

The effects of exercise and nutrients on brain function.

Copenhagen 25-27 August 2010 (rev. 20-08-10)

Purpose

The purpose of the course is to present and discuss the current understanding of the effect of exercise and nutrients on brain function. A central theme of the course is an understanding of the signalling pathways involved in mediating the effect of exercise and various nutrients on brain function. The course will also focus on the practical use of knowledge of the interaction of nutrients and exercise in cognitive and motor rehabilitation.

Content

The course will cover basic physiology of brain metabolism, basic physiology of brain-gut signalling and the neurobiological basis of plasticity in the brain.

Structure of the course

The structure of the course will be a combination of lectures by leading international speakers, group discussions and panel discussions. Prior to the course the students will be expected to read papers selected by the speakers related to each for the lectures. These papers will make the basis for group discussions among the students in the afternoon. Each of the groups will be asked to address specific issues in relation to the lecture/paper and to prepare specific questions for the speakers. During the subsequent panel discussions representatives from each group will present the conclusions and viewpoints from the individual group discussions and present the questions that the groups have generated for the speakers.

In between lectures and discussions students will be given the possibility of talking to the speakers in informal master classes. Social events will be arranged during the week

The venue

Helene Elsass Center was established in 2004 by the Ludvig & Sara Elsass Foundation. The center is named after the donor of the foundation Helene Elsass, daughter of Ludvig and Sara and she herself suffering from Cerebral Palsy. The main objective of Helene Elsass Center is to initiate research and development on Cerebral Palsy. Helene Elsass Center develops best practice and golden standards in relation to intervention strategies for Cerebral Palsy based on most recent knowledge and evidence based methods. Research is primarily conducted on data from intern projects, secondarily by monitoring new research internationally aiming at developing individual activity programs, providing insight and self-awareness and granting counseling and guidance to the individual and the family.

The center is situated in Charlottenlund in the northern part of Copenhagen. Here on an estate complete with park and lake situated in calm and beautiful surroundings the Helene Elsass Center welcomes you. More information is obtained at www.elsasscenter.dk

Target groups

Students (M.Sc., M.D, Ph.D.), researchers, health care personnel (MD, PT, OT) who are interested in motor development and disorders

Organizers:

Ass. Professor Kirsten Caesar, Professor Jens Bo Nielsen, CEO Peder Esben Bilde,

Course certificate

All participants will receive a certificate on completion of the course.

ECTS

The course corresponds to 3 ECTS (estimate, subject to decision by the involved Ph.D.-schools)

Preparation for the course

Students will find relevant on the course homepage prior to the course. The students will be expected to have read this material prior to the course since it will be used as a basis for group discussions and panel discussions in the afternoons.

Program**Wednesday, August 25**

08:30 - 08:45 Peder Esben Bilde, Kirsten Caesar: Introduction

08:45 - 09:15 Jens Bo Nielsen: Effects of exercise on brain function

09:15 - 10:00 Bente Kiens: Basic concepts of healthy nutrition

10.00 - 10:30 Break

10:30 - 11:15 Lotte Lauritzen: Maternal fish intake and brain development

11:15 – 12:00 Hans Forssberg: Motor and cognitive training and brain plasticity

12:00 – 12.45 Lunch

12:45 - 13:30 Jesper Mogensen: Effects of exercise on brain injury and neurorehabilitation

13:30 - 14:00 Break

14:00 - 15:30 Kirsten Caesar: Summary and discussions

Thursday, August 26

09:00 - 09:45 Zsolt Radak: Effects of exercise on brain function

09:45 - 10:30 Daniel P. Holschneider: Activity Dependent Reorganization of the Brain: Neuroimaging Findings

10:30 - 11:00 Break

11:00 - 11:45 Charles H. Hillman: exercise effects on brain and cognition

11:45 - 12:30 Susan E. Carlson: Lipids and early brain function and development

12:30 - 13:30 Lunch

13:30 - 14:15 Discussion

14:15 - 15:00 Jenni Harvey: Leptin: Role in cognition

15:00 - 15:30 Break

15:30 - 16:15 Mehmet Cansev: Effects of Uridine, DHA and Choline on brain function

Friday, August 27

09:00 - 09:45 Henriette van Praag: Effects of combined exercise and nutrients on brain function

09:45 - 10:30 John J. Ratey: The effect of exercise on mood

10:30 - 11:00 Break

11:00 - 11:45 Ellen C. Breen: Exercise induced VEGF transcription in brain

11:45 - 12:45 Lunch

12.45 – 13.30 Arthur F. Kramer: Effects on cognition and brain of older adults?

13:30 - 14:15 Fernando Gomez-Pinilla: Effect of combined exercise and DHA on brain function