

# Nutrition

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## Objectives

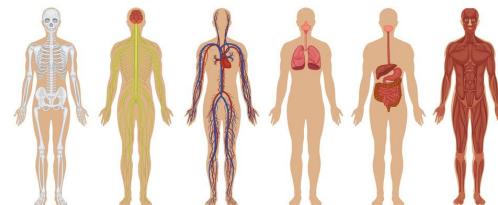
1. The student will be able to identify two reasons Nutrition is important for teens.
2. The student will be able to identify food examples of each macronutrient (carbohydrates, proteins, and fats).
3. The student will be able to identify at least three vitamins and minerals and a good source for each.
4. The student will be able to identify if their planned lunch for the day provides the essential nutrients and recommended portions of each nutrient discussed in the presentation.
5. The student will be able to verbalize three resources that are available to them to use in planning healthy nutrition choices.

Kahoot!

## Why nutrition?

## Development

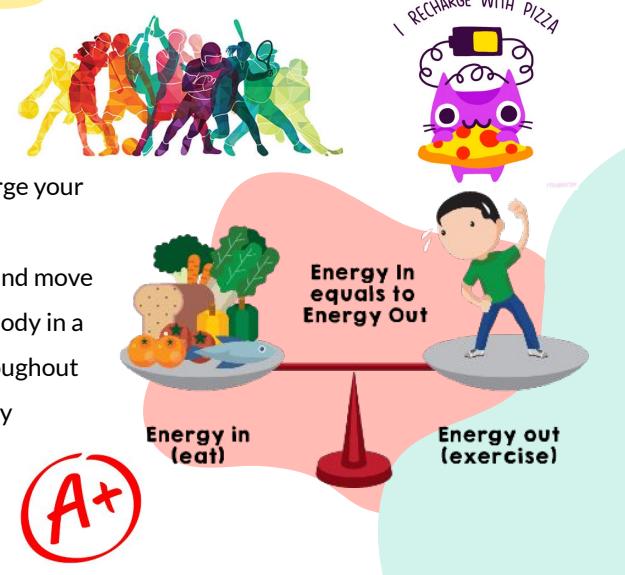
The teenage years are formative in growth and development of the bones, hormones, and organ and tissue development, including the brain



# Energy

Think of nutrition as a way to charge your body's battery.

- You use energy as you think and move so it is important to fuel the body in a way that will sustain you throughout the day to maintain an "energy balance"

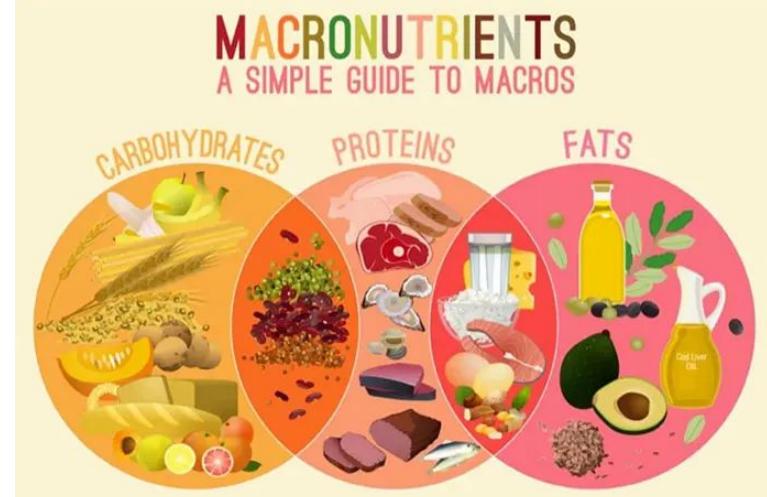


# Health

- "Around 20 % of kids between 12 and 19 years old" suffer from obesity (NIDDK, 2016)
  - Bad eating habits cost America \$300/person/year = \$50 billion
- Immune Function
- Skin Complexion
  - Foods can contribute to acne



# Macronutrients



# Carbohydrates

- Body's primary source of fuel
- Provide energy for normal functioning of the central nervous system



