

The Saltin Symposium

Exercise and Integrative Physiology

June 2-4, 2015

Auditorium I
Rigshospitalet, Blegdamsvej 9
2100 Copenhagen, Denmark

Arranged by

CENTER FOR
PHYSICAL

ACTIVITY RESEARCH



Scientific Committee

Henriette Pilegaard, Henrik Klitgaard and Robert Boushel

Organizing Committee

Bente K. Pedersen, Emil Holm Toft,
Inge Holm, Marie Kvistgaard and Morten Zacho

Consultancy Committee

Gisela Sjøgaard, Gunnar Grimby, Mark Hargreaves,
Michael Joyner, Peter Schantz and Ylva Hellsten

www.aktivsundhed.dk

PROGRAM

June 2

14:00-15:00 **Registration and Coffee/Tea**

15:00-15:10 **Opening:** *Jannik Hilsted, Medical Director of Rigshospitalet*

The History - Continuing in the Steps of Krogh and Lindhard

15:10-15:25 Chairs: *Birgitta Essén-Gustavsson & Jan Henriksson*

15:25-15:40 Formative Years in Stockholm
Peter Schantz

15:40-15:55 The August Krogh Institute: Capillaries and Beyond
Gisela Sjøgaard

The Copenhagen Muscle Research Centre

15:55-16:10 Chairs: *Jerome Dempsey & Peter B. Raven*

16:10-16:25 How to Get Value for Money
Peder Olesen Larsen

16:25-16:40 The Activity
Michael Kjær

16:40-16:55 The International Standing
Michael Joyner

17:00-19:00 **Reception (Rigshospitalet)**
Saltin Salutations and Mingling

June 3

Muscle Physiology

08:30-08:45 Chairs: *Erik A. Richter & Stephen Harridge*

08:45-09:00 Overview of Muscle and Exercise
Mark Hargreaves

09:00-09:15 Muscle Fibre Type and Beyond
Stefano Schiaffino

09:15-09:30 New Insights on Muscle Metabolic Profile
Niels Ørtenblad

09:30-09:45 Muscle Adaptation to Exercise: New Paradigms
Frank Booth

09:45-10:15 Discussion

10:15-10:45 **Coffee/Tea**

Signalling Events and Muscle Metabolism

10:45-11:00 Chairs: *Henriette Pilegaard and Terry Graham*

11:00-11:15 Imaging: Muscle Structure and Substrates
Clara Prats

11:15-11:30 Substrate Choice
Bente Kiens

11:30-11:45 Exercise and Muscle Signal Transduction
Jørgen Wojtaszewski

11:45-12:00 Mitochondrial Function and Exercise
Darrell Neuffer

12:00-12:15 Oxidative Capacity vs. Exercise VO₂
Eva Blomstrand

12:15-12:45 Discussion

12:45-13:30 **Lunch**

Cardiovascular Physiology I

13:30-13:45 Chairs: *Niels H. Secher and Jere Mitchell*

13:45-14:00 Muscle Vasodilator Mechanisms
Ylva Hellsten

14:00-14:15 The Role of ATP in Muscle Blood Flow
Jose Gonzalez-Alonso

14:15-14:30 Central and Regional Blood Flow Regulation
Jose A.L. Calbet

14:30-14:45 Reflex Control of Circulation
Paul Fadel

14:45-15:15 Discussion

15:15-15:45 **Coffee/Tea**

Cardiovascular Physiology II

- 15:45-16:00 *Chairs: Jaya Rosenmeier & Susanne Vissing*
- 16:00-16:15 Cardiovascular Regulation with Aging and Training
Stefan Mortensen
- 16:15-16:30 Physiological adaptations to exercise training
Carsten Lundby
- 16:30-16:45 Acclimation of the oxygen transport system with skiing in the Arctic
Robert Boushel
- 16:45-17:00 Cardiovascular Regulation After Bedrest and Spaceflight
Benjamin Levine
- 17:00-17:15 Modeling O₂ Transport as an Integrated System: Effect of Training
Peter D. Wagner
- 17:15-17:45 Discussion

**19:30 Dinner in Tivoli Gardens (*separate registration needed*)
Celebrating Bengt's 80th Birthday**
Chairs: Henrik Klitgaard & Susanne Vissing

June 4

08:50 **All participants must be seated**
09:00 Arrival of HRH Crown Prince Frederik

Saltin Award Ceremony

- 09:00-09:05 *Chair: Henrik Klitgaard*
- 09:05-09:15 **Saltin Award Presentation**
HRH Crown Prince Frederik
- 09:15-09:30 Awardee Talk: Human responses to altitude
Christoph Siebenmann

Applied and Comparative Physiology

- 09:30-09:45 *Chairs: Eva Jansson and Gerrit van Hall*
- 09:45-10:00 Sport Physiology
Jens Bangsbo

- 10:00-10:15 Olympic Scientific Activity
Stefan Lindeberg
- 10:15-10:30 Elite Skiers
Hans Christer Holmberg
- 10:30-11:00 The Kenyan Runners
Henrik Larsen & William Sheel
- 11:00-11:15 Mitochondrial Fitness in the Cold:
From Inuit Hunters to High-Altitude Climbers
Erich Gnaiger
- 11:15-11:30 Discussion
- 11:30-12:00 ***Coffee/ Tea and Sandwiches***

Exercise and Health

- 12:00-12:15 Chair: *Bente Klarlund Pedersen*
- 12:15-12:30 The 'Saltin-Grimby Physical Activity Level Scale' and its
Application to Health Research
Gunnar Grimby
- 12:30-12:45 Muscle, Exercise and Health throughout the Lifespan
Mark Tarnopolsky
- 12:45-13:00 Discussion
- 13:00 **Closing**: Inge Holm

Symposium Chairs, Lecturers and Organizers

Benjamin Levine

Director, Institute for Exercise and Environmental Medicine, S. Finley Ewing Jr.
Chair for Wellness at Texas Health Presbyterian Dallas, Harry S. Moss Heart
Chair for Cardiovascular Research, Professor of Medicine and Cardiology,
Distinguished Professorship in Exercise Science, University of Texas
Southwestern Medical Center at Dallas, USA

Bente Kiens

Professor, Section of Molecular Physiology, Department of Nutrition , Exercise
and Sports, University of Copenhagen, Denmark

Bente Klarlund Pedersen

Professor, Director, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

Birgitta Essén-Gustavsson

Associate Professor, Swedish University of Agricultural Sciences, Department of Large Animal Clinical Sciences, Uppsala, Sweden

Carsten Lundby

Professor, Center for Integrative Human Physiology (ZIHP), University of Zurich, Institute of Physiology, Zürich, Switzerland

Christoph Siebenmann (Saltin Awardee)

Postdoc Researcher, Royal Institute of Technology, School of Technology and Health, Stockholm, Sweden

Clara Prats

Associate Professor, Systems Biology Research Section, Panum Institute, University of Copenhagen, Denmark

Darrell Neuffer

Director, Professor, Departments of Physiology and Kinesiology, East Carolina Diabetes and Obesity Institute, USA

Emil Holm Toft

Administrative student assistant; BA of Laws, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

Erich Gnaiger

Professor, Daniel Swarovski Research Laboratory, Department of Visceral, Transplant and Thoracic Surgery, Medical University of Innsbruck and CEO, Oroboros Instruments Corp., Austria

Erik A. Richter

Professor, Section of Molecular Physiology, Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark

Eva Blomstrand

Professor in Nutrition Physiology, GIH, Swedish School of Sport and Health Sciences, Stockholm, Sweden

Eva Jansson

Professor, Division of Clinical Physiology, Department of Laboratory Medicine, Karolinska Institute, Stockholm, Sweden

Frank Booth

Professor, Departments of Biomedical Sciences, Medical Pharmacology and Physiology, and Nutrition and Exercise Physiology, Dalton Cardiovascular Institute, University of Missouri, USA

Gerrit van Hall

Professor, Department of Endocrinology, Rigshospitalet and University of Copenhagen, Denmark

Gisela Sjøgaard

Professor, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark

Gunnar Grimby

Professor Emeritus, Department of Neuroscience and Physiology, Section of Clinical Neuroscience and Rehabilitation, University of Gothenburg, Sweden

Hans-Christer Holmberg

Professor, HLV, Mid Sweden University, Sweden

Henriette Pilegaard

Professor, Senior Group Leader, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Department of Biology, University of Copenhagen, Denmark

Henrik Klitgaard

Henrik Klitgaard, PhD, Vice President, Neuroscience Therapeutic Area, UCB Pharma, Belgium

Henrik B. Larsen

Cand. Scient., Copenhagen, Denmark

Inge Holm

Head (administration); Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

Jan Henriksson

Professor Emeritus, Department of Physiology and Pharmacology, Karolinska Institute, Stockholm, Sweden

Jaya Birgitte Rosenmeier

Chief Consultant Cardiologist Ph.d., Department of Cardiology, Bispebjerg Hospital, Copenhagen, Denmark

