Major Minerals and Electrolytes

Calcium, Phosphorus, Magnesium
Sodium, Chloride, Potassium
Major minerals include calcium, phosphorus, and magnesium. Electrolytes include sodium, chloride, and potassium.
Electrolyte minerals help form particles that help cells function.
Calcium

Functions
- Helps regulate blood clotting, nerve activity, and other body processes
- Needed for muscle contraction, including the heart
- Helps keep teeth and gums healthy
- Keeps bones strong

Food Sources
- Dairy products
- Canned fish with edible bones
- Dry beans, peas, and lentils
- Dark green, leafy vegetables – broccoli, spinach, and turnip greens
- Tofu made with calcium sulfate
- Calcium-fortified orange juice
- Soy milk

Deficiencies and Excesses

Effects of getting too little
- Osteoporosis – a condition in which bones become porous, and therefore weak and fragile
  - May develop stooped posture and suffer bone breaks

Effects of getting too much
- Over 2,500 mg/day may cause kidney stones or calcium deposits in soft tissue
Phosphorus

Functions
- Works with calcium to build strong bones and teeth
- Helps release energy from carbohydrates, proteins, and fats
- Helps build body cells and tissues

Food Sources
- Meat, poultry, fish
- Eggs
- Nuts
- Dry beans and peas
- Dairy products
- Grain products

Deficiencies and Excesses

Effects of getting too little
- Decreased bone health

Effects of getting too much
- Poor bone health
Magnesium

Functions
- Helps build bones and make proteins
- Helps nerves and muscles work normally
- Helps regulate body temperature
- Contributes to proper heart function

Food Sources
- Whole-grain products
- Green vegetables
- Dry beans and peas
- Nuts and seeds

Deficiencies and Excesses
Effects of getting too little
- Muscle pain and weakness
- Decreased heart function

Effects of getting too much
- No known effects
Deficiencies and Excesses

**Effects of getting too little**
- Muscle cramps

**Effects of getting too much**
- Hypertension or high blood pressure – linked to high salt intake
- Bones can lose calcium
- Increase the risk of kidney stones
Chloride

Function
• Helps nerves send signals
• Helps maintain the acidity needed to digest food

Food Sources
• Table salt

Deficiencies and Excesses
Effects of getting too little
• Infant convulsions (deficiencies are rare)

Effects of getting too much
• Hypertension or high blood pressure
Potassium

 Functions
- Helps maintain a steady heartbeat
- Helps with muscle and nerve action
- Helps maintain normal blood pressure

 Food Sources
- Bananas
- Cantaloupe
- Milk
- Oranges
- Squash

Deficiencies and Excesses

 Effects of getting too little
- Muscle cramps
- Irregular heart beat
- Poor appetite

 Effects of getting too much
- Decreased heart rate
References and Resources

Textbooks:

Website: