Fredrik Calais was raised in the north of Sweden in the city of Härnösand, county of Ångermanland. After completing medical school in Umeå University 1997 and internship, he was engaged to the cardiology department in Stockholm South General Hospital where he in 2004 completed his cardiology specialist qualification. In 2005 he moved to Örebro, and continued his training in interventional cardiology and he currently holds the position of consultant cardiologist and head of the cath lab. He started his postgraduate studies in 2011 at Örebro University, school of Health and Medical sciences. His research interest is atherosclerosis from a broad clinical perspective and emerges from everyday encounters with patients suffering from the disease.

Atherosclerosis is a progressive pathological process affecting arteries throughout the body, and when manifested as cardiovascular disease has emerged as leading cause of death globally. Although much is known about the atherosclerotic process, there are still gaps in the knowledge and no agreed-upon comprehensive hypothesis regarding its pathogenesis.

Recent studies show improved prognosis in broad patient groups with established atherosclerotic cardiovascular disease after treatment with novel antithrombotic and anti-inflammatory agents. For reasons of health economics and for balancing treatment effects with risks for complications there is a need for identification of specific treatment groups with high risk and high potential treatment gain. Besides the need for new, effective and directed treatment alternatives, continuous evaluation of established treatments is also warranted so that limited resources will be directed to measures with proved efficacy. For the same reasons lifestyle changes should always be in the first line of treatment alternatives for the patient with cardiovascular disease, considering the cost efficacy and potential to improve prognosis.

In this thesis we explore how the prognosis after a coronary atherothrombotic event is influenced by the location and severity of atherosclerosis both in coronary and extracoronary arteries. We also investigate the association between coronary and extracoronary atherosclerosis in patients with myocardial infarction and how the prognosis is associated to lifestyle factors. Further we evaluate different invasive treatment strategies in relation to location of the atherosclerotic lesion.