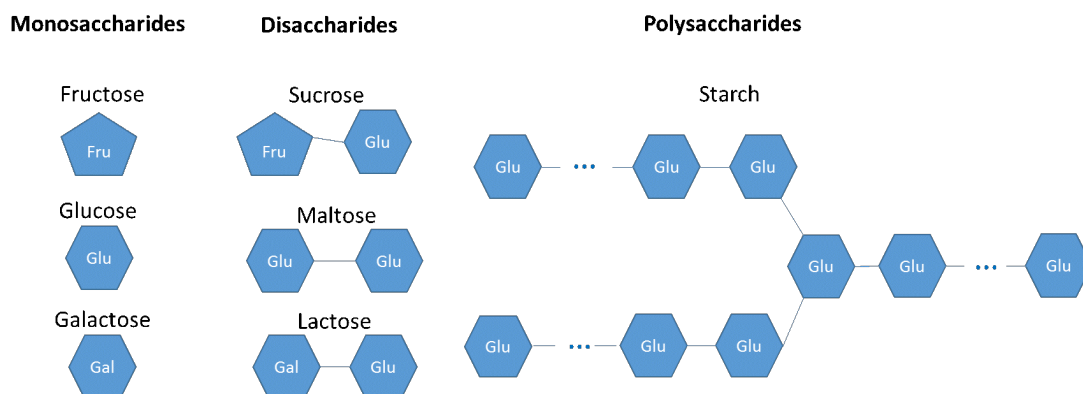
Carbohydrates

1) Starch (✓)

- digestible carbohydrate
- found in staples (rice, wheat, corn, potatoes, cassava, etc.)
- because digestible → breakdown to glucose
 - ↳ source of energy for cells, especially brain cells

2) Sugars (✓)

- Glucose
- Sucrose: disaccharide (fructose + glucose)
- High fructose corn syrup: → mixture of 1:1 glucose & fructose
 - often used in beverage sweetening



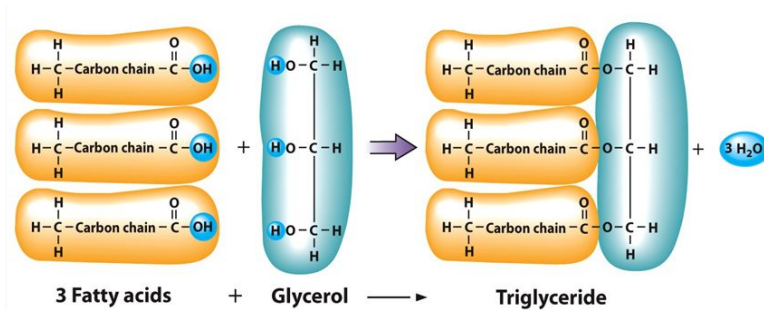
3) Dietary Fibre (×)

- Indigestible carbohydrate
- Found in vegetables, fruits, whole grains & legumes (beans, peas, lentils)

Lipids (aka Dietary fat / Fat)

A) Triglycerides

- Major form of lipids in food
- An ester of glycerol + 3 fatty acids



B) Unsaturated Fatty Acids:

- contain **double bonds**
- beneficial to health (↓ risk of CVD)
- Found in plant oils (canola oil, soybean oil, olive oil)
- Have two types:
 - Monounsaturated fatty acids (MUFA)**
 - Contain 1 double bond
 - e.g. olive oil
 - Polyunsaturated fatty acids (PUFA)**
 - contain >2 double bonds
 - e.g. canola oil & soybean oil
- iii. Essential fatty acids:
 - contain 2 PUFAs
 - must be obtained from diet
 - Linoleic acid (omega-6)
 - Alpha-linolenic acid (omega-3): e.g. flaxseed
- iv. Other omega-3 fatty acids:
 - Long-chain omega-3 fatty acid synthesized from essential fatty acid: alpha-linolenic acid
 - Found in fatty fish or fish oil supplements
 - Eicosapentaenoic acid (EPA)
 - Docosahexaenoic acid (DHA)

C) Saturated Fatty Acids:

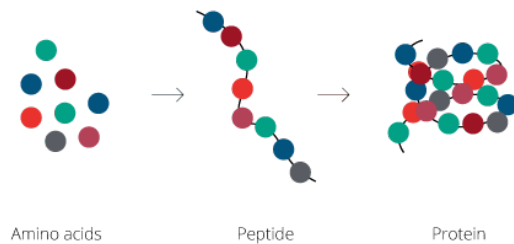
- Found in animal sources
- Associated with ↑ risk of disease

