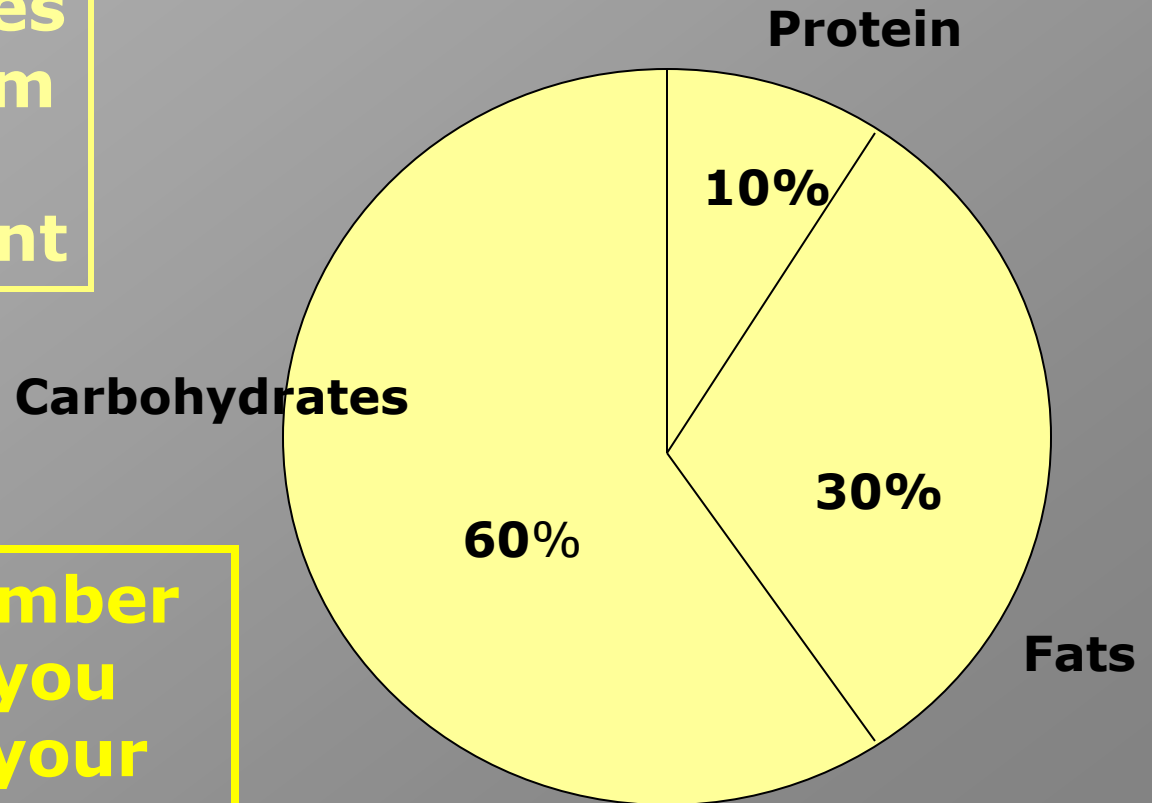


FATS, OILS, & CHOLESTEROL

**Percent of calories
needed daily from
each energy
producing nutrient**

**Calculate the number
of fat calories you
need based on your
daily calorie needs.
(Calories needed X .3)**



FAT RELATED TERMS:

