

## 更年期不定愁訴に対する運動処方の検討

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### Effects of Low-Intensity Aerobic Exercise Training on Climacteric Symptoms in Pre- and Post-Menopausal Women

by

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#### ABSTRACT

**Purpose:** The purpose of the present study was to investigate the effects of low-intensity aerobic exercise training on climacteric symptoms in pre- and post-menopausal women.

**Methods:** Six women (age,  $49.0 \pm 2.0$  yrs) with mild climacteric symptoms participated in trainer-supervised exercise program consisting of sub-maximal aerobic exercise with intensity at 40% heart rate reserve, equivalent to rating of perceived exertion (RPE) ~12, for the duration of 20 to 50 min, 2 times a week, for 12 weeks. Climacteric symptoms (Kupperman index; KI), mood (profile of mood states; POMS) and body composition (body weight, body mass index and percent of body fat; %fat) were assessed before and after the exercise program. In addition, heart rate (HR), blood pressure (BP), blood lactate concentration and RPE were measured at rest and

immediately after 3 min stepping exercise.

**Results:** After the exercise intervention, total scores of KI significantly decreased ( $p < 0.05$ ). Percent of body fat, resting mean arterial BP, the HR and diastolic BP immediately after the stepping exercise were significantly decreased ( $p < 0.05$ ). However these positive changes did not correlated with the improvement of total scores of KI. No change was found in the scores of POMS.

**Conclusion:** The results of our study suggest that the climacteric symptoms could be improved irrespective of positive morphological and physiological changes by 12-week low-intensity aerobic exercise training on pre- and post-menopausal women.

## 要 旨

軽度の更年期症状を有する更年期女性6名を対象に、低強度の有酸素運動を週2回の頻度で12週間継続し、更年期不定愁訴の改善効果を検討した。有酸素運動の時間は一回につき20～50分間とし運動強度は心拍数予備量の40%とした。運動プログラムの前後に、更年期障害指数、気分、形態、循環動態、および簡易的な体力の測定を行い運動プログラムの効果を判定した。その結果、更年期障害指数の総得点が運動プログラム後に有意に低下した。この時、体脂肪率、安静時平均血圧、および踏み台昇降直後の心拍数と拡張期血圧も有意に減少したが、これらの項目の運動プログラム前後の変化量と更年期指数総得点の変化量との間に有意な相関は認められなかった。一方、気分は運動プログラム前後で変化しなかった。以上、低強度の運動トレーニングは更年期不定愁訴の改善に効果があること、またこの改善は形態や循環動態などの身体面の変化とは独立して惹起される可能性が示唆された。