**GOOD CARBS VS. BAD CARBS**

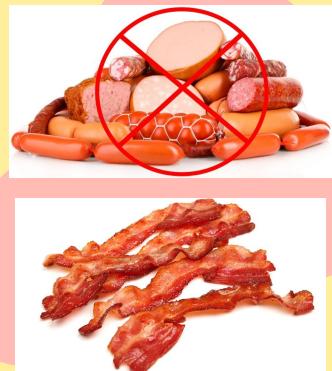
EAT MOST DAYS OF THE WEEK		EAT ON OCCASION IN SMALL AMOUNTS	
<b>VEGETABLES</b>		<b>REFINED CARBOHYDRATES (HIGHLY PROCESSED AND HIGH IN REFINED SUGARS)</b>	
	<ul style="list-style-type: none"> <li>• ½ cup cooked vegetables</li> <li>• 1 cup raw vegetables</li> </ul>		<ul style="list-style-type: none"> <li>• Fried vegetables</li> <li>• Vegetables in butter or cream sauce</li> <li>• Canned vegetables</li> </ul>
<b>GRAINS &amp; STARCHES</b>		<b>CANDIES</b>	
	<ul style="list-style-type: none"> <li>• ½ cup cooked whole grain</li> <li>• 1 small potato or sweet potato</li> <li>• 1 medium ear of corn</li> <li>• ½ cup cooked beans or lentils</li> <li>• 100% whole wheat bread</li> </ul>		<ul style="list-style-type: none"> <li>• Refined grains and desserts</li> <li>• White bread, white rice</li> <li>• Cookies, cakes and muffins</li> <li>• Granola</li> <li>• Cold cereal</li> <li>• Flavored oatmeal</li> <li>• Pretzels, chips and crackers</li> </ul>
<b>FRUITS</b>		<b>SODAS</b>	
	<ul style="list-style-type: none"> <li>• ½ cup chopped fruit</li> <li>• 1 small piece of fruit (size of a tennis ball)</li> </ul>		<ul style="list-style-type: none"> <li>• Fruit juice</li> <li>• Fruit bars</li> <li>• Dried fruit</li> <li>• Canned fruit</li> </ul>
<b>DAIRY OR DAIRY ALTERNATIVES</b>		<b>POSTRIES</b>	
	<ul style="list-style-type: none"> <li>• 1 cup low-fat milk or almond, soy, rice or coconut milk</li> <li>• 1 cup low-fat or non-fat yogurt</li> <li>• 1.5 ounce/1 thin slice mozzarella, Swiss, string cheese or feta (a few times per week)</li> </ul>		<ul style="list-style-type: none"> <li>• Ice cream</li> <li>• Butter</li> </ul>
<b>WHITE BREAD</b>		<b>SUGARY CEREALS</b>	
			
<b>REFINED CARBOHYDRATES (HIGHLY PROCESSED AND HIGH IN REFINED SUGARS)</b>		<b>WHITE BREAD</b>	
			

# Protein

- Essential to body functions like providing structure to **cell membranes, organs, muscle, hair, skin, and nails**
- Proteins are the most abundant organic molecules in living systems and are more diverse in structure than other macromolecules

PLANT BASED PROTEIN			ANIMAL BASED PROTEIN		
PROTEIN PER 100G					
CHICKPEAS	OATS	TOFU	EGGS	TURKEY MINCE	CHICKEN BREAST
7g protein	11g protein	13g protein	14g protein	25g protein	25g protein
BROWN RICE	QUINOA	LENTILS	PRAWNS	TUNA	SALMON
3g protein	4g protein	6g protein	18g protein	25g protein	25g protein
CASHews	PEANUT BUTTER	ALMONDS	PORK CHOP	RIBEYE	DUCK
18g protein	28g protein	29g protein	19g protein	19g protein	27g protein
AVOCADO	BROCCOLI	EDAMAME	SEMI-SKIMMED MILK	GREEK YOGURT	EDAM CHEESE
2g protein	4g protein	12g protein	4g protein	9g protein	26g protein

\*Some incomplete proteins      \*All complete proteins

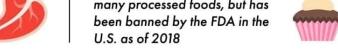


# Fat

- It is vital for the body as an **energy reserve**
- Fat provides **protection and insulation of organs**, and they allow for **transport of fat-soluble vitamins**

