



## **Chapter # 13**

# **Nutrition: Fats, Cholesterol & Your Diet**

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**Know how different fats affect your health  
Learn how healthy fats in your diet  
keep your heart healthy**

### **You Will Learn:**

- 1) The role of healthy fats in the body and identify food sources that can lower your blood cholesterol
- 2) To identify foods that have unsaturated, saturated and trans fats
- 3) How much saturated fat you are eating each day
- 4) To identify how to lower your triglyceride levels
- 5) How added sugar affects your body

## What are Fats?

Fats are also called 'fatty acids' or 'lipids.' Fatty acids or lipids in our body exist as three molecules put together, known as triglycerides. Most of the fat we need for life is made by the body. Some fats can only be received from our diet. These fats are known as essential fats because it is essential that we get them from food. Essential fats include Omega-3 fats.

## Why Is Fat Important?

Getting enough fat in your diet is important for overall health. Restricting fat intake to very, very low levels is not recommended. We need fat for the following reasons:

- To absorb vitamins such as, vitamins A, D, E and K
- To keep our skin healthy
- To make sure we get enough essential fats (e.g., Omega-3) that are important for heart health
- Healthy fats (e.g., unsaturated fats from plant oils) can help lower LDL (lousy) cholesterol in your body
- Fat adds flavor to food and keeps you feeling satisfied longer after a meal

## What is Cholesterol?

Cholesterol is a wax-like substance found in the body. Our bodies need cholesterol:

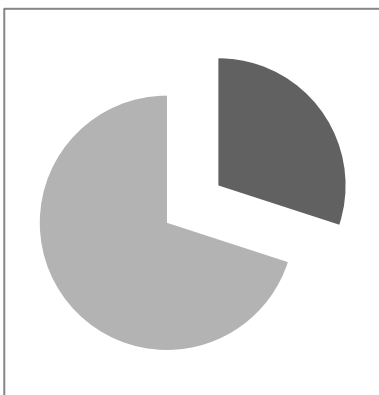
- To make vitamin D
- To make male and female hormones (testosterone and estrogen)
- To keep cell membranes (e.g., the wall that lines the cell) in our body healthy

Eating foods high in saturated and trans fat leads to more LDL (lousy) cholesterol in the body. LDL cholesterol slowly builds up along the walls of the arteries. Over time, this can lead to plaque buildup that can narrow the space in our arteries. When blood is not able to flow to the heart or the brain, the result is a heart attack or stroke.

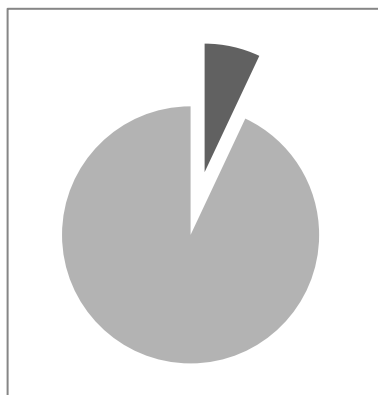
## How Much Fat Do You Need?

The Heart and Stroke Foundation and the American Heart Association recommend that less than 30% of our energy (calorie intake) comes from **total** fat. Saturated fat (the less healthy type of fat) should not be more than 7% of total calories. Saturated fats raise LDL (lousy) cholesterol in the body.

**30% Calories from TOTAL fat**



**7% Calories from SATURATED fat**



## What Does % of Calories Mean?

Recommendations for the amount of **total** and **saturated fat** will be different for each person depending on age, gender and activity level. The following chart gives you a guide based on certain calorie levels.