FAT -a necessary nutrient

OIL – liquid fat

**LIPIDS – family of chemicals
to which fat belong**

**CHOLESTEROL – fat like
substance produced in the
liver of anything that walks,
runs, swims, or flies.**

FUNCTIONS OF FAT

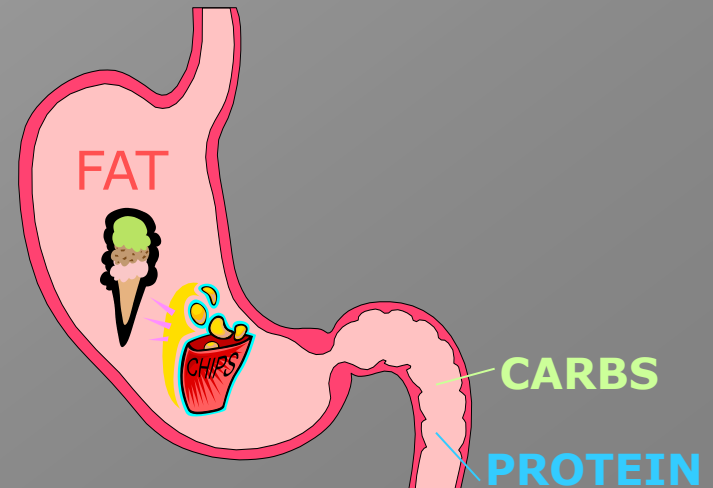
- **Energy**
- **Normal growth & development**
- **Insulation**
- **Shock absorber**
- **Transports and stores fat-soluble vitamins**
- **Formation of healthy cell membranes**
- **Maintains body's acid-base (PH) balance**
- **Hormone and vitamin production**
- **Produces brain cells**
- **Production of myelin sheath**

Fat is our best
source of energy
because it has...
9 calories per gram

•Carbohydrates and
Protein – 4 calories
per gram



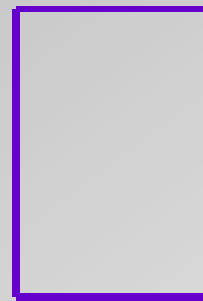
Fat takes longer to
digest so it stays in
the stomach longer
making us feel full
or satisfied longer.



TYPES OF FATTY ACIDS:

- Saturated

- Unsaturated

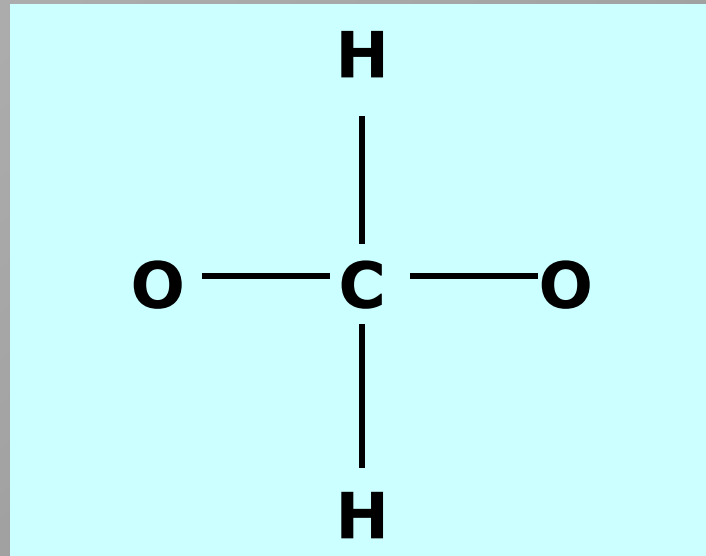


Polyunsaturated

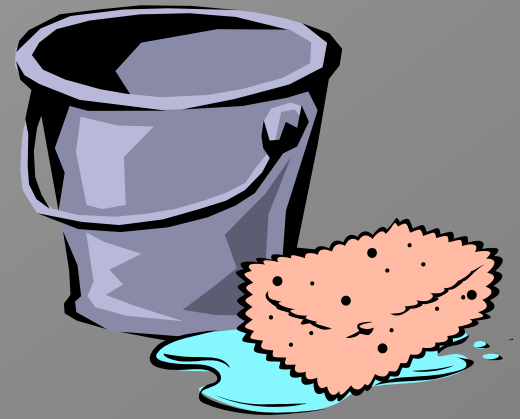
Monounsaturated

- Trans

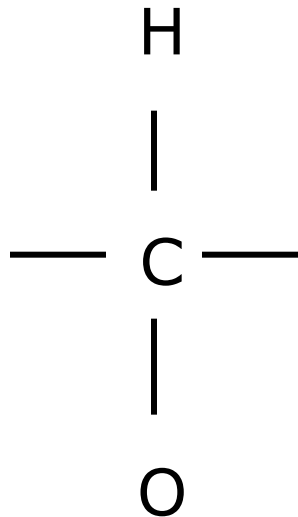
Saturated Fatty Acids have all of their chemical bonds full.



