**Name(s):** Chromium picolinate, chromium polynicotinate, chromium chloride, high-chromium brewer's yeast.

**Description:** This mineral is involved in the glycolysis pathway, this is a metabolic process where glucose is converted to energy. In this pathway, chromium activates the enzymes involved. Chromium is also involved in the synthesis of fatty acids and cholesterol. One of the main functions of chromium is that it is a facilitator of insulin. The form of chromium that is found in eggs is not beneficial to the body. A form termed hexavalant chromium causes skin problems, perforation of the nasal septum, and lung cancer. Consult a physician if pregnant, symptoms of nausea, diarrhoea, or dizziness last more than a week, or if new symptoms appear.<sup>1</sup>

**Absorption/Storage:** It has been found that approximately 3% of the chromium taken in is absorbed. The primary locations for storage are the spleen, kidneys, and testes. The excess is excreted in the urine. As age increases, the amount of chromium stored decreases.<sup>1</sup>

**Recommended Dietary Allowance/Dietary Reference Intake:** There is no RDA or RNI for chromium. Normal daily-recommended intakes for chromium are generally defined as follows:

Infants and children-

- Birth to 3 years of age: 10 to 80 micrograms (mcg) a day.
- 4 to 6 years of age: 30 to 120 mcg a day.
- 7 to 10 years of age: 50 to 200 mcg a day.
- Adolescents and adults--50 to 200 mcg a day.<sup>2</sup>

**Optimum Daily Allowance (Adult):** 150-400 mcg.<sup>3</sup>

Tolerable Upper Intake Levels: None available.

**Principal Uses:** High cholesterol,<sup>4-8</sup> diabetes,<sup>9-20</sup> hypoglycaemia.<sup>21-23</sup> and weight loss and obesity.<sup>24-27</sup>

**Proposed Uses:** High triglycerides and insulin resistance syndrome (Syndrome X).<sup>28</sup>

**Traditional Uses:** Athletic performance, depression,<sup>28</sup> and acne.<sup>29</sup>

#### Healthy Sources:

High (40%+ US DRI): Brewer's yeast.<sup>29</sup>

Medium (25-39% US DRI): None.

**Contraindications:** If you are taking this dietary supplement without a prescription, carefully read and follow any precautions on the label. For chromium, the following should be considered:

Allergies--Tell your health care professional if you have ever had any unusual or allergic reaction to chromium. Also tell your health care professional if you are allergic to any other substances, such as foods, preservatives, or dyes.

Pregnancy--It is especially important that you are receiving enough vitamins and minerals when you become pregnant and that you continue to receive the right amount of vitamins and minerals throughout your pregnancy. The healthy growth and development of the foetus depend on a steady supply of nutrients from the mother. However, taking large amounts of a dietary supplement during pregnancy may be harmful to the mother and/or foetus and should be avoided.

Breast-feeding--It is important that you receive the right amounts of vitamins and minerals so that your baby will also get the vitamins and minerals needed to grow properly. However, taking large amounts of a dietary supplement while breast-feeding may be harmful to the mother and/or baby and should be avoided.

Children--Problems in children have not been reported with intake of normal daily-recommended amounts.

Older adults--Problems in older adults have not been reported with intake of normal daily-recommended amounts.

Medicines or other dietary supplements--Although certain medicines or dietary supplements should not be used together at all, in other cases they may be used together even if an interaction might occur. In these cases, your health care professional may want to change the dose, or other precautions may be necessary. Tell your health care professional if you are using any other dietary supplement or any prescription or over-the-counter (OTC) medication.

Other medical problems--The presence of other medical problems may affect the use of chromium. Make sure you tell your health care professional if you have any other medical problems, especially:

• Diabetes mellitus (sugar diabetes)--Taking chromium supplements when you have a chromium deficiency may cause a change in the amount of insulin you need.<sup>2</sup>

#### Interactions:

Decreases Mineral Availability:	Oral corticosteroids, <sup>28</sup> calcium, sugar, and vanadium. <sup>30</sup>
Increases Mineral Availability:	Oxalates. <sup>30</sup>
Is Increased By Mineral Availability	Sertraline. <sup>28</sup>
Adverse Reactions	Glyburide and insulin. <sup>28</sup>

**Deficiency:** Just being slightly deficient can cause major complications. Athrosclerosis may result from a deficiency. Diabetics that are deficient experience serve glucose intolerance because the insulin is not functioning properly.<sup>1</sup>

**Toxicity/Side Effects:** No one should take more than 300 mcg per day of chromium without the supervision of a nutritionally oriented doctor.<sup>28</sup>

Signs and symptoms of acute overdose are: acute nausea, vomiting, dark red urine and stool, thrombocytopenia, hypotension, skin burns and coma.<sup>31</sup>

**Treatment For Overdose:** Nephrotoxicity can be managed ascorbic acid and calcium disodium EDTA; monitor serum/urine pH during treatment with ascorbic acid. Acetylcysteine may be effective therapy in enhancing chromium elimination; haemodialysis should also be employed especially if renal insufficiency is present; haemodialysis or exchange transfusions.<sup>31</sup>

Storage: To store this dietary supplement:

- Keep out of the reach of children.
- Store away from heat and direct light.
- Do not store in the bathroom, near the kitchen sink, or in other damp places. Heat or moisture may cause the dietary supplement to break down.

- Keep the dietary supplement from freezing. Do not refrigerate.
- Do not keep outdated dietary supplements or those no longer needed. Be sure that any discarded dietary supplement is out of the reach of children.<sup>2</sup>

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