

Reply to Hoppe and Hulthén

Methodologies that use radioisotopes to estimate iron absorption (^{55}Fe and ^{59}Fe) have generated most of the present knowledge on how iron is absorbed in humans. The iron absorption studies conducted by our group for the past 20+ years using these methodologies have included subjects with relatively homogenous characteristics: apparently healthy non-obese women, between 35–50 y of age and who at the time of the study were using a contraceptive device. In addition, the iron status of these women has also been homogenous. Furthermore, the studies have been conducted using a standardized operational protocol (1–3). It is well known that one of the factors that modify iron absorption is day-to-day variability. Hoppe and Hulthén (4) indicate in their Letter to the Editor that this variability compromises results when iron absorption studies are conducted using single servings on consecutive days, such as in our study. As pointed out by Hoppe and Hulthén, the day-to-day variability in iron absorption reported by Björn-Rasmussen et al. (5) and Brise et al. (6) is ~35% when using this design. In our laboratory, likely due to the aforementioned characteristics of the participating subjects and standardized protocol, we obtain a day-to-day variability that is <20%, as shown by the study by Olivares et al. (7) where iron absorption was assessed in the same group of subjects on different days. We would also like to point out that it has been shown that day-to-day variability in iron absorption can be minimized by including at least 12 subjects per absorption study (8). Furthermore, in the aforementioned article by Björn-Rasmussen et al. (5) it is concluded that “when the main purpose is to compare the absorption in different groups of subjects or in the same group of subjects at different times (e.g., after a certain treatment or a surgical procedure) labeled meals and reference doses should be given alternately on consecutive days.”

The main finding of our work is that calcium doses of up to 800 mg do not modify iron absorption from 5 mg of iron provided on an empty stomach. In a similar study, Cook et al. (9) showed that 600 mg of calcium does not modify the absorption of 18 mg of iron, as ferrous sulfate. These results indicate that

supplementation programs with both nutrients could be implemented in those populations with a high prevalence of iron and calcium deficiency.

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