Citations

1. Lukaski HC. Chromium as a supplement. Annu Rev Nutr 1999;19:279-302.
2. Anderson RA, Polansky MM, Bryden NA. Stability and absorption of chromium and absorption of chromium histidinate complexes by humans. Biol Trace Elem Res 2004;101:211-218.
3. Panel on Dietary Antioxidants and Related Compounds, Food and Nutrition Board, Institute of Medicine. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. Washington, DC: National Academy Press; 2001:65-126.
4. Bahijri SM, Mufti AM. Beneficial effects of chromium in people with type 2 diabetes, and urinary chromium response to glucose load as a possible indicator of status. Biol Trace Elem Res 2002;85:97-109.
5. Hathcock JN. Vitamins and minerals: efficacy and safety. Am J Clin Nutr 1997;66:427-437.
6. Anderson RA, Cheng N, Bryden NA et al. Elevated intakes of supplemental chromium improve glucose and insulin variables in individuals with type 2 diabetes. Diabetes 1997;46:1786-1791.
7. Cefalu WT, Hu FB. Role of chromium in human health and in diabetes. Diabetes Care 2004;27:2741-2751.
8. Wasser WG, Feldman NS, D'Agati VD. Chronic renal failure after ingestion of over-the-counter chromium picolinate. Ann Intern Med 1997;126:410.
9. Cerulli J, Grabe DW, Gauthier I et al. Chromium picolinate toxicity. Ann Pharmacother 1998;32:428-431.
10. Martin WR, Fuller RE. Suspected chromium picolinate–induced rhabdomyolysis. Pharmacotherapy 1998;18:860-862.
11. Young PC, Turiansky GW, Bonner MW, Benson PM. Acute generalized exanthematous pustulosis induced by chromium picolinate. J Am Acad Dermatol 1999;41:820-823.
12. Shannon M. Alternative medicines toxicology: a review of selected agents. J Toxicol Clin Toxicol 1999;37:709-713.
13. Kato I, Vogelman JH, Dilman V et al. Effect of supplementation with chromium picolinate on antibody titers to 5-hydroxymethyl uracil. Eur J Epidemiol 1998;14:621-626.
14. Anderson RA. Chromium, glucose intolerance and diabetes. J Am Coll Nutr 1998;17:548-555.
15. Mohamedshah FY, Moser-Veillon PB, Yamini S et al. Distribution of a stable isotope of chromium (53Cr) in serum, urine, and breast milk in lactating women. Am J Clin Nutr 1998;67:1250-1255.
16. Reading SA. Chromium picolinate. J Fla Med Assoc 1996;83:29-31.
17. Attenburrow MJ, Odontiadis J, Murray BJ et al. Chromium treatment decreases the sensitivity of 5-HT2A receptors. Psychopharmacology (Berl) 2002;159:432-436.
18. Roeback JR Jr, Hla KM, Chambless LE, Fletcher RH. Effects of chromium supplementation on serum high-density lipoprotein cholesterol levels in men taking beta-blockers: a randomized, controlled trial. Ann Intern Med 1991;115:917-924.
19. Ravina A, Slezak L, Mirsky N et al. Reversal of corticosteroid-induced diabetes mellitus with supplemental chromium. Diabet Med 1999;16:164-167.
20. Mertz W. Interaction of chromium with insulin: a progress report. Nutr Rev 1998;56:174-177.
21. Porter DJ, Raymond LW, Anastasio GD. Chromium: friend or foe? Arch Fam Med 1999;8:386-390.
22. Cefalu WT, Wang ZQ, Zhang XH et al. Oral chromium picolinate improves carbohydrate and lipid metabolism and enhances skeletal muscle Glut-4 translocation in obese, hyperinsulinemic (JCR-LA corpulent) rats. J Nutr 2002;132:1107-1114.
23. Vincent JB. Elucidating a biological role for chromium at a molecular level. Acc Chem Res 2000;33:503-510.
24. Vincent JB. Recent advances in the nutritional biochemistry of trivalent chromium. Proc Nutr Soc 2004;63:41-47.
25. Cefalu WT, Martin JM, Wachtel D et al. Chromium picolinate supplementation increases insulin-stimulated Akt phosphorylation in vivo in skeletal muscle from subjects with type 2 diabetes. Diabetologia 2003;46:Suppl 2:154A.
26. McCarty MF. Complementary measures for promoting insulin sensitivity in skeletal muscle. Med Hypotheses 1998;51:451-464.
27. Riales R, Albrink MJ. Effect of chromium chloride supplementation on glucose tolerance and serum lipids including high-density lipoprotein of adult men. Am J Clin Nutr 1981;34:2670-2678.
28. Anderson RA. Recent advances in the clinical and biochemical effects of chromium deficiency. Prog Clin Biol Res 1993;380:221-234.
29. Anderson RA. Chromium, glucose tolerance, and diabetes. Biol Trace Elem Res 1992;32:19-24.
30. Wang MM, Fox EA, Stoecker BJ et al. Serum cholesterol of adults supplemented with brewer's yeast or chromium chloride. Nutr Res 1989;9:989-998.
31. Davies S, McLaren Howard J, Hunnisett A, Howard M. Age-related decreases in chromium levels in 51,665 hair, sweat, and serum samples from 40,872 patients—implications for the prevention of cardiovascular disease and type II diabetes mellitus. Metabolism 1997;46:469-473.

32. Linday LA. Trivalent chromium and the diabetes prevention program. Med Hypotheses 1997;49:47-49.

33. Bahijri SM, Mira SA, Mufti AM, Ajabnoor MA. The effects of inorganic chromium and brewer's yeast supplementation on glucose tolerance, serum lipids and drug dosage in individuals with type 2 diabetes. Saudi Med J 2000;21:831-837.

34. Rajpathak S, Rimm EB, Li T et al. Lower toenail chromium in men with diabetes and cardiovascular disease compared with healthy men. Diabetes Care 2004;27:2211-2216.

