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Chromium Polynicotinate

More than 90% of U.S. adults have a deficiency of the mineral chromium.

Chromium Polynicotinate

Studies Show Chromium Picolinate is Dangerous

CHROMIUM

Source

More than 90% of U.S. adults have a deficiency of the mineral chromium. Chromium is not readily absorbed from foods, and the human body even has difficulty in absorbing chromium from most nutritional supplements.

To alleviate this problem, the U.S. Department of Agriculture developed and patented chromium picolinate, a readily absorbed form of the mineral. The U.S.D.A. licensed chromium picolinate to Nutrition 21 of San Diego, which manufactures the nutrient-grade powder. Their product is available in capsule form from several makers of nutritional supplements.

A number of reports on the importance of chromium picolinate were made at the October, 1992 Conference of the American Aging Association in San Francisco. At that conference, biochemist Gary W. Evans of Bemidji State University in Minnesota reported that laboratory rats fed diets supplemented with chromium picolinate lived to

a median age of 45 months compared to a median life span of 33 months for rats fed a similar diet with other forms of chromium supplementation. Rats deficient in chromium typically live no more than 24 months.

Chromium is believed to enhance the effectiveness of insulin, a hormone vital for the processing of glucose. Supplemental chromium reduces blood glucose levels.

High levels of glucose and problems with insulin activity cause glycation, a process that damages vital proteins in the body. This protein damage is the principal reason that diabetics have a lower life expectancy than normal. Many researchers believe that supplementary chromium could be very useful for diabetics, especially those with type 2, or adult-onset, diabetes.

It has been known for several decades that restricting calorie intake by about one-third will increase the life span by 50 percent or more. In every species tested, calorie restriction has produced a significant increase in life span. (It is vital, though, that the calorie-restricted diet not be deficient in any essential nutrient.)

It is widely believed that the effectiveness of calorie-restriction is mostly due to the lower blood glucose levels induced by calorie restriction. This results in less protein damage from a process known as glycation. Most of the researchers using chromium picolinate believe that the increased longevity it produces are due to its effects on reducing protein damage caused by poor glucose and insulin metabolism.

Gary W. Evans reported that the rats with chromium-picolinate-induced longevity had 25 percent lower blood glucose levels and 60 percent lower glycation-induced protein damage than the control rats.

Other studies reported at the conference showed that chromium picolinate in humans improved the HDL/LDL ratio (the ratio of "good cholesterol" to "bad cholesterol") and that it increased muscle mass while decreasing the percentage of body fat.

Athletes doing weight training taking chromium picolinate at Bemidji State University had a 21 percent greater drop in body fat and a 42 percent greater increase in muscle mass than athletes on the same program not taking the supplement.

The standard dose of chromium picolinate is 200 micrograms per day for a adult. The wholesale price of a year's supply of chromium picolinate is about a dollar. Of course, the retail price of the capsules available to the consumer is much higher than this.

Another form of bioavailable chromium is chromium polynicotinate, or niacin-bound chromium. It is also a patented substance, and is sold under the tradename *Chrome-Mate*. Chromium polynicotinate seems to have some definite advantages over chromium picolinate, including even better bioavailability.

One study indicated that large amounts of chromium picolinate cause chromosome

damage, whereas chromium polynicotinate did not. At first, this study was widely criticized because the chromium picolinate levels were far higher than one would get with normal supplementation. Subsequently, however, many other scientific studies have called into question the safety of chromium picolinate.

It now appears that niacin-bound chromium is a much safer form of chromium for supplementation. Some studies have also shown that niacin is necessary for chromium supplements to be of benefit.

Chromium aspartate, an unpatented and much less expensive form of chromium, appears also be very well absorbed; but it does not have the benefit of the level of scientific testing that the patented forms have. This makes it difficult for the consumer to know which form of chromium to take. Even supplement manufacturers are confused and some supplements contain a mixture of two or more of the above-mentioned forms.

Even though chromium aspartate may work as well as the other two forms, the only advantage of chromium aspartate is in its lower cost to the supplement manufacturer, who must buy it in large quantities. The cost of the chromium to the end user is not a significant factor because the amounts used in a daily supplement are so tiny.

As it pertains to life extension, it is likely that chromium is just a part of the larger subject of insulin resistance. Anything that can reduce the problem of insulin resistance, and bring blood sugar levels down to a moderately-low and stable level, will reduce the problems of aging.

Source

Chromium Polynicotinate

Chromium plays a role in the metabolism of glucose, and is

necessary for energy production. Since this mineral assists in the production of insulin, it helps to stabilize blood sugar levels and can be beneficial both for people with hypoglycemia and diabetes. It is also critical to the synthesis of cholesterol, fats, and proteins.

Chromium polynicotinate is more effective than any other type of chromium, as it binds the elemental chromium to niacin (vitamin B-3). This provides a biologically active form of chromium, which is more absorbable in the body.

Source

Studies Show Chromium Picolinate is Dangerous

Update 2000

Dr. Ann de Wees Allen, N.D.

