

Current data indicating that perinatal influences have a major impact on peri- and postnatal development leads to controverse discussions. To draw conclusions from observations different approaches to this comprehensive subject are necessary. The first DOHaD-studies (Developmental Origins of Health and Disease) are based on epidemiological research. Clinical, experimental, biological and also epigenetical studies followed.

One of the precursors of DOHaD research was David Barker. The Barker hypothesis – also called thrifty phenotype hypothesis – states that reduced fetal growth is strongly associated with a number of chronic conditions later in life (Barker et al 1992). An increased susceptibility results from adaptations made by the fetus in an environment limited in its supply of nutrients. These chronic conditions include coronary heart disease, stroke, diabetes, and hypertension. But also modified bone development and cancer are discussed results. As research moved on hypothesis of fetal programming was verbalized. It describes critical phases during intrauterine growth. Negative influences in these phases can cause long-term damage and structural changes. These mechanisms of compensation may be inherited by the next generation.

In this symposium international experts of diverse fields of medical and biological sciences will present and discuss scientific ideas and results of the broad field of "developmental origins of health and disease". Besides a critical exchange about newest research results of exposures, mechanisms and outcome in later life and corresponding topics like "junk food diet" and the role of the placenta in fetal programming, a major emphasis is placed on interventions and options to prevent diseases of perinatal origins.

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Conference organizers:

Professor Dr. Marek Zygmunt (Greifswald)
Professor Dr. Hans-Georg Bender ML* (Düsseldorf)
Professor Dr. Wolfgang Künzel ML* (Gießen)
Dr. Anne Rohdenburg (Greifswald)

Conference venue:

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Martin-Luther-Straße 14
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Information and registration:

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Conference fee: 60 Euro

Please register via the following URL only:

www.wiko-greifswald.de/anmeldung

* ML = Member of Leopoldina

Die Zulassung als Fortbildungsveranstaltung ist bei der Ärztekammer Mecklenburg-Vorpommern beantragt.

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Alfried Krupp Wissenschaftskolleg Greifswald

The Alfried Krupp Wissenschaftskolleg is an academically independent institution sponsored by the Stiftung Alfried Krupp Kolleg Greifswald.

The initiative to establish the Alfried Krupp Wissenschaftskolleg came from the Chairman of the Board of Trustees of the Alfried Krupp von Bohlen und Halbach-Stiftung, Professor Dr. h. c. mult. Berthold Beitz. Professor Beitz associated this initiative with the idea that an institute for advanced study in the Hanseatic and university city of Greifswald could assist Greifswald to become once again the "liberal, cosmopolitan centre for encounters in the Baltic Sea region" that it used to be for centuries.

The academic programme of the Alfried Krupp Wissenschaftskolleg is made possible by financial support provided by the Alfried Krupp von Bohlen und Halbach-Stiftung.

German Academy of Sciences Leopoldina, National Academy of Sciences

The Leopoldina is the world's oldest continuously existing academy for medicine and natural sciences with a tradition of over 355 years and more than 1300 members all over the world. Since 2008 it has been Germany's National Academy of Sciences. In this role, the Leopoldina has the duty to provide science-based advice to both politics and society and to carry out a representative function in international academy organizations and bodies.

Counselling national and international parliaments and bodies on scientific matters and the support and promotion of young scientists are the most important tasks of the Leopoldina.



Alfried Krupp Wissenschaftskolleg
Greifswald



German Academy of Sciences Leopoldina,
National Academy of Sciences

Developmental origins of health and disease: exposures, outcome, mechanisms and interventions

International symposium
September 4–6, 2009

Friday, September 4, 2009

1.00 pm – 2.00 pm

Welcome addresses

Bärbel Friedrich ML*

Academic director of the Alfried Krupp

Wissenschaftskolleg Greifswald

Rolf Kreienberg ML*

President of the Deutsche Gesellschaft für

Gynäkologie und Geburtshilfe e.V

Marek Zygmunt

Ernst Moritz Arndt-University Greifswald

Hans Georg Bender ML*

Heinrich-Heine-Universität Düsseldorf

Wolfgang Künzel ML*

Justus-Liebig-Universität Gießen

Session I: Introduction

Chair: Hans Georg Bender ML* (Düsseldorf, Germany)

2.00 pm – 2.30 pm

"Fetal programming"– origins of the hypothesis

Mark Hanson (Southampton, UK)

2.30 pm – 3.00 pm

Imprinted genes and placental development

Miguel Constancia (Cambridge,UK)

3.00 pm – 3.30 pm

What do we learn from population-based studies on the effects of intrauterine life?

