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The Influence of Ca Supplementation on the Serum Ca and Mg Levels and Depression Symptoms of Women

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This study was performed to investigate the effects of calcium supplementation on the depression score and serum Ca concentration in fifty-one women from 32 to 57 years old ($x \pm SD$ age; 47.7 ± 6.6 yr). During the four weeks of experimental period, they ate their usual diet and supplemented with 1000mg of calcium daily. Fasting blood samples were collected and serum Ca and Mg concentration were measured. At the same time, food habit and depression function of subject were tested by questionnaire. The results were as follows; The depression score of Ca supplemented group of premenopausal working women significantly ($P < 0.01$) decreased from 19.6 ± 4.7 to 13.7 ± 5.0 , and serum Ca concentration significantly ($P < 0.01$) increased from 8.68 ± 0.51 mg/dl to 9.64 ± 0.26 mg/dl. In case of postmenopausal working women, the depression score of Ca supplemented group significantly ($P < 0.01$) decreased from 17.6 ± 4.4 to 14.3 ± 2.3 , and serum Ca concentration significantly ($P < 0.01$) increased from 9.43 ± 0.50 mg/dl to 9.84 ± 0.56 mg/dl. Serum Ca concentration was significantly ($P < 0.05$) lower in high depression score group than in lower depression score group. Serum magnesium concentration was not affected by supplementation of calcium in women except premenopausal working women. Serum magnesium concentration of the postmenopausal working women with Ca supplementation were significantly ($P < 0.05$) higher than those without Ca supplementation. The serum Ca concentration positively correlated with calcium intake and negatively correlated with depression scores. The above results showed that daily supplementary intake of calcium can be effective to decrease the depression score.