

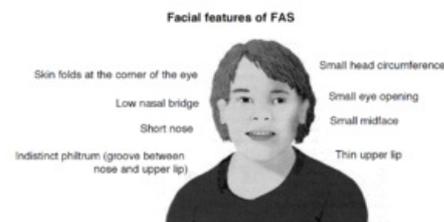
Maternal factors affecting teratogenesis

In mammals, their embryonic development is strongly influenced by the maternal organism. In humans, lifestyle also plays a significant role, including dietary habits, smoking, excessive alcohol consumption, etc.

Fetal alcohol syndrome

Chronic alcohol consumption during pregnancy can lead to the development of fetal alcohol syndrome, which is a serious fetal disability. The manifestations of the embryotoxic effects of alcohol are highly non-specific (intrauterine growth retardation, psychomotor dysfunction and craniofacial malformations). The diagnosis is therefore often made on the basis of information about the mother's alcoholism. The characteristic facial features of a child with fetal alcohol syndrome are a smooth philtrum, narrow upper lip, low nasal bridge, short nose, and a flat midface.

Craniofacial features associated with fetal alcohol syndrome



Child with FAS: Short nose with low arch, smooth philtrum, small head circumference, ptosis, thin upper lip...

Smoking

Smoking is not associated with major congenital defects but contributes to intrauterine growth retardation. It may be a cause of preterm birth. Insufficient supply of nutrients and oxygen to the fetus occurs in smoking mothers. There is also evidence that it causes behavioral disorders.

Diabetes mellitus

Disorders of sugar metabolism during pregnancy in diabetic women cause a higher incidence of preterm birth, more frequent malformations and higher neonatal mortality. Babies of diabetic women tend to have a higher birth weight. The risk of birth defects is three to four times higher compared to children of non-diabetic mothers. Heart, skeletal and CNS defects have been described. The incidence of malformations is strongly influenced by the seriousness and duration of the mother's disease.

Phenylketonuria

Mothers with phenylketonuria, caused by a deficiency of the enzyme phenylalanine hydroxylase, have elevated serum phenylalanine concentrations, which puts them at risk for mental retardation, microcephaly and heart defects of their children. On a phenylalanine-free diet, the mental development of affected individuals is normal and the diet can be discontinued as the CNS matures.

Nutritional deficiency

Persistent iodine deficiency in the mother's diet causes mental retardation in children, known as cretinism.

Links

Related articles

- Teratogenesis
- Fetal alcohol syndrome
- Gestational diabetes mellitus

Literature

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- SADLER, Thomas W. *Langmanova lékařská embryologie*. Grada Publishing, Praha 2011