## THE DIETARY FATS

@cheatdaydesign

<b>POLYUNSATURATED FAT</b> An essential fat (we must get from food because our bodies cannot produce) & lowers LDL (bad cholesterol)  <b>Found in:</b> Most cooking oils, pumpkin seeds, pine nuts, sesame seeds, fatty fish  <b>Also known as:</b> Omega-3 and Omega-6 fatty acids	<b>MONOUNSATURATED FAT</b> Considered a healthy fat: Lowers LDL (bad cholesterol) & maintains HDL (good cholesterol)  <b>Found in:</b> Olive oil, avocado & avocado oil, most nuts & nut butters
	
<b>SATURATED FAT</b> Increases total cholesterol & LDL (bad cholesterol). Best to consume in moderation.  <b>Found in:</b> Red meat, whole milk, cheese, coconut, butter, processed meat, many baked goods, deep fried foods	<b>TRANS FAT</b> A by-product of processing healthier fats to give them a longer shelf life. Raises your LDL (bad cholesterol) and lowers your HDL (good cholesterol). Try to limit.  <b>Also known as:</b> Partially hydrogenated oil
	



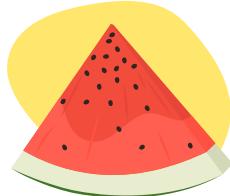
## Vitamins

“Vitamins are organic compounds that are essential in the diet in small amounts to promote and regulate body processes necessary for growth, reproduction, and maintenance of health”



# Water Soluble Vitamins

## Vitamin C



Vitamins that dissolve in water. Must be consumed on a regular basis because they are rapidly depleted and excreted from the body

## B Vitamins

## B Vitamins

Thiamin (B1)

Riboflavin

Niacin

Biotin

Pantothenic Acid

Vitamin B6

Folate (Folic acid)

Cobalamin (B12)



## Vitamin C

Important for the synthesis and maintenance of **collagen** which acts as a **connective tissue**.

Important for maintaining **teeth, bones, ligaments, tendons**.

**Deficiency:** scurvy ( bleeding gums, tooth loss, joint pain, bleeding gums and membranes)



## Fat Soluble Vitamins

Vitamin A

Vitamin D

Vitamin E

Vitamin K

## Vitamin A

Important for the maintenance of **vision** by promoting the health of the cornea

**Deficiency:** nighttime blindness, dry cornea, and eye infections.



## Vitamin D

Helps maintain normal levels of calcium and phosphorous in the blood which promotes proper **bone health**.

**Deficiency:** Rickets (poor bone development related to inadequate calcium absorption)



## Vitamin E

Protects cell membranes.

**Deficiency:** hemolytic anemia (RBC cell membranes rupture)



Important for the synthesis of **blood clotting protein**.

**Deficiency:** hemorrhage (infants)

## Vitamin K



# Minerals



Important for **bone** and **tooth structure**, **nerve transmission**, **muscle contraction**, **blood clotting**, **blood pressure regulation** and **hormone secretion**

## Calcium



## Iron

Iron is a component of hemoglobin which is responsible for **delivering oxygen to the cells**.

**Deficiency:** iron deficiency anemia, fatigue, weakness



Essential for the synthesis of **thyroid hormone** (controls metabolism).

**Deficiency:** goiter, impaired brain function, growth and developmental abnormalities

## Iodine



depositphotos

Image ID: 315962270 | www.depositphotos.com

## Fluoride

Strengthens tooth enamel.

Deficiency: increases the risk for dental caries



# Portions, Servings & Percentages

## Adolescent Females (14-18)

1,800 to 2,400 calories per day

## Adolescent Males

2,000 to 3,200 calories per day.

Dietary Reference Intakes: Acceptable Macronutrient Distribution Ranges

45-65%

Carbohydrates

10-30%

Protein

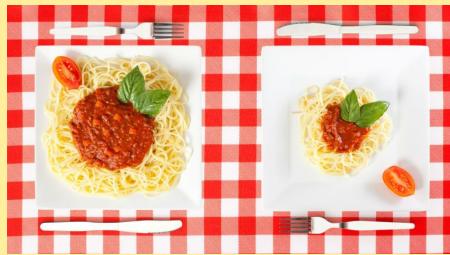
25-35%

Fats

Acceptable Macronutrient Distribution Ranges (AMDRs) were set for some macronutrients based on evidence that consumption above or below these ranges may be associated with nutrient inadequacy and increased risk of developing chronic diseases, including coronary heart disease, obesity, diabetes, and/or cancer.