D) Trans Fatty Acids:

- Found in partially hydrogenated vegetable oil, margarines, and shortening
- Very unhealthy! Banned from the Canadian food supply in 2018

Proteins

- Composed of amino acids (joined by peptide bonds to form polypeptide chain)
- Some amino acids are essential (must be obtained from diet); some are non-essential



ENERGY CALCULATIONS: Atwater Numbers

	Kcalories/Gram	Kjoules/Gram
Carbohydrate	4	16.7
Lipid	9	37.6
Protein	4	16.7
Alcohol	7	29.3

1 kcal = 4.18 kJ

MICRONUTRIENTS

- Nutrients that are required in small quantities

Vitamins: organic compounds

- **Fat-soluble:**
 - **A, D, E, K**
 - Can be stored in liver & adipose tissue
 - NOT rapidly depleted from body
 - Toxic when intake is extremely high
- **Water-soluble:**
 - **B, C**
 - Not stored in body
 - Rapidly depleted (except B₁₂)
 - Need regular consumption
 - When consumed in excess → excreted in the urine

Minerals: Inorganic compounds

- **Sodium:** important in blood pressure; high intake can result in hypertension
- **Iron:** prevent iron deficiency anemia
- **Calcium:** maintain bone health
- **Iodine:** prevent goitre

PHYTOCHEMICALS (TEXTBOOK READING T1)

- Substances not made by the body, not essential, but may be beneficial to health
 - Produced by plants
 - Many are **antioxidants**: neutralize reactive oxygen molecules and reduce oxidative damage; reduce the risk of diseases such as CVD & cancer
 - Considered to be **functional foods**: provide health benefits beyond basic nutrition
- ✓ **Carotenoids**
 - Mostly found in yellow-orange colour vegetable and fruits
 - Antioxidant
 - Decreased risk of certain cancers, CVD, and age-related eye diseases
 - **Lycopene**: the carotenoid that gives tomatoes their red colour
 - Carotenoids **lutein and zeaxanthin**: reduce the risk of macular degeneration
 - ✓ **Sulforaphane & Indoles**
 - Found in **cruciferous** family of vegetables
 - Sulforaphane: boosting breast cancer protection system (↓ risk of breast cancer)
 - Indoles: inactivate estrogen → ↓ risk of cancer
 - ✓ **Allium**
 - Sulfur compounds found in garlic and onions
 - Boost the activity of cancer-destroying enzyme systems; protect against oxidative damage, and defend against heart disease by lowering blood cholesterol, blood pressure, and platelet activity
 - ✓ **Flavonoids**
 - Polyphenolic compound found in green tea, wine, berries
 - May protect against cancer and heart disease (make capillary blood vessels stronger, block carcinogens, slow the growth of cancer cells)
 - Polyphenolic compound in grapes and wine, **resveratrol**, may be linked to increased longevity and reduced risk of cancer and heart disease
 - ✓ **Phytoestrogens**
 - Found in soy
 - Structurally similar to the hormone estrogen. Thus function to mimic estrogen → block estrogen from binding to active site, slow the growth of cancer cells, induce cancer cell death
 - ✓ **Dark chocolate** with at least 70% cocoa are **rich in polyphenolic antioxidants** → may be beneficial to health.
However, **white chocolate**, made primarily from cocoa butter and sugar, contains no cocoa at all. Thus, **no phytochemicals**.
 - ✓ Whole-grain flour contains bran and germ that are usually removed in the white flour. The bran and germ contain more vitamins and phytochemicals called polyphenols

MALNUTRITION

- ✚ 'mal' = bad
- ✚ **undernutrition**: consuming too little
- ✚ **overnutrition**: consuming too much

HEALTHY FOOD CHOICES

- Choose foods high in nutrient density (nutrient levels/kcal) to ensure adequacy
- Adequacy = enough of a nutrient to maintain health
- Goal:
 - Eat a **variety** of foods
 - Eat a **balanced** diet
 - **Avoid excess** kcal intake (moderation)
 - Follow the CFG

PORTION DISTORTION

- Increased in food size → increased in the consumption of kcal
- Subpackaging: packaging in 100 kcal portions

