Maternal and Child Nutrition: The First 1,000 Days
Maternal and Child Nutrition: The First 1,000 Days

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Preface

Contemporary data from numerous clinical and scientific studies have underscored the critical significance of healthy growth and development during the first 1,000 days of a child’s life (9 months in the mother’s womb and first 2 years after birth) in relation to both immediate survival and morbidity as well as to the development of noncommunicable disorders such as obesity, type 2 diabetes, hypertension and heart disease in adult life. The fact that optimal growth and development during this period are also critical to the development of brain and cognition is now well recognized and is the principal basis for targeting nutrition interventions within this critical period. The fact that in some parts of the world close to a third of all births are low birthweight (either premature or growth retarded or both) also indicates that growth and nutrition in fetal life are important determinants of development in early childhood. Undernutrition and micronutrient deficiencies among children under 2 years of age significantly increase the likelihood of serious infectious morbidities such as pneumonia, diarrhea and malaria and are associated with almost a third of all deaths during the first 5 years of life. Each year, close to 2.6 million children under 5 years of age die as a consequence of various forms of undernutrition, and many more are affected by high burden of disease and disability. At the other end of the spectrum, there has been a rapid increase in the incidence of diabetes, obesity and heart disease across the world, more so in the developing world in association with the arrival of industrialization and affluence, and has been related to growth during the first 1,000 days. The combination of the immediate and long-term consequences of impaired growth and development during the critical first 1,000 days contributes enormously to the health care cost and to the impairment of the economic growth of the society. As stated by the United States Secretary of State Hillary Clinton, ‘improving nutrition for mothers and children is one of the most cost-effective and impactful tool we have for poverty alleviation and sustainable development’.

The first 1,000 days of an infant’s life offer a unique opportunity for optimizing health and nutrition outcomes. Optimal nutrition and health care of the
mother and infant during this period are closely linked to growth, learning potential and neurodevelopment, and to long-term outcomes. A child with poor brain development is at high risk for cognitive developmental disorders leading to poor school performance, early school dropout, low-skilled employment and falls into the vicious cycle of intergenerational sharing of nutritional deficiencies and poverty. Given the importance of nutrition across the life cycle, many hold the view that the most optimal opportunities for addressing the problem may actually necessitate addressing issues in the preconception period. In addition, the understanding of the mechanism of nutrient-related programming of the metabolism during this period via epigenetic and other mechanisms and development of innovative approaches for intervention are critical if we are to make an impact on the rapidly spreading epidemic of noncommunicable diseases in developing societies. Careful observation of the immediate metabolic consequences of intrauterine growth restriction and low birthweight is important to develop and evaluate strategies to improve survival and promote postnatal growth. Such interventions in the immediate neonatal period and during the 2 years after birth are aimed at achieving optimal growth, favorable neurocognitive outcome, reducing infant mortality and morbidity and reducing the burden of noncommunicable diseases in adult life. It was in this context that the 74th workshop of the Nestlé Nutrition Institute was organized in Goa, India. Renowned experts in the field from across the world discussed the critical importance of nutrition and environment during the first 1,000 days, between conception and the child’s 2nd birthday, in determining the health and development of the baby. Recognition of nutrient and environmental influences and appropriate intervention strategies can have profound impact on the child’s growth and development, on long-term consequences and can impact society’s health and economic prosperity. We very much appreciate the enthusiastic participation of the speakers and the invited clinical and non-clinical scientists and caregivers that resulted in a healthy, informative and scientific discussion. This monograph presents the state-of-the-art knowledge gained in this workshop and possible future areas of research. We are thankful to Nestlé Nutrition Institute for the support of this workshop and specifically Prof. Ferdinand Haschke, Dr. Natalia Wagemans, Dr. Sanjeev Ganguli, and Christine Stillhart for organizing an outstanding and stimulating workshop. We are hopeful that you will find these proceedings both informative and stimulating.

Jatinder Bhatia
Zulfiqar A. Bhutta
Satish C. Kalhan
The 74th Nestlé Nutrition Institute Workshop titled ‘Maternal and Child Nutrition: The First 1,000 Days’ looked at two important nutritional issues that can affect a child’s growth and development.

The first area of focus was the prevention of low birthweight (LBW), starting with the health of adolescent girls, through the pre-pregnancy and pregnancy stages and ending with lactation.

The second was the nutritional follow-up and feeding opportunities in relation to dietary requirements of children with an LBW. Our nutritional interventions must make the best possible short- and long-term outcomes possible. The importance of these issues for South and South East Asia brought this workshop to India.

The rate of LBW is still unacceptably high in some high-risk countries; in the South Asia region, for example, it stands at 28% of annual births [UNICEF, State of the World’s Children, Childinfo, and Demographic and Health Surveys by Macro International]. This significant number does not only include premature babies, but also those with intrauterine growth restrictions who consequently have a very high risk of developing metabolic syndrome in the future. That is why epidemiology, epigenetic programming, the correct nutrition strategy and monitoring of outcomes were chosen as the subjects of the scientific discussions for this workshop.

Preventing even one case of LBW brings considerable benefits, making this a valuable workshop for health care professionals globally. Reducing rates of LBW can bring economic value, through lower treatment costs, benefiting both families and public health systems, and result in better cognitive development for the child.

We wish to warmly thank the three chairpersons of this workshop – Prof. Zulfiqar A. Bhutta, Prof. Satish C. Kalhan and Prof. Jatinder Bhatia for establishing an excellent scientific workshop program. We are also indebted to the renowned speakers who have furthered the debate and understanding of this
important topic through their presentations and participation. We thank the many experts who came from across the globe to review and discuss the importance of the maternal and child nutrition during the first 1,000 days.

Finally, we wish to thank and congratulate Dr. Sanjeev Ganguly and his team from Nestlé Nutrition Institute, India, for their excellent logistical support that allowed us all to enjoy the scientific program and experience the wonderful cultural spirit of Goa.

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