Wolfgang Hoffmann (Greifswald, Germany)

3.30 pm – 4.00 pm

Coffee Break / Poster session

Session II: Exposures

Chair: Wolfgang Künzel ML* (Gießen, Germany)

4.00 pm – 4.30 pm

Oxidative stress and fetal programming

Zhong-Cheng Luo (Montreal, Canada)

4.30 pm – 5.00 pm

Exercise, human placental development and fetal growth

James Clapp (Cleveland, USA)

5.00 pm – 5.30 pm

Maternal „junk food“ diet and postnatal development

Stephanie Bayol (London, UK)

5.30 pm – 6.00 pm

Renal mechanisms of perinatal programming

Jörg Dötsch (Erlangen, Germany)

6.00 pm – 6.15 pm

Short break

Session III: Mechanisms (Part I)

Chair: Ekkehard Schleussner (Jena, Germany)

6.15 pm – 6.45 pm

Cell and nucleic acid traffic across the placenta – practical consequences

Wolfgang Holzgreve ML* (Freiburg, Germany)

6.45 pm – 7.15 pm

Placental adaptive response and fetal programming

Thomas Jansson (Cincinnati, USA)

Saturday, September 5, 2009

Session IV: Outcome (Part I)

Chair: Peter Husslein ML* (Wien, Austria)

8.00 am – 8.30 am

Intrauterine programming of bone development

Stuart Lanham (Southampton, UK)

8.30 am – 9.00 am

Developmental origins of cardiovascular and metabolic disease

Mark Hanson (Southampton, UK)

9.00 am – 9.30 am

Perinatal programming of the metabolic syndrome

Andreas Plagemann (Berlin, Germany)

9.30 am – 10.00 am

Long-term programming effects of preterm birth and related disorders

Eero Kajantie (Helsinki, Finland)

10.00 am – 10.30 am

Coffee break

Session V: Outcome (Part II)

Chair: Rolf Kreienberg ML* (Ulm, Germany)

10.30 am – 11.00 am

Impact of fetal Insulin-effect on imprinting of glucose homeostasis

Bengt Belgardt (Cologne, Germany)

11.00 am – 11.30 am

Psychopathology and low birth weight

Saroj Saigal (Hamilton, Canada)

11.30 am – 12.00 pm

Birth weight and breast cancer

Dimitrios Trichopoulos (Boston, USA)

12.00 pm – 12.30 pm

Maternal toxic substance use and childhood outcome

Wolfgang Paulus (Ravensburg, Germany)

12.30 pm – 1.30 pm

Lunch break

Session VI: Mechanisms (Part II)

Chair: Vicki Clifton (Adelaide, Australia)

1.30 pm – 2.00 pm

Fetal growth regulation

Victor Han (London, Canada)

2.00 pm – 2.30 pm

Experimental fetal programming in the rat

Andre van Assche (Leuven, Belgium)

2.30 pm – 3.00 pm

Maternal diabetes and perinatal programming

Uwe Lang (Graz, Austria)

3.00 pm – 3.30 pm

Coffee break / Poster session

Session VII: Interventions

Chair: Marek Zygmunt (Greifswald, Germany)

3.30 pm – 4.00 pm

Diabetes and fetal programming – what can be done?

Rebecca A. Simmons (Pennsylvania, USA)

4.00 pm – 4.30 pm

ART and fetal programming

Marek Zygmunt (Greifswald, Germany)

4.30 pm – 5.00 pm

Postnatal obesity – what can be done in prenatal period?

Mark Vickers (Auckland, NZ)

5.00 pm – 5.30 pm

Behavioral outcomes and perinatal development

Kare Sten Olafsen (Tromsø, Norway)

5.30 pm – 6.00 pm

Undernutrition during gestation – implications for current pregnancies

Tessa Roseboom (Amsterdam, Netherlands)

8.00 pm

Dinner (Registration required)

Sunday, September 6, 2009

9.30 am – 3.30 pm

Maritime trip on a historic sailing boat (Registration required)