35. Evans GW, Meyer LK. Life span is increased in rats supplemented with a chromium-pyridine-2-carboxylate complex. Adv Sci Res 1994;1:19-23.

36. Mossop RT. Effects of chromium III on fasting blood glucose, cholesterol and cholesterol HDL levels in diabetics. Cent Afr J Med 1983;29:80-82.

37. Glinsmann WH, Mertz W. Effect of trivalent chromium on glucose tolerance. Metabolism 1966;15:510-520.

38. Martinez OB, McDonald AC, Gibson RS, Bourn D. Dietary chromium and effect of chromium supplementation on glucose tolerance of elderly Canadian women. Nutr Res 1985;5:609-620.

39. Anderson RA, Polansky MM, Bryden NA, Canary JJ. Supplemental-chromium effects on glucose, insulin, glucagon, and urinary chromium losses in subjects consuming controlled low-chromium diets. Am J Clin Nutr 1991;54:909-916.

40. Anderson RA, Polansky MM, Bryden NA et al. Chromium supplementation of human subjects: effects on glucose, insulin, and lipid variables. Metabolism 1983;32:894-899.

41. Uusitupa MI, Kumpulainen JT, Voutilainen E et al. Effect of inorganic chromium supplementation on glucose tolerance, insulin response, and serum lipids in noninsulin-dependent diabetics. Am J Clin Nutr 1983;38:404-410.

42. Sherman L, Glennon JA, Brech WJ et al. Failure of trivalent chromium to improve hyperglycemia in diabetes mellitus. Metabolism 1968;17:439-442.

43. Rabinowitz MB, Gonick HC, Levin SR, Davidson MB. Effects of chromium and yeast supplements on carbohydrate and lipid metabolism in diabetic men. Diabetes Care 1983;6:319-327.

44. Offenbacher EG, Rinko CJ, Pi-Sunyer FX. The effects of inorganic chromium and brewer's yeast on glucose tolerance, plasma lipids, and plasma chromium in elderly subjects. Am J Clin Nutr 1985;42:454-461.

45. Ravina A, Slezack L. [Chromium in the treatment of clinical diabetes mellitus]. Harefuah 1993;125:142-145, 191.

46. Ravina A, Slezak L, Rubal A, Mirsky N. Clinical use of the trace element chromium (III) in the treatment of diabetes mellitus. J Trace Elem Exp Med 1995;8:183-190.

47. Althuis MD, Jordan NE, Ludington EA, Wittes JT. Glucose and insulin responses to dietary chromium supplements: a meta-analysis. Am J Clin Nutr 2002;76:148-155.

48. Bahadori B, Wallner S, Hacker C et al. Effects of chromium picolinate on insulin levels and glucose control in obese patients with type-II diabetes mellitus. Diabetes 1999;48(suppl):A349 (abstract).

49. Rabinovitz H, Friedensohn A, Leibovitz A et al. Effect of chromium supplementation on blood glucose and lipid levels in type 2 diabetes mellitus elderly patients. Int J Vitam Nutr Res 2004;74:178-182.

50. Evans GW. The effect of chromium picolinate on insulin controlled parameters in humans. Int J Biosoc Res 1989;11:163-180.

51. Lee NA, Reasner CA. Beneficial effect of chromium supplementation on serum triglyceride levels in NIDDM. Diabetes Care 1994;17:1449-1452.

52. Cefalu WT, Bell-Farrow AD, Stegner J et al. Effect of chromium picolinate on insulin sensitivity in vivo. J Trace Elem Exp Med 1999;12:71-83.

53. Cheng N, Zhu X, Shi H et al. Follow-up survey of people in China with type 2 diabetes mellitus consuming supplemental chromium. J Trace Elem Exp Med 1999;12:55-60.

54. Jovanovic L, Gutierrez M, Peterson CM. Chromium supplementation for women with gestational diabetes mellitus. J Trace Elem Med Biol 1999;12:91-97.

55. Kalman DS. Chromium picolinate and type 2 diabetes. Am J Clin Nutr 2003;78:192; author reply 192-193.

56. Morris BW, Kouta S, Robinson R et al. Chromium supplementation improves insulin resistance in patients with type 2 diabetes mellitus. Diabet Med 2000;17:684-685.

57. Press RI, Geller J, Evans GW. The effect of chromium picolinate on serum cholesterol and apolipoprotein fractions in human subjects. West J Med 1990;152:41-45.

58. Abraham AS, Brooks BA, Eylath U. Chromium and cholesterol-induced atherosclerosis in rabbits. Ann Nutr Metab 1991;35:203-207.

58a. Martin J, Wang ZQ, Shang XH et al. Chromium picolinate supplementation attenuates body weight gain and increases insulin sensitivity in subjects with type 2 diabetes. Diabetes Care 2006;29(8):1826-1832.

59. Kleefstra N, Houweling ST, Jansman FG et al. Chromium treatment has no effect in patients with poorly controlled, insulin-treated type 2 diabetes in an obese Western population: a randomized, double-blind, placebo-controlled trial. Diabetes Care 2006;29:521-525.

60. McLeod MN, Gaynes BN, Golden RN. Chromium Potentiation of antidepressant pharmacotherapy for dysthymic disorder in 5 patients. J Clin Psychiatry 1999;60(4):237-240.

61. Seaborn CD, Stoecker BJ. Effects of antacid or ascorbic acid on tissue accumulation and urinary excretion of 51-chromium. Nutr Res 1990;10:1401-1407.

62. Davis ML, Seaborn CD, Stoecker BJ. Effects of over-the counter drugs on 51-chromium retention and urinary excretion in rats. Nutr Res 1995;15:201-210.

63. Sullivan EA, Shulman KI. Diet and monoamine oxidase inhibitors: a re-examination. Can J Psychiatry 1984;29:707-711.

64. Urberg M, Zemel MB. Evidence for synergism between chromium and nicotinic acid in the control of glucose tolerance in elderly humans. Metabolism 1987;36:896-899.

64a. Singer GM, Geohas J. The effect of chromium picolinate and biotin supplementation on glycemic control in poorly controlled patients with type 2 diabetes mellitus: a placebo-controlled, double-blinded, randomized trial. Diabetes Technol Ther 2006;8(6): 636-643.

65. Stoecker BJ. Chromium. In: Shils M, Olson JA, Shike M, Ross AC, eds. Nutrition in Health and Disease. Baltimore: Williams & Wilkins; 1999:277-282.

66. Kozlovsky AS, Moser PB, Reiser S, Anderson RA. Effects of diets high in simple sugars on urinary chromium losses. Metabolism 1986;35:515-518.

67. Seaborn CD, Stoecker BJ. Effects of starch, sucrose, fructose and glucose on chromium absorption and tissue concentrations in obese and lean mice. J Nutr 1989;119:1444-1451.

68. Anderson RA, Bryden NA, Polansky MM, Reiser S. Urinary chromium excretion and insulinogenic properties of carbohydrates. Am J Clin Nutr 1990;51:864-868.

69. Bouche C, Rizkalla SW, Luo J et al. Five-week, low-glycemic index diet decreases total fat mass and improves plasma lipid profile in moderately overweight nondiabetic men. Diabetes Care 2002;25:822-828.

70. Ludwig DS. The glycemic index: physiological mechanisms relating to obesity, diabetes, and cardiovascular disease. JAMA 2002;287:2414-2423.

71. Ebbeling CB, Leidig MM, Sinclair KB et al. A reduced-glycemic load diet in the treatment of adolescent obesity. Arch Pediatr Adolesc Med 2003;157:773-779.

72. Rizkalla SW, Taghrid L, Laromiguiere M et al. Improved plasma glucose control, whole-body glucose utilization, and lipid profile on a low-glycemic index diet in type 2 diabetic men: a randomized controlled trial. Diabetes Care 2004;27:1866-1872.

73. Lukaski HC, Bolonchuk WW, Siders WA, Milne DB. Chromium supplementation and resistance training: effects on body composition, strength, and trace element status of men. Am J Clin Nutr 1996;63:954-965.

74. Campbell WW, Beard JL, Joseph LJ et al. Chromium picolinate supplementation and resistive training by older men: effects on iron-status and hematologic indexes. Am J Clin Nutr 1997;66:944-949.

75. Hamel FG, Duckworth WC. The relationship between insulin and vanadium metabolism in insulin target tissues. Mol Cell Biochem 1995;153:95-102.

76. Cohen N, Halberstam M, Shlimovich P et al. Oral vanadyl sulfate improves hepatic and peripheral insulin sensitivity in patients with non-insulin-dependent diabetes mellitus. J Clin Invest 1995;95:2501-2509.

77. Goldfine AB, Simonson DC, Folli F et al. In vivo and in vitro studies of vanadate in human and rodent diabetes mellitus. Mol Cell Biochem 1995;153:217-231.

78. Goldfine AB, Patti ME, Zuberi L et al. Metabolic effects of vanadyl sulfate in humans with non-insulin-dependent diabetes mellitus: in vivo and in vitro studies. Metabolism 2000;49:400-410.

79. Offenbacher EG. Promotion of chromium absorption by ascorbic acid. Trace Elem Electrolytes 1994;11:178-181.

80. Seaborn CD, Cheng N, Adeleye B et al. Chromium and chronic ascorbic acid depletion effects on tissue ascorbate, manganese, and 14C retention from 14C-ascorbate in guinea pigs. Biol Trace Elem Res 1994;41:279-294.

81. Hahn CJ, Evans GW. Absorption of trace metals in the zinc-deficient rat. Am J Physiol 1975;228:1020-1023.

82. Preuss HG, Bagchi D, Bagchi M et al. Effects of a natural extract of (–)-hydroxycitric acid (HCA-SX) and a combination of HCA-SX plus niacin-bound chromium and Gymnema sylvestre extract on weight loss. Diabetes Obes Metab 2004;6:171-180.

Reference Literature

[No authors listed.] A scientific review: the role of chromium in insulin resistance. Diabetes Educ 2004;(Suppl):2-14. (Review)

Abraham AS, Brooks BA, Eylath U. The effects of chromium supplementation on serum glucose and lipids in patients with and without non-insulin-dependent diabetes. Metabolism 1992;41:768-771.

Althuis MD, Jordan NE, Ludington EA, et al. Glucose and insulin responses to dietary chromium supplements: a meta-analysis. Am J Clin Nutr 2002;76(1):148-155. (Review)

Amato P, Morales AJ, Yen SS. Effects of chromium picolinate supplementation on insulin sensitivity, serum lipids, and body composition in healthy, nonobese, older men and women. J Gerontol A Biol Sci Med Sci 2000;55:M260-M263.

Anderson RA. Chromium, glucose tolerance, diabetes and lipid metabolism. J Adv Med 1995; 8:37-48.

Anderson RA. Chromium, glucose intolerance and diabetes. J Am Coll Nutr 1998;17(6):548-555. (Review)

Anderson RA. Effects of chromium on body composition and weight loss. Nutr Rev 1998;56:266-270.

Anderson RA, Bryden NA, Polansky MM. Lack of toxicity of chromium chloride and chromium picolinate in rats. J Am Coll Nutr 1997;16:273-279.

Anderson RA, Bryden NA, Polansky MM. Urinary chromium excretion and insulinogenic properties of carbohydrates. Am J Clin Nutr 1990;51(5):864-868.

Anderson RA, Cheng N, Bryden NA, et al. Elevated intakes of supplemental chromium improve glucose and insulin variables in individuals with type II diabetes. Diabetes 1997;46:1786-1791.

Anderson RA, Polansky MM, Bryden NA, et al. Chromium supplementation of human subjects: effects on glucose, insulin and lipid variables. Metabolism 1983;32:894-899.