NUTRITION GUIDELINES

NUTRITION-BASED APPROACH VS. FOOD-BASED APPROACH

1. Nutrient-based approach

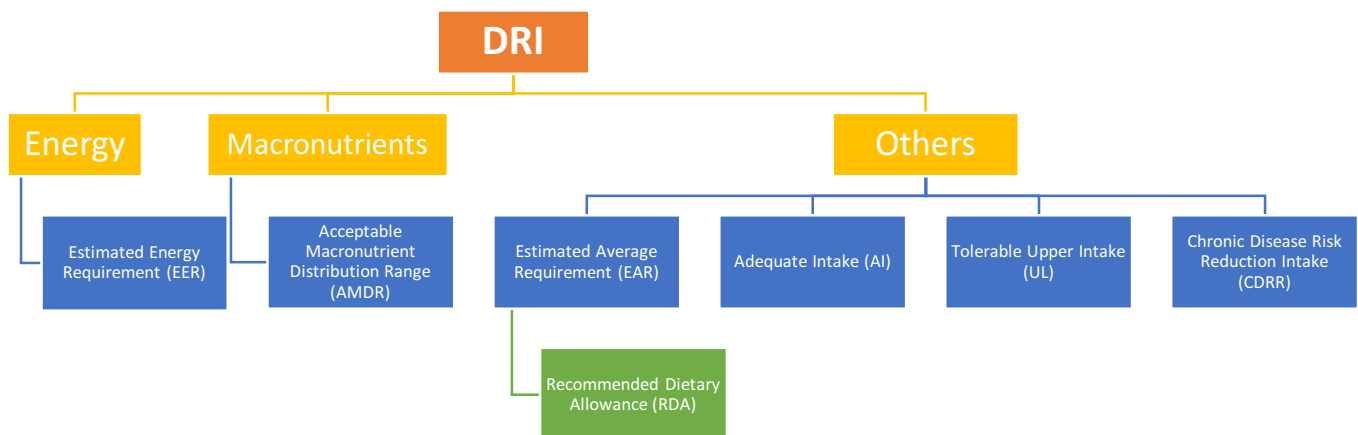
- Describes the amounts of individual nutrients that are needed
- First nutrient-based nutrition standards in Canada were published in 1939, were named Recommended Nutrient Intake (RNI).
In 1990's, a new set of recommendations determined by the institute of Medicine (IOM) by Canadian and American was called **Dietary Reference Intake (DRI)**

2. Food-based approach

- A dietary pattern is recommended
- Looking at what kinds of food is needed, instead of individual nutrient
- Dietary pattern = combination / package of types and amounts of foods that impact health
→ ex) CFG
- Ex) Canada's Official Food Rules 1942 → 1st CFG

DIETARY REFERENCE INTAKE (DRI)

- ✚ For planning & assessing diets of healthy individuals
- ✚ DRI include values for different life-stage groups: infants, children, adolescents, older adults, pregnant/lactating women (不同性别, 年龄, 和阶段的人有不同的 DRI 数值和分类。比如男性相比女性需要更多的 protein & milk products)



ESTIMATED AVERAGE REQUIREMENT (EAR) ----- 一个评估用的数值

1. Nutrient intake that meets the requirement of **50%** of individuals in a group (多少的营养摄入可以满足一个 group 里 50%的人达标)

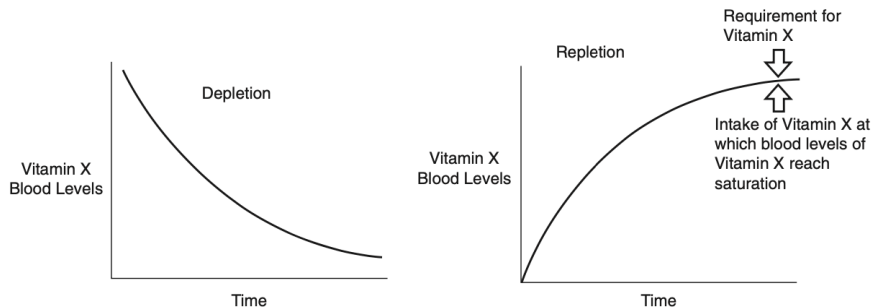
= median of requirement distribution

- a. To estimate the probability that an **individual's** usual intake is meeting the requirement (RDA)
- b. To estimate what **proportion of a group** is meeting their requirement (cut-point method)

2. Steps to determine EAR: (do experiment)

I. Determine a biochemical criterion that allows you to determine the intake at which an individual's requirement is being met.