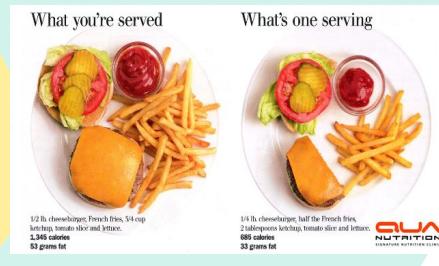
## Portion

Amount of food chosen to eat at one time whether it is homemade, from a package, or prepared by a restaurant.



## Serving

The amount of food listed on a product's nutrition facts label. Also referred to as a serving size.



## Vegetables (Cup/day): 2.5

- Dark-Green Vegetables (Cup/week): 1.5
- Red and Orange Vegetables (Cup/week): 5.5
- Beans, Peas, Lentils (Cup/week): 1.5
- Starchy Vegetables (Cup/week): 5
- Other Vegetables (Cup/week): 4



## Fruits (Cup/day): 2

## Proteins (Ounce/day): 5.5

- Meat, Poultry, Eggs (Ounce/week): 26
- Seafood (Ounce/week): 8
- Nuts, Seeds, Soy Products (Ounce/week): 5

## Grains (Ounce/day): 6

- Whole Grains (Ounce/day): 3
- Refined Grains (Ounce/day): 3

## Dairy (Cup/day): 3

## Oil (Grams/day): 27

## Portions



## Original Label

### Nutrition Facts

Serving Size 2/3 cup (55g)  
Servings Per Container About 8

Amount Per Serving	Calories	Calories from Fat	% Daily Value*
8g	230	72	12%
Saturated Fat 1g			5%
Trans Fat 0g			0%
Cholesterol 0mg			0%
Sodium 160mg			7%
Total Carbohydrate 37g			12%
Dietary Fiber 4g			16%
Sugars 12g			
Protein 3g			
Vitamin A			10%
Vitamin C			8%
Calcium			20%
Iron			45%
Total Fat 8g			10%
Saturated Fat 1g			5%
Trans Fat 0g			0%
Cholesterol 0mg			0%
Sodium 160mg			7%
Total Carbohydrate 37g			13%
Dietary Fiber 4g			14%
Total Sugars 12g			
Includes 10g Added Sugars			20%
Protein 3g			
Vitamin D 2mcg			10%
Calcium 260mg			20%
Iron 8mg			45%
Potassium 235mg			6%

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily value 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

## New Label

### Nutrition Facts

8 servings per container  
Serving size 2/3 cup (55g)

Amount per serving	Calories	% Daily Value*
8g	230	10%
Saturated Fat 1g		5%
Trans Fat 0g		0%
Cholesterol 0mg		0%
Sodium 160mg		7%
Total Carbohydrate 37g		13%
Dietary Fiber 4g		14%
Total Sugars 12g		
Includes 10g Added Sugars		20%
Protein 3g		
Vitamin D 2mcg		10%
Calcium 260mg		20%
Iron 8mg		45%
Potassium 235mg		6%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

## Servings

### Nutrition Facts Label

**Serving Size-** Based on amount eaten at one time. Not a recommendation.

**Calories-** New larger font. Energy supplied in one serving.

**% Daily Value-** Contribution to total daily allotment. (<5% = Low, >20% = High)

**Total Fat:**

**Saturated Fat-** Limit to 10% total energy.

**Trans Fat-** Limit as much as possible. Common sources are shortening and hydrogenated oils.

**Sodium-** Salts. Limit to 2,300mg a day.

## Original Label

Nutrition Facts	
Serving Size 2/3 cup (55g) Servings Per Container About 8	
Amount Per Serving	
Calories 230	Calories from Fat 72
Total Fat 8g	% Daily Value*
Saturated Fat 1g	12%
Trans Fat 0g	5%
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 12g	
Protein 3g	
Vitamin A 10%	
Vitamin C 8%	
Calcium 20%	
Iron 45%	
* Percent Daily Values are based on a 2,000 calorie diet. Your daily value 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 200mg	300mg
Sodium Less than 2,400mg	2,400mg
Total Carbohydrate 300g	375g
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8 servings per container Serving size 2/3 cup (55g)	
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Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 12g	
Protein 3g	
Vitamin A 10%	
Vitamin C 8%	
Calcium 20%	
Iron 45%	
* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.	
Calories: 2,000	2,500
Total Fat Less than 65g	80g
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Cholesterol Less than 200mg	300mg
Sodium Less than 2,400mg	2,400mg
Total Carbohydrate 300g	375g
Dietary Fiber 25g	30g

<https://www.fda.gov/consumers/consumer-updates/nutrition-facts-label-reboot-tale-two-labels>

## Servings

### Nutrition Facts Label

#### Total Carbohydrates:

Dietary Fiber- Adds bulk from indigestible plant derived food.

