



45TH ANNUAL MEETING OF THE

Fetal and Neonatal
Physiological
Society
2018

24 - 27 JUNE

MAASTRICHT

THE NETHERLANDS

Scientific Programme

Sunday June 24th

From 16:00 Registration opens

18:00 – 19:00 Session I – Official welcome and opening of the meeting

Chairs: Luc Zimmermann and Jan Derks

- K1. Geoffrey Dawes Lectures
Fetal behaviour and perinatal mortality.
Jan G. Nijhuis

From 19:00 Reception and informal dinner

Monday June 25th

08:30 – 10:15 Session II – Cardiovascular A

Chairs: Emilio A. Herrera and Tomoaki Ikeda

- K2. Survival and neurological outcome of growth retarded fetuses < 32 weeks
Jan Derks
- O27. The breath of life: Fetal hemodynamic response to acute maternal hyperoxygenation.
Jack R.T Darby, Brahmdeep Saini, Sunthara Rajan Perumal, Jia Yin Soo, Mitchell C. Lock, Christopher K. Macgowan, Mike Seed, Janna L Morrison
- O13. Cardiovascular effects of delayed recombinant human erythropoietin treatment after asphyxia in preterm fetal sheep.
Simerdeep Dhillon, Joanne O Davidson, Guido Wassink, Alistair J Gunn and Laura Bennet
- O30. Fetal Cardiac Haemodynamics: Initial Experience using 4D flow MRI.
Eric Schrauben, Brahmdeep Saini, Jack R.T. Darby, Jia Yin Soo, Mitchell C Lock, Greg Stortz, John Sled, Mike Seed, Janna L Morrison, Christopher Macgowan
- O32. What's That Smell? First Evidence of Cardio-protective Actions of Hydrogen Sulphide in the Developing Heart.
Rita M Hess, Youguo Niu, Tessa A Garrud, Kimberley J Botting, Sage G Ford, Dino A Giussani
- O54. Melatonin improves cerebrovascular function in neonatal lambs gestated in chronic hypoxic.
Alejandro González-Candia, Alejandro A. Candia, German Ebensperger, Roberto V. Reyes, Anibal J. Llanos, Emilio A. Herrera.

10:15 – 10:45 Coffee Break and poster viewing

10:45 – 12:30 Session III - Developmental Neuroscience A

Chairs: Alistair Gunn and Yves Jacquemyn

- K3. Chorioamnionitis - the double-edged sword for the fetus.
Boris Kramer

- O23. An approach to mild HIE: keep calm, collect data, and do no harm.
Alistair J. Gunn, Joanne O. Davidson, Max Berry, Laura Bennet.
- O24. Altered diurnal rhythms in growth restricted fetuses: a case-control study.
Antoniya Georgieva, Christopher Lear, Laura Bennet, Alistair J. Gunn, Christopher Redman
- O29. Maternal obesity diminishes inhibitory interneurons in the hippocampus of the rat.
Harold Coleman, Ammar Abdulwahid, Helena Parkington
- O35. Systemic TNF blockade reduces cerebral inflammation and restores oligodendrocyte development in preterm fetal sheep exposed to intrauterine inflammation.
Robert Galinsky, Christopher A. Lear, Justin M. Dean, Simerdeep K. Dhillon, Mhoyra Fraser, Joanne O. Davidson, Laura Bennet and Alistair J. Gunn
- O53. Melatonin improves cerebrovascular function in neonatal lambs gestated in chronic hypoxic.
Alejandro A. Candia, Alejandro Gonzalez-Candia, Daniel Cañas, Eugenio Rivera, Claudio Garcia-Herrera, German Ebensperger, Roberto V. Reyes, Anibal J. Llanos, Emilio A. Herrera

