MINERALS: A CONDENSED SUMMARY

MAJOR MINERALS

Nutrient	Main Functions in the Body
Calcium	✦ builds bones and teeth ✦ maintains bone strength ✦ involved in muscle contraction ✦ involved in blood clotting ✦ maintains cell membranes
Phosphorus	✦ builds bones and teeth ✦ aids in release of energy from carbohydrate, proteins and fats ✦ forms genetic material, cell membranes and enzymes
Magnesium	✦ builds bones ✦ produces proteins ✦ aids in release of energy from glycogen (carbohydrate muscle stores) ✦ regulates body temperature
Sodium	✦ regulates body-fluid volume ✦ regulates blood acidity ✦ aids in transmission of nerve impulses
Chloride	✦ a component of gastric juice ✦ aids in acid-base balance
Potassium	✦ assists in muscle contraction ✦ maintains fluid and electrolyte balance in cells ✦ aids the transmission of nerve impulses ✦ aids in release of energy from carbohydrate, proteins and fats

TRACE MINERALS

Nutrient	Main Functions in the Body
Iron	✦ involved in formation of hemoglobin ✦ involved in formation of myoglobin ✦ component of several enzymes and proteins

Zinc	✦ involved in protein formation, thus the growth of all tissues ✦ involved in wound healing ✦ involved in the prevention of anemia ✦ component of many enzymes
Iodine	✦ component of thyroid hormones
Fluoride	✦ maintains bone and tooth structure
Copper	✦ vital to enzyme systems ✦ aids in manufacturing of red blood cells
Selenium	✦ works with vitamin E ✦ assists in protecting tissues and cell membranes from oxidative damage
Chromium	✦ maintains normal glucose metabolism ✦ assists in insulin function
Manganese	✦ involved in maintaining bone structure ✦ involved in reproduction ✦ involved in the central nervous system ✦ component of many enzyme systems
Molybdenum	✦ component of enzymes

MAJOR FOOD SOURCES

Calcium:	all dairy products, including milk and cheese, dark green leafy vegetables, legumes, nuts, sunflower seeds, dried fruit, molasses, canned fish, tofu processed with calcium.
Phosphorus:	lean meats, poultry, fish, dairy products, legumes, nuts.
Magnesium:	whole grains, legumes, nuts and seeds, avocados.
Sodium:	Most of the sodium in our diet is from salt added during processing and manufacturing (75%). Fifteen percent comes from salt added at the table or during cooking. Ten percent of the salt we consume comes from the natural content of foods.
Chloride:	table salt, seafood.
Potassium:	widely distributed in foods, especially fruits and vegetables. The less fat in food, the more potassium.
Iron:	lean red meats, organ meats (liver, kidney and heart), poultry, fish and shellfish, legumes, green leafy vegetables, whole grains, dark molasses.

Zinc: tends to follow protein foods so seafood, meats, whole grains and legumes.

Iodine: iodized table salt, dairy products, fish and shellfish.

Fluoride: fluoridated drinking water.

Copper: legumes, seafood and shellfish, organ meats, whole grains, nuts and seeds.

Selenium: nuts, whole grains, lean pork, cottage cheese, dark molasses.

Chromium: nuts, prunes, vegetable oils, green peas, corn, whole grains, orange juice, dark green vegetables, legumes.

Manganese: whole grains, nuts, seeds, pineapple, berries, legumes, dark green vegetables.

Molybdenum: tomatoes, lean pork, legumes, whole grains, strawberries, winter squash, dark green vegetables, carrots.

RDA for ADULTS

Nutrient	**Male**	**Female**
Calcium	800 mg	800 mg
Phosphorus	800 mg	800 mg
Magnesium	350 mg	280 mg
Sodium	500 mg	
Chloride	750 mg	
Potassium	2000 mg	
Iron	10 mg	15 mg
Zinc	15 mg	12 mg
Iodine	150 µg	
*Fluoride	1.5-4.0 mg	
*Copper	1.5-3.0 mg	
Selenium	55-70 µg	
*Chromium	50-200 µg	
*Manganese	2.0-5.0 mg	
*Molybdenum	75-250 µg	

*Instead of RDA *safe and adequate* daily dietary intake range is given

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Issued 06-95; FN-SSB.028.