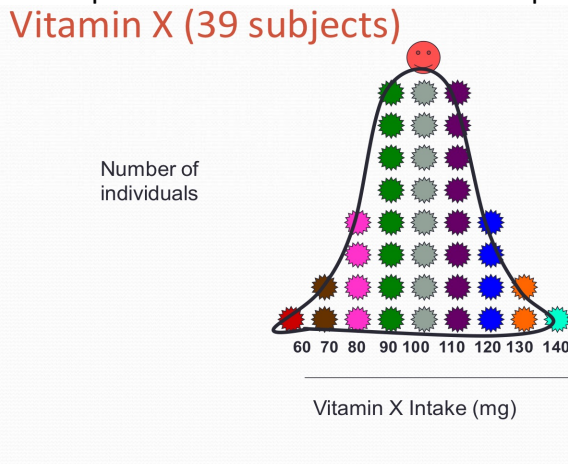
→ by doing **depletion-repletion experiment**



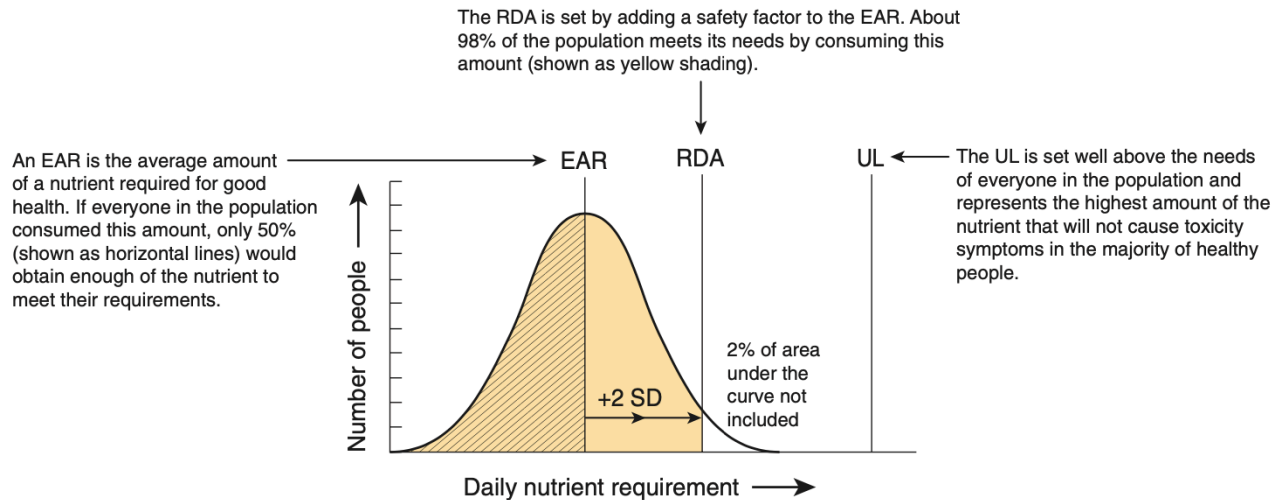
- Depletion:
 - Fed a vitamin X-free diet
 - [Vitamin X] ↓ in blood
 - eventually [vitamin X] = 0; then, we can do repletion
 - *note: vitamin X in blood ↓ = vitamin X in tissue ↓*
- Repletion:
 - Refeeding vitamin X
 - [Vitamin X] ↑ in blood
 - eventually reach saturation (plateau)
 - this concentration of intake is this tested individual's vitamin X requirement

BUT!!! 每个人的 requirement 是不同的, 而给每个人做测试又不现实。所以还需要接着看

II. Determine the requirement distribution from a sample of the population



Requirement Distribution



Requirement Distribution

- Normal distribution
- Median = EAR = 50% of subjects meet their requirement
- If your intake = EAR, you have 50:50 chance of meeting the requirement
- NOTE: we are only calculating probabilities here!!! 就算有一个人她只有 1%的几率达标, 她也是有可能可以达标的。或者有个人达标的几率是 99%, 但是她也是有可能不达标的

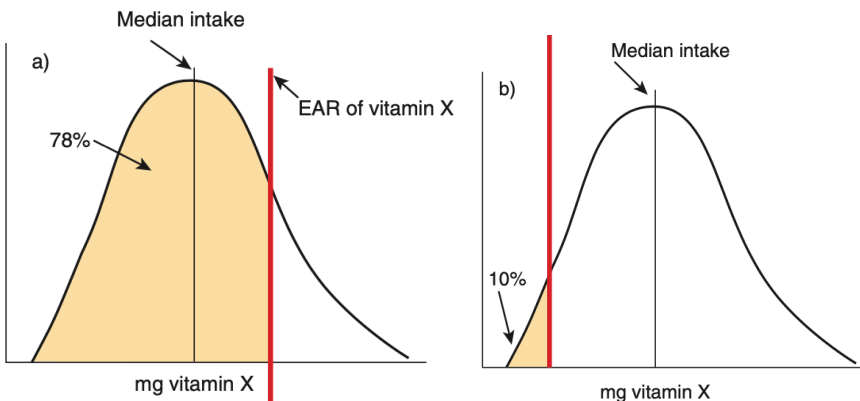
Recommended Dietary Allowance (RDA)