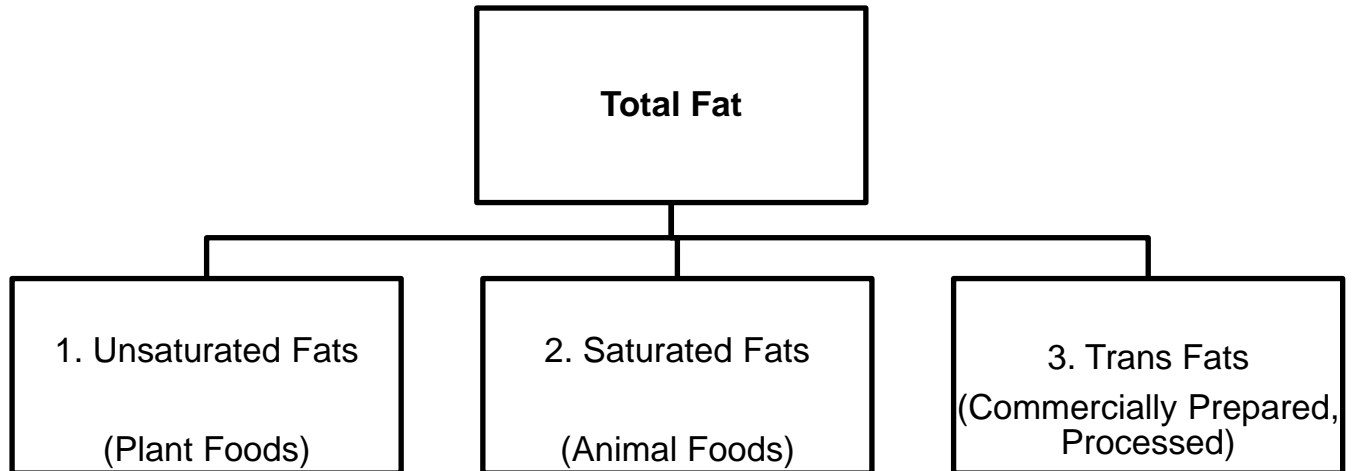
	Daily Calories	Recommended Daily <b>Total</b> Fat Intake	Recommended Maximum Daily <b>Saturated</b> Fat Intake
Men	1800 - 2000	60 – 65g*	14 -15.5g**
Women	1500-1700	50 – 56g*	11.5 – 13g**

\* **Calculation:** Number of calories per day x 30%=calories from TOTAL fat ÷ 9 calories/gram of fat= amount of TOTAL fat in grams for the day. *Example:* 1800 calories x 30%=540 ÷ 9 = 60g

\*\***Calculation:** Number of calories per day x 7%=calories from saturated fat ÷ 9 calories/gram of fat= amount of saturated fat in grams for the day. *Example:* 1500 calories x 7%=126 ÷ 9 = 14g

## Types of Fat

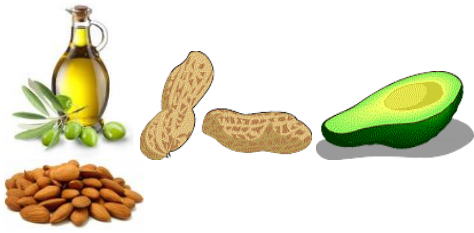
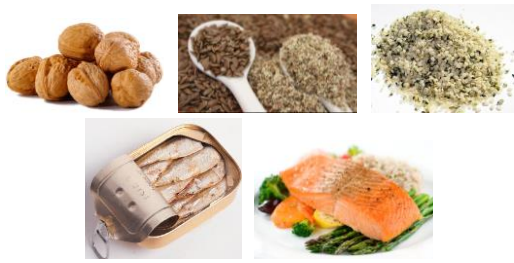
There are **three** main types of fat found in the foods you eat:



### 1) Unsaturated Fats

- Found in plant foods and oils
- Healthy fats, but should be eaten in moderation
- 2 types: **mono-unsaturated** fats and **poly-unsaturated** fats

See table on next page for examples of mono and poly unsaturated foods:

MONO-unsaturated Fats/Oils	POLY-unsaturated Fats/Oils
<ul style="list-style-type: none"> <li>• Lower (↓) LDL (lousy) cholesterol in your body</li> <li>• Increase (↑) HDL (healthy) cholesterol in your body</li> <li>• Examples are: <ul style="list-style-type: none"> <li>- olive oil and olives</li> <li>- canola oil</li> <li>- natural peanut butter</li> <li>- peanut oil and peanuts</li> <li>- avocado</li> <li>- almonds</li> <li>- cashews</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Lower (↓) LDL (lousy) cholesterol in your body</li> <li>• <b>Omega-3</b> fats: Increase (↑) HDL and lower (↓) triglycerides</li> <li>• Examples are: <ul style="list-style-type: none"> <li>- walnuts</li> <li>- ground flaxseed &amp; flaxseed oil</li> <li>- hemp seed/hemp hearts</li> <li>- chia seed/salba seed</li> <li>- canola oil</li> <li>- fatty fish: mackerel, salmon, unsalted herring, sardines (fresh or canned), trout.</li> </ul> </li> </ul>
	