12:30 – 13:45 Lunch and poster viewing

13:45 – 15:45 Session IV – Programming

Chairs: Tim Moss and Alwan Al-Nasiry

- K4. From Womb to Tomb: developmental programming of hypothalamo-pituitary adrenal function across the life course.
Peter W. Nathanielsz
- O15. Behavioural assessment of mice in preparation for studying the effects of maternal obesity.
Emily J Mort, Surina Fordington, Abigail L. Fowden, Emily J. Camm,
- O18. The use of a novel rodent touchscreen continuous performance test (rCPT) to assess attentional function in rat offspring from hypoxic pregnancies.
Emily J. Camm, Beth M. Fisher, Chris. J. Heath, Ana-Mishel Spiroski, Emma R. Eastwell, Anna Maria Nuzzo, Megan R. Sutherland, Thomas J. Ashmore, L. M. Saksida, D. A. Giussani¹ and T. J. Bussey.
- O25. The BELgian PRenatal MicroArray (BEMAPRE) consortium: A systematic nation-wide database of fetal genomic aberrations and postnatal follow up study.
Joke Muys, Bettina Blaumeiser, Katrien Janssens, Claude Bandelier, Nathalie Brison, Saskia Bulk 5, Patrizia Chiarappa, Winnie Courtens, Anne De Leener, Marjan De Rademaeker, Julie Désir, Anne Destree, Koenraad Devriendt, Annelies Dheedene, Annelies Fieuw, Erik Fransen, Jean-Stéphane Gatot, Philip Holmgren, Mauricette Jamar, Sandra Janssens, Jorien Kerstjens, Kathelijn Keymolen, Damien Lederer, Björn Menten, Marije Meuwissen, Benoit Parmentier, Bruno Pichon, Sonia Rombout, Yves Sznajer, Ann Van Den Bogaert, Kris Van Den Bogaert, Olivier Vanakker, Joris Vermeesch, Yves Jacquemyn.
- O38. The effects of pre- and postnatal inflammation on atherosclerosis in ApoE knockout mice.
Albert Limwan, Lisa Widiasmoko, David Burgner, Tim Moss

- O52. Intrauterine growth restriction increases the activity of some drug metabolising enzymes in the maternal-placental-fetal unit.

Grace M McBride, Jia Yin Soo, Jack RT Darby, Mitchell C Lock, Mike Seed, Mary J Berry, Michael Wiese, Janna L Morrison

- O40. Reported effects of intrauterine growth restriction may not be the result of intrauterine growth restriction at all.

Aminath Azhan, Mary Tolcos, David Walker, Shreya Rana, Flora Wong, Tim Moss

15:45 – 16:15 Coffee Break and poster viewing

16:15 – 18:00 Session V – Cardiovascular B

Chairs: Wilfried Gyselaers and Laura Bennet

- K5. Maternal hemodynamics and its assessment in 2018 : the mother's rebirth.

Wilfried Gyselaers

- O3. Oxidative stress in healthy pregnancy and preeclampsia is linked to chronic inflammation, iron status and vascular function.

Dominique Mannaerts, Ellen Faes, Paul Cos, Jacob J. Briedé, Wilfried Gyselaers, Jerome Cornette, Yury Gorbanev, Annemie Bogaerts, Marc Spaanderman, Emeline M. Van Craenenbroeck, Yves Jacquemyn

- O34. Atrial phase characteristics in the jugular venous Doppler waveform during uncomplicated pregnancy.

Inge Dierickx, Kathleen Tomsin, Daniel Vanhercke, Simon Van Hooland, Wilfried Gyselaers

- O36. Intrathoracic Fluid Changes from Preconception to Postpartum as measured by Bio-Impedance Monitoring.

Dorien Lanssens, Christophe JP Smeets, Pieter Vandervoort, Lars Grieten, Wilfried Gyselaers

- O37. Capillaroscopy in pregnancy.

Kristof Thevissen, Wilfried Gyselaers

- O44. Abnormal body fluid volume homeostasis in pregnancies complicated with hypertension or poor fetal growth.