Total Sugars- Combined total of natural and added sugar.

Added Sugars- Sugars added in processing or preparation that is not from natural source. Limit to 10% of total energy.

Protein- From both plants and animals.



Nutrition Facts	
17 servings per container Serving size 1 Slice (49g/1.8oz)	
Amount per serving	
Calories 110	
Total Fat 1.5g	% Daily Value
Saturated Fat 0g	2%
Trans Fat 0g	0%
Polyunsaturated Fat 1g	
Mono-unsaturated Fat 0g	
Cholesterol 0mg	0%
Sodium 170mg	8%
Total Carbohydrate 22g	8%
Dietary Fiber 5g	17%
Total Sugars 5g	
Includes 10g Added Sugars 20%	
Protein 5g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 1mg	6%
Potassium 100mg	2%

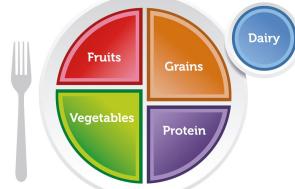
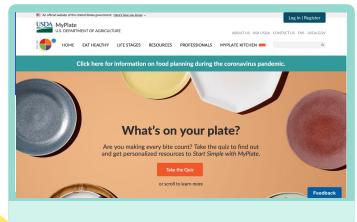
## Ingredient Lists

**INGREDIENTS:**  
Organic whole wheat (organic whole wheat flour, organic cracked whole wheat), water, organic cane sugar, organic 21 Whole Grains and Seeds mix (organic whole flax seeds, organic sunflower seeds, organic ground whole flax seeds, organic brown sesame seeds, organic triticale, organic pumpkin seeds, organic rolled barley, organic rolled oats, organic rolled rye, organic black sesame seeds, organic blue cornmeal, organic millet, organic rolled spelt, organic brown rice flour, organic amaranth flour, organic yellow cornmeal, organic KAMUT® khorasan wheat, organic quinoa, organic buckwheat flour, organic sorghum flour, organic poppy seeds), organic wheat gluten, organic oat fiber, contains 2% or less of each of the following: organic molasses, sea salt, yeast, organic vinegar, organic cultured wheat flour, enzymes, organic acerola cherry powder.



**INGREDIENTS:** Water, Heavy Cream, Butter (Cream, Salt), Parmesan Cheese (Pasteurized Part-Skim Milk, Cheese Cultures, Salt, Enzymes), Soybean Oil, Modified Corn Starch, Enzyme Modified Egg Yolk (Egg Yolk, Salt, Enzyme), Romano Cheese made from Cow's Milk (Pasteurized Part-Skim Milk, Cheese Cultures, Salt, Enzymes), Salt, American Sherry Cooking Wine (Wine, Grape Alcohol, Salt, Potassium Metabisulfite [Preservative]), Whey, Yeast Extract, Xanthan Gum, Disodium Phosphate, Garlic Powder, Spices, Natural Flavors.  
**CONTAINS:** MILK, EGG

## MyPlate.gov



#### Website features:

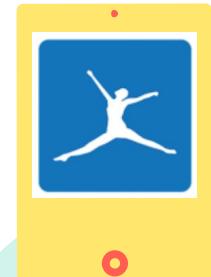
- Food proportions appropriate for age and gender
- Healthy recipes
- Personalized meal plans (vegetarian, vegan, low budget)
- Tips to help you shop for healthier choices

## Contains:

- Food diary : Tracks carbohydrates, fat, sugar, protein, calories
  - Barcode
  - Recipe database (restaurants)
  - Personal recipes
- Exercise log/ calories burned
  - fitbit , step counter
  - Workout routines

## Applications

### MyFitnessPal



# Applications

## Fooducate



### Includes:

- Food recommendations/ Nutrition tips
  - Healthy recipes
  - Barcode scanner
  - Healthy food grading system
- Community/ social aspect
  - Motivational
  - Unity

# Kahoot!

# Thanks!

DO YOU HAVE ANY  
QUESTIONS?

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