- Intake that ensures a 98% probability of meeting nutrient requirement
- To ensure an adequate intake for an individual (as a goal)
- $RDA = EAR + 2 \text{ standard deviation}$



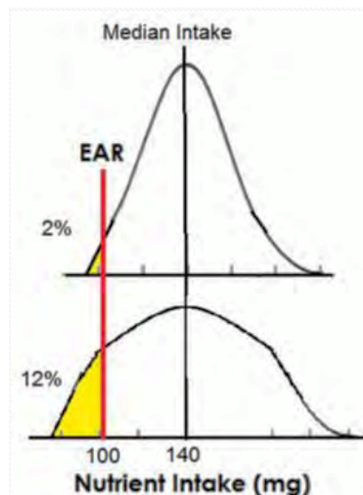
Intake Distribution (EAR Cut-Point Method)

- To estimate what **proportion of a group** is meeting their requirements
- Proportion of a population that is NOT meeting its requirements = Proportion of the population with intakes below the EAR on an **intake distribution**
- Here, EAR is not necessarily equal to the median
- Intake distribution does NOT allow you to identify which individual are not meeting the requirement. It only tells you the proportion of the group



- **10%** is Health Canada data: If the proportion of the population whose intake is below the EAR is $\leq 10\%$, this population can be considered to have an adequate intake
- EAR cut-point method is used by CCHS to assess the nutrient intakes of Canadians

NOTE: how well a population is doing with respect to nutrient intake depends on median intake + standard deviation



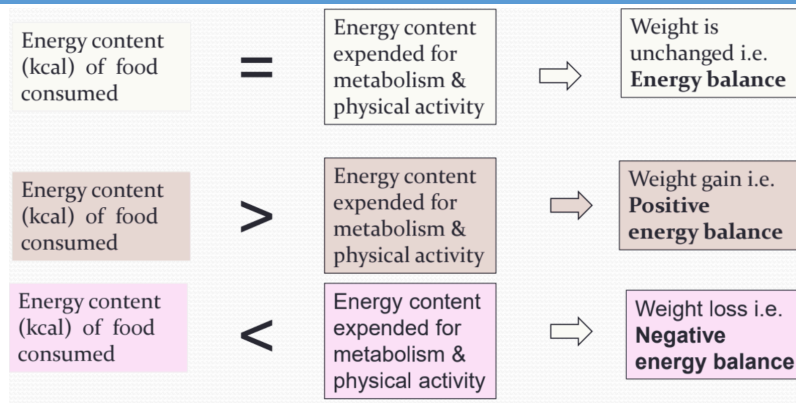
ADEQUATE INTAKE (AI)

- Usually based on an estimate of average nutrient intake by a healthy population
- Used when there is insufficient data to calculate an EAR (not enough experimental data)
- If intake < AI, intake probably NOT OK
- If intake > AI, intake probably OK

TOLERABLE UPPER INTAKE LEVEL (UL)

- The maximum level of daily intake of a nutrient that is unlikely to pose a risk of adverse effects
- NOT a recommended level of intake (no additional effect above RDA)

ESTIMATED ENERGY REQUIREMENT (EER)



✚ Equations are used to estimate the average energy needs of adults

Men: $EER = 662 - (9.53 \times \text{age [y]}) + PA \times (15.91 \times \text{weight [kg]} + 539 \times \text{height [m]})$

Women: $EER = 354 - (6.91 \times \text{age [y]}) + PA \times (9.36 \times \text{weight [kg]} + 726 \times \text{height [m]})$

See also section 7.3: Estimating Energy Needs pg 274

PA (physical activity term) = 1.00 (sedentary) → 1.48 (very active)

✚ Know the variables involved in this equation!