An alarming study conducted by Dr. John Vincent at the University of Alabama shows that chromium picolinate reacts with antioxidants in the cells to produce in "reduced" form of chromium capable of causing mutations in DNA, our human genetic material.

Based on this new research, the University of California at Berkeley warns that:

"Nobody should take chromium picolinate, especially not young people."

This is not the first time that chromium picolinate has gotten negative press from the media and the scientific community. In 1995 and 1996 scientific studies showed that chromium picolinate could damage genetic material in animals. The research was funded by the National Cancer Institute and conducted at George Washington University, Department of Pharmacology, Washington, D.C. and Dartmouth College, Department of Chemistry.

The study included testing specific chromium supplements as well as various forms of chromium. Chromium picolinate, U.S. Patent 5194615, currently the most widely used form of chromium, was included in the study. The potential toxicity of the picolinate form of chromium has been an issue of debate over the past five years.

The three forms of chromium analyzed in the study were:

- Chromium Chloride
- Chromium Nicotinate (chromium bound to niacin; Niacin-bound chromium)

- Chromium Picolinate (chromium bound to picolinic acid, US Patent 4315927).

Cytotoxicity was determined by measurement of colony formation in laboratory animals. Chromosome damage was measured as clastogenicity observed for cells in metaphase. Results were compared to those obtained in cells treated with ligands alone or with chromium. "Treatment with chromium picolinate producing 91 +/- 12% colony survival resulted in 32 +/- 12% of metaphases with chromosome damage." The results are indeed staggering in their implication.

"Chromium picolinate was found to cause significant chromosome damage at a non-toxic dose."

"Chromium nicotinate and CrCl3 (chloride) did not cause chromosome damage at equivalent doses."

Critics of the study retaliated by saying that the amount of chromium picolinate tested was too high to be meaningful. But Dr. Stearns, chromium researcher at Dartmouth College, says that while the doses were high, "They were not out of context considering that day in and day out consumers are taking large amounts of chromium, which may be accumulating the body." Dr. Stearns predicts that after 5 years of swallowing a daily dose of 600 mcg of chromium picolinate, the amount recommended on supplement packages, chromium would accumulate in the body to the level that caused damage in her study."

The study conclusively linked chromosome damage to chromium picolinate. Since the data showed that chromium picolinate causes DNA damage at low, supposedly nontoxic doses, the researchers concluded that, "This study raises the question of the safety of chromium picolinate as a human dietary supplement."

The chromium picolinate industry responded with cries of "bad science" and insisted that chromium picolinate was safe. They chose to ignore the fact that this kind of generic damage in animals can be a loud warning signal of a cancer-causing agent in humans.

Since the Dartmouth study was published, the chromium picolinate manufacturers and marketers have aggressively pushed their product in the nutrient industry. Currently, millions of people are taking chromium picolinate, and many consumers are not even aware that they are ingesting this potentially dangerous nutrient. Chromium picolinate can be found in many of the most popular vitamin supplements including multi-vitamins, sports drinks, diabetic formulas, and weight loss formulas.

Are all chromium supplements dangerous? No. The combination of chromium and picolinate can produce dangerous compounds, not the chromium alone. Safety issues concerning the use of the picolinate form of chromium have been in question for the past few years. Aside from genetic damage evidenced in the recent study, picolinate is known to "break off" from its chromium-bond and cause adverse effects.

Since many vitamin, mineral, and multi-vitamin products currently contain chromium picolinate, it is strongly advised that consumers check labels and ingredients panels of the supplements they are taking to ascertain if they contain chromium picolinate.

Consumers are urged to switch to a nontoxic form of chromium, such as niacin-bound chromium, also known as chromium polynicotinate. Niacin-bound chromium is the safest and most bioavailable form of chromium. Most health food stores carry niacin-bound chromium polynicotinate Two of the best-known brand name products are:

- **Solgar Chromium Polynicotinate ***
  200 mcg chromium (polynicotinate) per capsule

- **Natrol ChromeMate ***
  200 mcg chromium (polynicotinate) per capsule
  10 mg vitamin B-6

The Natrol Chromate contains added B-6 plus 50 mg of L-arginine and 50 mg L-lysine. L-Arginine and L-Lysine are direct antagonists of each other, meaning that at higher doses (over 2 grams/2000 mg) they should not be taken together. In doses of 50 mg, as found in the Natrol product, the negating effects of the two amino acids should not be significant.

* Dr. Ann de Wees Allen has no affiliation with the Solgar Chromium product or the Natrol ChromeMate product, and does not receive any monies or benefits from mentioning their products in this article. Manufacturer's wishing to have their niacin-bound chromium products added to this article may submit the label copy to www.anndewessallen.com for review.

No compensation will be accepted by Dr. Allen.

References

Tufts University Diet & Nutrition Letter, Oct. 1996
U. S. Dept. of Agriculture, Human Nutrition Research Center, Chromium Study, 1996
George Washington University, Department of Pharmacology, Washington, D.C., Chromium Toxicity Study, 1995

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