**CALCIUM**

***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 CALCIUM

**Seafood** - sardines, caviar, smelt

**Animal products** - egg yolks

**Nuts/seeds** - almonds, sesame seeds, filberts **Vegetables** - kale, collards, mustard greens, turnip greens **Dairy** - cheeses, milk

**Miscellaneous** - molasses, kelp, brewer's yeast, torula yeast

**ROLES IN THE BODY**

About 99% of our calcium is found in bone structures. However, calcium is essential for four other critical roles:

* Cell Membrane Regulation - affecting cell permeability, muscle contraction and nerve

impulse conduction.

* Body Fluid Regulation - affecting blood clotting, acidity and alkalinity.
* Regulation of cell division.
* Regulation of hormone secretion - insulin.

# FUNCTIONS OF CALCIUM

**Circulatory** - excites the heart, constricts small blood vessels

**Excretory** - inhibits water loss

**Digestive** - in excess, is constipating

**Nervous** - slows nerve impulse transmission

**Reproductive** - required for normal cell division

**Endocrine** - inhibits release of thyroid-releasing and other pituitary hormones **Blood** - stimulates blood formation and is required for blood clotting **Muscular** - reduces muscular irritability and contractibility

**Skeletal** - main component of bone

**Metabolic** - required for phosphorus metabolism and energy production in the Krebs cycle

**Detoxification** - inhibits uptake of lead, antagonizes cadmium

**Cellular** - decreases permeability of cells to sodium and potassium ions

# SYMPTOMS ASSOCIATED WITH A CALCIUM DEFICIENCY

alarm or fight-flight reaction anxiety

bruising

"fast" oxidation high blood pressure insomnia

irritability

muscle cramps and spasms nervousness

osteoporosis tooth decay

# SYMPTOMS ASSOCIATED WITH A CALCIUM EXCESS

apathy arthritis constipation

depression, mental fatigue

gall stones hardening of arteries kidney stones

"slow" oxidation withdrawal, social

# NUTRIENTS THAT ARE SYNERGISTIC WITH CALCIUM

**Absorption** - vitamin A and D, stomach acidity, protein in diet

**Utilization -** magnesium, copper, vitamin C

# ANTAGONISTIC NUTRIENTS

**Absorption** - fluoride, low stomach acidity, low protein in diet, phosphorus in excess

**Utilization -** lead, cadmium, sodium, potassium, high protein diet increases calcium loss in urine

# HAIR ANALYSIS NOTES

**High Hair Calcium:**

* usually indicates that calcium is leaving the bones and accumulating in the soft tissues of the body
* high calcium is associated with a slow oxidation rate
* good indicator of hidden copper toxicity
* high calcium on a retest often means the body is eliminating excess calcium

# Low Hair Calcium:

* a low calcium level usually means calcium is being lost in the urine
* associated with fast oxidation rate - alarm stage of stress
* often associated with copper deficiency

# REASONS FOR CALCIUM SUPPLEMENTATION

* to slow the oxidation rate
* to help detoxify lead and cadmium
* to balance key mineral ratios