Physical Activity Level	
Sedentary: activities of daily living; <30 min of intentional exercise/day.	
Low active: walking 30 min at 6.5 km/hr every day.	+ 135 to 165 kcal
Active: walking 1 hr 45 min at 6.5 km/hr every day.	+ 470 to 580 kcal
Very active: walking 4 hr 15 min at 6.5 km/hr every day.	+ 1145 to 1405 kcal

- ✚ EER is different for every individual based on their **age, sex, activity level, and body size**
 - increase when PA, weight, height is increased
 - decrease when age is increased
 - male needs more EER than female

ACCEPTABLE MACRONUTRIENT DISTRIBUTION RANGE (AMDR)

- Recommendations on ranges of intake for macronutrients
- Expressed as % of total calories
 - Carbohydrates: 45-65%
 - Fat: 20-35%
 - Saturated fat: < 10% kcal (CFG); < 7% (scientific literature)
 - Trans fat: < 1% kcal
 - Protein: 10-35%

CANADA'S FOOD GUIDE 2019

+ Food-based recommendation

+ 旧版: 2007 Eating Well with Canada's Food Guide

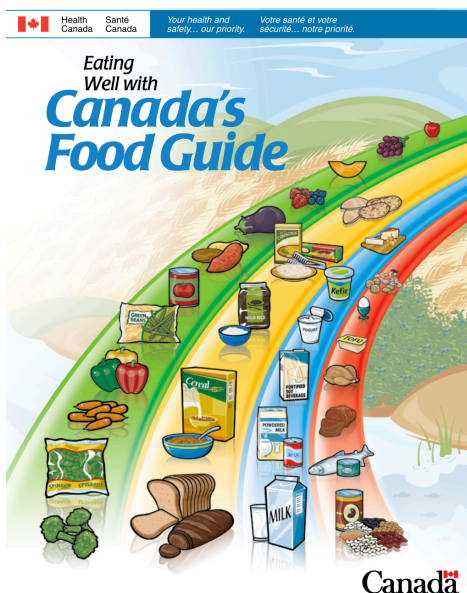
新版: Jan 2019

+ CFG 2007 Controversies:

- Not enough emphasis on whole grains
- Milk and meat food groups reflect dairy and beef industry influence
- Misnamed: called "meat & alternatives", but most of foods shown are not meat but alternative products
- Includes fruit juice as vegetable and fruit intake "soft on juice", high sugar content
- Amount of recommended number of serving per day is too prescriptive
 - But prescriptive approach can be used to assess diet quality (3-day food record)
- Poor messaging on fat
 - Only include reduction of the fat, without concern for the types of fat consumed

+ CFG 2019 was developed by:

- Review of systematic scientific literature
- Review of the Canadian context
- Review of consumer preferences with respect to the CFG 2007 presentation of information
- Food industry representatives were excluded



VS



Canadian dietary guidelines

1. Nutritious foods are the foundation for healthy eating
 - a. Energy balance
 - b. Environmental impact
 - c. Food traditions
2. Processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat should not be consumed regularly (*free sugar* 指添加的糖或者添加的蜂蜜/糖浆/果汁)
 - a. Reduce intake of sugary drinks, confectioneries and sugar substitute
 - b. Publically funded institutions should follow the guidelines
 - c. Alcohol consumption is associated with health risks
3. Food skills are needed to navigate the complex food environment and support healthy eating
 - a. Cooking skill should be promoted
 - b. Food labels should be promoted

Food Choices

1. Eat a variety of vegetable and fruits
 - ✓ Replace the high sugar fruit juice with water
2. Eat whole grains
 - ✓ Whole grains contain high fibre which can reduce the risk of diseases
3. Choose plant-based protein more often
 - ✓ Beans, lentils, nuts, seeds
 - ✓ Lower fat dairy products
4. Choose unsaturated fats instead of saturated or trans-fat
 - ✓ Nuts, seeds, avocado, fatty fish, vegetable oils, soft margarine
5. Limit highly processed foods
 - ✓ Highly processed foods add excess sodium, sugars or saturated fat
6. Prepare meals and snacks with low sodium, sugars or saturated fat
7. Choose healthier menu options when eating out
8. Make water your drink of choice
 - ✓ Or other healthy drink choices like milk, unsweetened soy or almond beverage, coffee and teas
9. Use food labels
10. Be aware that food marketing can influence your choices

Eating Habits

1. Be mindful of your eating habits
2. Cook more often
3. Enjoy your food
4. Eat meals with others

FOOD LABELS

1. **Mandatory** -- All packaged foods in Canada are required to have:
 - a. Product name
 - b. Product amount (weight or volume)
 - c. Product manufacturer or distributor
 - d. Best before date for perishable items
 - Best before date \neq expiry date
 - e. **List of ingredients**
 - f. **Nutrition facts table (NFT)**
2. **Voluntary** -- Optional:
 - a. Nutrient content claims
 - b. Nutrient function claims
 - c. Disease risk reduction claims
3. CFG recommends using food labels to select foods low in saturated fat, sugars, sodium and kcalories

Mandatory Nutrition Labelling

Nutrition Facts Table (NFT)

Original

Nutrition Facts Valeur nutritive	
Per 250 mL / par 250 mL	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 110	
Fat / Lipides 0 g	0 %
Saturated / saturés 0 g + Trans / trans 0 g	0 %
Cholesterol / Cholestérol 0 mg	
Sodium / Sodium 0 mg	0 %
Carbohydrate / Glucides 26 g	9 %
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	
Protein / Protéines 2 g	
Vitamin A / Vitamine A	0 %
Vitamin C / Vitamine C	120 %
Calcium / Calcium	2 %
Iron / Fer	0 %

New

Nutrition Facts Valeur nutritive	
Per 1 cup (250 mL) pour 1 tasse (250 mL)	
Amount Teneur	% Daily Value* % valeur quotidienne*
Calories 110	
Fat / Lipides 0 g	0 %
Saturated / saturés 0 g + Trans / trans 0 g	0 %
Carbohydrate / Glucides 26 g	
Fibre / Fibres 0 g	0 %
Sugars / Sucres 22 g	22 %
Protein / Protéines 2 g	
Cholesterol / Cholestérol 0 mg	
Sodium 0 mg	0 %
Potassium 450 mg	10 %
Calcium 30 mg	2 %
Iron / Fer 0 mg	0 %

*5% or less is a **little**, 15% or more is a **lot**
*5% ou moins c'est **peu**, 15% ou plus c'est **beaucoup**

Serving size stands out more and is more similar on similar foods

Daily Values updated

New % Daily Value for total sugars

Updated list of minerals of public health concern

Calories is larger and stands out more with bold line below

mg amounts are shown

New % Daily Value footnote

Daily Value (DV)

1. A standard nutrient amount on food labels to indicate how much of nutrient is in a food
2. Approximate the nutritional needs of an adult consuming 2000 kcal daily
3. General rule: $\leq 5\%$ DV is low in that nutrient; $\geq 15\%$ DV is high in that nutrient
 - ✓ Nutrients to limit (fat, saturated/trans-fat, sodium, sugars) should aim for $< 5\%$ DV
 - ✓ Nutrients to get enough (vitamin A, vitamin C, calcium, iron) should aim for $> 15\%$ DV
4. New daily value (%DV) are brought into agreement with DRIs

TABLE 2.5A Old Reference Standards^a and New Daily Values^b based on 2,000 Kcalories Diet

Nutrient	Old Reference Standard	New Daily Value
Total fat	65 g (30% of energy)	75 g (35% of energy)
Saturated & trans fat	20 g (10% of energy)	20 g (10% of energy)
Total carbohydrate	300 g (60% of energy)	No DV
Total sugars	No DV	100 g (20% of energy)
Dietary fibre	25 g	28 g (Declaring %DV optional)
Cholesterol	300 mg (Declaring %DV optional)	300 mg (Declaring %DV optional)
Sodium	2,400 mg	2,300 mg
Potassium	3,500 mg	4,700 mg

TABLE 2.5B Old Recommended Daily Intakes (RDI)^a and New Daily Values (DV)^b

Nutrient	Old RDI	New DV	Nutrient	Old RDI	New DV
Biotin	30 mcg	30 mcg	Pantothenic acid	7 mg	5 mg
Calcium	1,100 mg	1,300 mg	Phosphorus	1,100 mg	1,250 mg
Choline	n/a	550 mg	Riboflavin	1.7 mg	1.3 mg
Chloride	3,400 mg	2300 mg	Selenium	50 mcg	55 mcg
Chromium	120 mcg	35 mcg	Thiamin	1.3 mg	1.2 mg
Copper	2 mg	900 mcg	Vitamin A	1,000 RE	900 RAE
Folate	220 mcg	400 mcg DFE	Vitamin B ₆	1.8 mg	1.7 mg
Iodide	160 mcg	150 mcg	Vitamin B ₁₂	2 mcg	2.4 mcg
Iron	14 mg	18 mg	Vitamin C	60 mg	90 mg
Magnesium	250 mg	420 mg	Vitamin D	5 mcg	15 mcg
Manganese	2 mg	2.3 mg	Vitamin E	10 mg	15 mg
Molybdenum	7 mcg	45 mcg	Vitamin K	80 mcg	120 mcg
Niacin	23 NE	16 NE	Zinc	9 mg	11 mg

Exercise:

1) A glass of calcium-fortified orange juice contains 300mg of calcium/250ml. 250ml is the serving size shown on the NFT. What %DV would appear on the NFT beside calcium?

