



Effects Combined Aerobic and Resistance Exercise on the Improvement of Body Composition, Blood Variables and Physical Function in Middle-Aged Overweight Women: Implication of Exercise Frequency

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ABSTRACT

BACKGROUND: In general, exercise frequency for adults is recommended to exercise three times a week. But, In overweight middle-aged women, if they exercise even twice a week or once a week steadily, the effect will be significant. **PURPOSE:** The purpose of this study was to determine the effects of twice-weekly and once-weekly combined exercise on overweight middle-aged women's body composition, muscle strength, physical function, blood pressure, and blood variables. **METHODS:** A total of 173 overweight middle-aged women were assigned to the control group (n = 47), once-weekly combined group (n = 43), and twice-weekly exercise group (n = 83). the combined exercise program includes aerobic exercise and resistance exercises using elasticity bands and dumbbells. (10-15 times, 3-5 sets). The program lasted 10 weeks. **RESULTS:** As a result, In relation to body composition, there were significant differences in body weight, body mass index, body fat mass and body fat percentage between pre and post in the twice-weekly group (p<.05). but, in once-weekly group, There was a significant difference in only body mass index (p<.05). and, In relation to physical function, there were significant differences in all variables in the twice-weekly group (p<.05), and, in once-weekly group, significant differences were found in sit-ups, surgent jumps, and sidesteps. (p<.05). also, In relation to muscle mass, basal metabolic rate, muscle strength, blood pressure, and blood variables, all variables (except HDL cholesterol) showed significant difference between pre and post in only the twice-weekly group. (p<.05). The control group showed not significant difference between pre and post in all variables. **CONCLUSION:** The results showed The twice-weekly combined exercise program had many positive ef0ects on overweight middle-aged women's body composition, physical function, blood pressure, and blood variables. But, The once-weekly combined exercise program had low positive effects on overweight middle-aged women, compared to The twice-weekly program.

RESULTS

Body Composition

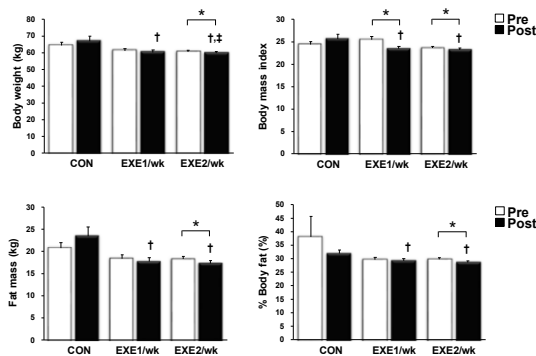


Figure 1. Changes in body composition of the control group, once-weekly combined group, and twice-weekly exercise group after 10-week combined exercise.

CON, Control; EXE1/wk, Exercise once a week; EXE2/wk, Exercise twice a week
*, p<.05 compared to Pre; †, p<.05 compared to CON; ‡, p<.05 compared to EXE1/wk

Blood Variables

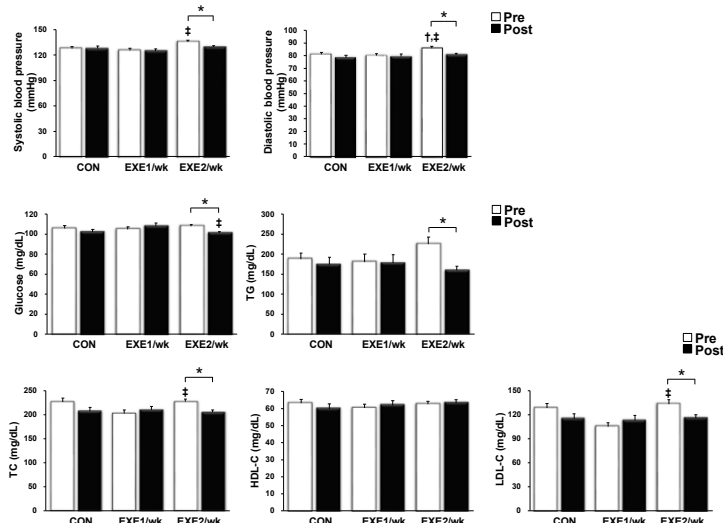


Figure 2. Changes in blood variables of the control group, once-weekly combined group, and twice-weekly exercise group after 10-week combined exercise.

CON, Control; EXE1/wk, Exercise once a week; EXE2/wk, Exercise twice a week
*, p<.05 compared to Pre; †, p<.05 compared to CON; ‡, p<.05 compared to EXE1/wk

Physical Function

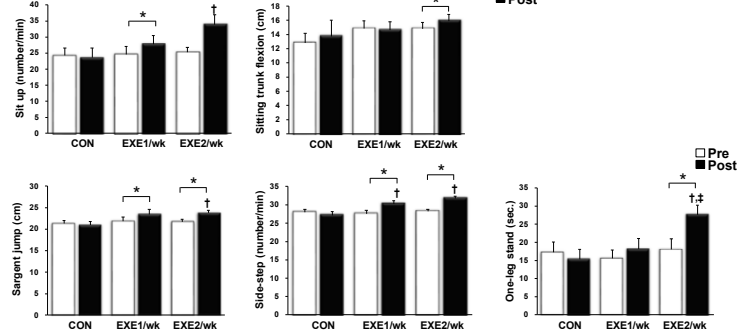


Figure 3. Changes in physical function of the control group, once-weekly combined group, and twice-weekly exercise group after 10-week combined exercise.

CON, Control; EXE1/wk, Exercise once a week; EXE2/wk, Exercise twice a week
*, p<.05 compared to Pre; †, p<.05 compared to CON; ‡, p<.05 compared to EXE1/wk

Muscular Strength

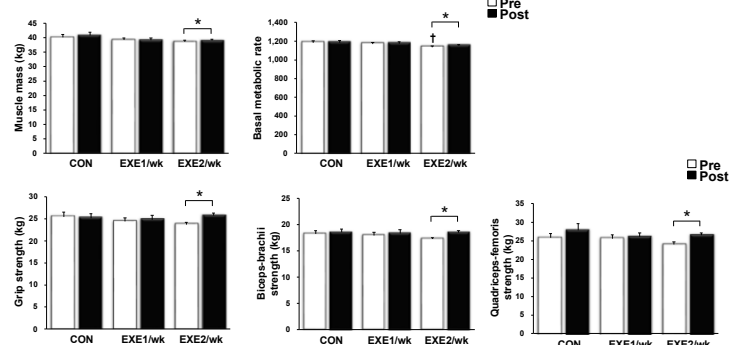


Figure 4. Changes in muscle variables of the control group, once-weekly combined group, and twice-weekly exercise group after 10-week combined exercise.

CON, Control; EXE1/wk, Exercise once a week; EXE2/wk, Exercise twice a week
*, p<.05 compared to Pre; †, p<.05 compared to CON; ‡, p<.05 compared to EXE1/wk

CONCLUSION

In conclusion, In The twice-weekly group, We could observe many positive ef0ects on overweight middle-aged women's body composition, physical function, blood pressure, and blood variables, between pre and post. But, IN The once-weekly group, We couldn't. In this way, in order for overweight middle-aged woman to feel an certain exercise effect, exercise twice-weekly or more is required.