**Vitamins & Minerals**

Deficiency can result in night blindness.

Foods sources of Vitamin A:

- **Beta-Carotene Name for the Pro-Vitamin of Vitamin A:**
  
  Function of Vitamin A:
  
  Helps develop pigment in the eye, helps vision and tissue strength, assists with growth, and prevents deficiencies.
Toxic amounts lead to kidney damage.

Deficiency leads to rickets—malformation of skeletal tissue and long bones.

**RICKETS:**

Ten minutes of sunlight produces enough adequate vitamin D for a day. Problem is that exposure can vary daily.

**VITAMIN E:**

Acts as an antioxidant.

**Sources:** vegetable oils, nuts, milk, eggs, muscle meats, fish. **PARTNER:** Selenium.

**SELENIUM:**

Selenium—works with Vitamin E to prevent damage to cell wall.

Selenium rich food is shrimp, it works with Vitamin E as a partner to prevent cell wall damage.
• Spinach is included.
• Is responsible for synthesis of blood clotting in the liver.
• B Vitamins.
• Serves out body by acting as a coenzyme to metabolize nutrients.

Alcoholics are deficient in thiamin B1.

Beriberi is a result of a thiamin deficiency.

Systems affected include:

• GI, respiratory, and endocrine systems.

RIBOFLAVIN:

Easily destroyed by light.

PYROXIDINE B6-ASSOCIATED WITH PROTEIN METABOLISM:

Tryptophan is an amino acid that converts to niacin.
Pellagra is a disease associated with niacin deficiency.

**Sources of niacin:** Salmon steak, grains, bread, cereals, and legumes.

**Vitamin C** assists with healing, collagen, and bone formation.

Deficiency results in bruising and pinpoint hemorrhages, and poor wound healing.

Smoking also robs of Vitamin C.

**Folic Acid and folate** assist in preventing neural tube defects in a pregnant woman.

**Neural Tube Defects:**
MINERALS:

Calcium is the most prevalent mineral within the body.

Calcium & Phosphorus makes up the bone; most phosphorus is found in lean beef.

Most of the sodium in our body comes from processed foods.

Calcium Rich Foods:

Body’s sodium is found in outside cells, and is vital to water balance in the body.

Phosphorus helps the body with bone formation, energy, and acid base balance.

Major intracellular mineral in the body.

Often lost in urine and in GI.

Extracellular mineral helps Na+ with water and acid-base balance (Chloride).

**Vitamin C** enhances iron absorption.

Main food source of Iodine.

Deficiency results in Goiter.


**Fluoride prevents dental caries**

Trace minerals are found in small quantities in the body.