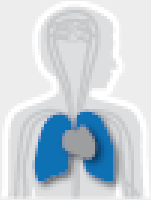
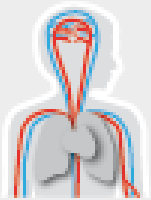


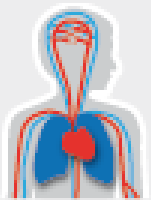
Heart Failure & Arrhythmias



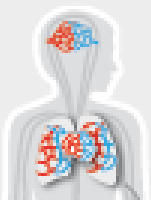
Pulmonary Hypertension
& Thrombosis



Atherosclerosis
& Ischemic Syndromes



Diabetes & Metabolism



Microcirculation

Focus of research group (I)

Name PI: Ed Eringa

Department, UMC: Physiology, Amsterdam UMC/VUMC

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

Mission

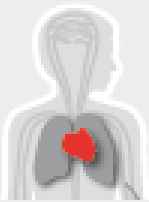
To elucidate the origins of perfusion defects in obesity and type 2 diabetes to prevent organ failure

Vision

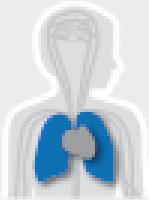
- Cardiovascular disease in obesity/T2D results from inter-organ miscommunication: (perivascular) adipose tissue, pancreas, bone, kidney and cardiovascular system
- Pathogenesis of complications of type 2 diabetes starts decades before diabetes itself

Aims

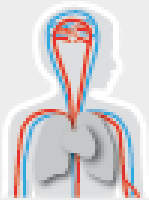
- Elucidate role of local PVAT in regulation of tissue perfusion, metabolism
- Define role of microvascular dysfunction in non-obstructive coronary artery disease
- Elucidate role of FHL2 in aging-related cardiometabolic disease



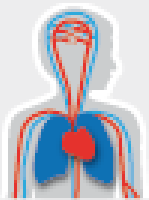
Heart Failure & Arrhythmias



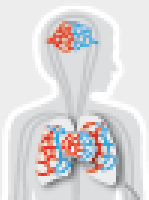
Pulmonary Hypertension
& Thrombosis



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Diabetes & Metabolism

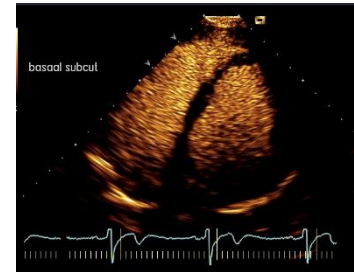


Microcirculation

Focus of research group (II)

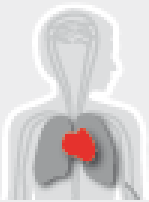
Current expertise

- 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)

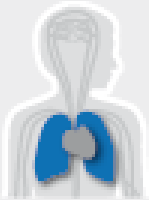


Current funding

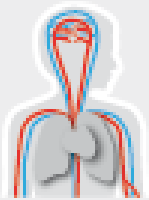
- CVON (Reconnect)
- Netherlands Heart Foundation (Innovation)
- Netherlands Heart Institute
- VUMC Innovation
- Horizon 2020 (IMPROVE-PD consortium)
- Netherlands Organisation for Scientific Research (Vidi)
- Amsterdam Cardiovascular Sciences



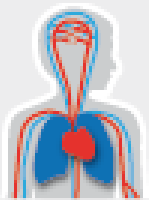
Heart Failure & Arrhythmias



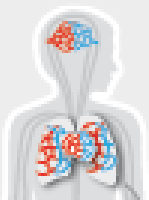
Pulmonary Hypertension
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Diabetes & Metabolism



Microcirculation

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)