## 2) Saturated Fats

- Raise (↑) LDL (lousy) cholesterol in your body
- Found mostly in all animal products and tropical oils such as: cocoa butter, palm oil, coconut and coconut oil, palm kernel oils
- All animal products have cholesterol

See table on next page for examples of foods high in saturated fat:

Foods High in Saturated Fat	Changes You Can Make
<p><b>Marbled or fatty meats:</b></p> <ul style="list-style-type: none"> <li>• Corned beef, brisket, regular</li> <li>• Ground beef, short or spare ribs</li> <li>• Skin on chicken and turkey, chicken wings</li> <li>• Bacon (all kinds)</li> <li>• Sausages</li> <li>• Goose or duck</li> <li>• Breaded or battered foods</li> <li>• High fat luncheon meats</li> </ul>	<p><b>Choose leaner meats:</b></p> <ul style="list-style-type: none"> <li>• <b>Beef:</b> round, sirloin, chuck or loin; <b>lamb:</b> leg, arm or loin; <b>pork:</b> tenderloin, leg or shoulder; <b>veal:</b> all trimmed cuts; extra lean ground beef</li> <li>• Replace luncheon meats with low sodium canned fish or chicken/turkey packed in water</li> <li>• Remove the skin from chicken and turkey</li> <li>• Eat a smaller amount of meat</li> <li>• Eat meat less often. Cook with dried peas, beans &amp; lentils or with tofu and fish</li> </ul>
<p><b>High fat dairy foods</b></p> <ul style="list-style-type: none"> <li>• Whole milk (3.5%)</li> <li>• High fat cheeses with more than 20% M.F. (milk fat)</li> <li>• Yogurts with more than 2% M.F</li> <li>• Butter</li> <li>• Cream (any type)</li> </ul>	<p><b>Lower fat dairy products</b></p> <ul style="list-style-type: none"> <li>• Cheeses with less than 15% M.F.</li> <li>• 1% or skim milk</li> <li>• Low fat plain or fat-free, low sugar fruit yogurt</li> <li>• Consider non-hydrogenated margarine, olive oil or avocado as a spread</li> </ul>








### 3) Trans Fats

- Raise (↑) LDL (lousy) and lower (↓) HDL (healthy) cholesterol in your body
- Trans fats are also called **partially hydrogenated vegetable oil or shortening**

### What Are Trans Fats?

- Trans fats are produced when a healthy fat (e.g., oil) undergoes a chemical process known as **partial hydrogenation**

- Food manufacturers add hydrogen atoms (hence the term *hydrogenation*) to a healthy oil (e.g., soybean, canola or olive). This process allows the liquid oil to become a solid and hard fat
- *Hydrogenation* prevents separation of the fat. It can also improve the texture and consistency of the product. Consider natural peanut butter. Natural peanut butter needs to be stirred before spreading. The oil separates from the crushed nuts, which you do not see with regular peanut butter
- Read the **Ingredients List** on the food label for *partially hydrogenated or hydrogenated oils/fats*. This is a clue that trans fat is in the product

Foods With Trans Fats	Changes You Can Make
<p><b>Found mostly in commercially prepared, processed food items:</b></p> <ul style="list-style-type: none"> <li>• Crackers and cookies</li> <li>• Cakes, pie crusts, pastries, donuts</li> <li>• Vegetable shortening, hard margarine</li> <li>• French fries, potato and corn chips</li> <li>• Deep-fried restaurant or fast foods</li> </ul> <div data-bbox="250 1312 406 1522">  </div> <div data-bbox="516 1390 678 1482">  </div> <div data-bbox="712 1423 802 1518">  </div>	<p><b>Replace commercially prepared, processed foods with healthy choices:</b></p> <ul style="list-style-type: none"> <li>• Fruit and ¼ cup unsalted nuts</li> <li>• Raw veggies and hummus</li> <li>• Low fat, low sugar yogurt</li> <li>• Whole grain crackers and low fat ricotta cheese</li> </ul> <div data-bbox="912 1291 998 1402">  </div> <div data-bbox="1047 1276 1128 1402">  </div> <div data-bbox="1166 1318 1286 1402">  </div> <div data-bbox="1315 1302 1421 1402">  </div>

