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Effects of chromium picolinate on food intake and satiety.

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BACKGROUND: Chromium picolinate (CrPic) has been shown to attenuate weight gain, but the mechanism underlying this effect is unknown. **METHODS:** We assessed the effect of CrPic in modulating food intake in healthy, overweight, adult women who reported craving carbohydrates (Study 1) and performed confirmatory studies in Sprague-Dawley rats (Study 2). Study 1 utilized a double-blind placebo-controlled design and randomly assigned 42 overweight adult women with carbohydrate cravings to receive 1,000 mg of CrPic or placebo for 8 weeks. Food intake at breakfast, lunch, and dinner was directly measured at baseline, week 1, and week 8. For Study 2, Sprague-Dawley rats were fasted for 24 h and subsequently injected intraperitoneally with 0, 1, 10, or 50 microg/kg CrPic. Subsequently, rats were implanted with an indwelling third ventricular cannula. Following recovery, 0, 0.4, 4, or 40 ng of CrPic was injected directly into the brain via the intracerebroventricular cannula, and spontaneous 24-h food intake was measured. **Results:** Study 1 demonstrated that CrPic, as compared to placebo, reduced food intake ($P<0.0001$), hunger levels ($P<0.05$), and fat cravings ($P<0.0001$) and tended to decrease body weight ($P=0.08$). In study 2, intraperitoneal administration resulted in a subtle decrease in food intake at only the highest dose ($P=0.03$). However, when administered centrally, CrPic dose-dependently decreased food intake ($P<0.05$). **CONCLUSIONS:** These data suggest CrPic has a role in food intake regulation, which may be mediated by a direct effect on the brain.

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