



Coordinator:



EARLYNUTRITION

Long-term effects of early nutrition on later health

Welcome!

CAS^{LMU} Center for Advanced Studies

Kick-off meeting project EarlyNutrition
21st – 23rd of March 2012 Munich, Germany



This project receives funding from the European Union
Seventh Framework Programme (FP7/2007-2013) under
grant agreement n° 289346

EARLY NUTRITION

Long-term effects of early nutrition on later health



www.project-earlynutrition.eu

EARLY NUTRITION

Long-term effects of early nutrition on later health



- World's largest research project on developmental origins of adult disease
- Key question: influence of diet and metabolism from pre-pregnancy to early childhood on later adiposity and related health outcomes
- Collaboration of a multi-disciplinary team of scientists from **36 partners** in 13 European countries, USA and Australia
- Funded under the Food, Agriculture and Fisheries, and Biotechnology Priority of FP7, with an **EU contribution of 8,96 mio €** towards a total budget of **11,12 mio EUR**, cofunded by **Australian NHMRC with 440k €**
- Project duration **60 months**
- Coordinated by Dr. von Hauner Children's Hospital, University of Munich (LMU) Medical Centre

International Research Consortium



EARLYNUTRITION

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- Builds on EU FP6 Early Nutrition Programming Project (EARNEST)
- EARNEST established a variety of different programming effects on different outcomes
- Was highly rated by reviewers and EU DG Research
- EARNEST, but also other investigators show particularly convincing body of evidence for early nutrition and lifestyle effects on obesity and its associated disorders
- Because of the increasing public health importance and the transgenerational nature of the problem, the focus of this project is early programming of adiposity (body fat content, which appears to best predict long term outcomes)

The Early Nutrition Programming Project

Project Number: FOOD-CT-2005-007036

For further information visit - www.metabolic-programming.org



Dr. von Haunersches
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May 6-8, 2010

**The Power of Programming:
Developmental Origins
of Health and Disease**

Guest
Scientific
Editor

Berthold Koletzko



THE POWER OF PROGRAMMING

International Conference on Developmental Origins of Health and Disease
Campus of the University Hospital, Munich-Großhadern

Munich, Germany
6th - 8th May, 2010



www.metabolic-programming.org



How did it come about?

- Since 2007, continued discussions with EU DG Research on future research needs & opportunities on developmental origins of health
- Complemented by discussions with NIH - EU Biotechnology Task Force, European Parliament, EU Technology Platform, et al
- EU DG Research decides to bring out a call for large project
- First meeting with potential project partners in Munich, May 2010
- Preparation of project application from May 2010 to Jan 2011, led by a Steering Group (Berthold Koletzko, Lucilla Poston, Keith Godfrey, Brigitte Brands, Hans Demmelmair, Margaret Ashwell), in close collaboration with (potential) partners

