The nutritional status of women is increasingly being regarded to be important during reproductive life. Beside the influences on fertility, embryogenesis and organogenesis, fetal growth and maternal adaptation to pregnancy are affected as well [1]. Impaired maternal nutrition may be related to some kind of intrauterine 'programming' during early fetal life, of diseases expressed during adult life such as cardiovascular disease and non-insulin-dependent diabetes [2]. Furthermore, there have been some indications that maternal in-utero exposure to malnourishment, does affect obstetric performance [3].

However, the physiologic mechanisms involved in the nutrition of the conceptus as well as the critical gestational time periods during which some kind of nutritional deprivation will lead to abnormal pregnancy outcome, are still poorly understood. Some progress regarding the importance of early human nutrition is being made, as for example in recent work which has demonstrated a relation between yolk sac injury and embryopathy [4].

As it has been shown that the intake of food and energy per se does not need to be increased in well-nourished western women, provided that they reduce their level of physical activity [5], attention has to be focused on quality rather than quantity of maternal nutrition as the requirements for several specific nutrients are increased in pregnancy. The importance of deficient as well as excessive intake of vitamins in relation to congenital birth anomalies is currently a matter of great (public) interest. Folic acid, taken by the mother during the periconceptional period, has been proven to reduce the recurrence and occurrence risks of neural tube defects in her offspring [6,7]. This unique finding is an important illustration of primary prevention of perinatal morbidity and mortality brought on by improved nutritional intake. Another such example is the prevention of anaemia in pregnancy — a condition known to be possibly associated with preterm delivery and low birth weight [8] — by iron supplementation.

Dietary interventions during pregnancy have to be carefully investigated with regard to nutritional implications. Following the studies of De Snoo in the early decades of this century [9], dietary sodium restriction has remained an applied measure in antenatal care in our country to prevent and treat hypertensive disorders during pregnancy. Such dietary advise, however, has been shown to result in a dramatic decrease in the intake of almost all other nutrients in these pregnant women [10,11].

Environmental influences also have to be taken into account in the evaluation of quality of nourishment in intra and (early) extrauterine life. Although a recent retrospective study suggested the beneficial effect of breastfeeding on postnatal neurological development as compared to feeding with formula-milk [12], the possible subtle detrimental effects of chemical pollutants in breast-milk remain a matter of concern.

This special issue of the European Journal of Obstetrics and Gynecology and Reproductive Biology is made up of 11 (review) articles relating to presentations held during an international workshop on 'Nutrition in pregnancy' on the 25th November 1994 in Eindhoven, The Netherlands. We hope that this volume will help in identifying ways forward and enhance our understanding of the role of nutrition in the course and outcome of pregnancy.

References


