

Macro and Micro Nutrients

Macro Nutrients:

Definition: nutrients needed in larger amounts in the body

1. Protein:

- Definition: a compound that is made up of amino acids. Amino acids contain nitrogen that the body needs.
- 20 amino acids that make up proteins. 9 amino acids are considered essential and need to be consumed through the diet.
- Protein is important for your body because it is the main component of muscles, tissues, transporters in the blood, which means it is necessary to be healthy.
- Daily requirements are very easily met and are often over estimated and should be met through lean sources.
- Need about 56 grams of protein per day.
- The amount of protein in an item can be found on the food label.
- **Food Sources:** eggs, meat/poultry, beans, fish, milk, nuts/seeds and cheese.
- Lean proteins are recommended. They are more heart healthy because they give you the protein and not extra saturated fats.
 - Lean proteins foods:** chicken breast, poultry, and lean red meat, egg whites, and beans.

2. Carbohydrates:

- Definition: a compound in food that supply energy (glucose) for cells through out your body.
- Your brain primarily uses glucose to function; 130 grams a day is needed for the brain to function properly.
- **Foods sources:** fruits, veggies, pasta, bread, and anything that contains sugar.
- Types of Carbohydrates; simple and complex.
 - Simple Carbohydrates: refined grains and cereals, white bread, candy bars, and soft drinks.
 - Simple carbohydrates provide short term energy to your cells and organs.
 - Complex Carbohydrates: whole grains pasta, breads and cereal, fruits, vegetables and beans.
 - Complex Carbohydrates provide fiber, glucose and a variety of vitamins; ultimately long term sustained energy and fuel for your cells and organs.

3. Fats (lipids):

- Definition: composed of fatty acids.
- Important for insulating and protecting the body, transporting certain vitamins, providing and storing energy.
- Your body needs about 35-40 grams a day.
- Types of Fat:
 - Unsaturated fats are the ones you should consume most of. They are heart healthy.
 - **Food Sources:** plant oils, nut/seeds, avocado, fish and peanut butter.
 - Saturated fat should be limit in your diet. It contributes to clogging your arteries and other dangerous diseases.
 - **Food Sources:** red-meats, cheeses, whole milk, etc.

Micro Nutrients:

Definition: nutrients needed in small amounts by the body to help regulate and support chemical reactions and processes in the body

Definitions of Unfamiliar Terms:

Vitamin: compounds needed in small amounts by the body to help regulate and support chemical reactions and processes in the body

Fat-soluble: vitamins that dissolve in fat: A, D, E and K

Water-soluble: vitamins that dissolve in water: B's and C and sometimes Folate

Mineral (dietary): naturally occurring inorganic, chemical elements needed in small amounts by the body to help regulate and support chemical reactions and processes in the body.

1. Iron

- Mineral.
- Important for: Cognitive development, immune function, body temperature control, energy metabolism, transports O₂ to the lungs, part of red blood cell, works with enzymes, alcohol metabolism, and drug detoxification.
- **Food Sources:** dark leafy greens, liver, animal products, and fortified grains.
- Deficiencies: anemia *most men not at risk.

2. Calcium

- Mineral.
- Important for: heart function, bones and teeth development and maintenance, blood clotting, aids in transmission of nerve impulse, muscle contraction, and cell metabolism.
- **Food Sources:** Dairy, cheese, dark leafy greens, fortified grains, and canned salmon.
- Deficiencies: Osteoporosis, low blood calcium, deteriorate bones, muscle and heart function failure, and low bone mass development in children, increase blood pressure, and cancer.

3. Vitamin D

- Fat-soluble vitamin.
- Important for: Hormones, affect Ca and P, bone health, makes calcium available to body, assist in heartbeat, neurological junction, and muscle function (because muscle fiber affected).
- **Food Sources:** (***)from sunlight... darker skin less absorb), fortified grains and milk, eggs, butter, liver, and fatty fish.
- Deficiencies: rickets (decomposition of bones), gum disease, and cancer.

4. Vitamin A

- Fat-soluble vitamin.
- Important for: Eye health, light into brain signals, gene expression, minimize wrinkles, resistance to infection, lower risks of cataracts, and mucus (especially for the eyes).
- **Food Sources:** beef liver, spinach, sweet potatoes, mangoes, fish, milk, cantaloupes, peaches, carrots, green veggies, and eggs.
- Deficiencies: blindness, liver disease, alcoholism leads to...

5. Vitamin C

- Water-soluble vitamin.
- Important for: Cell function, enzyme function, connective tissue, bone and blood vessel function, anti-oxidant, white blood cells, aid absorption of iron, biosynthesis of hormones and neurotransmitters, immune system (mainly bacteria).
- **Food Sources:** fruits and vegetables, and citrus.
- Deficiencies: scurvy, bleeding gums, connective tissue failure, and depression, linked to alcoholism... *male more at risk.

6. B Vitamins (generally)

- Water-Soluble Vitamin.
- Important for: enzymatic reactions, red blood cell synthesis, carbohydrate/ immune function/ lipid metabolism, neurotransmitter synthesis, produce ATP, break down fatty acids, and nervous system.

- **Food Sources:** meats, fish, poultry, enriched grains, peanuts, and eggs.
- Deficiencies: anemia, sensory disturbances in legs, Wernicke-Korsakoff syndrome (from alcohol consumption), beriberi (muscle weakness, memory loss, confusion, congestive failure), and pellagra (dementia, diarrhea, dermatitis).

7. Folate

- Water-soluble vitamin.
- Important for: DNA synthesis, neurotransmitter, and metabolism, and pregnancy (neural tube defects in infant development/ first trimester).
- **Food Sources:** liver, fortified grains, legumes, fresh dark leafy greens, eggs, and dried beans.
- Deficiencies linked with alcoholism, causes anemia, cancer (b/c linked with DNA).

8. Potassium

- Electrolyte/ mineral.
- Important for: Lower blood pressure, fluid balance, nerve-impulse transmission, contractibility of muscles, and heart muscle.
- **Food Sources:** fruits and vegetables, milk, whole grains, coffee, and tomatoes.
- Deficiencies: irregular heartbeat, decreases ability to pump blood, confusion, loss of appetite, increases risk of stroke, and also linked with alcoholism.

Recipe (demo/ sample):

Oil and Vinegar with Cubed Bread

Demonstrates:

1. Differences of taste in simple versus complex carbohydrates
2. Use of an unsaturated fat in an appetizer. (Yum!)

Ingredients:

- Whole- grain bread; cubed into large pieces
- White bread/ French bread; cubed into large pieces
- 1/8 cup balsamic vinegar
- 1/8 cup olive oil
- 3 cloves garlic; minced
- 1 teaspoon oregano
- 1 teaspoon basil

1. Combine together vinegar, oil, garlic and spices in bowl.
2. Serve; dip bread pieces in mixture.