

Chromium

Why We Need It

Chromium, one of the trace minerals, is found in very small amounts in our bodies. Its role in overall health is not well understood.

Chromium works with insulin to maintain normal blood glucose, or blood sugar levels. Early research suggests benefits to some people with diabetes or glucose intolerance. Chromium is not an alternative to insulin for type 1 diabetics, but it may be helpful to type 2 diabetics in controlling blood sugar levels. Currently the American Diabetes Association does **not** recommend chromium supplements for persons with diabetes, however.

Chromium helps us use the carbohydrate and fat from our diets. This mineral also can affect the amount of fat and protein in our bodies. For this reason, many athletes are interested in chromium. Talk to your doctor before taking a supplement.

Sources

Both animal and plant foods contain chromium. Good sources include cheese, meat, eggs, whole-grain products, ready-to-eat cereals, peas/beans, apples and peanuts.

In addition, chromium is found in mushrooms, prunes, asparagus, nuts, wine, brewer's yeast, and some kinds of beer. Exact amounts of chromium content have not been determined, partly because it varies depending on soil types and other factors.

Chromium is a component of steel; therefore, cooking an acidic food like tomato sauce in a stainless steel pot adds small amounts of chromium to the food.

Sources of Chromium

| Food | Chromium (µg per serving) |
|--------------------------------|------------------------------|
| cheese, American, 1 oz | 48 |
| liver, braised, 3 oz | 42 |
| shredded wheat, 1 oz | 33 |
| peas, ½ cup | 30 |
| egg, large, 1 | 26 |
| µg = micrograms oz = ounces | |

Recommended Daily Intakes of Chromium

| | Age | Chromium (µg/day) | |
|-----------------|-------------------|----------------------|----|
| Infants | birth-6 months | 0.2 | |
| | 6 months-1 year | 5.5 | |
| Children | 1-3 years | 11 | |
| | 4-8 years | 15 | |
| Males | 9-13 years | 25 | |
| | 14-50 years | 35 | |
| | 51 years and over | 30 | |
| Females | 9-13 years | 21 | |
| | 14-18 years | 24 | |
| | 19-50 years | 25 | |
| | 51 years and over | 20 | |
| | pregnancy | ≤ 18 | 29 |
| | | 19-50 | 30 |
| | breastfeeding | ≤ 18 | 44 |
| 19-50 | | 45 | |

µg = micrograms

Source: adapted from the Dietary Reference Intakes series, National Academies Press. Copyright 1997, 1998, 2000, 2001, 2002, 2004, by the National Academies of Sciences.

It is very unlikely that you will consume harmful amounts of chromium from dietary sources.

If We Don't Get Enough

The effects of a chromium deficiency in healthy people are not well known. Many people get less chromium than the recommended daily intakes, but scientists aren't sure whether or not this represents a health risk. Although a deficiency is rare, it can look like diabetes, since chromium works closely with insulin.

A lack of chromium may affect glucose uptake into cells. In addition, it may cause blood lipids to rise, which could increase your risk for heart disease.

Chromium needs may decrease with age, but more research needs to be done with older people to confirm this theory.

Supplements

Before taking a chromium supplement, talk to your doctor. Most people get enough chromium from their normal diet, and supplements are not advised.

The majority of people with diabetes do not need supplements, because they are not chromium deficient. Some type 2 diabetics may find supplements beneficial with blood glucose control. However, the American Diabetes Association currently does **not** recommend chromium supplements for persons with diabetes.

Chromium supplements may offer no benefits and could even have adverse effects, such as interfering with iron in the body. Excessive chromium intake through supplements also has been linked to kidney failure.

Chromium picolinate, a popular dietary supplement, is promoted as improving physical performance, building muscle, burning body fat, and prolonging youth. However, there is no scientific evidence that athletes benefit from extra chromium.

This form of chromium has been found to cause DNA damage in cell culture studies. Until further studies are done, it would be wise to avoid chromium picolinate.

How Much Is Too Much?

Chromium is absorbed very poorly, and it would take a high dose of this mineral to cause a toxic reaction. You cannot get too much from food sources. No upper limit of chromium in the diet has been set. Of course, it is always wise to avoid large doses of any nutrient in supplement form.

For More Information

The Family and Consumer Sciences (FCS) agent at your county Extension office may have more written information and nutrition classes for you to attend. Also, your doctor, health care provider, or a registered dietitian (RD) can provide reliable information.

Reliable nutrition information may be found on the Internet at the following sites:

<http://hgic.clemson.edu>
<http://virtual.clemson.edu/groups/NIRC/>
<http://www.eatright.org>
<http://www.nutrition.gov>
<http://www.nal.usda.gov/fnic>
<http://www.diabetes.org>

Sources:

1. Bobroff, Linda B. University of Florida Extension. *Facts About Chromium*. FCS8803. December 2006.
<http://edis.ifas.ufl.edu/publications.html>
2. Duyff, Roberta Larson. American Dietetic Association *Complete Food and Nutrition Guide, 3rd Edition*. 2006.
3. National Academies of Sciences. National Academies Press. *Dietary Reference Intakes series*. 2004.

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