**Meats,
Eggs, Milk
Palm Oil
Coconut Oil**



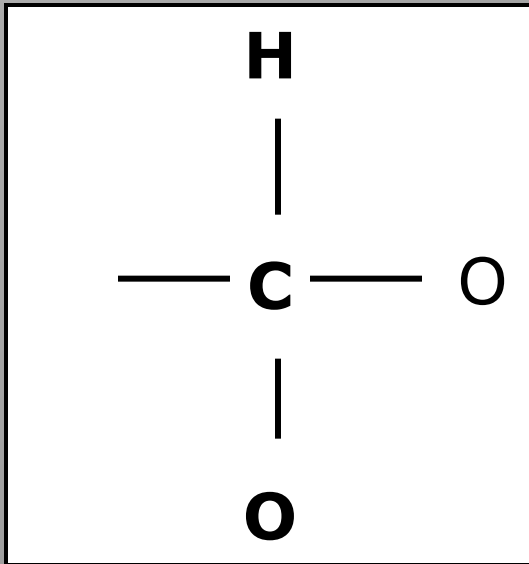
Polyunsaturated fatty acids have two or more of their chemical bonds open.



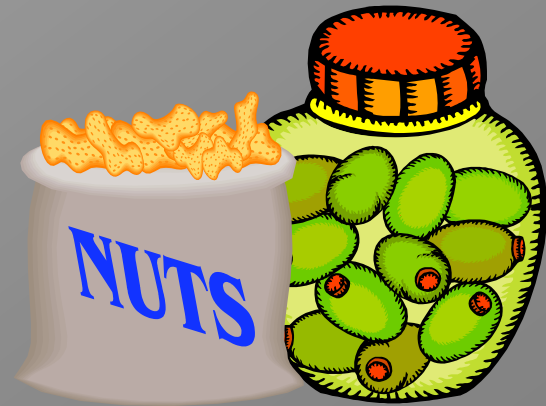
**Corn Oil
Soybean Oil
Safflower Oil
Cottonseed Oil
Vegetable Oil**



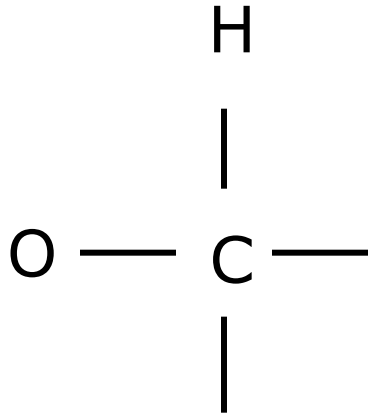
Monounsaturated fatty acids have one of their chemical bonds open.



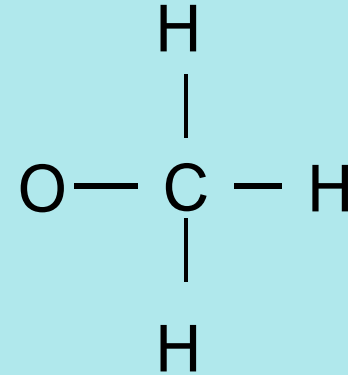
**Olive Oil
Canola Oil
Peanut Oil**



Trans Fat is made by adding hydrogen to vegetable oils through a process called hydrogenation



