



## Exercise Biochemistry Review

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Proceedings of IBEC 2018, Beijing, China, October 23-25  
OR-013

### **One Year Outdoor and Daytime Aerobic Dance Practice Increased Serum 25(OH)D<sub>3</sub> and PTH, but Decreased FSH Level of Postmenopausal Women**

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**Objective** Vitamin D deficiency is widespread in postmenopausal women. It is verified that Vitamin D<sub>3</sub> supplementation intake can improve the Vitamin D<sub>3</sub> level of those Vitamin D deficiency patients. In addition to the exogenous intake, whether aerobic exercise plus sunshine could affect vitamin D level in postmenopausal women gained our attention.

**Methods** 16 postmenopausal women in Shanghai attended this test. They voluntarily participated in a one year aerobics plan, practicing Chinese traditional dance outdoor under sunshine for one hour from 9:30-10:30 am each day. Before and after one year practice, serum 25(OH)D, 25(OH)D<sub>3</sub> and estradiol E<sub>2</sub>, follicle stimulating hormone(FSH), luteinizing hormone(LH), parathyroid hormone(PTH) of all participants were analyzed.

**Results** Before aerobics practice, serum 25(OH)D and 25(OH)D<sub>3</sub> levels were 16.30±4.12(ng/ml) and 15.60±3.79(ng/ml). After one year practice, the data were significantly increased 19.50% (P=0.002) and 18.78% (P=0.002), separately. Before aerobics practice, the state of 25(OH)D level of 13 women was inadequacy (≤20.0ng/ml), 3 women was in lack status (20-30ng/ml). After one year practice, 9 women was inadequacy, 7 women in lack. The value of the chi square test was 4.747(P=0.029). After one year practice, serum PTH significantly increased, while FSH significantly decreased. E<sub>2</sub> and LH had no significant variance before and after one year of aerobics practice.

**Conclusions** One year aerobics practice under sunshine could increase serum 25(OH)D level, and affected estrogen levels variably in postmenopausal women.