Focus of research group (I)

Name PI: Ed Eringa
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Size of research group: 4 co-PI, 1 technician, 4 PhD students

Mission
To elucidate the origins of perfusion defects in obesity and type 2 diabetes to prevent organ failure

Vision
• Cardiovascular disease in obesity/T2D results from inter-organ miscommunication: (perivascular) adipose tissue, pancreas, bone, kidney and cardiovascular system
• Pathogenesis of complications of type 2 diabetes starts decades before diabetes itself

Aims
• Elucidate role of local PVAT in regulation of tissue perfusion, metabolism
• Define role of microvascular dysfunction in non-obstructive coronary artery disease
• Elucidate role of FHL2 in aging-related cardiometabolic disease
Focus of research group (II)

Current expertise
• Physiology of obesity, type 2 diabetes
• Adipose tissue phenotyping (mice, humans)
• Glucose metabolism (mice, humans)
• Phenotyping of microcirculation (mice, humans) – contrast ultrasonography
• Microvascular dysfunction specific to obesity, type 2 diabetes
• Mouse modeling of chronic kidney failure
• Blood pressure measurement by radio telemetry (mice)

Current funding
• CVON (Reconnect)
• Netherlands Heart Foundation (Innovation)
• Netherlands Heart Institute
• VUMC Innovation
• Horizon 2020 (IMPROVE-PD consortium)
• Netherlands Organisation for Scientific Research (Vidi)
• Amsterdam Cardiovascular Sciences
Future plans

Short term (1-2 year) plan
• Microvascular diagnosis for non-obstructive coronary artery disease
• Characterize role of FHL2 in cardiometabolic disease

Necessary infrastructure
• Mouse vivarium, usable for internal and external partners
• Clinical Research unit
• Microvascular/adipose tissue imaging facilities: Echo, MRI, CT

Long term (>2 year) plan
• PVAT in organ ischemia/hypoxia *in vivo*
• New *in vitro* models of adipose-endothelial interaction
• Interaction between renal failure and obesity in cardiometabolic disease
• Microvascular phenotyping in population

Necessary infrastructure
• Human cell culture facilities
• Accessible, well-defined cohorts

Collaboration in ACS
CoE Diabetes & Metabolism (, Cardiology (Appelman), Physiology (Van Hinsbergh/Koolwijk), Vascular medicine (C de Vries, Lutgens), Oncoproteomics (Jimenez)