Wilfried Gyselaers, Sharona Vonck, Anneleen Simone Staelens, Dorien Lanssens, Kathleen Tomsin, Jolien Oben, Pauline Dreesen, Liesbeth Bruckers

Tuesday June 26th

8:30 – 10:30 Session VI - Developmental Neuroscience B

Chairs: Dino Giussani and Graham Jenkin

- K6. Systemic multipotent adult progenitor cells for global hypoxic-ischemia in the preterm rat.
Danilo Gavilanes
- O8. Long-term neurophysiological and histological outcomes after hypoxia-ischemia in preterm fetal sheep.
Christopher Lear, Joanne Davidson, Benjamin Lear, Johanna Lloyd, Jialin Sae-Jiw, Yoshiki Maeda, Michael Beacom, Alistair Gunn, Laura Bennet
- O9. Can treatment with clonidine reduce white matter injury after severe asphyxia in preterm fetal sheep?
Guido Wassink, Justin Dean, Joanne Davidson, Steven Bencito, Alistair J. Gunn, Laura Bennet
- O10. The effect of the rate of rewarming after cerebral hypothermia on post-ischemic white matter injury in the near-term fetal sheep.
Joanne O Davidson, Vittoria Draghi, Guido Wassink, Laura Bennet, Alistair Gunn
- O16. Early epileptiform discharges are a marker of moderate asphyxia in near-term fetal sheep
Ted Andelius, Joanne O. Davidson, Paul Drury, Guido Wassink, Alistair J. Gunn, Laura Bennet
- O43. Multipotent Adult Progenitor Cells for hypoxic-ischemic injury in the preterm cerebellum.
Ruth Gussenhoven, Jeroen Dudink, Kay Pietermans, Martin Lammens, Daan Ophelders, Robert Mays, Luc Zimmermann, Boris Kramer, Tim Wolfs, Reint Jellema

10:30 – 11:00 Coffee Break and poster viewing

11:00 – 13:00 Session VII - Nutrition & Therapy

Chairs: Luc Zimmermann and Emily Camm

- K7. Adverse organ outcomes: the therapeutic potential of antenatal immune modulation
Tim G. Wolfs
- O2. Comparison of the longitudinal effects of persistent periodic breathing and apnoea on cerebral oxygenation in term and preterm-born infants.
Rosemary SC Horne, Sunjuri Sun, Stephanie R Yiallourou, Karinna L Fyfe, Aleksandria Odoi BNS, Flora Y Wong
- O4. High dose postnatal steroid treatment stimulates cardiomyocyte proliferation in preterm lambs.
Amanda Vrselja, J Jane Pillow, Siavash Ahmadi-Noorbakhsh, M Jane Black
- O17. The influence of a maternal meal on fetal liver blood flow at two gestational weeks in third trimester, and its association with maternal prepregnancy body mass index.
Gun Lisbet Opheim, Tore Henriksen, Guttorm Haugen

- O19. Tadalafil treatment for fetus with early onset growth restriction (TADAFER) A multicenter phase II clinical trial.

Shintaro Maki, Hiroaki Tanaka, Shoichi Magawa, Fumi Furuhashi, Makoto Tsuji, Kyoko Shimada, Michiko Kubo, Masafumi Nii, Kayo Tanaka, Yuki Kamimoto, Tomoaki Ikeda

- O57. Mother's Own Milk Protects Preterm Infants against Bronchopulmonary Dysplasia: A Systematic Review and Meta-Analysis.

Eduardo Villamor-Martínez, Maria Pierro, Giacomo Cavallaro, Fabio Mosca, Luc Zimmermann, Eduardo Villamor

- O59. Protection of the fetal gut against perinatal stress by plant sterols.

Charlotte van Gorp, Ilse H. de Lange, Owen B. Spiller, Lilian Kessels, Nico Kloosterboer, Jogchum Plat, Boris W. Kramer, Luc J. Zimmermann, Tim G. Wolfs

- P28. Manipulating human uterine function and dysfunction in labour via chloride and potassium channels.

