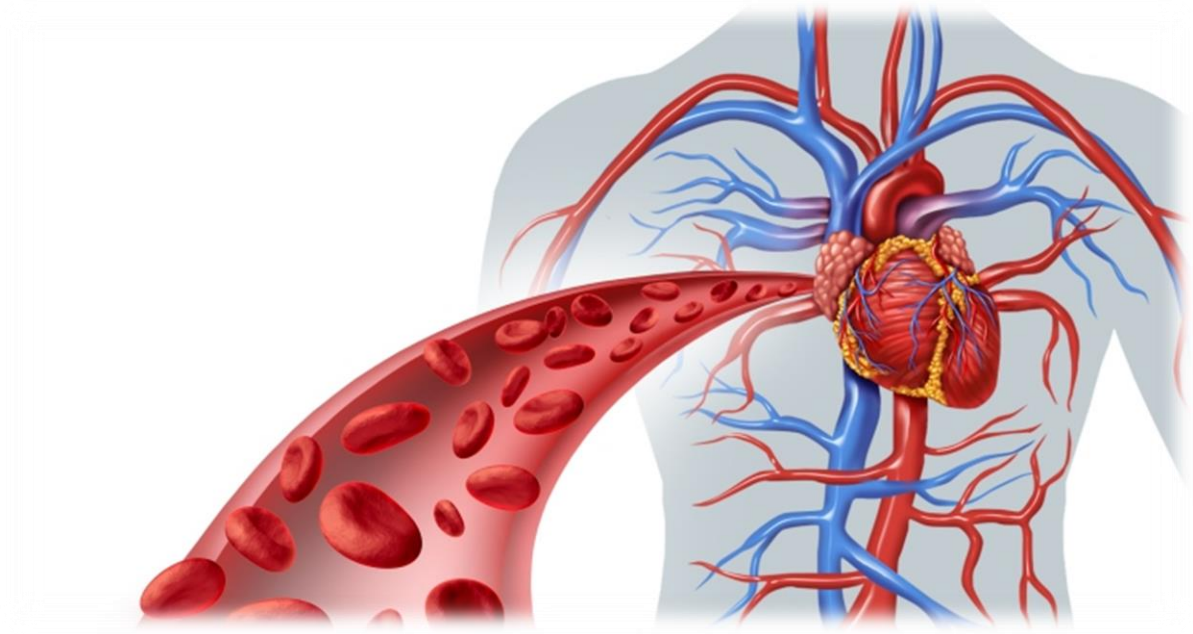
PhD course: August 29th – September 2nd, 2022

Vascular function and skeletal muscle angiogenesis in health and lifestyle related disease



Arranged by:

Integrative Physiology, Department of Nutrition, Exercise and Sports

University of Copenhagen

https://phdcourses.ku.dk/DetailKursus.aspx?id=104684&sitepath=NAT

External teachers: Professor Chris Ellis, University of Western Ontario, Canada, Professor Stuart Egginton, University of Leeds, UK, Professor Mike Tschakovsky, University of Waterloo, Canada, Professor Adrian Evans, Swansea University and Morriston Hospital, UK

Course Organizers: Ylva Hellsten, Lasse Gliemann, Sophie Møller

Contact: Sophie Møller e-mail: sopm@nexs.ku.dk

Monday 29th August 2022: Microcirculation in skeletal muscle

9:30-10:00 Registration/coffee

10:00-10:15 Introduction – *Ylva Hellsten / Lasse Gliemann*

10:15-11:15 Structure of the microcirculation – *Chris Ellis*

11:15-12:15 Student presentations – 5 min blitz talks

12:15-13:15 Lunch

13:15-14:00 Regulation of skeletal muscle angiogenesis: Part I Physiological factors – *Stuart Egginton*

14:00-14:15 Coffee

14:15-15:15 Student presentations – 5 min blitz talks

15:15-16:30 Physical activity

16:30-17:15 Regulation of skeletal muscle angiogenesis: Part II Angiogenic factors – *Ylva Hellsten*

18:00 Informal get together in town

Tuesday 30th August 2022: Cardiovascular function and blood flow regulation

8:30-9:30 Student presentations – 5 min blitz talks

9:30-10:15 Regulation of Oxygen supply in skeletal muscle microvasculature – *Chris Ellis*

10:15-10:45 Control of brain oxygen delivery – *Phil Ainslie*

10:45-11:15 Discussion over coffee

11:15-11:45 The systemic challenge of performing exercise: Sympathetic activity and functional sympatholysis – *Mike Tschakovsky*

11:45-12:15 Methods to determine vascular function invasively and non-invasively in humans – *Lasse Gliemann & Mike Tschakovsky*

12:15-12:30 Discussion

12:30-13:15 Lunch

13:15-13:45 Measurements of sympathetic nerve activity in muscle (MSNA) – *Thomas Ehlers*

13:45-14:15 Student presentations – 5 min blitz talks

14:15-15:30 Physical activity

15:30-17:00 Coffee and Problem based session – parallel sessions – *All lecturers*

Wednesday 31st August 2022, Methods in cardiovascular research

9:00-9:30 Microvascular disease in the heart – *Eva Prescott*

9:30-10:00 Demonstration: Echo of the heart – *Mads Fischer*

10:00-10:30 Methods to determine angiogenesis in skeletal muscle – *Stuart Egginton*

10:30-11:00 Discussion over coffee

11:00-11:20 Measurements of thrombogenicity II: Platelet reactivity – *Kate Wickham & Line Olsen*

11:20-11:50 Measurements of thrombogenicity I: Clot microstructure – *Adrian Evans*

11:50-12:05 Discussion

12:05-13:00 Lunch

13:00-13:40 Introduction to experimental design – *Lasse Gliemann / Ylva Hellsten*

13:40-15:00 Physical activity

15:00-16:30 **Group work** – preparation of experiment (and coffee!) – *Lasse Gliemann / Ylva Hellsten / Adrian Evans*

Thursday 1st September 2022, Experiments. Life style related disease

Experiments

8:00-12:00 Experiments – *All lecturers*

12:00-13:00 Lunch

Vascular function: Lifestyle related disease, aging and sex differences

13:00-14:00 Lifestyle related disease and the role of physical activity – *Mike Tschakovsky*

14:00-14:15 Coffee

14:15-14:45 Aging, sex hormones and physical activity – *Lasse Gliemann*

14:45-15:15 Arterial thrombosis in lifestyle related disease: A clinical perspective – *Adrian Evans*

15:20-17:00 **Group Work** – Analysis of experimental data and preparation of presentation

17:00 Common walk to town for course dinner at 18

Friday 2nd September 2022. Special topics in cardiovascular research

9:00-10:30 Presentation and discussion of data from experimental work – *All lecturers*

10:30-11:00 Coffee

11:00-11:25 The influence of physical activity on cardiac function – *Mads Fischer*

11:25-11:50 The influence of lifestyle and physical activity on vascular inflammation – *Jan Sommer*

11:50-12:15 Cellular models of lifestyle and physical activity – *Camilla Hansen / Sophie Møller*

12:15-12:40 Regulation on brain blood flow during exercise – *Hannah Caldwell*

12:40-13:05 Can physical activity counteract the physiological changes at menopause in women? – *Line Olsen / Kate Wickham*

13:05-14:00 Lunch

14:00-15:00 Summary and evaluation