Example of a high fat meal compared to a lower fat meal:

### High fat meal:

**Total fat: 99g**

**Saturated fat: 33g**

Food	Amount	Total Fat (g)	Saturated Fat (g)
Fried Chicken	4 oz (100g)	23	6
French Fries	2.5 oz	11	1.5
Caesar Salad	Side Order	20	4
Whole Milk	1 cup (250 mL)	9	6
Apple Pie	1 slice (1/8 pie)	19	4.7
Ice Cream	1 scoop (1/2 cup)	17	11

### Healthy meal:

**Total fat: 21g**

**Saturated fat: 7g**

Food	Amount	Total Fat (g)	Saturated Fat (g)
Roasted Chicken	4 oz (100g)	4	1
Baked Potato + Low Fat Sour Cream	1 potato 1Tbsp sour cream	1	0.5
Green salad with olive oil	2 tsp oil (10 mL)	9	1
1% Milk	1 cup (250mL)	2	1.5
Baked Apple	1	0	0
Low Fat Frozen Yogurt	1 scoop (1/2 cup)	4.5	2.5




## Lowering Triglycerides


- Triglycerides are a type of fat in your blood. They are referred to as storage fat.
- When we eat more calories than our body needs for energy, the body converts these extra calories into triglycerides
- High triglyceride levels can raise the risk of heart disease and increase your risk of heart attack



- A safe **target** for triglycerides is: **less than 1.7 mmol/L**; (mmol/L is the unit of measure used to measure cholesterol and triglyceride levels in Canadian laboratories)
- My value is: \_\_\_\_\_ mmol/L

### Improve Triglyceride Levels By:

Lifestyle Changes	Reason	Examples
<p>1. Reducing your intake of sugars, sweets and refined, processed carbohydrates</p> 	<ul style="list-style-type: none"> <li>• A diet high in simple sugars and refined carbohydrates raises triglycerides</li> </ul>	<ul style="list-style-type: none"> <li>• candy</li> <li>• desserts</li> <li>• pastries</li> <li>• jams/jellies/syrup</li> <li>• honey</li> <li>• white rice</li> <li>• white flour foods, e.g. white bread</li> <li>• soda pop</li> <li>• sweet drinks</li> <li>• juice</li> <li>• chocolate</li> <li>• crackers</li> </ul>
<p>2. Reducing alcohol intake</p> 	<ul style="list-style-type: none"> <li>• Drinking too much alcohol will increase triglyceride levels, especially if mixed with juices or regular soda pop</li> </ul>	<ul style="list-style-type: none"> <li>• beer</li> <li>• liqueurs</li> <li>• wine</li> <li>• champagne</li> <li>• gin</li> <li>• whisky</li> <li>• rum</li> <li>• brandy</li> <li>• mixed drinks</li> </ul>
<p>3. Eating fish more often.</p> <p>Aim to eat fatty fish 2-3 times a week.</p> 	<ul style="list-style-type: none"> <li>• Fish high in Omega-3 can:</li> <li>• Lower triglyceride levels</li> <li>• Reduce blood clotting</li> <li>• Prevent heart attacks</li> <li>• Reduce the risk of irregular heartbeat</li> </ul>	<ul style="list-style-type: none"> <li>• salmon</li> <li>• halibut</li> <li>• mackerel</li> <li>• walnuts</li> <li>• flax seed (ground)</li> <li>• soy and soy-based products</li> <li>• flounder</li> <li>• haddock</li> <li>• red snapper</li> <li>• canola oil</li> <li>• spinach</li> <li>• trout</li> <li>• bass</li> <li>• tuna</li> <li>• flax seed oil</li> </ul> <p><b>Others sources of Omega-3 fats:</b></p>

Lifestyle Changes	Reason	Examples
<p>4. Decreasing total fat and trans fat intake</p> 	<ul style="list-style-type: none"> <li>• A diet high in saturated and trans fat will thicken the blood and increase the chance of clotting</li> </ul>	<ul style="list-style-type: none"> <li>• fast foods</li> <li>• high fat cheese</li> <li>• fried foods</li> <li>• bacon</li> <li>• shortening (vegetable)</li> <li>• deli meats</li> <li>• mayonnaise</li> <li>• convenience foods e.g., hot dogs, hamburger helpers or macaroni and cheese</li> <li>• pastries, cookies, ice cream, desserts</li> <li>• butter</li> <li>• croissants</li> <li>• chocolate</li> <li>• sausages</li> <li>• margarine</li> </ul>