Helena Parkington, Ranga Siriwardhana, Penelope Sheehan, Shaun Brennecke, Harold Coleman

13:15 – 14:30 Lunch combined with Poster Session

From 15:00 Annual sport event

Wednesday June 27th

09:00 – 10:30 Session VIII – Placenta & other A

Chairs: Jan Nijhuis and Max Berry

- O1. Hypoxia causes reductions in birth weight by altering maternal glucose and lipid metabolism.
Jenni Määttä, Niina Sissala, Elitsa Y. Dimova, Raisa Serpi, Lorna G. Moore and Peppi Koivunen
- O26. Egg donation pregnancies and placenta: a matter of allogeneic transplantation?
Anna Maria Nuzzo, Bianca Masturzo, Domenica Giuffrida, Tullia Todros, Alessandro Rolfo
- O31. The new placental function evaluation method used functional MRI : the method of blood oxygenation level-dependent for normal pregnancy cases and Intrauterine fetal death cases.
Shoichi Magawa, Masaki Ishida, Shinichi Takase, Ryohei Nakayama, Kazuya Yoshikawa, Kimi Murashima, Hideaki Yajima, Tsuyoshi Matsumoto, Fumi Furuhashi, Shintaro Maki, Takuya Kawamura, Masafumi Nii, Saori Takeuchi, Yuki Kamimoto, Hiroaki Tanaka, Hajime Sakuma, Tomoaki Ikeda
- O33. Impaired Uterine Perfusion and Relative Maternal Hypertension with Placental Oxidative Stress in Chronically Hypoxic Ovine Pregnancy.
Wen Tong, Kirsty L. Brain, Beth J. Allison, Youguo Niu, Kimberley J. Botting, Sage G. Ford, Tereza Cindrova-Davies, Hong W. Yung, Graham J. Burton, Dino A. Giussani
- O39. Balancing pragmatism and rigour in animal experiments.
Tim Moss, Paris Papagianis, J. Jane Pillow
- O48. Fetal growth in ART-pregnancies and the effect of culture medium.
Cato Vrouwenraets, Veronique Schiffer, Aafke van Montfoort, Ron van Golde, Marc Spaanderman, Salwan Al-Nasiry

10:30 – 11:00 Coffee Break and poster viewing

11:00 – 13:00 Session IX – Placenta & other B

Chairs: Tom Hasaart and Robert Galinsky

- K9. Intranasal mesenchymal stem cell therapy for neonatal brain injury. Towards clinical application.
Carolien de Theije
- O5. Cortisol and mitochondrial function in fetal skeletal muscle.
Katie Davies, Emily Camm, Andrew Murray, Abigail Fowden
- O11. Relationship between maternal and fetal heart rate variability in healthy late pregnancy.
Peter Stone, John Thompson and the Maternal Sleep in Pregnancy Research Group
- O7. Transient loss of low frequency fetal heart rate variability after severe asphyxia in near-term fetal sheep.
Michi Kasaj, Christopher A. Lear, Paul P. Drury, Joanne O. Davidson, Micael J. Beacom, Yoshiki Maeda, Tomoaki Ikeda, Laura Bennet, Alistair J. Gunn

- O46. Placental pathology and neonatal outcome in relation to uterine artery Doppler velocimetry in pregnancies complicated by placenta syndrome.

Veronique Schiffer, Laura Evers, Carmen Severens-Rijvers, Marc Spaanderman, Salwan Al-Nasiry

- O12. Maternal body position and placental localisation affects uterine arterial blood flow velocity: relevance to position related stillbirth risk.

Peter Stone, John Thompson and the Maternal Sleep in Pregnancy Research Group

- O51. Differences in longitudinal sFlt-1, PlGF and sFlt-1/PlGF ratio in predicting the development of placental syndrome in a high risk population.