+ H atoms =

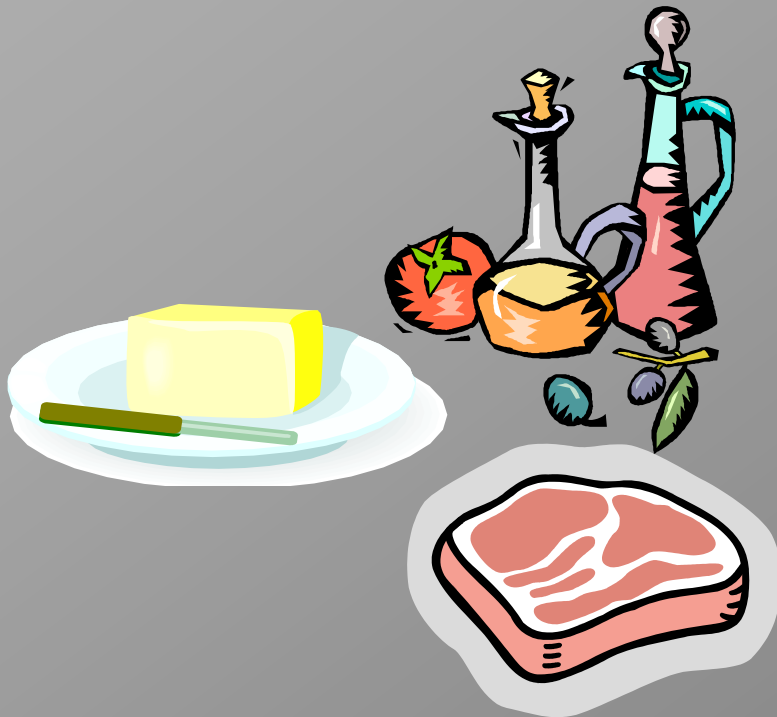


Trans fats are more solid than oil, making them less likely to spoil. They help foods stay fresh longer, have a longer shelf life and have a less greasy feel.

Found in Commercially baked goods...crackers cookies and cakes...and many fried foods...doughnuts and French fries as well as shortenings and some margarines

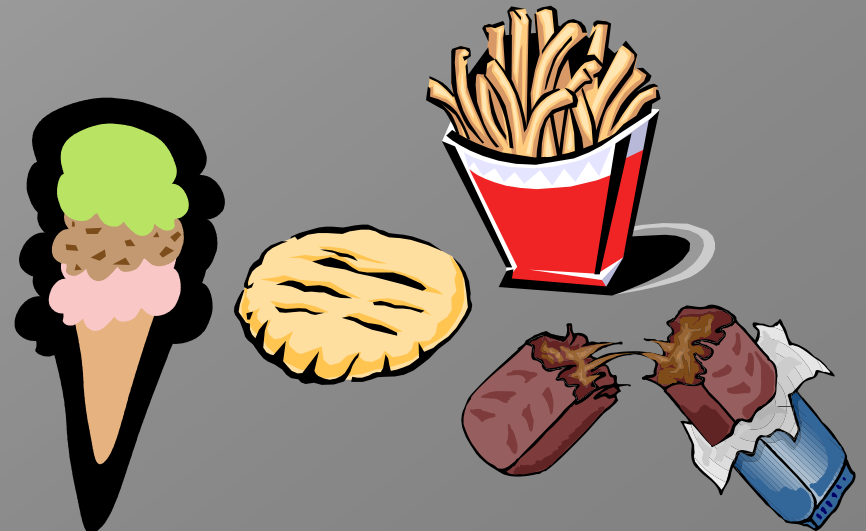
VISIBLE FAT...

Is fat you can see.



INVISIBLE FAT...

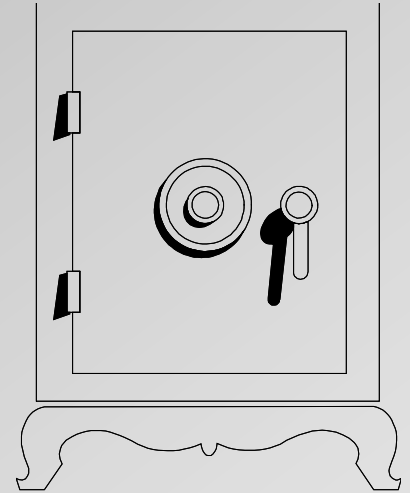
Is fat you can not see.



Fat soluble means.....

Dissolved and stored in.

Fat soluble vitamins are...



A

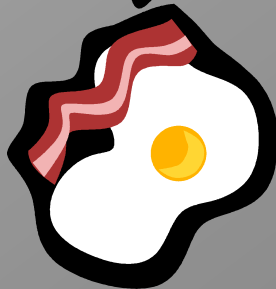
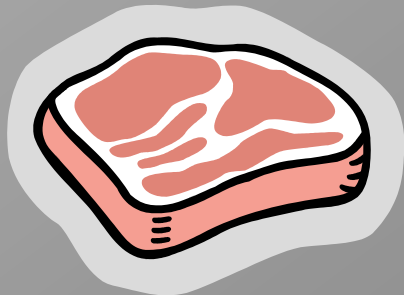
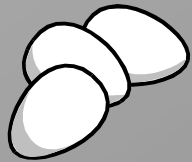
D

E

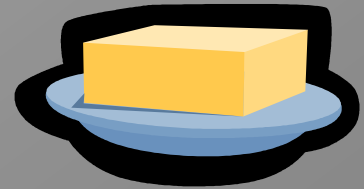
K

Richest sources of fat come from animal source foods.

