

REACH OUT GROUP TOMMY OLSSON

English version

The research group is funded by SRP diabetes and is also funded by grants from the Swedish Diabetes Association, the Swedish Heart and Lung Foundation, STINT/Swedish Research Council and the National Research Foundation South Africa. The major goal for the group is to increase the understanding of how type 2 diabetes (T2DM) develops with the ultimate goal to prevent this obesity-related disorder.

We analyze putative predictors for “ectopic” (ie outside fat cells) lipid deposition with a focus on the role of intermediary metabolism including targeted analysis of proteins and genes in various tissues associated with insulin resistance and insulin secretion – that major culprits in development of T2DM. In cross-sectional, experimental and intervention studies our aim is to pinpoint relevant pathways in metabolic dysfunction leading to T2DM (Dr Julia Otten, Dr Elin Chorell).

In multidisciplinary intervention studies we study the effects of changes in diet and physical activity on improving metabolic balance in obese subjects, thereby reducing the risk for T2DM. This includes studies on how to reduce the risk for heart failure and neurodegenerative disorders, linked to obesity-related metabolic imbalance in middle age (Assoc Prof Mats Ryberg, Dr Frida Bergman, Dr Jonas Andersson)

In collaboration with researchers at the Universities of Cape Town and Witwatersrand we study the pathophysiological backgrounds for the clear differences between black and white obese women in development of T2DM. This is of outmost importance as South Africa currently has the highest predicted increased risk for T2DM in the world (Assoc Prof Julia Goedecke, Cape Town/Johannesburg).

Key references

Goedecke JH, Keswell D, Weinreich C, Fan J, Hauksson J, Victor H, Utschneider K, Levitt NS, Lambert EV, Kahn SE, Olsson T. Ethnic Differences in hepatic and systemic insulin sensitivity and their associated determinants in obese black and white South African women. *Diabetologia* 2015;58:2647-52

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Svensk version

Kort populärvetenskaplig beskrivning av forskningsgrupp Tommy Olsson

Vår forskning stöds från flera organisationer, inklusive Svenska Diabetesförbundet, Hjärt- och Lungfonden, STINT/VR, samt National Research Foundation i Sydafrika. Vi vill öka förståelsen för utveckling av typ 2 diabetes mellitus (T2DM) med målet att förebygga och behandla denna fetma-relaterade sjukdom. Ett särskilt fokus är studier av kopplingen mellan ändrad omsättning av fetter och proteiner vid utveckling av T2DM, associerat med nedsatt känslighet för insulin i olika vävnader (insulinresistens) samt störd frisättning av insulin från bukspottkörteln – avgörande störningar vid utveckling av T2DM. Vi genomför tvärsnittsstudier av individer med ökad risk för diabetes, experimentella studier för att analysera ämnesomsättningsprodukters betydelse för insulinkänslighet samt –frisättning och behandlingsstudier för att finna vägar att förebygga och behandla T2DM inklusive risken att utveckla hjärtsvikt och demenssjukdom vid metabola störningar. Vi samarbetar vidare med forskare i Sydafrika, särskilt bitr prof Julia Goedecke i Kapstaden/Johannesburg för att öka förståelsen för den kraftigt ökade risken för T2DM bland svarta överviktiga kvinnor.

I forskargruppen ingår flera seniora forskare: Docent Mats Ryberg, Forskare/Fil Dr Elin Chorell, Med Dr Julia Otten, Med Dr Frida Bergman samt Med Dr Jonas Andersson.

Utvalda referenser

Goedecke JH, Keswell D, Weinreich C, Fan J, Hauksson J, Victor H, Utschneider K, Levitt NS, Lambert EV, Kahn SE, Olsson T. Ethnic Differences in hepatic and systemic insulin sensitivity and their associated determinants in obese black and white South African women. *Diabetologia* 2015;58:2647-52

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