### Title: The effects of aerobic training on homocystein and CRP serum levels in Elderly woman

**Abstract:**

Introduction: Several novel risk factors have been proposed as potential criteria for improved detection of sub clinical atherosclerosis. In particular on inflammatory biomarkers such as C-reactive protein (CRP) and on nutritional markers associated with premature atherothrombosis, such as total plasma homocysteine. Plasma HCY levels increase with natural menopause suggesting a close relationship between HCY levels and increased CVD risk in older age women. Moreover, it has been suggested that CRP directly and indirectly mediates inflammatory processes in atherosclerosis. It is well established that physical activity is a key component of good health and disease prevention. The purpose of this study was to determine the effect of aerobic exercise on homocysteine and CRP serum levels in 60-75 years old women.

**Method and material:**

In this research was selected 20 aged women (age 60 - 75 yr) after medical examination and divided into training and control groups. Weight and Body fat percentage were measured using the body composition analyzer. To measure the homocystein and CRP levels using ELISA Technique, their blood samples were taken before breakfast. The experimental group performed an aerobic training including 30 minutes of running with 55-65% of the individual's maximum heart rate on treadmill three times a week for three months. After three months of training all parameters in both groups were measured again. Data were analyzed by using paired t test and covariance.

**Results:** The results showed that the aerobic training, decreased weight ($F=7/21 , P=0/01$), fat percentage ($F=5/82, P=0/02$) and plasma levels of homocystein ($F=11/2 , P=0/004$) and CRP ($F=5/66 , P=0/02$).

**Discussion:** The results showed that the aerobic training is effective in reducing homocystein, CRP, weight and fat percentage in elderly women. Exercise training was associated with weight loss. In fact, exercise training concomitant with weight loss may be necessary to observe reductions in CRP. In response to training, the basal as well as exercise-induced level of IL-6 is down regulated, which secondarily reduces circulating CRP levels. It has been proposed that adipose tissue–secreted IL-6 and tumor necrosis factor - α may contribute to the elevated CRP levels observed in obesity. Thus, exercise training may reduce CRP levels adequately by reducing adiposity. Duration, intensity, and mode of exercise could impact on blood homocysteine levels divergently, and may be dependent on individual fitness levels. It seems that short term circuit resistance training can be used as a method of preventing cardiovascular disease in women, and it can be recommended as a lifestyle intervention to promote health.

**Key word:** homocysteine, CRP, aerobic training, Elderly woman

**Presentation:** Poster