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Effect of Citrus Fruit (*Sudachi*) Juice on Absorption of Calcium from Whole Small Fish in Healthy Young Men

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Shirasuboshi (boiled and semi-dried whitebait) is a processed seafood that is abundant in calcium. It is eaten whole and commonly consumed in Japan. In this study, we examined the effect of *Sudachi* (*Citrus sudachi* Hort. ex. Shirai) juice on calcium, magnesium and phosphorus bioavailability in healthy young men. Dried *shirasuboshi* powder treated with distilled water (C) or *sudachi* juice (S20) was prepared for use in two experimental diets, the control diet and the *sudachi* diet. Either S20 or C was added to a basal diet with a low calcium content (180mg/d). The basal diet and the two experimental diets were each consumed for 6d by six healthy young men according to a randomized and crossover design. The apparent absorption and retention of calcium, magnesium and phosphorus from *shirasuboshi* were determined and were found to be significantly higher in the *sudachi* diet than in the control diet. The apparent absorption and retention of calcium from the basal diet were found to be in negative balance. Our results indicate that *shirasuboshi* added to *sudachi* juice was associated with increased mineral bioavailability in healthy young men.

Keywords: fish, citrus fruit, calcium absorption, bone resorption, healthy young men

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