ANIMALS

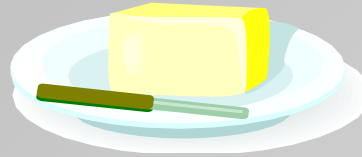


PLANTS



- **Hydrogenation - - -**
chemically adding
hydrogen atoms to liquid
unsaturated fats to get
them to a solid state.

- **Butter - - -** made
from the milk fat.



- **Margarine - - -**
Hydrogenated vegetable
fat with butter flavoring,
coloring and salt.

- **Lard - - -** animal fat
usually from pork.



- **Vegetable Oil ---**
oils extracted
from plants.



- **Vegetable Shortenings** are
hydrogenated
vegetable oils.



- Spoiled fat is called **rancid**.
- Caused by exposure to air.
- Identified by smell or odor.

These fats are distinct and leave their flavor in food:

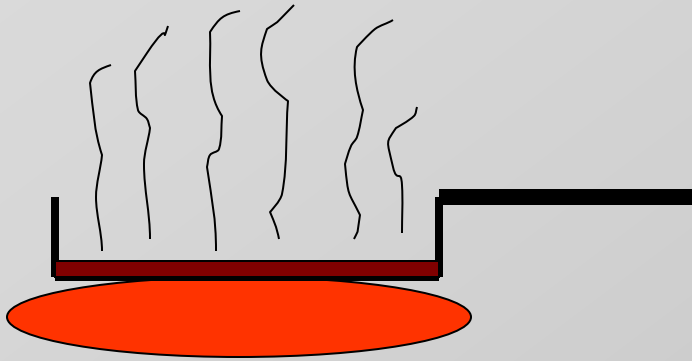
- Butter
- Olive oil
- Bacon
- Lard

These mild flavored fats don't affect flavor of food:

- Vegetable Oils
- Shortening

• Keep all fats in airtight containers.

FAT heated at too high of temperatures will SCORCH!!!



•Use medium to medium high temperatures.

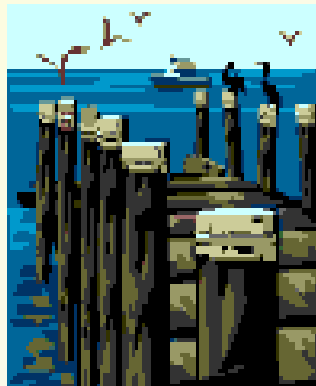
DEEP FAT FRYING

- Use a thermometer.**
- Wear oven mitts.**
- Avoid transporting hot containers.**
- Know first-aid for burns.**
- Be prepared to extinguish grease fires.**

CHOLESTEROL

A fat-like substance produced in the liver of everything that:

- Walks
- Runs
- Swims
- Flies



FACTORS INFLUENCING LIVER PRODUCTION:

- Genetics ←
- Exercise ←
- Diet ←

WHO NEEDS CHOLESTEROL???

Anything that:

- Walks
- Runs
- Swims
- Flies



FUNCTIONS OF CHOLESTEROL:

- Needed to make skin
- Nerve and brain development
- Hormone production
- Helps liver digest fats
- Part of every cell

TYPES OF CHOLESTEROL

HDL

Healthy

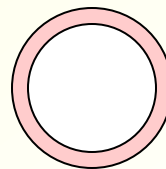
LDL

Lethal

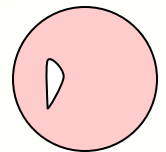
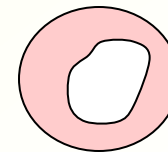
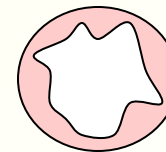
**Blood
cholesterol:**

**Amount of HDL
and LDL found
in blood.**

Cholesterol in Arteries



Normal



Blocked
Artery

Saturated Fatty Acids **increase** liver's production of **both HDL** and **LDL**.

Polyunsaturated Fatty Acids **decrease** liver's production of **both HDL** and **LDL**

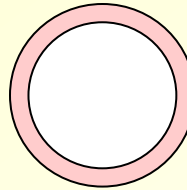
Monounsaturated Fatty Acids **decrease** production of **LDL** and leave production of **HDL** alone.