Anderson RA, Polansky MM, Bryden NA. Stability and absorption of chromium and absorption of chromium histidinate complexes by humans. Biol Trace Elem Res 2004;101(3):211-218.

Anderson RA, Polansky MM, Bryden NA, et al. Supplemental-chromium effects on glucose, insulin, glucagon, and urinary chromium losses in subjects consuming controlled low-chromium diets. Am J Clin Nutr 1991;54:909-916.

Anderson RA, Roussell AM, Zouari N, et al. Potential antioxidant effects of zinc and chromium supplementation in people with type 2 diabetes mellitus. J Am Coll Nutr 2001;20(3):212-218.

Bahadori B, Wallner S, Schneider H, et al. Effect of chromium yeast and chromium picolinate on body composition of obese, non-diabetic patients during and after a formula diet. Acta Med Austriaca 1997;24:185-187. [German; English abstract]

Bahadori B, Wallner S, Hacker C, et al. Effects of chromium picolinate on insulin levels and glucose control in obese patients with type-II diabetes mellitus. Diabetes 1999;48(Suppl):A349. (Abstract)

Bahijri SM, Mufti AM. Beneficial effects of chromium in people with type 2 diabetes, and urinary chromium response to glucose load as a possible indicator of status. Biol Trace Elem Res 2002;85(2):97-109.

Bahjri SM. Effect of chromium supplementation on glucose tolerance and lipid profile. Saudi Med J 2000;21:45-50.

Berner TO, Murphy MM, Slesinski R. Determining the safety of chromium tripicolinate for addition to foods as a nutrient supplement. Food Chem Toxicol 2004;42(6):1029-1042. (Review)

Blank HM, Khan LK, Serdula MK. Use of nonprescription weight loss products, results from a multistate survey. JAMA 2001;286(8): 930-935.

Blasiak J, Kowalik J. A comparison of the in vitro genotoxicity of tri- and hexavalent chromium. Mutat Res 2000;469(1):135-145.

Brown RO, Forloines-Lynn S, Cross RE, et al. Chromium deficiency after long-term total parenteral nutrition. Dig Dis Sci 1986;31(6): 661-664.

Bouche C, Rizkalla SW, Luo J, et al. Five-week, low-glycemic index diet decreases total fat mass and improves plasma lipid profile in moderately overweight nondiabetic men. Diabetes Care 2002;25(5):822-828.

Bunner SP, McGinnis R. Chromium-induced hypoglycemia. Psychosomatics 1998;39(3):298-299. (Case report, Letter)

Bureau I, Anderson RA, Arnaud J, et al. Trace mineral status in post menopausal women: impact of hormonal replacement therapy. J Trace Elem Med Biol 2002;16(1):9-13.

Burkhardt S, Reiter RJ, Tan DX, et al. DNA oxidatively damaged by chromium(III) and H(2)O(2) is protected by the antioxidants melatonin, N(1)-acetyl-N(2)-formyl-5-methoxykynuramine, resveratrol and uric acid. Int J Biochem Cell Biol 2001;33(8):775-783.

Campbell WW, Beard JL, Joseph LJ, et al. Chromium picolinate supplementation and resistive training by older men: effects on iron-status and hematologic indexes. Am J Clin Nutr 1997;66(4):944-949.

Campbell WW, Joseph LJ, Davey SL, et al. Effects of resistance training and chromium picolinate on body composition and skeletal muscle in older men. J Appl Physiol 1999;86(1):29-39.

Campbell WJ, Mertz W. Interaction of insulin and chromium (III) on mitochondrial swelling. Am J Physiol 1963;204:1028-1030.

Cefalu WT. Chromium and metabolic syndrome. The VII International Society of Trace Element Research in Humans. Bangkok,Nov 11, 2004.

Cefalu WT. Evolving strategies for insulin delivery and therapy. Drugs 2004;64(11):1149-1161.

Cefalu WT, Bell-Farrow AD, Stegner J, et al. Effect of chromium picolinate on insulin sensitivity in vivo. J Trace Elem Exp Med 1999;12:71-83.

Cefalu WT, Hu FB. Role of chromium in human health and in diabetes. Diabetes Care 2004;27(11):2741-2751. (Review)

Christensen JM, Holst E, Bonde JP, et al. Determination of chromium in blood and serum: evaluation of quality control procedures and estimation of reference values in Danish subjects. Sci Total Environ 1993;132(1):11-25.

Clancy SP, Clarkson PM, DeCheke ME, et al. Effects of chromium picolinate supplementation on body composition, strength, and urinary chromium loss in football players. Int J Sport Nutr 1994;4:142-153.

Clarkson PM. Effects of exercise on chromium levels: is supplementation required? Sports Med 1997;23:341-349.

Cronin JR. The chromium controversy. Altern ComplementTher 2004;10(1):39-42. (Review)

Davidson JR, Abraham K, Connor KM, et al. Effectiveness of chromium in atypical depression: a placebo-controlled trial. Biol Psychiatry 2003;53:261-264.

Davies S, McLaren Howard J, Hunnisett A, et al. Age-related decreases in chromium levels in 51,665 hair, sweat, and serum samples from 40,872 patients: implications for the prevention of cardiovascular disease and type II diabetes mellitus. Metabolism 1997;46(5): 469-473.

Davis JM, Welsh RS, Alerson NA. Effects of carbohydrate and chromium ingestion during intermittent high-intensity exercise to fatigue. Int J Sport Nutr Exerc Metab 2000;10:476-485.

Despres JP, Lamarche B, Mauriege P, et al. Hyperinsulinemia as an independent risk factor for ischemic heart disease. N Engl J Med 1996;334:952-957.

Ding W, Chai Z, Duan P, et al. Serum and urine chromium concentrations in elderly diabetics. Biol Trace Elem Res 1998;63(3):231-237.