Submission of the Grant Application: Jan 2011

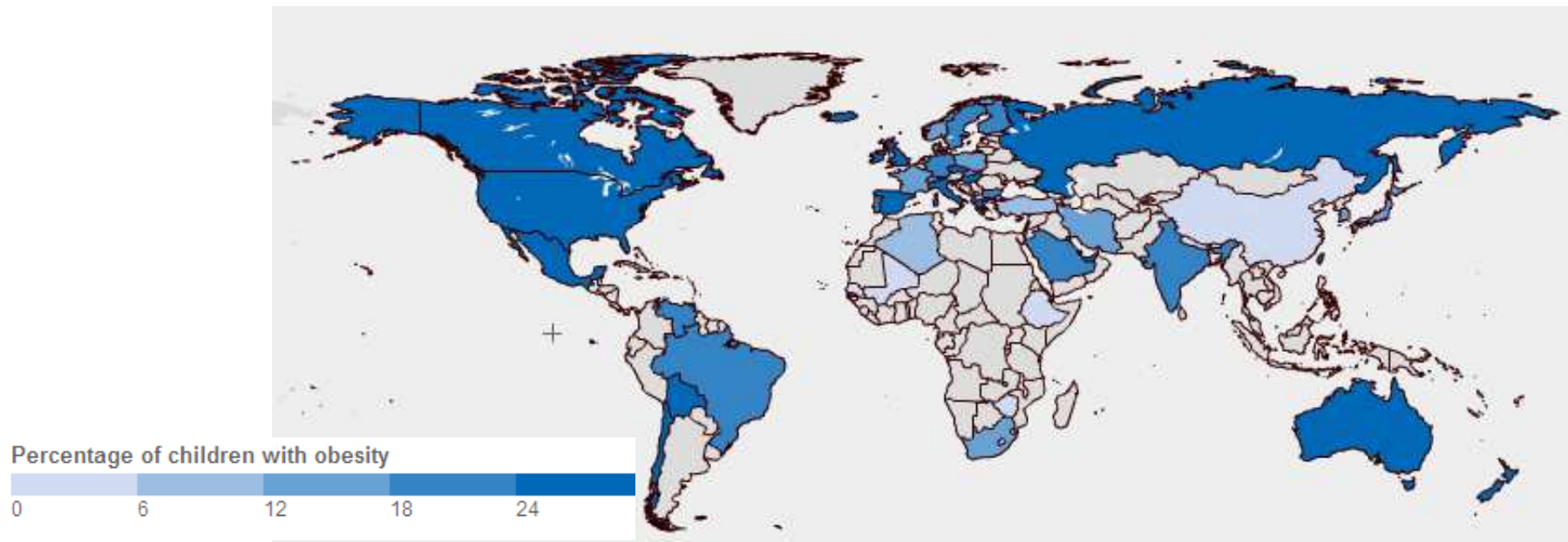


Why Research on Early Nutrition \Rightarrow Adiposity?

