

Differences in Fat-Free Mass According to Serum Vitamin D Level and Calcium Intake: Korea National Health and Nutrition Examination Survey 2008-2011

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We analyzed the differences in fat-free mass (FFM) according to serum vitamin D level (VitD) and daily calcium intake (Ca) in 14,444 adults aged over 19 years. We used data from the 4th and 5th Korea National Health and Nutrition Examination Surveys (2008-2011). FFM was measured using dual-energy X-ray absorptiometry. VitD was classified as insufficient or sufficient (cutoff: 20 ng/mL). Ca was classified as unsatisfactory or satisfactory (recommended daily intake: 700 mg). In men, the FFM of group 2 (VitD \geq 20 ng/mL; Ca < 700 mg), group 3 (VitD < 20 ng/mL; Ca \geq 700 mg) and group 4 (VitD \geq 20 ng/mL; Ca \geq 700 mg) was 0.50 kg (95% confidence interval (CI), 0.084-0.92), 0.78 kg (95% CI, 0.26-1.29) and 1.58 kg (95% CI, 0.95-2.21) higher than that of group 1 (VitD < 20 ng/mL; Ca < 700 mg), respectively. In women, a 1 ng/mL increase in VitD was associated with a 0.023 kg increase in FFM (95% CI, 0.003-0.043) and a 1 g increase in Ca was associated with a 0.62 kg increase in FFM (95% CI, 0.067-1.16). High VitD and Ca were associated with a high FFM.

Keywords: body composition; fat-free mass; muscle; sarcopenia; vitamin D; calcium