Jens Bangsbo

Professor, Deputy Head of Research, Integrative Physiology, Department of Nutrition, Exercise and Sport, University of Copenhagen, Denmark

Jere H. Mitchell

Clinical Professor, Internal Medicine, Physiology, Biomedical Engineering, UT Southwestern Medical Center, Dallas, USA

Jerome Dempsey

John R. Sutton Professor Emeritus of Population Health Sciences Director, John Ranking Laboratory of Pulmonary Medicine, School of Medicine and Public Health, University of Wisconsin-Madison, USA

José A.L. Calbet

Professor of Exercise Physiology, Dept. of Physical Education, University of Las Palmas de Gran Canaria, Spain

José Gonzalez-Alonso

Professor of Exercise and Cardiovascular Physiology, Director of Centre for Sports Medicine and Human Performance, Brunel University London, United Kingdom

Jørgen Wojtaszewski

Professor, Section of Molecular Physiology, August Krogh Centre, Department of Nutrition , Exercise and Sports, University of Copenhagen, Denmark

Marie Kvistgaard

Symposium secretary, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

Mark Hargreaves

Pro Vice-Chancellor of Melbourne Research, Professor of Physiology, Dept. of Physiology, Faculty of Medicine Dentistry and Health Sciences, University of Melbourne, Australia

Mark Tarnopolsky

Professor, Department of Pediatrics and Department of Medicine, McMaster University, Hamilton, Ontario, Canada

Michael Joyner

Professor, The Human and Integrative Physiology and Clinical Pharmacology laboratories, Mayo Clinic, Rochester, USA

Michael Kjær

Professor of Sports Medicine, Institute of Sports Medicine and Centre for Healthy Ageing, Bispebjerg Hospital and University of Copenhagen, Denmark.

Niels H. Secher

Clinical Professor, Institute for Clinical Medicine, Rigshospitalet, University of Copenhagen, Denmark

Niels Ørtenblad

Associate Professor, Head of Research Unit, Institute of Sports Science and Clinical Biomechanics, Muscle Physiology and Biomechanics, University of Southern Denmark, Denmark

Paul Fadel

Associate Professor, Medical Pharmacology and Physiology, School of Medicine, University of Missouri Health System, USA

Peder Olesen Larsen

Head of the Board and Director of the Danish National Research Foundation from 1991 to 1998, University of Copenhagen, Denmark

Peter B. Raven

Professor, Department of Integrative Physiology and Anatomy, University of North Texas Health Science Center, Fort Worth, USA

Peter Schantz

Professor in Human Biology, GIH, Swedish School of Sport and Health Sciences, Stockholm, Sweden

Peter D. Wagner

Distinguished Professor of Medicine and Bioengineering, Division of Physiology, Department of Medicine, University of California, San Diego, USA

Robert Boushel

Professor, GIH, Swedish School of Sport and Health Sciences, Stockholm, Sweden

Stefan Lindeberg

President of the Swedish Olympic Committee (SOK) Executive Board, Stockholm, Sweden

Stefan Mortensen

Associate Professor, Cardiovascular and Renal Research, University of Southern Denmark, Denmark

Stefano Schiaffino

Professor Emeritus, University of Padova, and Vice President, Venetian Institute of Molecular Medicine (VIMM), Italy

Stephen Harridge

Professor of Human and Applied Physiology, Director at Centre of Human and Aerospace Physiological Sciences, Faculty of Life Sciences and Medicine, Kings College London, United Kingdom

Susanne Vissing

MD, DMSc, Medical Specialist, Dermatology, Copenhagen, Denmark

Terry Graham

Professor Emeritus, Human Health and Nutritional Sciences, University of Guelph, Canada

William Sheel

Professor, University of British Columbia, Vancouver, Canada

Ylva Hellsten

Professor, Integrated Physiology, Department of Nutrition, Exercise and Sport, University of Copenhagen, Denmark

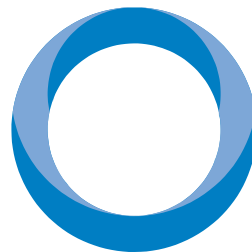
**The Saltin Symposium
'Exercise and Integrative Physiology'**

is supported by



TrygFonden

&



**DANISH
DIABETES ACADEMY**

*The Danish Diabetes Academy is supported
by The Novo Nordisk Foundation*

Saltin Symposium Contact Information

Address: Rigshospitalet, 7641, Blegdamsvej 9, DK-2100 Copenhagen Ø

Tel +45 3545 7641

E-mail: saltin2015@inflammation-metabolism.dk

www.aktivsundhed.dk