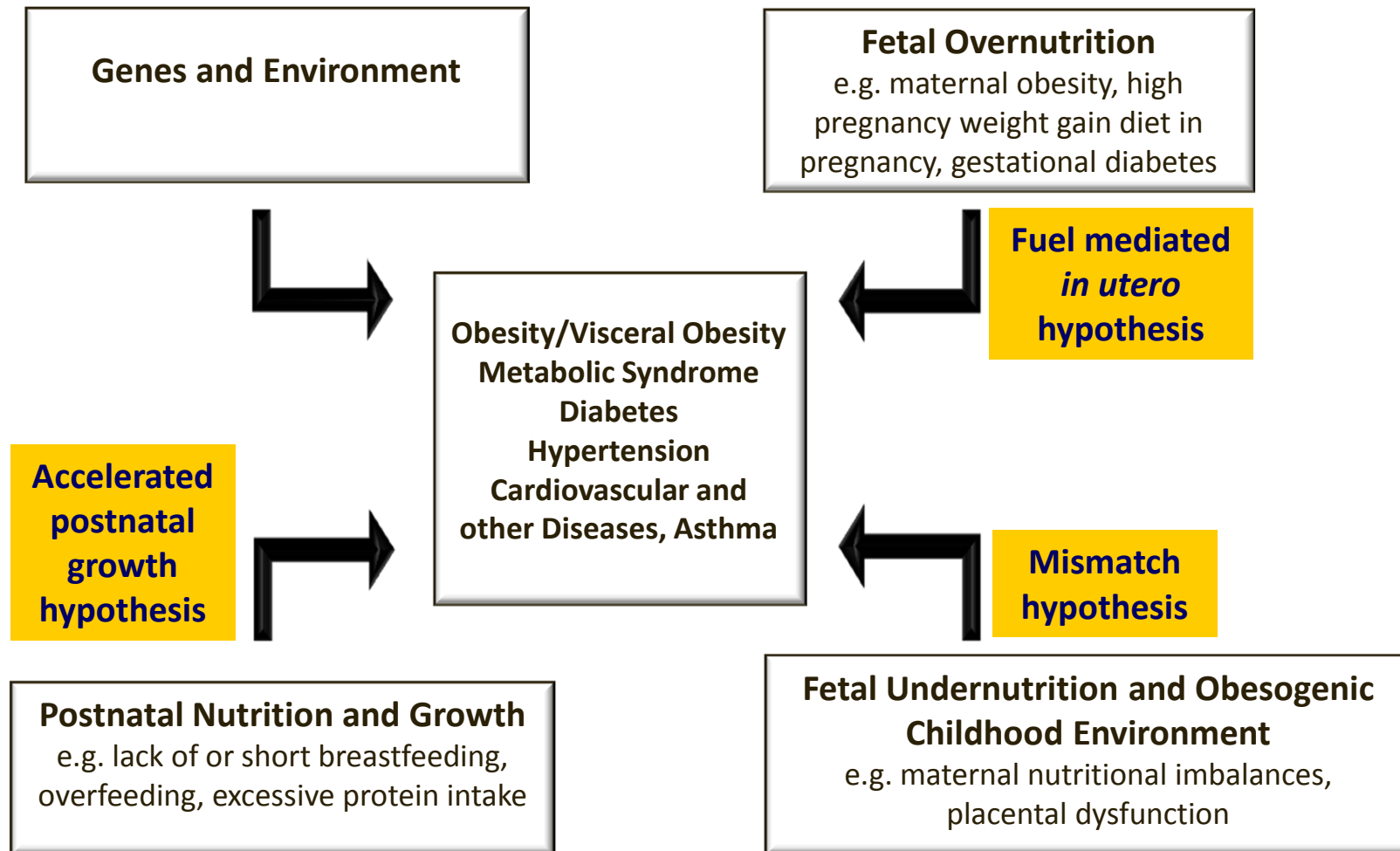


WHO: overweight & obesity = 5th. leading cause for global deaths

- The growing obesity propels an upsurge of non communicable diseases e.g. diabetes, hypertension and cardiovascular diseases
- Globally, 44% of the diabetes burden, 23% of the ischaemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.

