diabetics can count on chromium

WHAT DO ELEVATED BLOOD SUGAR LEVELS, DEPRESSION, AND EXCESS WEIGHT HAVE IN COMMON? THEY ALL MAY IMPROVE WITH SUPPLEMENTS OF THE TRACE MINERAL CHROMIUM

By Jack Challem

Chromium, an essential dietary mineral, plays a central role in how the body uses insulin to burn sugars, carbs, fats, and proteins for energy. Because of this insulin-enhancing role, chromium can be especially helpful in controlling, and sometimes reversing, some of the symptoms of prediabetes and type 2 (adult-onset) diabetes. Chromium supplements, which are commonly sold as chromium picolinate, chromium polynicotinate (niacin-bound chromium), chromium glycinate, and chromium amino acid chelate, may reduce appetite and contribute to weight loss. The mineral can sometimes help in treating depression, particularly atypical depression, which often manifests as depression accompanied by excessive hunger, weight gain, unexplained exhaustion, and/or too much sleep, according to psychiatrist Malcolm Noel McLeod, MD, author of Lifting Depression: The Chromium Connection, who has done extensive research on the link between chromium and depression.

HOW IT WORKS: Chromium is essential for the normal activity of insulin, the key hormone involved in burning food for energy. Symptoms of chromium deficiency, including elevated blood glucose, insulin, total cholesterol, and triglyceride, can resemble those of prediabetes and syndrome X. This doesn’t mean that a lack of chromium alone causes diabetes, but low chromium intake likely contributes to diabetes.

When people eat a lot of sugars and sugar-like carbs, their blood sugar levels quickly rise. In response, the body secretes insulin to lower blood sugar. However, after many years of this “blood sugar–insulin roller coaster,” cells become resistant or unresponsive to the action of insulin. This situation leads to still more insulin secretion in an effort to compensate—and ultimately to insulin resistance, the cornerstone of prediabetes and type 2 diabetes. Less insulin is better—and chromium maximizes insulin function.

HEALTH BENEFITS: Supplemental chromium has many important health benefits. Here’s an overview:
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- Blood glucose and insulin. Chromium supplements can have a dramatic effect on blood sugar and insulin levels. In a study of 180 people with type 2 diabetes, 1,000 mcg of chromium picolinate daily resulted in significant improvements in blood sugar and insulin levels after just four months. Niacin-bound chromium has similar benefits. In one study, people taking 300 mcg daily of niacin-bound chromium had significant decreases in fasting blood sugar and modest reductions in triglycerides and glycated hemoglobin (which reflect blood sugar levels over six weeks) after three months.

- Weight control. Stable blood sugar often translates to fewer hunger jags, which in turn leads to eating less and losing weight. In one study, 28 overweight women took 200 mcg of niacin-bound chromium three times daily for two months, as part of a program of moderate dieting and exercise. The women lost significant amounts of fat, but preserved their fat- and sugar-burning muscle tissue. In another study, researchers found that taking chromium picolinate with the diabetes drug glipizide reduced the weight gain side effect.

- Depression. Researchers at the University of North Carolina, Chapel Hill, School of Medicine found that supplements of chromium picolinate could relieve depression. It appeared most effective in dosages of 200–400 mcg in people who were overweight or had a history of overeating (again, associated with atypical depression). Many of the patients also began losing weight after taking chromium and were able to stop taking antidepressant drugs. Researchers believe chromium may increase serotonin.

BACKGROUND CHECK: The body's chromium reserves decrease with age. That's because large amounts of chromium are released to help metabolize sugars and refined carbs, but such foods provide little if any chromium to replenish the loss.

GLEANINGS: Marketplace competition between chromium polynicotinate (niacin-bound chromium) and chromium picolinate products is intense. Is one better than the other? According to Harry Preuss, MD, of Georgetown University in Washington both forms appear to be therapeutically equivalent. However, Preuss, one of the top chromium researchers, favors the polynicotinate form.

HEADS UP: You might remember that chromium was implicated as an industrial toxin in the movie Erin Brockovich. Hexavalent chromium is an industrial compound, which has a different chemical structure (six chemical bonds) from that of trivalent chromium (three chemical bonds). All supplements use trivalent, or nutritional, chromium.

GTF (glucose tolerance factor) chromium was the term originally used to describe the chromium-containing molecule involved in regulating blood sugar and insulin. The structure of this molecule has never been identified. Nonetheless, chromium is essential for normal glucose tolerance, and chromium deficiency can result in diabetes-like symptoms.

WHAT YOU SHOULD TAKE: Most chromium supplements provide 200 mcg per capsule, and some contain 400 or 500 mcg. Based on human studies, 1,000 mcg daily is the most effective dose for people with diabetes. It's also safe. For people with overeating- or overweight-associated depression, 400 mcg daily appears sufficient. If you take insulin, Glucophage, or any other drug for regulating blood sugar, chromium may reduce your medication requirements over several weeks.