

**4th Human Milk Oligosaccharides (HMO) in Pregnancy Symposium
&
2nd Early Life Determinants (ELiD) Workshop**

October 5th 2023, Graz, Austria
Aula MedCampus, Neue Stiftingtalstraße 6

Metabolic Legacy of Pregnancy

PROGRAM

Early development in pregnancy has a decisive influence on later health of the baby. It is therefore increasingly perceived as an opportunity to identify, prevent, and regulate interfering influences with the aim of slowing down the rapid increase of non-heritable diseases such as cardiovascular, metabolic, and immunological health problems.

Important human-specific factors of this developmental phase are human milk oligosaccharides (HMOs), complex sugars found in breast milk, but also during pregnancy. HMOs are known for their prebiotic, anti-infective and immunomodulatory effects, among others. In particular maternal metabolism in pregnancy modifies HMO concentration and composition and programs future health of the baby, and thus, leaves its legacy on the offspring.

As pregnancy is a serious transitional phase for the mother, it also shapes her future health. In fact, pregnancy can increase future metabolic and cardiovascular risk, and leaves its legacy on the mother as well. This aspect will also be addressed in this event.

Evelyn Jantscher-Krenn, head of the HMO research group, and Ursula Hiden, head of the research unit ELiD, welcome you to this interlinked event under the joint title *Metabolic Legacy of Pregnancy*, which features a variety of presentations on the topic of HMOs in pregnancy, fetal programming, and the role of maternal metabolism in pregnancy. Enjoy!

PROGRAM

from 08.15 *Registration*

08.45 - 09.00 *Welcome and Introduction: Evelyn Jantscher-Krenn & Ursula Hiden*

HMO morning

09.00 – 10.45 *Session I: **Metabolic and cardiovascular (mal)adaptations in pregnancy**, Chair: TBA*

09.00 – 09.25 **Lina Bergman**, Department of Obstetrics and Gynecology, University of Gothenburg, Sweden, (online presentation) ***Prevention of future cardiovascular disease after preeclampsia***

09.25 – 09.50 **Martijn Hoes**, Departments of Clinical Genetics, Cardiology, Genetics and Cell Biology, Maastricht University, The Netherlands, ***Peripartum Cardiomyopathy: cardiac adaptations in pregnancy gone wrong?***

09.50 – 10.05 **Christina Stern**, Department of Obstetrics and Gynecology, Medical University of Graz; ***Metabolic legacy of pregnancy: Maternal outcomes***

10.05 – 10.25 **Evelyn Jantscher-Krenn**, Department of Obstetrics and Gynecology, Medical University of Graz, ***HMO as mediators of adaptations in pregnancy?***

10.25 – 10.35 **Marie-Therese Weiser-Fuchs**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Changes in HMO patterns during oGTT at midpregnancy***

10.35 – 11.05 *Coffee break and posters (HS 5)*

11.05 – 13.00 *Session II: **Postpartum and Lactation: Time of transition**, Chair: TBA*

11.05 – 11.20 **Lukas Schönbacher**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Regulation of serum HMOs by insulin-glucose interplay in lactation***

11.20 – 11.45 **Alecia-Jane Twigger**, Department of Pharmacology, University of Cambridge, UK, ***Single cell analysis of human lactocytes highlights transcriptional changes during lactation***

11.45 – 12.10 **Elena Osto**, Otto Loewi Research Center for Vascular Biology, Immunology and Inflammation, Division of Physiology and Pathophysiology, Medical University of Graz, ***Sex-dependent modulation in endothelial function and atherosclerosis development***

12.10 – 12.20 **Charlotte Neumann**, Diagnostic and Research Institute of Hygiene, Microbiology and Environmental Medicine, Medical University of Graz, ***Female microbiome: Abrupt changes from preconception to pregnancy to postpartum***

12.20 – 12.45 **Dena Ennis**, The Hebrew University of Jerusalem, Israel, ***Relation of HMO composition and variability of Bifidobacterium species in the infant gut***

12.45 – 13.00 **Anna Rath**, University of Applied Sciences Graz/Medical University of Graz, ***Influence of feeding patterns on anthropometric outcomes***

13.00 – 14.00 *Lunch at Mensa*

ELiD afternoon

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- 14.00 – 15.30 *Session I: **Fetal Programming by Maternal Metabolism**, Chair: Ursula Hiden*
- 14.00 – 14.25 **Susana P Pereira**, CNC-Center for Neuroscience and Cell Biology, University of Coimbra; Laboratory for Integrative and Translational Research in Population Health, Faculty of Sports, University of Porto, Portugal, ***Shaping offspring cardiac function by maternal metabolism***
- 14.25 – 14.45 **Silvija Tokic**, Department of Paediatrics and Adolescent Medicine, Medical University of Graz, ***GDM programming of placental endothelial cells***
- 14.45 – 15.00 **Ursula Hiden**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Maternal metabolism determines the function of circulating neonatal endothelial progenitor cells***
- 15.00 – 15.20 **Gernot Desoye**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Fetal programming of adiposity***
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- 15.20 – 15.50 *Coffee break and posters (HS 5)*
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- 15.50 – 17.05 *Session II: **Maternal Influences in Pregnancy**, Chair: Gernot Desoye*
- 15.50 – 16.15 **Carlos Salomon**, Translational Extracellular Vesicles in Obstetrics and Gynaecology-Oncology Group, Royal Brisbane and Women's Hospital, The University of Queensland Centre for Clinical Research, Brisbane, Australia, ***Contribution of extracellular vesicles to fetal programming in GDM***
- 16.15 – 16.25 **Natascha Berger**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Bile acids link metabolism to granulosa cell function***
- 16.25 – 16.35 **Azra Kulovic-Sissawo**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Nephrilysin levels in pregnancy are related to blood pressure***
- 16.35 – 16.45 **Carolina Tocantins**, CNC-Center for Neuroscience and Cell Biology, University of Coimbra, Portugal, ***Pregnancy alters the metabolism of the mother's heart in rodents***
- 16.45 – 16.55 **Anna Dieberger**, Department of Obstetrics and Gynecology, Medical University of Graz, ***Changes in the distribution of subcutaneous adipose tissue throughout pregnancy and its relationship with gestational weight gain***
- 16.55 – 17.05 **Beatrice Brugger**, Gottfried Schatz Research Center, Division of Cell Biology, Histology and Embryology, Medical University of Graz, ***Flow modulation of the villous trophoblast may restrict fetal growth***
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- 17.05 *Concluding remarks*