Trans (transformed) Fatty Acids **increase** production of **LDL** and **decrease** production of **HDL**

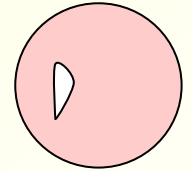
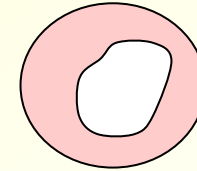
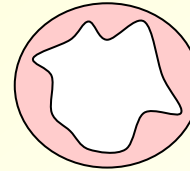
SAFE BLOOD CHOLESTEROL LEVEL

**200 or
below**

**Excess blood
cholesterol
accumulates.....**



Normal



Blocked
Artery

- **Hospitals**
 - **Doctor Offices**
 - **Pharmacies**
- during special
cholesterol check
days or weeks.**

**Arteriosclerosis
or Hardening of
the Arteries.**

Causing HEART DISEASE

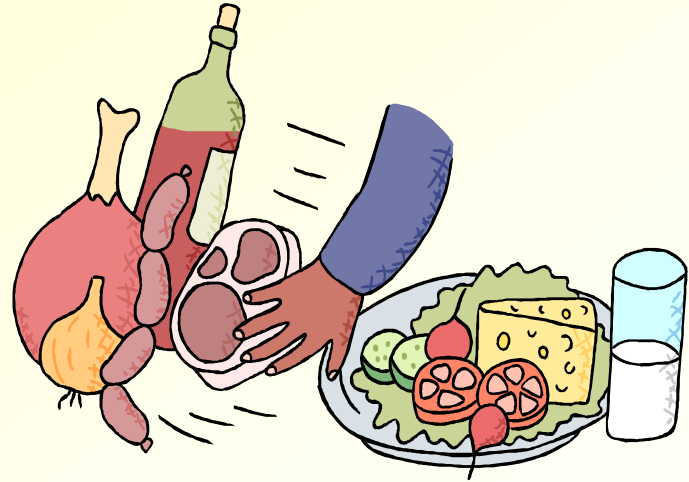
**In over 50% of the cases,
first symptom of heart
disease is.....**



CONTROLLING CHOLESTEROL LEVELS



EXERCISE



DIET



MEDICATION

CHOLESTEROL



SKINNY

vs.

FAT



**Excess cholesterol
accumulates in the
ARTERIES**

**Excess fat accumulates in
the body's FAT CELLS**

Reading Labels for Fat and Cholesterol Information

Ingredients: unbleached enriched wheat flour (flour, niacin, reduced iron, Vit. B₁), sweet chocolate (sugar, chocolate liquor, cocoa butter, soy, lecithin added as an emulsifier, vanilla extract:, sugar, partially hydrogenated vegetable shortening (soybean, cottonseed, and/or canola oils), nonfat milk, whole eggs, cornstarch, egg whites, salt, vanilla extract, baking soda, and soy lecithin.

Nutrition Facts

Serving Size 3 cookies (34g/1.2 oz)
Servings Per Container About 5

Amount Per Serving

Calories 180 Calories from Fat 90

% Daily Value

Total Fat 10g 20%

Saturated Fat 3.5g 7%

Polyunsaturated Fat 1g 2%

Monounsaturated Fat 5g 10%

Cholesterol 10mg 20%

Sodium 80mg 16%

Total Carbohydrate 24g 8%

Dietary Fiber 1g 2%

Sugars 11g 22%

Protein 2g 4%

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 4%

Thiamin 6% • Riboflavin 4%

Niacin 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories	2,000	2,500
Total Fat	Less than	65g	80g	
Sat Fat	Less than	20g	25g	
Cholesterol	Less than	300mg	300mg	
Sodium	Less than	2,400mg	2,400mg	
Total Carbohydrate		300g	375g	
Dietary Fiber		25g	30g	

Nutrition Facts

Serving Size 2 crackers (14 g)

Servings Per Container About 21

Amount Per Serving

Calories 60 **Calories from Fat** 15

	% Daily Value*
Total Fat 1.5g	2%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 70mg	3%
Total Carbohydrate 10g	3%
Dietary Fiber Less than 1g	3%
Sugars 0g	

Protein 2g

Vitamin A 0% • Vitamin C 0%

Calcium 0% • Iron 2%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Fat Information from a Macaroni and Cheese Label

	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%