**Malin Lönn (former Ottosson)**

**Human adipose tissue and metabolic disease**

Obesity has reached epidemic proportions and is a major contributor to the global burden of chronic disease. In particular abdominal obesity is closely associated with metabolic disturbances, and enlarged abdominal fat cells predict type 2 diabetes. Adipose tissue acts as an endocrine organ, secreting several proinflammatory cytokines and other signaling molecules, together termed adipokines. Some adipokines act predominantly within the adipose tissue itself, while others are released into the systemic circulation affecting other tissues including liver, skeletal muscle and endothelium. The release of bioactive molecules by adipose tissue and adipocytes may therefore underlie many of the metabolic complications related to obesity. The aim of this project is to increase our knowledge of the mechanisms linking excess accumulation of fat, and enlarged fat cells, to inflammation and metabolic disorders with the goal of improving prevention and treatment strategies. Our studies include in vitro systems for long-term and short-term incubation of human adipose tissue as well as functional assays. The long-term incubation system allows studies of for example hormonal or pharmacological regulation of human adipose tissue metabolism. The short-term system is used to mimic adipose tissue release of adipokines in vivo. Special focus is given to the role of adipose tissue in development of metabolic disturbances in women with polycystic ovary syndrome (PCOS) and in pregnant women. A dietary intervention including energy restriction to reduce gestational weight gain in obese pregnant women is evaluated.

**Group members**

Malin Lönn, associate professor  
Staffan Edén, professor  
Henrik Svensson, PhD student  
Birgitta Odén, technician  
Connected to the group is also Louise Mannerås-Holm, post doc, Inst of Neuroscience and Physiology, and we have an on-going collaboration with AstraZeneca R&D Mölndal.

**Key references**

*Original articles*


Book chapter

CV
Education
1988, BSc in Chemistry and Nutrition, Stockholm University

PhD
1995, Medicine
Thesis title: Cortisol and growth hormone regulation of human adipose tissue metabolism
Supervisor: Prof Per Björntorp

Post doc positions
- 1995-1998, Univ of Gothenburg, Institute of Physiology and Pharmacology (group S Edén)
- 1999-2002, Univ of Gothenburg, Institute of Medicine (group L Carlsson)

Associate professor
2002, Experimental Medicine

Present professional appointment
1:st Chemist, Department of Clinical Chemistry, Sahlgrenska University Hospital

Previous professional appointments
- PhD student, The Wallenberg Laboratory, University of Gothenburg, 1989-1995
- Post doc, Inst of Physiology and Pharmacology, University of Gothenburg, 1995-1998
- Junior Researcher, Swedish Research Council, 1999-2002
- Senior Researcher, Inst of Medicine, University of Gothenburg, 2003-2005
- 1:st Chemist/Senior Researcher, Dept of Clinical Chemistry/Inst of Medicine, 2006-2008

Education in leadership and supervision
- Introduction to University Didactics, University of Gothenburg, 2000
- Scientific supervision, Department of Education, University of Gothenburg, 2001
- Understanding Groups and Leadership, Escapad Teamutveckling AB, 2001
- University Didactics, Department of Education, University of Gothenburg, 2002
PhD students

Previous
Jenny Palming, June 15, 2006; Human adipose tissue. Genes predominantly expressed in the visceral depot and in hypertrophic adipocytes. (Main supervisor)

Margareta Jernås, February 29, 2008; Microarray analysis of gene expression in human adipocytes and adipose tissue. (Co-supervisor)

Camilla Alexanderson, December 12, 2008; Metabolic and ovarian consequences of perinatal sex steroid programming. (Co-supervisor)

John Brandberg, February 27, 2009; Computed tomography and magnetic resonance imaging in determination of human body composition. Methodological and applied studies. (Co-supervisor)

Louise Mannerås Holm, February 5, 2010; Polycystic ovary syndrome - Studies of metabolic and ovarian disturbances and effects of physical exercise and electro-acupuncture. (Co-supervisor)

Present
Susanne Lager, dissertation scheduled June 11, 2010; Cytokines and lipids in pregnancy – Effects on developmental programming and placental nutrient transport. (Co-supervisor)

Julia Johansson, 2008-, (Co-supervisor)

Henrik Svensson, 2009-, (Main supervisor)