



## The importance of micronutrients during perinatal period

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特別講演 1

**The importance of micronutrients during perinatal period**

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Many pregnant women, infants and children suffer from micronutrient deficiencies (WHO). In pregnancy micronutrients needs increase more than energy needs, therefore the quality of nutrient supply requires attention. Inadequate intakes are common for folic acid, vitamins D & B<sub>12</sub>, iron and iodine. The B-vitamin **folate** is essential for the synthesis of DNA and cell components. Low folate status before pregnancy and during the first trimester induces increased risks of serious congenital anomalies, particularly neural tube defects (NTDs) but apparently also other congenital defects. Supplementing folic acid ( $\geq 400$  µg/d) starting from preconception and continuing during the first trimester markedly reduces the risk of NTDs and other malformations. Higher folate dosages and combination with multivitamins appear to enhance benefits. About 80 countries introduced folate fortification of staple foods to effectively reduce congenital anomalies. Many women show low **vitamin D** concentrations because of limited sun exposure. Vitamin D supports maternal and fetal bone health and immune function. **Iron** deficiency anemia is the most frequent anemia in pregnancy and promotes preterm delivery and low birthweight. Iron is also essential for fetal brain development. **Iodine** supply secures normal thyroid hormone synthesis and normal thyroxine concentrations for fetal brain development. Subnormal urinary iodine excretion in pregnant women was linked to lower cognitive development of their children. Securing an adequate vitamins and trace element supply to pregnant and lactating women is important for promoting health and optimal long-term outcomes of mothers and children.

## 【Biography】

**Academic background:** Professor of Paediatrics at LMU -

Ludwig-Maximilians-Universität Munich, Germany. Head, Div. Metabolic & Nutritional Medicine, Dr. von Hauner Children's Hospital, Univ. of Munich Medical Centre. Author of 930 journal articles (Web of Science: Citations 19 855, H-index 71; Google Scholar: Citations 38 604, H-index 99), 218 book chapters, and 37 books/monographies. Research funding from the European Commission, the European Research Council, the German Research Council, the German Federal Ministry of Education and Research, the governments of Bavaria and Norway, the US NIH and other public funding bodies. Member of the grant review board medicine, German Research Council and chair of the Clinical Trial grant review board, German Research Council. Editor in Chief of Annals Nutrition & Metabolism (the journal of IUNS) and of World Review of Nutrition and Dietetics, and Associate Editor of Curr Opin Clin Nutr Metabol Care and of Monatsschrift Kinderheilkunde.

**Specialty:** Paediatrics

**Roles in scientific societies:** President, Federation of Int. Soc. of Paediatr. Gastroenterology, Hepatology & Nutrition (fispghan.org), Immediate Past-President, Eur. Soc. Paediatr. Gastroenterology, Hepatology & Nutrition (espghan.org), Strategic Technical Advisor on Nutrition, Int. Pediatric Association (ipa-world.org), Chair of the Tertiary Care Council, European Academy of Paediatrics ([eapaediatrics.eu](http://eapaediatrics.eu)), President-Elect, The Int. Soc. f. Research in Human Milk and Lactation (isrhml.net). Council Member, United Eur. Gastroenterology (ueg.eu), The Int. Soc. f. Developmental Origins of Health and Disease (dohadsoc.org).