

Healthy pregnancy: fetal programming and chronic diseases in later life

Preconceptional and maternal care are essential for newborn health and health in adulthood. Already in the mother's womb, essential features are programmed that determine the baby's health throughout his life, such as having a heart disease later in life.

Key Facts

- Maternal and newborn health are inevitably connected
- The unborn or newborn baby is influenced by various environmental factors, such as the mother's lifestyle (smoking, alcohol), her nutrition and health status
- Fetal programming = the baby is "programmed" in the womb of the mother and is more prone to develop later in life chronic diseases such as diabetes, obesity and coronary heart disease

Maternal and newborn health are interconnected. Some of the main risk factors potentially harming the unborn child can be positively influenced and the risk can be significantly reduced considering certain factors:

Lifestyle factors: Is smoking, alcohol and stress dangerous?

While pregnant women should be careful with coffee, tobacco and alcoholic drinks should be absolutely taboo. The negative effects of alcohol and smoking on pregnancy, fetal development, preterm birth, birth complications, malformations, and long-term health problems in the off-spring, are evident. Physical fitness and prevention of stress is essential for a healthy child. Reduction of maternal stress, for instance, also lowers the risk of preterm birth.

Why is nutrition so important?

Healthy/balanced diet

Optimal nutrition is the essential basis of life and can have a profound impact for pregnant women, the developing baby and the newborn child. It is essential that the woman takes certain vitamins and minerals to ensure a healthy development of the baby. For example, a higher need of folate should be fulfilled to prevent malformations of the fetus. A higher intake of omega 3 fatty acids is found to influence positively the intelligence of children at the age of five.

Overweight and obesity

Overweight and obesity are among the primary current health challenges resulting in increased disease and death rates world-wide. In Europe, about one third of pregnant women are overweight and probably more than one in ten pregnant women suffer from diabetes during pregnancy. Conditions closely related to overweight and obesity, such as diabetes and high blood pressure lead to negative health consequences for the unborn baby also later in life.

What is the influence of breastfeeding?

Health in adulthood may also be determined to some extent by nutrition received during infancy. Breastfeeding is optimal for the baby for a number of physiological and psychological reasons. Studies have found that breastfed infants are less likely to become overweight/obese as adults. WHO recommends a time period of 6 months of exclusive breastfeeding for an optimal outcome of the baby. Breast milk is also good for bone size and mineral content of the adult 20 years later.

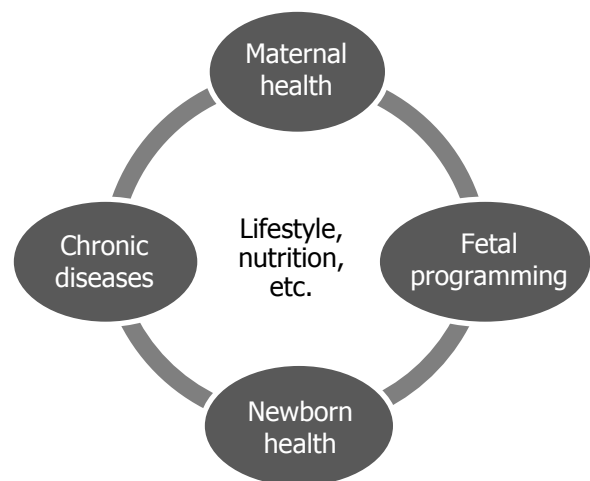
During all stages– before conception, during pregnancy and after birth- the environment and the mother's behaviour influence the baby's development and health until adulthood.

What is "fetal programming"?

Already in the mother's womb, the bases for certain diseases such as diabetes, obesity, and cardio-vascular diseases are set through fetal "programming" during critical stages in fetal development. The growing baby in the womb (fetus) is exposed to all environmental factors through the mother and even gene expressivity can be sustainably altered by an "undernutrition" of the fetus. Environmental factors, nutrition and health status of the mother play an important role in this process.

Therefore, pregnancy, birth and neonatal life offer a unique opportunity to contribute to primary prevention throughout the lifespan.

Maternal height, weight and body composition may relate to the metabolic capacity of the mother and thus her ability to deliver nutrients to the fetus. This alters the baby's body and is from then differently "programmed"- the fetus is later in life more prone to develop obesity/overweight himself and coronary heart disease, diabetes and hypertension.



About EFCNI

The European Foundation for the Care of Newborn Infants (EFCNI) is the first pan-European organization and interactive network to represent the interest of preterm infants, ill newborns and their families. It gathers together parents, professionals and other stakeholders from different disciplines with the common goal of improving long-term health of preterm and newborn children by ensuring the best possible prevention, treatment, care and support. www.efcni.org