

Serum zinc and copper levels and dietary intakes in a group of middle-aged men in Korea

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This study was performed to assess zinc(Zn) and copper(Cu) nutritional status in middle-aged Korean men and to investigate their relationships with food and nutrient intakes. Dietary intakes, anthropometry, blood pressure, serum zinc and copper levels, and other related factors were obtained from 303 healthy men aged 30-60 years. The prevalence of obesity of the subjects was 26.7% by BMI and 11.2% by WHR criteria. The average intakes of the most nutrients were relatively adequate except Ca and riboflavin(78.6% and 64.9% of RDA). Average serum zinc and copper levels were 111.7 $\mu\text{g}/\text{dl}$ (17.1 $\mu\text{mol}/\ell$) and 106.5 $\mu\text{g}/\text{dl}$ (16.7 $\mu\text{mol}/\ell$). The ratio of serum Zn and Cu was 1.09. Although the average values for serum Zn and Cu of the subjects were all in the normal range, the prevalence rates of both, deficiency and excess were considerably high. The subjects whose values fell below the normal range were 2.3% and 7.2% for zinc and copper while the subjects with values above the normal range were 7.9% and 13.2%. Serum zinc level showed positive relationships with nuts, Ca, fiber, and P intakes. Serum copper level showed positive relationships with spices, vegetable protein, and fiber intakes. These results did not show any consistent trend in relationships between serum zinc and copper levels and dietary intake patterns but suggested that zinc and copper nutritional status in middle-aged Korean men were positively associated with a diet that is composed of diversified food items.