Donaldson RM Jr, Barreras RF. Intestinal absorption of trace quantities of chromium. J Lab Clin Med 1966;68:484-493.

Ebbeling CB, Leidig MM, Sinclair KB, et al. A reduced-glycemic load diet in the treatment of adolescent obesity. Arch Pediatr Adolesc Med 2003;157:773-779.

Evans GW. The effect of chromium picolinate on insulin controlled parameters in humans. Int J Biosocial Med Res 1989;11:163-180.

Evans GW, Bowman TD. Chromium picolinate increases membrane fluidity and rate of insulin internalization. J Inorg Biochem 1992;46:243-250.

Fontbonne A, Tchobroutsky G, Eschwege E, et al. Coronary heart disease mortality risk: plasma insulin level is a more sensitive marker than hypertension or abnormal glucose tolerance in overweight males: the Paris Prospective Study. Int J Obes 1988;12:557-565.

Fowler JF Jr. Systemic contact dermatitis caused by oral chromium picolinate. Cutis 2000;65(2):116.

Fox GN, Sabovic Z. Chromium picolinate supplementation for diabetes mellitus. J Fam Pract 1998;46(1):83-86.

Freund H, Atamian S, Fischer JE. Chromium deficiency during total parenteral nutrition. JAMA 1979 2;241(5):496-498.

Fujimoto S. Studies on the relationships between blood trace metal concentrations and the clinical status of patients with cerebrovascular disease, gastric cancer, and diabetes mellitus. Hokkaido Igaku Zasshi 1987;62:913-932.

Garber AJ. Benefits of combination therapy of insulin and oral hypoglycemic agents. Arch Intern Med 2003;163:1781-1782.

Gardner DM, Shulman KI, Walker SE, et al. The making of a user friendly MAOI diet. J Clin Psychiatry 1996;57(3):99-104. (Review)

Garland M, Morris JS, Colditz GA, et al. Toenail trace element levels and breast cancer. Am J Epidemiol 1996;144:653-660.

Ghosh D, Bhattacharya B, Mukherjee B, et al. Role of chromium supplementation in Indians with type 2 diabetes mellitus. J Nutr Biochem 2002;13(11):690-697.

Goldman L, Bennett JC. Cecil's textbook of medicine. 21st ed. Philadelphia: WB Saunders; 2000.

Gordon JB. An easy and inexpensive way to lower cholesterol? West J Med 1991;154(3):352.

Grant KE, Chandler RM, Castle AL, et al. Chromium and exercise training: effect on obese women. Med Sci Sports Exerc 1997;29:992-998.

Guallar E, Jimenez J, van t' Veer P, et al. The association of chromium with the risk of a first myocardial infaction in men: the EURAMIC Study. Circulation 2001;103:1366. (Abstract)

Guan X, Matte JJ, Ku PK, et al. High chromium yeast supplementation improves glucose tolerance in pigs by decreasing hepatic extraction of insulin. J Nutr 2000;130:1274-1279.

Gunton JE, Hams G, Hitchman R, et al. Serum chromium does not predict glucose tolerance in late pregnancy. Am J Clin Nutr 2001;73(1):99-104.

Haffner SM. The importance of hyperglycemia in the nonfasting state to the development of cardiovascular disease. Endocr Rev 1998;19:583-592.

Hallmark MA, Reynolds TH, DeSouza CA, et al. Effects of chromium and resistive training on muscle strength and body composition. Med Sci Spt Ex 1996;28:139-144.

Hasten DL, Rome EP, Franks BD. Effects of chromium picolinate on beginning weight training students. Int J Sports Nutr 1992;2:343-350.

Hathcock JN. Vitamins and minerals: efficacy and safety. Am J Clin Nutr 1997;66(2):427-437. (Review)

Hellerstein MK. Is chromium supplementation effective in managing type II diabetes? Nutr Rev 1998;56(10):302-306.

Hepburn DD, Vincent JB. In vivo distribution of chromium from chromium picolinate in rats and implications for the safety of the dietary supplement. Chem Res Toxicol 2002;15(2):93-100.

Hepburn DD, Vincent JB. Tissue and subcellular distribution of chromium picolinate with time after entering the bloodstream. J Inorg Biochem 2003;94(1-2):86-93.

Hepburn DD, Xiao J, Bindom S, et al. Nutritional supplement chromium picolinate causes sterility and lethal mutations in Drosophila melanogaster. Proc Natl Acad Sci U S A 2003;100(7):3766-71. Erratum in Proc Natl Acad Sci U S A 2003;100(24):14511.

Hermann J, Arquitt A, Stoecker B. Effects of chromium supplementation on plasma lipids, apolipoproteins, and glucose in elderly subjects. Nutr Res 1994;14(5):671.674.

Houweling ST, et al. Effects of chromium treatment in patients with poorly controlled, insulin-treated type 2 diabetes mellitus: a randomized, double blind, placebo-controlled trial. Abstract 756. 18th International Diabetes Federation Congress: Paris, August 24, 2003.

Hu M, Wu H, Chao C. Assisting effects of lithium on hypoglycemic treatment in patients with diabetes. Biol Trace Elem Res 1997;60(1-2):131-137.

Institute of Medicine. Dietary reference intakes for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc. Washington, DC: National Academy Press; 2001.

Special Issue: International Symposium on the Health Effects of Dietary Chromium. J Trace Elem Exp Med 1999;12:53-169.

Itokawa Y. [Trace elements in long-term total parenteral nutrition.] Nippon Rinsho 1996;54(1):172-178. [Japanese] (Review)

Jeejeebhoy KN. The role of chromium in nutrition and therapeutics and as a potential toxin. Nutr Rev 1999;57:329-335.

Job FP, Wolfertz J, Meyer R, et al. Hyperinsulinism in patients with coronary artery disease. Coron Artery Dis 1994;5:487-492.

Joseph LJ, Farrell PA, Davey SL, et al. Effect of resistance training with or without chromium picolinate supplementation on glucose metabolism in older men and women. Metabolism 1999;48:546-553.