Kirsten Palm, Manouk Hendrix, Judith Bons, Otto Bekers, Marc Spaanderman, Salwan Al-Nasiry

13:00 Closure, farewell and lunch

Poster Presentations

- P6. The effect of remifentanyl on the fetal heart rate pattern: a retrospective cohort study.
Danne Boterenbrood, Martine Wassen, Gerard Visser, Jan Nijhuis
- P14. Neuropsychological and neurobiological findings in children born to mothers after antenatal depression treatment in a pilot randomized controlled trial (RCT): a summary of findings and implications.
Laura S. Bleker, Jeannette Milgrom, Alexandra Sexton-Oates, Donna Parker, Tessa J. Roseboom, Alan W. Gemmill, Christopher J. Holt, Richard Saffery, Alan Connelly, Huibert Burger, and Susanne R. de Rooij
- P20. Hypothyroidism in utero suppresses pituitary-adrenal function in the ovine fetus near term.
Emily Camm, Isabella Inzani, Katie Davies, Miles De Blasio, F.B. Peter Wooding, Abigail L. Fowden, Alison J. Forhead
- P21. A rare case of spontaneous fetal bladder rupture resulting in fetal ascites.
Christine De Bruyn, Joke Muys, Yves Leroy, Dominique Mannaerts, Ellen Faes, Yves Jacquemyn
- P22. Signal Quality of the Non-Invasive Fetal ECG Device During Labour. A case-series.
Carlijn Lempersz, Lore Noben, Juul Tissink, Rik Vullings, Michelle Westerhuis1, Guid Oei
- P41. Placenta derived factors involved in the pathogenesis of the liver in the syndrome of haemolysis, elevated liver enzymes and low platelets (HELLP): a review.
Lois van Lieshout, Ger Koek, Marc Spaanderman, Pieter van Runnard Heimel
- P42. Is fetal motor assessment of additional value to detect fetal akinesia deformation sequence? A ten year cohort study.
Jill Tjon, Bloeme van der Knoop, Johanna de Vries
- P45. Changes in endothelial glycocalyx between the first and third trimester in high-risk and low-risk pregnancies.
Astrid, Bruekers, Salwan Al-Nasiry
- P47. IVF culture media in relation to placenta vascularization.
Cato Vrouwenraets, Veronique Schiffer, Aafke van Montfoort, Ron van Golde, Marc Spaanderman, Salwan Al-Nasiry.
- P49. Placental structure and vascularization in IVF/ICSI-pregnancies compared to naturally conceived pregnancies.
Veronique Schiffer, Cato Vrouwenraets, Aafke van Montfoort, Marc Spaanderman, Salwan Al-Nasiry
- P50. The additional value of combining fetal growth parameters and maternal biomarkers in the detection of small-for-gestational-age neonates.
Manouk Hendrix, Judith Bons, Otto Bekers, Roy Snellings, Sander van Kuijk, Marc Spaanderman, Salwan Al-Nasiry

- P55. Melatonin does not interfere with the newborn cardiovascular defense to acute hypoxia. Preliminary findings.

Felipe Beñaldo, Claudio Araya Quijada, Gertrudis Cabello, Guillermo J Valenzuela, Emilio A. Herrera, Aníbal Llanos, María Serón-Ferré.

- P56. Chorioamnionitis is a Risk Factor for Intraventricular Hemorrhage in Preterm Infants: A Systematic Review and Meta-Analysis.

Eduardo Villamor-Martínez, Monica Fumagalli, Owais Mohammed Rahim, Sofia Passera, Giacomo Cavallaro, Pieter Degraeuwe, Fabio Mosca, Eduardo Villamor

- P58. Being small for gestational age, but not intrauterine growth restriction, reduces the risk of patent ductus arteriosus in preterm infants: a systematic review and meta-analysis.

Eduardo Villamor-Martínez, Mohammed Kilani, Pieter Degraeuwe, Ronald Clyman, Eduardo Villamor