

Cardiovascular characteristics in athletes and patients with a myocardial infarction

Clinical relevance

The WHO has reported that more people have died from cardiovascular disease than any other cause. Previous studies support a strong inverse relationship between physical activity and cardiovascular morbidity and mortality. However, the mechanisms that underlie the beneficial effects of physical activity are still largely unknown.

Background

It appears that only ~60% of the beneficial effects of exercise could be attributed to favourable changes in traditional risk factors such as weight loss, cholesterol, and blood pressure. Plausible proposed mechanisms for exercise-induced coronary heart disease protection include improved endothelial function, remodelling of the arterial wall, improved cardiac function and stabilization of vulnerable plaques.

Although physical exercise seems to be a powerful preventive tool for cardiovascular diseases, it is known that myocardial infarction also occurs in physically active individuals. Post-mortem studies do not reveal any association between coronary atherosclerosis and different levels of physical activity.

We hypothesize that plaque stabilization, rather than plaque progression, is the major determinants explaining the protective effect of exercise. Using novel and state-of-the-art techniques we can determine plaque vulnerability, cardiac and vascular function and structure, in physically active and inactive subjects with and without a myocardial infarction to elucidate the protective effect of exercise.

Goals

In this internship you will compare cardiovascular characteristics of athletes and patients with a myocardial infarction, with a healthy control group. These data can provide important insight into the determinants and progression of the development of cardiovascular diseases in active and inactive individuals.

Methods

During your internship you will recruit patients / subjects, collect your own dataset, learn several measurement techniques and perform your own data analysis.

We offer:

The possibility to perform and present high quality clinically oriented research in a professional, multicultural and highly motivating working environment in a well-equipped department.

We are looking for:

A highly motivated student of the studies medicine or biomedical sciences with a pro-active attitude!

Contact:

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