



## GTF Chromium

(500mcg)

Stock #1801-6 (90 tablets)

Chromium stimulates enzymes which are part of glucose metabolism, and is the primary mineral involved in insulin production. Chromium is also a key component of GTF (glucose tolerance factor), a substance which enables cells to absorb glucose (blood sugar) to burn for energy. Chromium improves the effectiveness of insulin and its ability to monitor glucose, preventing both diabetes—elevated blood sugar—and hypoglycemia—low blood sugar.

Chromium is also required for carbohydrate metabolism, especially sugars, and for protein synthesis. Chromium increases HDL cholesterol, while reducing overall cholesterol levels. Chromium supplementation has been used for arteriosclerosis, atherosclerosis, diabetes, high blood pressure, hypercholesterolemia and hypoglycemia.

Many clinical studies have shown chromium lowers fasting blood sugar levels, improving glucose tolerance and reducing the need for insulin. At the same time, hypoglycemic patients, have been able to increase their blood sugar levels by taking 200mcg (micrograms) of chromium daily.

A chromium deficiency actually blocks insulin's performance, causing glucose levels to rise. A prolonged deficiency can lead to glucose intolerance, as well as impaired growth, elevated blood cholesterol, fatty deposits in the arteries, decreased sperm count, and a general decline in lifespan. Borderline chromium deficiencies are rather common in America. In fact, 90% of Americans are deficient in chromium, due to a diet heavy in over-processed foods, especially grains. More than 80% of organic chromium is stripped during processing and refining. Furthermore, eating simple sugars causes the body to eliminate large amounts of chromium.

Aging, eating refined foods, and even pregnancy can deplete chromium levels. Pregnant women are especially at risk for developing a chromium deficiency, as the fetus requires large amounts. Athletes and those who participate in strenuous exercise also increase their need for chromium. Research shows vigorous running places a great deal of stress upon the body, elevating energy needs by 7-22% and causing fluctuations in hormones and other nutrients involved in glucose metabolism. Studies also reveal the amount of chromium present in body tissues significantly declines with age, while glucose intolerance slowly increases. Some theorize this process may be partially responsible for aging.

Chromium deficiency also affects vitamin C absorption, due to the vitamin's dependence on insulin function. Studies show a relative vitamin C deficiency exists even in diabetics with acceptable dietary intake of vitamin C, confirming the relationship between these two nutrients.

Reduced chromium levels have been shown to contribute to hypercholesterolemia (high blood cholesterol). Since glucose is the body's main source of energy, inefficient glucose metabolism resulting from chromium depletion causes the body to depend on lipid (fat) metabolism for energy. Unfortunately, this type of impaired energy exchange can cause the development of lipid metabolism by-products which form cholesterol. In fact, many researchers believe this process may be the cause of accelerated atherosclerosis, as seen in diabetics. Furthermore, studies show a chromium deficiency may reduce the liver's ability to absorb cholesterol and fatty acids, which in turn, may promote lipid accumulation in the arteries.

Researchers have found chromium supplementation lowers the serum levels of cholesterol and triglycerides, while at the same time raising the level of high density lipoproteins (HDLs). One hundred micrograms (100mcg) of chromium taken daily for 8 weeks was shown to lower serum cholesterol levels of 240 mg to less than 220 mg, and simultaneously raise HDL levels.

A study at the State University of New York Upstate Medical Center at Syracuse demonstrated that 100mcg of chromium taken daily caused total cholesterol/HDL ratios averaging 5 before the study, to drop to 3.9. A ratio above 4.5 is not considered good cardiac health. A second phase of the study showed that even 50mcg of chromium continued to lower the ratio in practically 80% of the participants.

Chromium may also play a role in the cardiovascular disease mystery. Some researchers observed individuals suffering from coronary artery disease displayed much lower levels of chromium than healthy people.

Chromium is found in brewer's yeast, cheese, meat (particularly liver), and whole grain breads and cereals.

Each tablet of GTF Chromium provides 300mcg of chromium from chromium amino acid chelate, in a base of horsetail, red clover and yarrow.

**Horsetail** shrinks inflamed mucosal tissues, especially of the prostate, and increases urine production. Horsetail is perhaps best-known for its abundant supply of trace minerals, particularly calcium, chromium, iron, magnesium, manganese, and potassium. Horsetail is often recommended for enuresis, muscle cramps, osteoporosis, prostatitis and urinary tract infections.

**Red clover** helps the body manufacture bile and other digestive fluids and enzymes, and acts as an analgesic (pain-reliever) and anti-inflammatory. Red clover is particularly high in the minerals chromium, magnesium, phosphorus and potassium. Red clover has provided significant results in cases of arthritis, inflammatory skin conditions, jaundice, liver congestion, and muscle cramps.

**Yarrow** shrinks inflamed tissues, stops bleeding, lowers blood pressure, induces perspiration to lower fever and expel toxins, and relaxes muscle spasms. Yarrow also enhances the elimination of uric acid buildup in the joints which can contribute to arthritis, gout and rheumatism. Yarrow is a rich source of the minerals chromium and tin, and contains fairly high amounts of vitamin B<sub>1</sub>, B<sub>2</sub> and C, and potassium and selenium. Yarrow is commonly used for fever, hemorrhoids, inflammatory skin conditions and nausea.