Jovanovic L, Gutierrez M, Peterson CM. Chromium supplementation for women with gestational diabetes mellitus. J Trace Elem Med Biol 1999;12:91-97.

Jovanovic-Peterson L, Peterson CM. Vitamin and mineral deficiencies which may predispose to glucose intolerance of pregnancy. J Am Coll Nutr 1996;15(1):14-20.

Juturu V. Chromium and insulin resistance. Exp Biol 2004;Abstract 351.7. (Abstract)

Juturu V, Komorowski JR. Chromium supplements, glucose, and insulin responses. Am J Clin Nutr 2003;78(1):190. (Letter)

Kaats GR, Blum K, Fisher JA, et al. Effects of chromium picolinate supplementation on body composition: a randomized, double-masked, placebo-controlled study. Curr Ther Res 1996;57:747-756.

Kaats GR, Blum K, Pullin D, et al. A randomized, double-masked, placebo-controlled study of the effects of chromium picolinate supplementation on body composition: a replication and extension of a previous study. Curr Ther Res 1998;59:379-388.

Khan A, Bryden NA, Polansky MM, et al. Insulin potentiating factor and chromium content of selected foods and spices. Biol Trace Elem Res 1990;24(3):183-188.

Kien CL, Veillon C, Patterson KY, et al. Mild peripheral neuropathy but biochemical chromium sufficiency during 16 months of "chromium-free" total parenteral nutrition. JPEN J Parenter Enteral Nutr 1986;10(6):662-664.

Kim DS, Kim TW, Kang JS. Chromium picolinate supplementation improves insulin sensitivity in Goto-Kakizaki diabetic rats. J Trace Elem Med Biol 2004;17(4):243-247.

Kirschmann GJ, Kirschmann JD. Nutrition almanac. 4th ed. New York: McGraw-Hill; 1996:108-109.

Kleefstra N, Houweling ST, Jansman FGA, et al. Chromium treatment has no effect in patients with poorly controlled, insulin-treated type 2 diabetes in an obese Western population: a randomized, double-blind, placebo-controlled trial. Diabetes Care 2006;29:521-525.

Kobla HV, Volpe SL. Chromium, exercise, and body composition. Crit Rev Food Sci Nutr 2000;40(4):291-308.

Kozlovsky AS, Moser PB, Reiser S, et al. Effects of diets high in simple sugars on urinary chromium losses. Metabolism 1986;35(6): 515-518.

Kruse-Jarres JD, Rukgauer M. Trace elements in diabetes mellitus: peculiarities and clinical validity of determinations in blood cells. J Trace Elem Med Biol 2000;14(1):21-27.

Lamarche B, Tchernof A, Mauriege P, et al. Fasting insulin and apolipoprotein B levels and low-density lipoprotein particle size as risk factors for ischemic heart disease. JAMA 1998;279:1955-1961.

Lane BC. Diet and the glaucomas. J Am Coll Nutr 1991;10(5):536.

Laws A, King AC, Haskell WL, et al. Relation of fasting plasma insulin concentration to high density lipoprotein cholesterol and triglyceride concentrations in men. Arterioscler Thromb 1991;11:1636-1642.

Lee NA, Reasner CA. Beneficial effect of chromium supplementation on serum triglyceride levels in NIDDM. Diabetes Care 1994;17:1449-1452.

Lefavi R, Anderson R, Keith R, et al. Efficacy of chromium supplementation in athletes: emphasis on anabolism. Int J Sport Nutr 1992;2:111-122.

Liu VJ, Abernathy RP. Chromium and insulin in young subjects with normal glucose tolerance. Am J Clin Nutr 1982;35(4):661-667.

Liu VJ, Morris JS. Relative chromium response as an indicator of chromium status. Am J Clin Nutr 1978;31(6):972-976.

Livolsi JM, Adams GM, Laguna PL. The effect of chromium picolinate on muscular strength and body composition in women athletes. J Strength Cond Res 2001;15(2):161-166.

Ludwig DS. The glycemic index: physiological mechanisms relating to obesity, diabetes, and cardiovascular disease. JAMA 2002;287(18):2414-2423. (Review)

Lukaski HC. Chromium as a supplement. Annu Rev Nutr 1999;19:279-302.

Lukaski HC. Magnesium, zinc, and chromium nutriture and physical activity. Am J Clin Nutr 2000;72(2 Suppl):585S-593S.

Lukasi HC, Bolonchuk WW, Siders WA, et al. Chromium supplementation and resistance training: effects on body composition, strength, and trace element status of men. Am J Clin Nutr 1996;663:954-965.

Lydic ML, McNurlan M, Komaroff E, et al. Effects of chromium supplementation on insulin sensitivity and reproductive function in polycystic ovarian syndrome: a pilot study. Fertil Steril 2003;80(Suppl 3):45-46.

McCarty MF. Anabolic effects of insulin on bone suggests a role for chromium picolinate in preservation of bone density. Med Hypotheses 1995;45:241-246.

McCarty MF. Chromium meta-analysis. Am J Clin Nutr 2003;78(1):191-192; author reply 192-193. (Letter)

McCarty MF. Complementary measures for promoting insulin sensitivity in skeletal muscle. Med Hypotheses 1998;51(6):451-464. (Review)

McCarty MF. Nutraceutical resources for diabetes prevention: an update. Med Hypotheses 2005;64(1):151-158. (Review)

McCarty MF. The case for supplemental chromium and a survey of clinical studies with chromium picolinate. J Appl Nutr 1991;43:59-66.

McLeod MN, Gaynes BN, Golden RN. Chromium potentiation of antidepressant pharmacotherapy for dysthymic disorder in 5 patients. J Clin Psychiatry 1999;60(4):237-240.

