

COMMENTS AND RESPONSES

Effect of Chromium Supplementation on Glucose Metabolism and Lipids: A Systematic Review of Randomized Controlled Trials

Response to Balk et al.

With interest, we read the systematic review by Balk et al. (1). It reviewed the effect of chromium supplementation on glucose metabolism and lipids. It is important to have an update of the systematic review performed by Althuis et al. (2) in 2002, since many studies have been published in the years thereafter.

However, we have some concerns with the conclusions of the current systematic review (1). Althuis et al. (2) excluded the study of Anderson et al. (3), performed in China, in their meta-analysis because this study caused heterogeneity problems. Furthermore, this study, which was rated by Balk et al. (1) as being of poor quality, has by far the most beneficial effects on A1C compared with

all other studies. We cannot assess the effects, as they were found by combining the results of the studies with the methodological qualification of "good" in the subanalysis. We guess from Fig. 1 that this effect is about 0.2%, which, if significant, would not be very relevant.

Also, it would have been informative to know whether Balk et al. have performed subanalyses of Western and non-Western patients, as it seems that the beneficial effects on A1C are for the most part found in studies in non-Western countries. The possibly modest effect on A1C in the studies qualified as "good" is, to the greatest extent, caused by a study conducted in India.

Balk et al. themselves are quite rightly cautious in their conclusion that the poorer the quality of the trial the greater the effect was on A1C. However, in the article and abstract, it is stated that chromium supplementation improves A1C with 0.6%, which they again nuanced. In our opinion, the conclusion should rather be that chromium has no (relevant) effect on A1C, especially not in Western patients with type 2 diabetes, which was also the conclusion of our randomized, double-blind, placebo-controlled trial with 400 μg chromium (yeast) (4).

Instead of more of the same randomized controlled trials, future research should focus on how to determine which patients are chromium deficient. Unfortunately, there is still not a good tool to define chromium status in an individual.

NANNE KLEEFSTRA, MD^{1,2}
SEBASTIAAN T. HOUWELING, MD, PHD²
HENK J.G. BILO, MD, PHD, FRCP¹

From the ¹Diabetes Centre, Isala Clinics, Zwolle, the Netherlands; and the ²Langerhans Medical Research Group, Langerhans Foundation, Zwolle, the Netherlands.

Address correspondence to Nanne Kleefstra, MD, Langerhans Foundation, Diabetes Centre, Isala Clinics, Sophia Location, P.O. Box 10400, 8000 GK Zwolle, Netherlands. E-mail: kleefstra@langerhans.com.

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