

Master thesis project

CAPRICE – Cancer Adverse effects PRevention with Individualized Care & Exercise - www.caprice-study.ch

Background:

Adequate daily physical activity during and after chemotherapy can reduce side effects, improve physical fitness and reduce cancer fatigue. There is evidence from animal studies that physical training can also reduce the harmful side effects of chemotherapy on cardiovascular function (cardiotoxicity).

The CAPRICE study will investigate whether 12 weeks of supervised exercise therapy during or after chemotherapy with anthracyclines reduces cardiotoxicity. We will also investigate whether the timing plays a role, i.e. whether it makes a difference whether the exercise therapy is carried out during or after completion of the chemotherapy. Further, we will assess which timing is preferred by the patients in terms of physical, psychological, logistical or other factors. In addition to the examination of heart function and evaluation of physical performance and quality of life, the study includes recording the activity profile of the study patients using a training diary and activity tracker (Fitbit).

This study has been running for 2.5 years (May 2019) and the recruitment of around 100 breast cancer and lymphoma patients is planned until spring 2022.

Aim of the Master thesis:

During the Master thesis, the physical activity data collected by the Fitbit device, the training diaries and the trainings performed at the centre of the Caprice study patients will be analysed. Furthermore, the spiroergometries of the entry and exit tests of both patient groups are analysed and the changes of cardiorespiratory parameters between the tests over time are determined. Patients were interviewed regarding their motivators and barriers toward exercise training. The aim of the Master thesis is to investigate the association of exercise and training data with the change in cardiorespiratory fitness, taking into account influencing factors such as cardiorespiratory fitness before therapy, cardiovascular risk profile, age and type of chemotherapy. Further, compliance with training and barriers with training will be evaluated and related to cardiorespiratory fitness and physical activity data.

In addition to data processing, there is the opportunity to perform spiroergometric exercise tests and body composition measurements using BIA on patients participating in the CAPRICE study.

Tasks during the master thesis:

Compilation of data on physical activity, physical fitness (spiroergometry data), body composition, questionnaires and interviews. Statistical analysis of the data (with R or SPSS).

Student profile:

Student of Master in Movement and Sports Sciences.

Location, conditions and contact:

The Master's thesis is carried out as external work at the Inselspital in Bern

Time frame: 6 months 80%-100%, start as soon as possible or by arrangement.

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