2) How about if I change the size to 150mg of calcium/125ml; serving size = 250ml

3) A can (355ml) of regular cola contains 39g of sugar. The serving size on the NFT is 1 can. What % DV will appear on the new NFT. Is this a lot or a little?

New Food Label

- Font size increased to make serving size and calories more visible
- Macronutrients are grouped together for easier comparison
 - ✓ Nutrients with a mandatory DV between the first and second thick lines should be limited (fat, saturated/trans-fat, sugars, sodium)
 - ✓ All the nutrients should be limited now have %DV indicated
- Change in the micronutrients listed
 - ✓ Vitamin A & C are replaced with potassium which has higher public health concern
 - ✓ High sodium and low potassium contribute to hypertension → cardiovascular disease
 - ✓ DVs & absolute amount should be indicated

Original		New																																																																																	
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New Ingredients List

1. List ingredients by order of weight
2. More readable
3. All sugars-based ingredients group in brackets after ‘sugars’
 - ✓ **Sugar** = sucrose = disaccharide of glucose and fructose (ex. white sugar, table sugar)
 - ✓ **Sugars** = any monosaccharide or disaccharide found in food (ex. Sugars in milk)
 - ✓ A line about “Added sugars” was proposed to add on NFT but not accepted
 - ✓ But if you see %DV value > 15% beside “Sugars” on NFT = a signal for the consumer that there might be some added sugar

OLD	NEW
<p>INGREDIENTS: WHEAT FLOUR, FANCY MOLASSES, VEGETABLE OIL SHORTENING (SOYBEAN AND/OR CANOLA OIL AND MODIFIED PALM OIL), BROWN SUGAR, LIQUID WHOLE EGG, SUGAR, SALT, SODIUM BICARBONATE, SPICES, COLOUR CONTAINS: WHEAT, EGG, SOY</p>	<p>Ingredients Sugars (fancy molasses, brown sugar, sugar) • Wheat flour • Vegetable oil shortening (soybean and/or canola oil and modified palm oil) • Liquid whole egg • Salt • Sodium bicarbonate • Spices • Colour Contains: Wheat • Egg • Soy</p>

Voluntary Labelling

Nutrient Content Claims

- Can be added without seeking prior approval from Health Canada
- E.g. This milk contains excellent source of calcium

Free	Product contains no amount of, or a trivial amount of, fat, saturated fat, <i>trans</i> fat, cholesterol, sodium, sugars, kcalories, etc. For example, “sugar free” and “fat free” both mean less than 0.5 g per serving. Trans fat free means less than 0.2 g of trans fat and less than 2 g saturated fat per serving. Synonyms for “free” include “without,” “no,” and “zero.”
Low	Can be used to describe the amount of fat, saturated fat, cholesterol, sodium, kcalories, and other nutrients. Specific definitions have been established for each of these nutrients. For example, “low fat” means that the food contains 3 g or less per serving; “low cholesterol” means that the food contains less than 20 mg of cholesterol (and less than 2 g saturated fat) per serving; “low sodium” means less than 140 mg sodium/100 g of food. Synonyms for “low” include “little,” “few,” and “low source of.”
Lean and Extra Lean	Used to describe the fat content of meat, poultry, seafood, and game meats. “Lean” means that the food contains less than 10 g fat per 100 g. “Extra lean” means that the food contains less than 7.5 g fat per 100 g.
Source of	Foods contain greater than 5% of the daily value of the stated nutrient, e.g., source of vitamin A.
Good Source of	Food contains greater than 15% of the Daily Value for a particular nutrient per serving, except vitamin C, for which foods contain > 30%, e.g., good source of fibre.
Excellent source of	Used for foods that contains 25% or more of the Daily Value for a particular nutrient (except vitamin C, which contains 50% or more). Synonyms include “high” and “rich in,” e.g., excellent source of calcium.
Reduced	Nutritionally altered product contains 25% less of a nutrient or of energy than the regular or reference product. Synonyms include “less,” “lower” and “light,” e.g., reduced in fat.
Light	Used in different ways. See “reduced” above. “Lightly salted” refers to a food in which sodium has been reduced by 50%. The term “light” can also be used to describe properties such as texture and colour, as long as the label explains the intent—for example, “light and fluffy.”

Nutrient Function Claims

- Can be added without seeking prior approval from health Canada, but prior consultation is recommended
- Foods must contain at least **5% DV**
- Claim must mention food and nutrient
- E.g. milk is an excellent source of calcium which aids in the formation and maintenance of bones and teeth

Disease Risk Reduction Claims (therapeutic claims)

- Requires prior approval from Health Canada
- Scientific evidence must strongly support the claim