## Added Sugars

- The American Heart Association defines “*added sugars*” as the sugars and syrups added to foods during the processing or preparation. The sugars and syrups that are added at the table are also added sugars
- Sugars that are locked in and naturally found in foods such as fruit, vegetables, milk and whole grains are healthy choices. These foods are recommended as part of a healthy diet
- High sugar intake from added sugars is linked to high triglyceride levels. High triglyceride levels in the blood increase the risk of diabetes and heart disease

- The World Health Organization, the Canadian Diabetes Association and the American Heart Association recommend adults consume less than 10% of total calories from added or free sugars
  - For **women**, this would mean having no more than **100 calories** or **6 teaspoons** from added sugars each day
  - For **men**, this means having no more than **150 calories** or **9 teaspoons** from added sugars per day
  - 1 teaspoon has 4 grams of sugar

**Note:** The information on food labels includes TOTAL sugars per serving in a product. This means that the number you see for ‘*Sugars*’ on a food label includes the amount of sugar that is naturally present in foods AND added sugars. This makes it hard to know how much added sugars there are in foods and drinks.

Nutrition Facts	
Per 125 ml	
Amount	% Daily Value
<b>Calories</b> 140	
<b>Fat</b> 7g	<b>11 %</b>
Saturates 4.5 g + Trans 0.3 g	<b>24 %</b>
<b>Cholesterol</b> 30 mg	
<b>Sodium</b> 60 mg	<b>3 %</b>
<b>Carbohydrate</b> 17 g	<b>6 %</b>
Fibre 0 g	<b>0 %</b>
<b>Sugars</b> 14 g	
<b>Protein</b> 2 g	
Vitamin A	<b>8 %</b>
Vitamin C	<b>0 %</b>
Calcium	<b>6 %</b>
Iron	<b>0 %</b>

### Sugar Appears in Many Different Forms:

- |                      |                            |                    |
|----------------------|----------------------------|--------------------|
| • Molasses           | • Fruit puree              | • Liquid sugar     |
| • Honey              | • Juice                    | • Invert sugar     |
| • Agave              | • Cane sugar               | • Dextrin          |
| • Sucrose            | • Maple syrup              | • Sugar beets      |
| • Dextrose           | • Brown sugar              | • Glucose-fructose |
| • Anhydrous dextrose | • High fructose corn syrup | • Brown rice syrup |
| • Malt syrup         | • Fruit-juice concentrate  | • Cane syrup       |



## How Can I Reduce the Amount of *Added Sugars* In My Diet?

- Replace sugary drinks (e.g., regular soda, iced tea, juices, fruit drinks, sports drinks, energy drinks, etc.) with water, unsweetened herbal tea, reduced fat milk or unsweetened soy, rice or almond milk
- Add flavour to foods by using spices (e.g., ginger, cinnamon, nutmeg, vanilla extract) instead of sugar
- Choose plain yogurt instead of fruit or flavoured sweetened yogurt. Add fresh fruit, such as berries or chopped apple, to plain yogurt and breakfast cereals or oatmeal instead of sugar
- Read labels and the ingredients list. Choose breakfast cereals with no more than 6 grams of sugar per serving. Look for cereals with no added sugar. Buy unsweetened non-dairy milks, unflavoured instant cereals and tinned fruit in its own juice (versus syrup)
- Reduce sugar in recipes. You can cut the amount of sugar in a recipe by half for most baked goods. Substitute unsweetened applesauce for sugar in recipes (use equal amounts)



## Your Resources

- 1) See the Nutrition Tool Box for sugar content found in common foods
- 2) Eat Right Ontario: [www.ontario.ca/eatright](http://www.ontario.ca/eatright)
- 3) Call 1-877-510-5102 to talk to a Registered Dietitian for free.
- 4) Heart and Stroke Foundation: [www.heartandstroke.ca](http://www.heartandstroke.ca)
- 5) Dietitians of Canada: [www.dietitians.ca](http://www.dietitians.ca)
- 6) Health Canada (Food Guide, Label Reading): [www.healthycanadians.gc.ca](http://www.healthycanadians.gc.ca)