Mertz W. Chromium in human nutrition: a review. J Nutr 1993;123:626-633. (Review)

Mertz W. Interaction of chromium with insulin: a progress report. Nutr Rev 1998;56(6):174-177. (Review)

Moore JW, Maher MA, Banz WJ, et al. Chromium picolinate modulates rat vascular smooth muscle cell intracellular calcium metabolism. J Nutr 1998;128:180-184.

Morris BW, Kouta S, Robinson R, et al. Chromium supplementation improves insulin resistance in patients with type 2 diabetes mellitus. DiabetesMed 2000;17(9):684-685.

Morris BW, MacNeil S, Hardisty CA, et al. Chromium homeostasis in patients with type II (NIDDM) diabetes. J Trace Elem Med Biol 1999;13(1-2):57-61.

Morris BW, MacNeil S, Stanley K, et al. The inter-relationship between insulin and chromium in hyperinsulinaemic euglycaemic clamps in healthy volunteers. J Endocrinol 1993;139(2):339-345.

Newman HA, Leighton RF, Lanese RR, et al. Serum chromium and angiographically determined coronary artery disease. Clin Chem 1978;24(4):541-544.

Nielsen FH. Controversial chromium. Nutr Today 1996;31:226-233.

Offenbacher EG. Chromium in the elderly. Biol Trace Elem Res 1992;32:123-131. (Review)

Offenbacher E, Pi-Sunyer F. Beneficial effect of chromium-rich yeast on glucose tolerance and blood lipids in elderly subjects. Diabetes 1980;29:919-925.

Offenbacher EG, Rinko CJ, Pi-Sunyer FX. The effects of inorganic chromium and brewer's yeast on glucose tolerance, plasma lipids, and plasma chromium in elderly subjects. Am J Clin Nutr 1985;42(3):454-461.

Page TG, Southern LL, Ward TL, et al. Effect of chromium picolinate on growth and serum and carcass traits of growing-finishing pigs. J Anim Sci 1993;71:656-662.

Pittler MH, Ernst E. Dietary supplements for body-weight reduction: a systematic review. Am J Clin Nutr 2004;79(4):529-536. (Review)

Pittler MH, Stevinson C, Ernst E. Chromium picolinate for reducing body weight: meta-analysis of randomized trials. Int J Obes Relat Metab Disord 2003;27(4):522-529.

Porter DJ, Raymond LW, Anastasio GD. Chromium: friend or foe? Arch Fam Med 1999;8:386-390.

Press RI, Geller J, Evans GW. The effect of chromium picolinate on serum cholesterol and apolipoprotein fractions in human subjects. West J Med 1990;152(1):41-45.

Preuss HG, Jarrell ST, Scheckenbach R, et al. Comparative effects of chromium, vanadium and gymnema sylfestre on sugar-induced blood pressure elevations in SHR. J Am Coll Nutr 1998;17(2):116-123.

Preuss HG, Wallerstedt D, Talpur N, et al. Effects of niacin-bound chromium and grape seed proanthocyanidin extract on the lipid profile of hypercholesterolemic subjects: a pilot study. J Med 2000;31:227-246.

Pyorala K, Savolainen E, Kaukola S, et al. Plasma insulin as coronary heart disease risk factor: relationship to other risk factors and predictive value during 9 1/2-year follow-up of the Helsinki Policemen Study population. Acta Med Scand Suppl 1985;701:38-52.

Rabinovitz H, Friedensohn A, Leibovitz A, et al. Effect of chromium supplementation on blood glucose and lipid levels in type 2 diabetes mellitus elderly patients. Int J Vitam Nutr Res 2004;74(3):178-182.

Rabinovitz H, Leibovitz A, Madar Z, et al. Blood glucose and lipid levels following chromium supplementation in diabetic elderly patients on a rehabilitation program. Gerontologist 2000:40:38. (Abstract)

Rabinowitz MB, Gonick HC, Levin SR, et al. Effects of chromium and yeast supplements on carbohydrate and lipid metabolism in diabetic men. Diabetes Care 1983;6:319-327.

Rajpathak S, Rimm EB, Li T, et al. Lower toenail chromium in men with diabetes and cardiovascular disease compared with healthy men. Diabetes Care 2004;27(9):2211-2216.

Ravina A, Slezack L. Chromium in the treatment of clinical diabetes mellitus. Harefuah 1993;125(5-6):142-145,191. [Hebrew]

Rendell MS, Kirchain WR. Pharmacotherapy of type 2 diabetes mellitus. Ann Pharmacother 2000;34(7-8):878-895. (Review)

Riales R, Albrink MJ. Effect of chromium chloride supplementation on glucose tolerance and serum lipids including high-density lipoprotein of adult men. Am J Clin Nutr 1981;34(12):2670-2678.

Rizkalla SW, Taghrid L, Laromiguiere M, et al. Improved plasma glucose control, whole-body glucose utilization, and lipid profile on a low-glycemic index diet in type 2 diabetic men: a randomized controlled trial. Diabetes Care 2004; 27(8):1866-1872.

Robinson C, Weigly E. Basic nutrition and diet therapy. New York: MacMillan;1984.

Roe DA. Diet and drug interactions. New York: Van Nostrand Reinhold;1989.

Roe DA. Drug-induced nutritional deficiencies. 2nd ed. Westport, CT: Avi Publishing;1985.

Roe DA. Risk factors in drug-induced nutritional deficiencies. In: Roe DA, Campbell T, eds. Drugs and nutrients: the interactive effects. New York: Marcel Decker;1984:505-523.

Rubin MA, Miller JP, Ryan AS, et al. Acute and chronic resistive exercise increase urinary chromium excretion in men as measured with an enriched chromium stable isotope. J Nutr 1998;128(1):73-78.

Saner G, Yüzbasiyan V, Neyzi O, et al. Alterations of chromium metabolism and effect of chromium supplementation in Turner's syndrome patients. Am J Clin Nutr 1983;38:574-578.

Saydah SH, Loria CM, Eberhardt MS, et al. Subclinical states of glucose intolerance and risk of death in the U.S. Diabetes Care 2001;24:447-453.