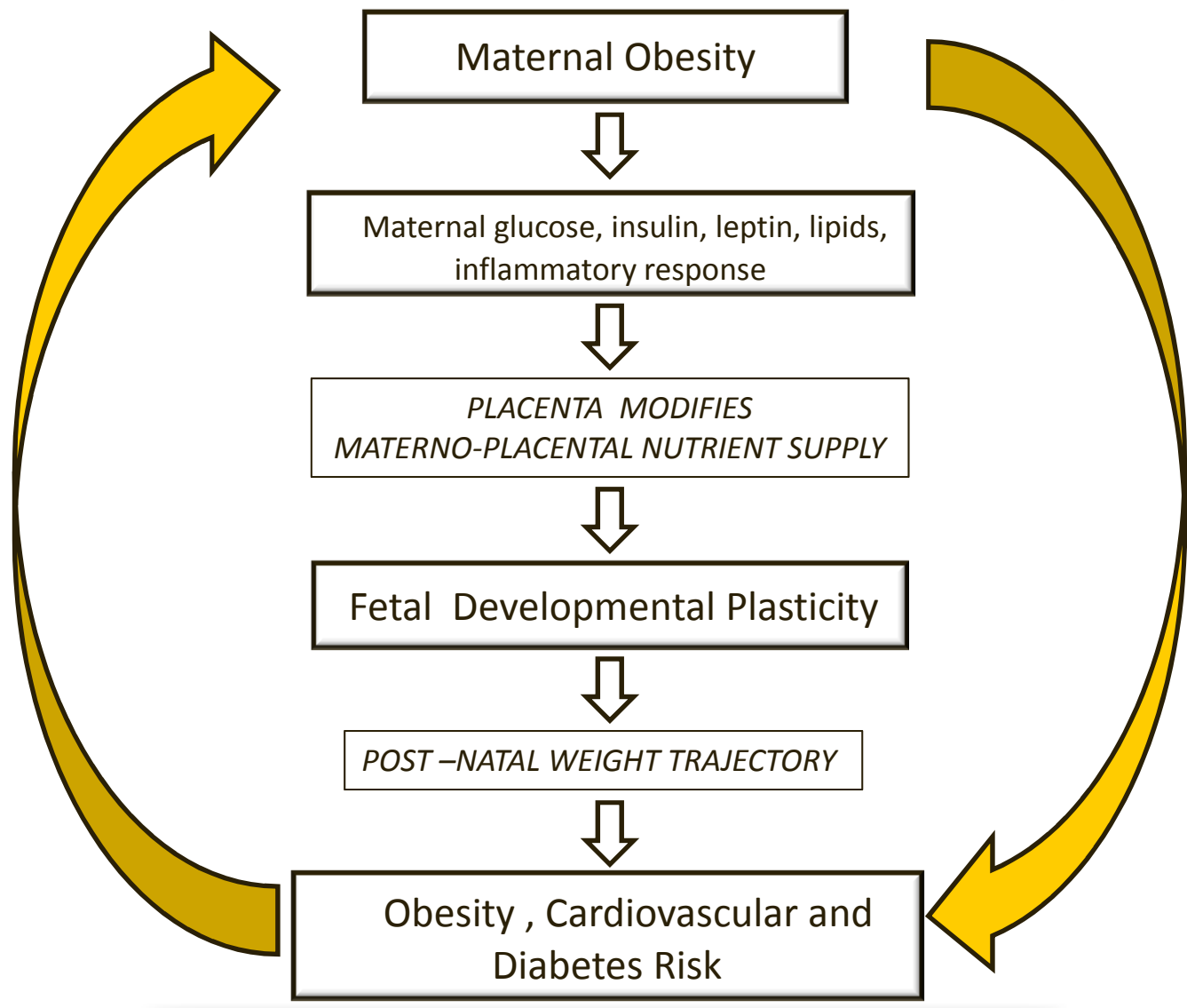


Key Hypotheses

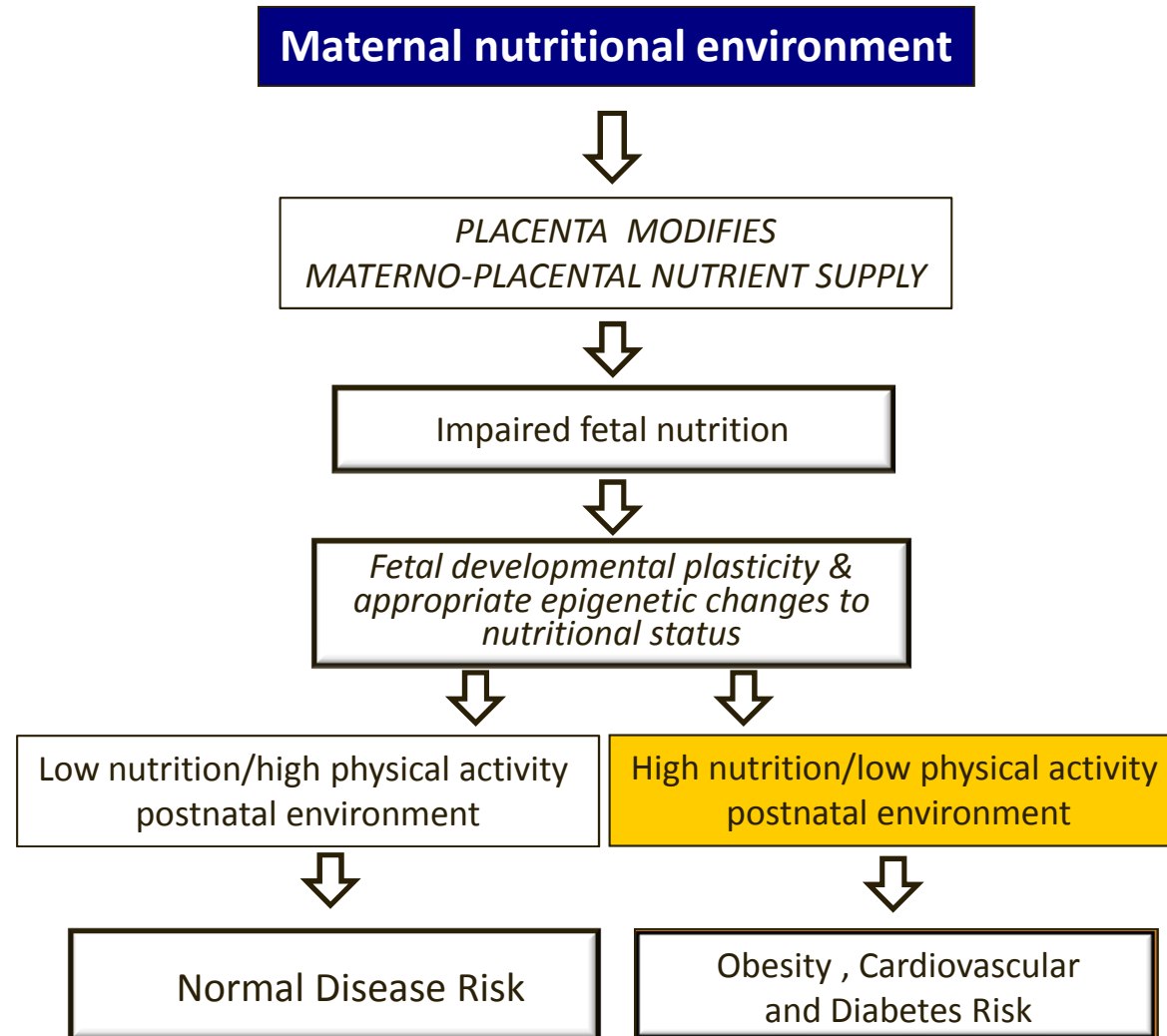


modified from Koletzko et al, Am J Clin Nutr, 2011 Dec;94(6):2036S-2043S.

