Chromium picolinate to boost metabolism? [1]

Alice,

I have heard a lot about chromium picolinate lately. Does it really increase your metabolism? How do I know — short of frequent physical exams — whether or not it's working? In other words, what kind of message does my body send to me that it is — or isn't — increasing my metabolic rate?

If it does work, how much should I supplement daily? Should I hang around old junkyards, prying chrome bumpers off of old cars?

Signed,
Metabolic Anonymous

Answer

Dear Metabolic Anonymous,

Before you make the junkyard your new jaunt, it's a good idea to take a look at some of the research on the impact of chromium supplements on metabolism and weight loss. One type of chromium (more on those in a bit), trivalent chromium, has been shown to enhance the effectiveness of insulin, a hormone that helps metabolize and store carbohydrates, fat, and proteins in the body. While researchers have investigated the effects of chromium supplements (including chromium chloride, chromium nicotinate, chromium picolinate, high-chromium yeast, and chromium citrate) on diabetes, blood lipid levels, and body weight, sufficient and reliable evidence to conclude that chromium supplements could improve these health outcomes is still lacking. What's more, there isn't an established recommendation for how much chromium to take in a day. But, don't lose hope, Metabolic Anonymous, there are other ways to increase your metabolism without taking supplements.

Chromium is a mineral that comes in two forms. One form, hexavalent chromium, is toxic and caused by pollution, and the second form, trivalent chromium, is used to regulate insulin and breakdown food in the body. Trivalent chromium is readily available in foods including meats, whole grain products, and some fruits and vegetables, especially broccoli. Trivalent chromium levels tend to be lower in foods with high levels of simple sugars, such as fructose and sucrose.
To get these and other nutrients, it’s a typical rule of thumb for folks to get as many nutrients as possible from their food choices. With regard to chromium picolinate specifically, studies have investigated whether it will reduce body fat and increase lean muscle mass, but the research is inconclusive. One review of 24 studies found no significant benefits. Another review of clinical trials did find that the chromium picolinate helped with weight loss (as compared to a placebo), but not by much. It’s also been noted that the trials that did find a benefit have been criticized for being short in duration and not having adequately controlled for the participants’ food intakes.

You also ask how much chromium to take in a day. Unfortunately, the recommended dietary intake of chromium hasn’t yet been determined due to insufficient research. Instead, the Institute of Medicine[2] has established the Adequate Intake (AI) measure, which is based on the levels typically consumed by healthy people. In adults ages 19 to 50, this amounts to 35 micrograms (mcg) daily for men and 25 mcg daily for women (women who are pregnant or nursing typically get 30 mcg/day and 45 mcg/day, respectively). However, be wary of too much of a good thing — possible side effects of taking too much chromium include:

- Stomach irritation, itching, and flushing
- Fast, irregular heart rhythm
- Reduced effectiveness of insulin’s ability to control sugar
- Kidney damage
- Liver problems
- Worsened cases of depression, anxiety, and schizophrenia

Not only can taking too much chromium cause adverse health effects, but taking it in combination with certain prescription or over-the-counter medications including steroids, nonsteroidal anti-inflammatory drugs (NSAIDs), and insulin, can lead to impacts on the effectiveness on these drugs. If you’re interested in taking chromium supplements, it’s best to do so under the supervision of your health care provider. You may also want to talk to her/him about what to look for when measuring metabolic changes and what you’re hoping to gain from taking these supplements. Not sold on the supplements just yet? A registered dietitian may also be a good resource on how to incorporate food choices rich in chromium in your diet. Research has also found a number of other ways that can boost your metabolism sans supplements. To read up on those specific strategies, check out Morning workout increases metabolism throughout the day? [3]. Lastly, if weight loss is your reason for considering chromium, check out the Weight Gain & Loss [4] category in the Go Ask Alice! archives for more Q&As on the subject.

Alice!
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