**COPPER**

***The information on this sheet is of a general nature and is for educational purposes only. It is in no way intended to reflect the findings in this report.***

# SOURCES OF COPPER

**Seafood** - oysters, crabs, bluefish, perch, lobster

**Meats** - veal, duck, lamb, pork, beef liver and kidneys

**Nuts/seeds** - almonds, pecans, walnuts, filberts, brazil nuts, sesame, sunflower, pistachio

**Vegetables** - soybeans

**Grains** - wheat germ and bran

**Miscellaneous** - yeast, gelatin, bone meal, corn oil, margarine, mushrooms, chocolate

**Other sources** - copper water pipes, copper sulfate added to drinking water, copper compounds used in swimming pools, mineral supplements (especially prenatal vitamins), copper cookware and tea kettles, birth control pills, copper intrauterine devices, vegetarian diets, stress, exhaustion of the adrenal glands

Many children are born today with excessive copper levels passed to them from their mothers in utero.

**ROLES IN THE BODY**

* Energy production
* Female reproductive system
* Blood formation

# FUNCTIONS OF COPPER

**Circulatory** - structure of blood vessels, aorta and heart muscle

**Blood** - formation of hemoglobin

**Nervous** - maintenance of the myelin sheath on nerves **Reproductive** - essential for fertility, menstrual cycle **Endocrine** - synthesis of stimulatory neurotransmitters **Muscular/skeletal** - bone and connective tissue structure **Immune system** - necessary for the immune system **Integumentary** - needed for skin, hair, nails and pigments **Energy** - energy production (the electron transport system)

# SYMPTOMS ASSOCIATED WITH A COPPER DEFICIENCY

anemia atherosclerosis

demyelination of nerves diarrhea

edema fatigue

hair loss

impaired collagen formation loss of hair color

low hormone production osteoporosis

# SYMPTOMS ASSOCIATED WITH A COPPER EXCESS

acne

adrenal insufficiency allergies

alopecia anemia anorexia anxiety arthritis autism

cholesterol, elevated cancer

cystic fibrosis depression, mental diabetes

estrogen (imbalance)

fatigue fears

fractures, bone headaches (migraine) hemorrhages

heart disease hyperactivity hypertension hyperthyroidism hypochlorhydria hypoglycemia infections inflammation insomnia

mind racing mood swings multiple sclerosis

myocardial infarction nausea

pancreatic dysfunction premenstrual tension schizophrenia

sexual inadequacy spaciness

strokes tooth decay

urinary tract infections vitamin deficiencies

# SYNERGETIC NUTRIENTS

**Absorption** - proteins

# ANTAGONISTIC NUTRIENTS

**Absorption** - zinc, manganese, iron, calcium, molybdenum, sulfur, mercury, cadmium, vitamin C

**Metabolic** - zinc, vitamin C, vitamin B6, sulfur, molybdenum, manganese, iron

# HAIR ANALYSIS NOTES

* Bio-unavailable copper: Often copper status can be tricky to assess. Copper may be present, but unavailable for use in the body. This occurs any time adrenal gland activity is low.
* Copper and Oxidation Type: Fast oxidizers generally are deficient in copper, while slow oxidizers usually have either high copper or bio-unavailable copper.
* Hidden Copper Toxicity: Copper is often normal on hair tests, but may actually be locked in body tissues. Test indicators of a hidden copper imbalance are:
	+ calcium level greater than 75 mg%
	+ potassium level less than 3 mg%
	+ sodium/potassium ratio less than 2.2:1
	+ mercury toxicity often indicates a hidden copper toxicity
	+ copper level less than 1.0 mg%
	+ zinc/copper ratio less than 6:1

# REASONS FOR SUPPLEMENTATION WITH COPPER

* to raise a low sodium/potassium ratio
* to enhance retention of calcium in tissues