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Research article

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2014**Effects of 12 Weeks of Combined Exercise Training on Visfatin and Metabolic Syndrome Factors in Obese Middle-Aged Women**Citations in  
ScholarGoogleDong-il Seo<sup>1</sup>, Wi-Young So<sup>2</sup>, Sung Ha<sup>3</sup>, Eun-Jung Yoo<sup>4</sup>, Daeyeol Kim<sup>1</sup>, Harshvardhan Singh<sup>1</sup>, Christopher A. Fahs<sup>1</sup>, Lindy Rossow<sup>1</sup>, Debra A. Bembem<sup>1</sup>, Michael G. Bembem<sup>1</sup>, Eonho Kim<sup>1</sup>, 

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Visfatin is a highly expressed protein with insulin-like functions located predominantly in visceral adipose tissue and has been linked to obesity and increased health risks. The purpose of this study was to examine the effects of 12 weeks of combined exercise training on visfatin and metabolic syndrome factors in obese middle-aged women. Subjects were randomly assigned to either a training (n = 10) or control (n = 10) group. The training group exercised for 1 hour, 3 days per week during the 12 week supervised training program. The training program included 3 sets of 10 repetition maximum (10RM) resistance exercise as well as aerobic exercise at an intensity of 60-70% of their heart rate reserve (HRR). The control group was asked to maintain their normal daily activities. Two-way (group X time) repeated measured analysis of variance revealed no significant main effects, but there was a significant group X time interaction for the following variables: body weight (p < 0.01), percent body fat (% fat) (p < 0.01), waist hip ratio (WHR) (p < 0.01), diastolic blood pressure (DBP) (p < 0.05), fasting glucose level (p < 0.01), triglyceride levels (TG) (p < 0.01), high density lipoprotein cholesterol levels (HDL-C) (p < 0.05), and visfatin (p < 0.01). In conclusion, the 12 week combined resistance and aerobic training program used in this study was very effective for producing significant benefits to body composition and metabolic syndrome factors, as well as lowering visfatin levels in these obese middle-aged women.

**Key words:** Metabolic syndrome, combined resistance, aerobic exercise, visfatin

### Key Points

- Recent studies have linked visfatin to obesity and increased health risks.
- The study was done to investigate the effects of 12 weeks of combined exercise training on visfatin and metabolic syndrome factors in obese middle-aged women.
- The exercise program used in this study was found to be very effective for lowering visfatin levels in obese middle-aged women.

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