WHO guideline development meeting— Optimal blood folate concentrations in women of reproductive age for prevention of neural tube defects

WHO/HQ Geneva, Switzerland, 23-25 September 2013
Salle G (8th floor)

SCOPE AND PURPOSE

Birth defects, also known as congenital anomalies, can be defined as structural or functional abnormalities, including metabolic disorders, which are present from birth and can be caused by single gene defects, chromosomal disorders, multifactorial inheritance, environmental teratogens or micronutrient deficiencies. WHO estimates that 270 000 deaths worldwide (about 7% of all neonatal deaths) were caused by birth defects in 2010 and that are among the leading causes of childhood death, chronic illness, and disability in many countries. In an effort to address the emerging importance of birth defect morbidity and mortality, on 21 May 2010 the 63rd World Health Assembly adopted a resolution calling all Member States to promote primary prevention and to enhance the health of children with birth defects by developing and strengthening vital registration and surveillance systems; promoting international cooperation, developing expertise and building capacity; and strengthening research and studies on aetiology, diagnosis and prevention.

The aetiology of birth defects can be complex and multifactorial. Studies have shown that increasing the consumption of folic acid by women during the periconceptional period can significantly reduce the occurrence of neural tube defects (NTDs) which has led to recommendations for women to consume 400 micrograms (0.4 mg) of folic acid daily to reduce their risk of having an NTD-affected pregnancy. Higher amounts of folic acid also can help reduce the recurrence of NTDs.

The information on the use of different biomarkers to monitor vitamin and mineral status worldwide is included in the World Health Organization (WHO) Vitamin and Mineral Nutrition Information System (VMNIS), hosted by the Department of Nutrition for Health and Development (NHD) since its establishment in 1991, following a request by the World Health Assembly to strengthen surveillance of micronutrient deficiencies at the global level. Current folate cut-offs are focused on the prevention of megaloblastic anaemia in all age groups. However, it is possible that blood folate concentrations in women of reproductive age need to be higher to help prevent neural tube defect-affected pregnancies.

The establishment of optimal blood folate concentrations entails many challenges. There is scarce information on the direct relationship between folic acid intake and blood folate concentrations to NTDs occurrence, from both intervention trials and observational studies. These associations may also be affected by technical, genetic, biological, safety and contextual factors that need to be considered when examining and interpreting the existing data.
The Department of Nutrition for Health and Development, World Health Organization, and the Division of Birth Defects and Developmental Disabilities, National Center on Birth Defects and Developmental Disabilities, US Centers for Disease Control and Prevention (CDC), convened a technical consultation on 13-15 August 2012 in Atlanta, USA, to define the priority questions and describe the methods for retrieving, summarizing, assessing and modeling the evidence to establish the optimal range of red blood cell and serum/plasma folate concentrations in women of reproductive age associated with the prevention of neural tube defect-affected pregnancies.

As a follow up to that consultation and as part of the continuing role of the WHO Department of Nutrition for Health and Development in providing evidence-informed policy and programme guidance to Member States, in collaboration with relevant internal partners and guided by the WHO guidelines development process, is convening a guideline development meeting on 23 to 25 September 2013 in Geneva, Switzerland, to discuss the WHO guideline: blood folate concentrations in women of reproductive age. The guideline development group is requested to advise WHO on the following:

1. The interpretation of evidence for establishing cut-offs in serum and red blood cells at the individual at public health level, with explicit consideration of the overall balance of risks and benefits.
2. The formulation of final draft recommendations.
3. Determine the strength of these recommendations, considering the balance of evidence for benefits and harms, and taking into account costs, values and preferences.
4. Define implications for research in the areas discussed.
5. Agree on a ‘review by’ date for the discussed guidelines, considering on-going research and controversies.