Shils ME, Olsen JA, Shike M, eds. Modern nutrition in health and disease. 9th ed. Media, Pa: Williams and Wilkins Co; 1999:277-282.

Shinde Urmila A, Sharma G, Xu Yan J, et al. Anti-diabetic activity and mechanism of action of chromium chloride. Exp Clin Endocrinol Diabetes 2004;112(5):248-252.

Shrivastava R, Upreti RK, Chaturvedi UC. Various cells of the immune system and intestine differ in their capacity to reduce hexavalent chromium. FEMS Immunol Med Microbiol 2003;38(1):65-70.

Singer GM, Geohas J. The effect of chromium picolinate and biotin supplementation on glycemic control in poorly controlled patients with type 2 diabetes mellitus: a placebo-controlled, double-blinded, randomized trial. Diabetes Technol Ther 2006;8(6):636-643.

Soltyk K, Lozak A, Ostapczuk P, et al. Determination of chromium and selected elements in multimineral and multivitamin preparations and in pharmaceutical raw material. J Pharm Biomed Anal 2003;32(3):425-432.

Speetjens JK, Collins RA, Vincent JB, et al. The nutritional supplement chromium (III) tris(picolinate) cleaves DNA. Chem Res Toxicol 1999;12:483-487.

Stearns DM, Belbruno JJ, Wetterhahn KE. A prediction of chromium (III) accumulation in humans from chromium dietary supplements. FASEB J 1995;9:1650-1657.

Stearns DM, Wise JP, Patierno SR, et al. Chromium (III) picolinate produces chromosome damage in Chinese hamster ovary cells. FASEB J 1995;9:1643-1649.

Threlkeld DS, ed. Hormones, antidiabetic agents, sulfonylureas. In: Facts and comparisons drug information. St Louis: Facts and Comparisons;1992:130m.

Trent LK, Thieding-Cancel D. Effects of chromium picolinate on body composition. J Sports Med Phys Fitness 1995;35:273-280.

Trovato A, Nuhlicek DN, Midtling JE. Drug-nutrient interactions. Am Family Phys 1991;44:1651-1658. (Review)

Trow LG, Lewis J, Greenwood RH, et al. Lack of effect of dietary chromium supplementation on glucose tolerance, plasma insulin, and lipoprotein levels in patients with type 2 diabetes. Int J Vitam Nutr Res 2000;70(1):14-18.

Tuzcu A, Bahcec M, Dursun M, et al. Can long-term exposure to chromium improve insulin sensitivity in chromium mine workers? J Trace Elem Med Exp Med 2004;17(1):55-63.

Uusitupa MI, Kumpulainen JT, Voutilainen E, et al. Effect of inorganic chromium supplementation on glucose tolerance, insulin response, and serum lipids in noninsulin-dependent diabetics. Am J Clin Nutr 1983;38(3):404-410.

Uusitupa MI, Mykkanen L, Siitonen O, et al. Chromium supplementation in impaired glucose tolerance of elderly: effects on blood glucose, plasma insulin, C-peptide and lipid levels. Br J Nutr 1992;68:209-216.

Verhage AH, Cheong WK, Jeejeebhoy KN. Neurologic symptoms due to possible chromium deficiency in long-term parenteral nutrition that closely mimic metronidazole-induced syndromes. JPEN J Parenter Enteral Nutr 1996;20(2):123-127.

Vincent JB. Elucidating a biological role for chromium at a molecular level. Acc Chem Res 2000;33(7):503-510. (Review)

Vincent JB. Quest for the molecular mechanism of chromium action and its relationship to diabetes. Nutr Rev 2000;58(3 Pt 1):67-72. PMID: 10812920. (Review)

Vincent JB. Recent advances in the nutritional biochemistry of trivalent chromium. Proc Nutr Soc 2004;63(1):41-47. (Review)

Vincent JB. Recent developments in the biochemistry of chromium(III). Biol Trace Elem Res 2004;99(1-3):1-16.

Vincent JB. The bioinorganic chemistry of chromium (III). Polyhedron 2001;20:1-26.

Vincent JB. The biochemistry of chromium. J Nutr 2000;130:715-718.

Vincent JB. The potential value and toxicity of chromium picolinate as a nutritional supplement, weight loss agent and muscle development agent. Sports Med 2003;33(3):213-230. (Review)

Volpe SL, Huang HW, Larpadisorn K, et al. Effect of chromium supplementation and exercise on body composition, resting metabolic rate and selected biochemical parameters in moderately obese women following an exercise program. J Am Coll Nutr 2001;20:293-306.

Wang JF, Bashir M, Engelsberg BN, et al. High mobility group proteins 1 and 2 recognize chromium-damaged DNA. Carcinogenesis 1997;18(2):371-375.

Wang MM. Fox EA. Stoecker BJ. et al. Serum cholesterol of adults supplemented with brewer's yeast or chromium chloride. Nutr Res 1989;9:989-998.

Wells IC, Claassen JP, Anderson RJ. A test for adequacy of chromium nutrition in humans--relation to type 2 diabetes mellitus. Biochem Biophys Res Commun 2003;303(3):825-827.

Werbach MR. Foundations of nutritional medicine. Tarzana, CA: Third Line Press;1997. (Review)

Westphal SA, Palumbo PJ. Insulin and oral hypoglycemic agents should not be used in combination in the treatment of type 2 diabetes. Arch Intern Med 2003;163 1783-1785.

Wilson BE, Gondy A. Effects of chromium supplementation on fasting insulin levels and lipid parameters in healthy, non-obese young subjects. Diabetes Res Clin Pract 1995;28:179-184.

Wolf LR. Adrenergic blocker toxicity. In: Haddad L, Shannon MW, Winchester JF,eds.Clinical management of poisoning and drug overdose.3rd ed. Pennsylvania: WB Sanders;1998:1031-1040.