Sedentariness, physical activity and breast cancer.

Studies on incidence, prognosis and well-being post exercise.

Background:
Physical activity has been shown to reduce the risk of breast cancer and improves survival. More recently, sedentary behavior has been suggested to be an independent risk factor of breast cancer. Therefore, the aim of our first study was to analyse the association between occupational sedentariness and breast cancer incidence, and the aim of our second study was to analyse the association between post-diagnosis physical activity and survival in both pre- and postmenopausal women.

Method:
The analysis were based on questions from the Melanoma Inquiry of Southern Sweden (MISS), a prospective population-based cohort, with 29 000 participants.

Study I: Association between occupational sedentariness and breast cancer incidence was analysed by Cox regression, for the entire cohort and stratified by age at diagnosis.

Study II: Association between post-diagnosis PA and mortality in women with pre- and postmenopausal breast cancer, was analysed by Cox regression.

Results:
Study I: Women with a history of occupational sedentariness had an increased risk of breast cancer compared to women with non-sedentary occupation or and women with mixed occupations. The association was stronger for women younger than 55 years. (1)

Study II: Data from 847 women diagnosed with breast cancer was included in the analysis. After a ten year follow-up, 133 of the included women had died. A significant association between the physical activity level and all-cause mortality was observed, in a dose-response manner. In a subgroup analysis, an improved breast cancer survival was only seen in women over 55 years of age at diagnosis. (2)

Significance:
In contrast to many other risk factors sedentary behavior and physical activity are modifiable variables, which makes them important to study. Too much sedentary worktime should be avoided to decrease the risk of breast cancer and physical activity should be encouraged after breast cancer diagnosis.

Future studies will focus on the acute effects from one exercise bout regarding stress-energy, pain and nausea. The effects from one single exercise bout within a week after chemotherapy will be studied. Furthermore, we will investigate if number of days after chemotherapy affect the acute effects on stress-energy, pain and nausea after one single exercise bout.

Publication: