

# Abstract

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## Improved cognitive-cerebral function in older adults with chromium supplementation.

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**OBJECTIVE:** Insulin resistance is implicated in the pathophysiological changes associated with Alzheimer's disease, and pharmaceutical treatments that overcome insulin resistance improve memory function in subjects with mild cognitive impairment (MCI) and early Alzheimer's disease. Chromium (Cr) supplementation improves glucose disposal in patients with insulin resistance and diabetes. We sought to assess whether supplementation with Cr might improve memory and neural function in older adults with cognitive decline.

**METHODS:** In a placebo-controlled, double-blind trial, we randomly assigned 26 older adults to receive either chromium picolinate (CrPic) or placebo for 12 weeks. Memory and depression were assessed prior to treatment initiation and during the final week of treatment. We also performed functional magnetic resonance imaging (fMRI) scans on a subset of subjects.

**RESULTS:** Although learning rate and retention were not enhanced by CrPic supplementation, we observed reduced semantic interference on learning, recall, and recognition memory tasks. In addition, fMRI indicated comparatively increased activation for the CrPic subjects in right thalamic, right temporal, right posterior parietal, and bifrontal regions.

**CONCLUSIONS:** These findings suggest that supplementation with CrPic can enhance cognitive inhibitory control and cerebral function in older adults at risk for neurodegeneration.

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