Inborn Diseases of Metabolism Affecting Brain Development

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1 ECTS

SUMMARY
Monogenic inborn errors have a prevalence of 1:100. Among these, metabolic diseases affecting brain development have a prevalence of 1:1500. These numerous, but rare and often orphan diseases deeply affect the brain development and functions. This course will provide an overview of the main metabolic diseases affecting brain development, from their genetic to their phenotypic (clinical, pathophysiological and biochemical) description. Students will also learn that these rare diseases also provide an excellent opportunity to analyze brain development and functions from an often unrecognized domain in neuroscience: Intermediary metabolism, which regulate all cellular essential pathways.

DATES IN 2021

The course will take place on Zoom: https://unil.zoom.us/j/95482841615
(Password: IDMABD)

- **Wednesday May 26 from 12h15-14h**
  - Introduction to the course.
  - Metabolism and cerebral function during development.
  - Isolation and contacts between CNS and periphery: Development of blood-brain barrier and choroid plexus.
- **Wednesday June 2 from 12h15-14h**
  - Hyperammonemia in newborns and children: Consequences for brain development.
- **Wednesday June 9 from 12h15-14h**
  - Creatine deficiencies.
- **Wednesday June 16 from 12h15-14h**
  - Serine deficiencies
  - Deficiency in glucose transporter GLUT1
  - Phenylketonuria and BH4 deficiencies
- **Wednesday June 30 from 12h15-14h**
  - MCAD deficiency (Medium Chain Acyl-CoA Dehydrogenase)
  - Galactosemia
  - Biotinidase deficiency
  - Non-cetotic hyperglycinemia
  - Homocystinuria
EVALUATION
Based on a written exam (mini-review).

REGISTRATION
Write an e-mail to the indscourses@gmail.com before April 1, 2020 (course title as subject; supervisor in copy)

READING MATERIALS
Course materials are stored on the UNIL e-learning platform Moodle. You can access by doing the following:

- go to "https://moodle2.unil.ch"
- log in with your institutional/university address
- click on "Faculté de Biologie et de Médecine" > "Ecole doctorale / doctoral school" > "Lemanic Neuroscience Doctoral School"

The materials are stored under "Inborn Diseases of Metabolism Affecting Brain Development". Please use the self-enrollment method to access them.