The Copenhagen Women Study: Preliminary data related to cardiovascular health

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Background: After menopause women experience a markedly increased risk of cardiovascular events due to the loss of estrogen. As estrogen replacement is associated with negative side effects, a more attractive alternative to help maintain a good cardiovascular and metabolic health status may be regular physical activity. In this ongoing study our aim is to elucidate the beneficial effects of a period of physical activity on a number of health related parameters in pre- and post-menopausal women.

Methods: The study has been approved by the ethics committee of Capitol Region of Denmark (H-1-2012-150). Informed consent was given by the participants prior to inclusion in the study. Pre and post menopausal women, between the age of 45 and 57 years of age are recruited. The women are sedentary non-smokers with no known chronic diseases. The women undergo a three month training program with spinning training three times per week. Before and after the training period they are characterized with regard to daily activity level by use of accelerometry (actibelt®), food intake, body composition, fitness level, cardiac function, platelet function, and vascular function.

Results: As the study is ongoing, results are preliminary. Based on our practical experience so far we can conclude that actibelt® is an effective and well-functioning means of determining daily activity. Moreover, the preliminary data indicate that post-menopausal women have reduced vascular and platelet function compared to pre-menopausal women. The study also shows that aspects of both vascular and platelet function appear to be improved by the three month training period. Both pre and post-menopausal women experience improved fitness levels and plasma lipid profile.

Discussion/conclusion: The preliminary data from this study show that already soon after menopause impairments occur in cardiovascular health status and that these impairments may be more related to the loss of estrogen than to age. Exercise training by spinning is an effective mean to improve fitness and a number of health related parameters in middle aged women. We propose that physical activity can be a valuable alternative to estrogen replacement.