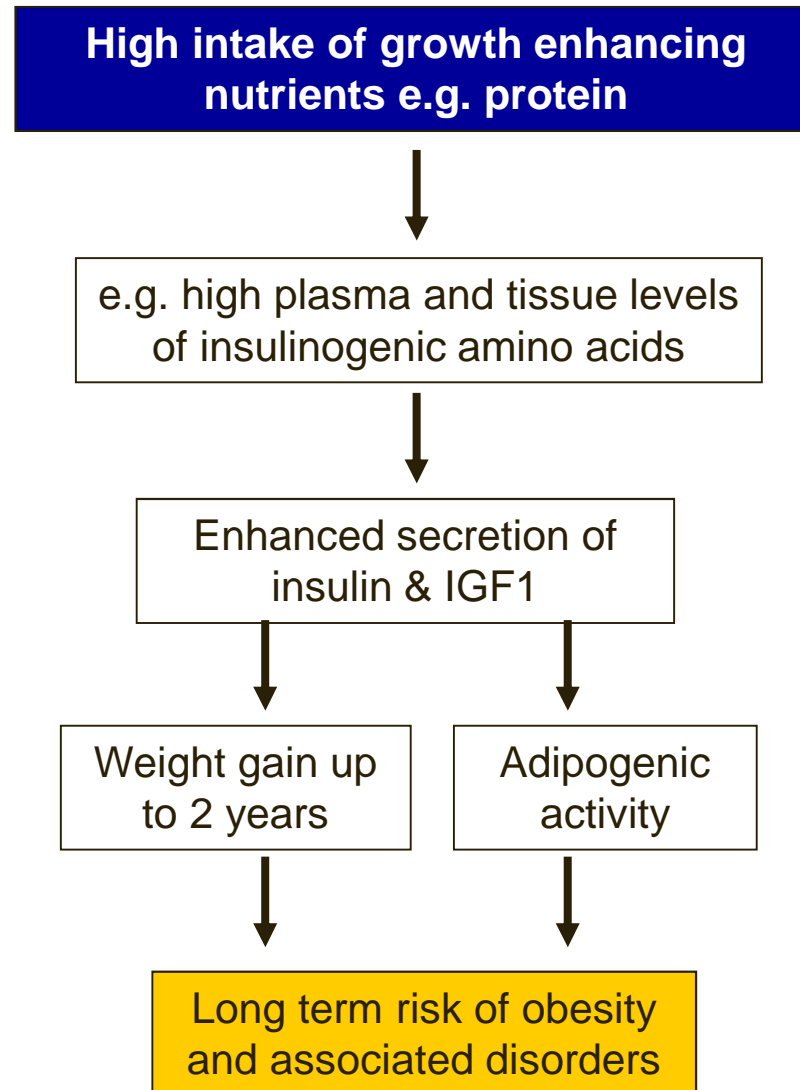
Transgenerational Circle of Obesity



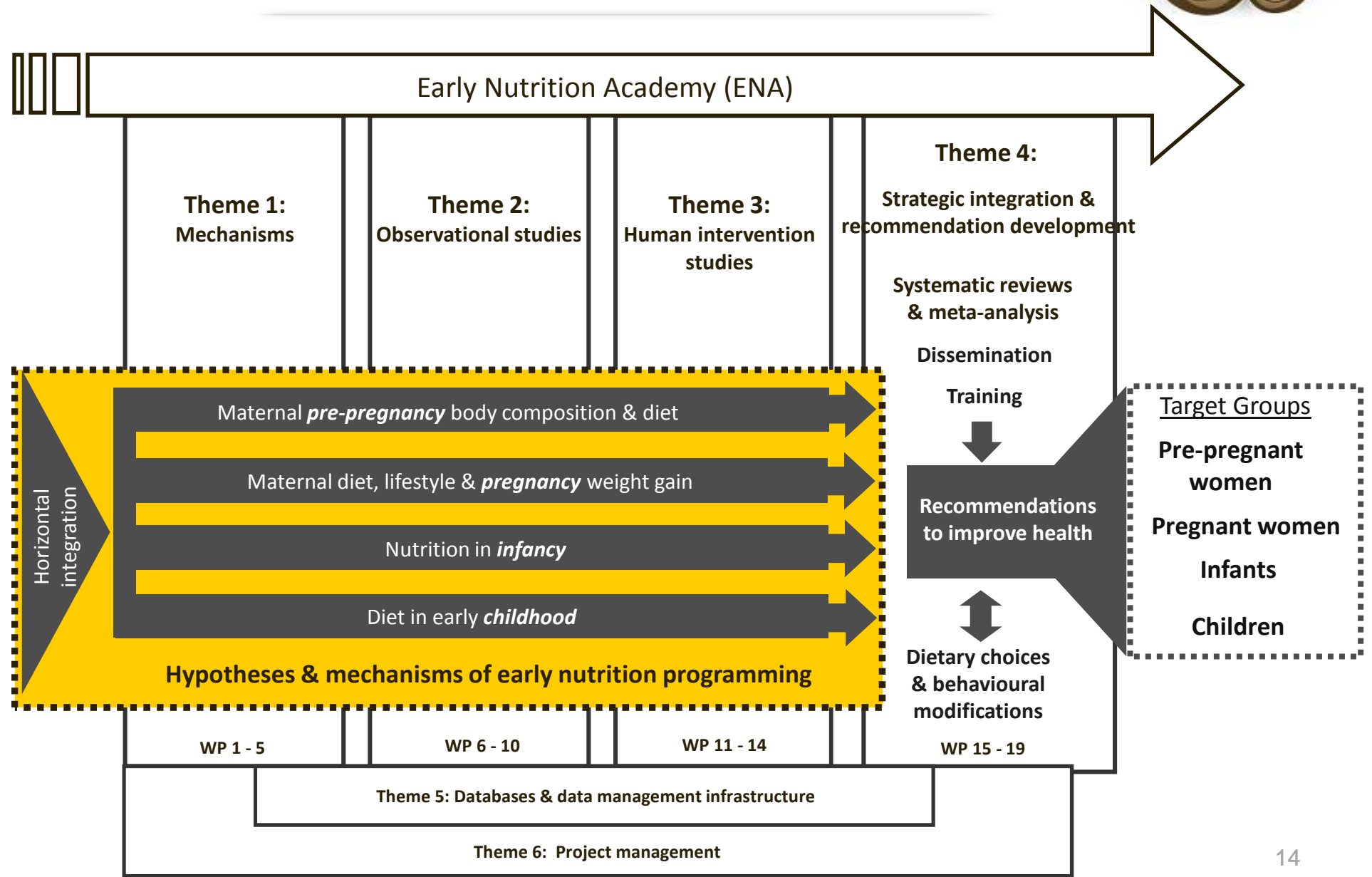
Mismatch between pre- and postnatal Environment



Postnatal accelerated Weight Gain



Project EarlyNutrition - Structure



Project EarlyNutrition brings together...



⇒ **11 observational cohorts:** SWS, DNBC, GenerationR, HUMIS/MOBA, Genesis, LISA, PreventCD, RAINE, UC Irvine, VIVA

and

⇒ **9 interventional studies (RCTs):** UPBEAT, SCOPE/Baseline, CHOP, ROLO, LIMIT, new RCT „LGI dietary supplement“, new RCT „low GI follow-on formula“; new RCT „novel nitrogen composition in infant formula“

from 13 European countries, the USA and Australia comprising
>470,000 individuals

