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# Book Reviews

**Maternal and child nutrition: The first 1,000 days,** J. Bhatia, Z.A. Bhutta, S.C. Kalhan, editors (Karger, Basel, Switzerland) 2013. 238 pages. Price: US$ 59.00 / CHF 50.00 / EUR 42.00
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This book is the 74th volume of the Nestlé Nutrition Institute workshop series. This is a compilation of the papers presented in the workshop held in Goa, India in March 2012. The papers presented have been organised under three major sections: *(i)* Prevention of Low Birthweight, Epidemiology; *(ii)* Epigenetic Factors before and during Pregnancy; and *(iii)* Clinical Outcome of Low Birthweight, Long-Term Consequences.

The first section begins with an overview of the epidemiology of low birthweight (LBW). The author shows how LBW babies comprise of two distinct groups: preterm births and small for gestational age (SGA) babies. This is followed by review of the global burden of LBW and SGA, aeteology of LBW and SGA, how they differ among countries with varying socio-economic status and risk factors and how they are changing over time. For quite some time the global epidemiology community has been intrigued by a paradoxical trend. India and South Asian countries continue to have increased low birthweight rates but most LBW babies are mature and survive with breast feeding and essential newborn care. However, in the developed countries there is a progressive increase in birth weight and most of the preterm infants weigh more than 2500 g and require intensive care because they are premature. This has led to the reappraisal of the definition and consequences of LBW in different country settings. The author concludes that "one size fits all" may not be appropriate; efforts to assess the risk of morbidity and mortality associated with different birth weights and interventions to reduce mortality may be the right focus.

The second chapter is on foetal malnutrition and its long term adverse nutrition and health consequences. These include stunting, lower cognitive performance, increased risk of adiposity, hypertension and diabetes in adult life and increase in cardiovascular disease and all-cause mortality; all of which might be attributable to foetal programming. Higher birth weight has been shown to be associated with higher obesity, diabetes and perhaps cancer risk in adult life. Therefore, prevention of both low and high birth weight through nutrition and health intervention in pregnancy needs due attention. The next chapter is the summary of the discussions on these two important papers.

The next four chapters of this section discuss the interventions for preventing LBW in developing countries. Recognising the need for considering the multiple interacting factors responsible for LBW while designing intervention strategies, the programmes discussed include health and nutrition interventions during pregnancy, multiple micronutrient versus iron folate supplementation on foetal growth, and importance of preconceptions interventions to improve outcome of pregnancy. Appropriate interventions for detected problems during pregnancy such as anaemia or diabetes are components of antenatal care and undoubtedly pay rich dividend in terms of optimal outcome in the individuals with such problems.

The second section is devoted to understanding the mechanisms by which nutrient related programming of the metabolic processes occur with special reference to the intrauterine period via epigenetic pathways. The first two articles in this section deal with the nutrition regulation of foetal growth and endocrine interactions in the control of foetal growth; these are followed by a discussion on these two articles. After this is an article on the role of prenatal stress on developmental programming of obesity and metabolic dysfunction and followed by a commentary. The next two articles

are on one-carbon metabolism, foetal growth and long-term consequences and the discussion on this article. The final article is on influence of maternal vitamin B12 and folate on growth and insulin resistance in the offspring.

The third section deals with clinical outcome of low birthweight, and its long-term consequences. The first two articles are on immediate metabolic consequences of intrauterine growth restriction and low birthweight; the next two are on amino acid homeostasis in the preterm infant. Both these articles are of value to neonatologists in their efforts to minimize the adverse consequences of prematurity and low birthweight by offering effective interventions to combat the metabolic changes in these infants. The next article deals with the important aspect of interventional strategies to promote appropriate growth in preterm infants based on experience from the developed countries. The succeeding two articles deal with the conflicting imperatives to promote optimal nutritional intake to support growth in preterm infants: use of parenteral administration of nutrients, initiation of enteral feeds preferably by breast milk as early as possible and providing the additional nutrients needed through appropriate supplementation. Iron and other micronutrient deficiencies are commonly seen in low birthweight infants, and iron deficiency anaemia has been reported to occur in about one fourth of the LBW babies. The usefulness of delayed clamping of the cord, and iron supplementation at appropriate dose to the infant have been discussed in the next two articles. The last two articles in the section deal with the interventions for improving neuro-developmental outcomes in the LBW infants. There is a concluding article summarising all the three sections.

The publication is of special importance and interest to Indian obstetricians and paediatricians. It is now well recognised that the first 1000 days of life are critical determinants of survival, growth and well being of the offsprings right through life wherever the children live. The articles provide in-depth understanding of the recent advances in research with respect to this critical period across the world. Overall, this is a valuable book for all those who are interested in improving the nutrition and health status of children so that they grow into healthy adults.

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