PER SKOOG is a Swedish surgeon. He was born in 1975 in Kumla, Sweden and received his medical degree 2002 from Umeå University, Sweden and University of Otago, Wellington, New Zealand. After completing his internship, he started his surgical training as a resident at the Department of Surgery, Karlskoga Hospital. His surgical training was completed at the Department of Surgery, Örebro University Hospital, where he is now working as a surgeon at the Department of Cardio-Thoracic and Vascular Surgery, specialising in vascular surgery.

Skoog was registered as a PhD student at Örebro University in 2010 after he had joined Professor Lars Norgren's research group in 2007. Under supervision of Associate Professor Kjell Jansson and Professor Lars Norgren his research has focused on abdominal metabolism after surgery with a special interest in abdominal compartment syndrome (ACS).

Intra-abdominal hypertension (IAH) and especially the progression to ACS are life threatening complications of vascular and abdominal surgery, trauma, sepsis, and burns. Studies have shown that 30-40% of unselected patients in intensive care units have elevated abdominal pressure and after acute aortic surgery about 20% of patients develop ACS. In the latter group, the mortality is high. Several studies also suggest that ACS remains a clinical problem with the transition from open to endovascular surgery for ruptured aortic aneurysm. Hypoperfusion, hypoxia, induction of inflammatory pathways and production of oxygen reactive species are the reasonable causes of tissue damage following increased abdominal pressure.

Microdialysis with a free floating intraperitoneal catheter (IPM) is a method to monitor metabolic alterations in the abdominal fluid. Laserdoppler flowmetry utilises a laser beam and the reflecting light from tissues to measure change in microcirculation.

The main aim of this thesis was to explore the abdominal metabolism under elevated pressure with organ dysfunction utilising IPM, and to find out whether metabolic parameters can be used as markers for IAH/ACS. In one pilot, the experimental study the methodology was established and in two animal studies with controls we found that metabolic changes occurred as IAH was induced and restituted after subsequent decompression. In a clinical study following patients who underwent endovascular surgery for ruptured aortic aneurysm, we found early metabolic alterations among patients that later developed IAH with organ failure.

Metabolic changes in the abdomen measured with microdialysis are recorded early as IAH is induced and they restitute after decompression. IPM seems to be useful in the detection of organ dysfunction and could, if these results are verified, be used clinically in patients at risk of ACS.