Expected Impact



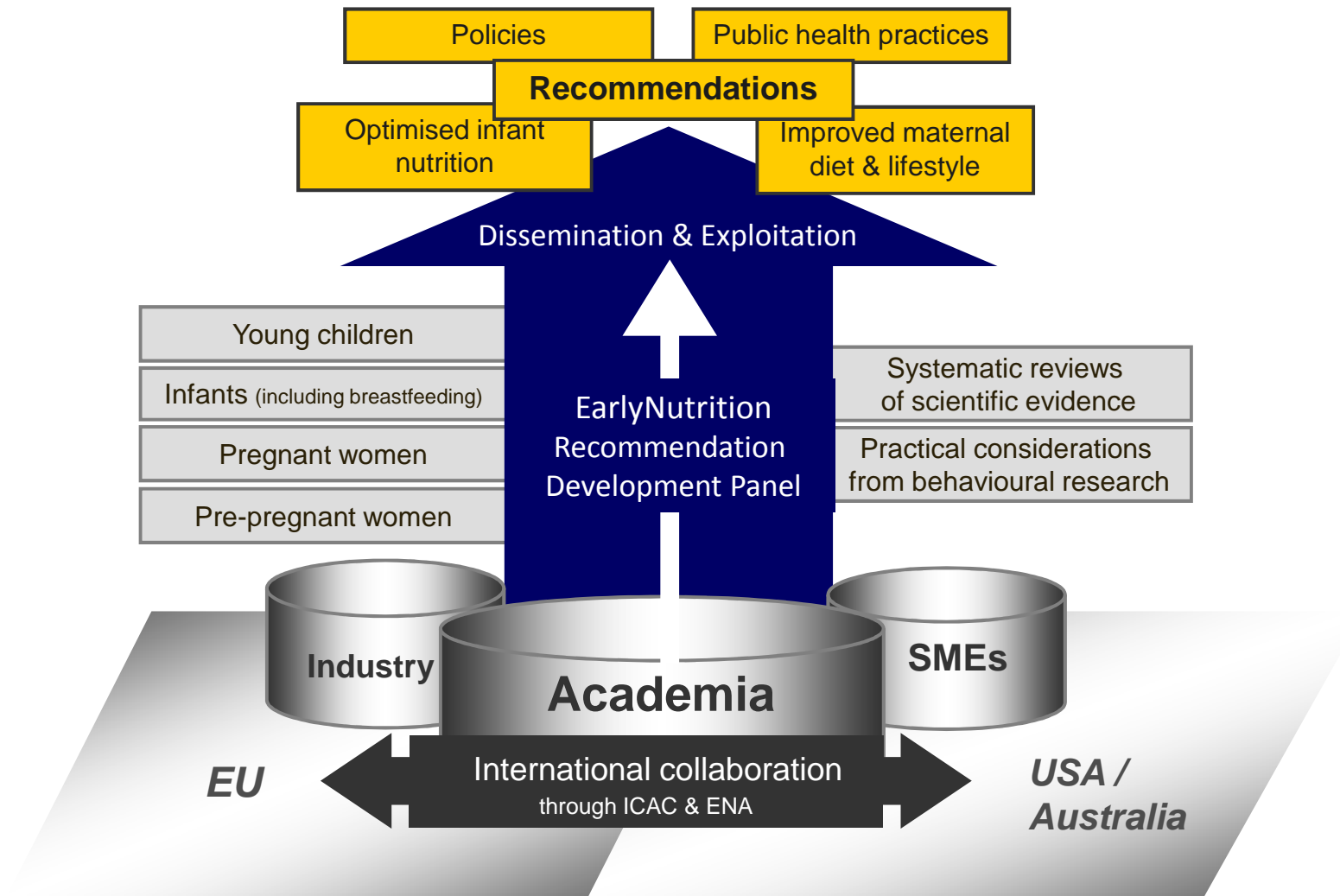
- Better evidence for the effects of early nutrition programming on health, well-being and performance, with a focus on reduction of obesity and associated disorders
- Characterisation and validation of biomarkers for early growth patterns and later outcomes
- Demonstration of effects on novel dietary interventions
- Definition of behaviour change approaches to the practical implementation of dietary and physical activity recommendations among consumers

Translational Application



- Few current recommendations on optimal nutrition consider long-term outcomes on early nutrition programming effects
- Better evidence for effects & mechanistic pathways of early nutrition will support recommendations for optimal nutrition and lifestyle
- Four Target Groups, chosen according to critical periods for programming and where recommendations are applicable
 - pre-pregnant women
 - pregnant women
 - infants (including breastfeeding)
 - children

Closing the Gap between Research and Application



Expected Key Benefits



- Contribution towards EU policies on reduction of health inequalities, EU strategies on obesity and ageing, the Europe 2020 strategy and the EU Innovation Union policies
- Economic benefits through prevention of obesity
 - ⇒ major reduction of health care and social security costs
 - ⇒ enhanced wealth due to increased productivity, and due to development and production of improved dietary products for the target populations
- Attracting and training of new biomedical researchers that will be the innovators of the future

Many thanks to the Grant Writing and the Munich Project Management Team



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Project Management



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Issues



Simone Cramer
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Martina Scheer
Financial/
Administrative
Issues



EARLYNUTRITION

Thanks to CAS^{LMU} for hosting this
welcome event and reception

Join us for dinner at nearby
Café Reitschule at 20.00h