

Growth rate[[edit](#)]

Growth rate of fetus is linear upto 37 weeks of gestation, after which it plateaus.^[16] The growth rate of an embryo and infant can be reflected as the weight per [gestational age](#), and is often given as the weight put in relation to what would be expected by the gestational age. A baby born within the normal range of weight for that gestational age is known as **appropriate for gestational age (AGA)**. An abnormally slow growth rate results in the infant being [small for gestational age](#), and, on the other hand, an abnormally large growth rate results in the infant being [large for gestational age](#). A slow growth rate and [preterm birth](#) are the two factors that can cause a [low birth weight](#). Low birth weight (below 2000 grams) can ultimately increase the likelihood of schizophrenia by almost four times. ^[17]

The growth rate can be roughly correlated with the [fundal height](#) which can be estimated by abdominal palpation. More exact measurements can be performed with [obstetric ultrasonography](#).

Factors influencing growth rate[[edit](#)]



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Poverty

Poverty has been linked to poor prenatal care and has been an influence on prenatal development. Women in poverty are more likely to have children at a younger age, which results in low birth weight. Many of these expecting mothers have little education and are therefore less aware of the risks of smoking, alcohol, and drugs - other factors that influence the growth rate of a fetus. Women in poverty are more likely to have diseases that are harmful to the fetus.

Mother's age

Women between the ages of 16 and 35 have a healthier environment for a fetus than women under 16 or over 35. Women between this age gap are more likely to have fewer complications. Women over 35 are more inclined to have a longer labor period, which could potentially result in death of the mother or fetus. Women under 16 and over 35 have a higher risk of preterm labor (premature baby), and this risk increases for women in poverty, African Americans, and women who smoke. Young mothers are more likely to engage in high risk behaviors, such as using alcohol, drugs, or smoking, resulting in negative consequences for the fetus. Premature babies from young mothers are more likely to have neurological defects that will influence their coping capabilities - irritability, trouble sleeping, crying, etc. There is a risk of mental retardation for infants over the age of 40 - down syndrome. Teen mothers and mother over 35 are more exposed to the risks of miscarriages, premature births, and birth defects.

Drug use

Eleven percent of fetus's are exposed to illicit drug use during pregnancy. Maternal drug use occurs when drugs ingested by the pregnant woman are metabolized in the placenta and then transmitted to the fetus. When using drugs (narcotics), there is a greater risk of birth defects, low birth weight, and a higher rate of death in infants or stillbirths. Drug use will influence extreme irritability, crying, and risk for SIDS once the fetus is born. The chemicals in drugs can cause an addiction in the babies once they are born. Marijuana will slow the fetal growth rate and can result in premature delivery. It can also lead to low birth weight, a shortened gestational period and complications in delivery. Heroin will cause interrupted fetal development, stillbirths, and can lead to numerous birth defects. Heroin can also result in premature delivery, creates a higher risk of miscarriages, result in facial abnormalities and head size, and create gastrointestinal abnormalities in the fetus. There is an increased risk for SIDS, dysfunction in the central nervous system, and neurological dysfunctions including tremors, sleep problems, and seizures. The fetus is also put at a great risk for low birth weight and respiratory problems. Cocaine use results in a smaller brain, which results in learning disabilities for the fetus. Cocaine puts the fetus at a higher risk of being stillborn or premature. Cocaine use also results in low birthweight, damage to the central nervous system, and motor dysfunction.

Alcohol

Alcohol use leads to disruptions of the fetus's brain development, interferes with the fetus's cell development and organization, and affects the maturation of the central nervous system. Alcohol use can lead to heart and other major organ defects, such as small brain, which will affect the fetus's learning behaviors. Alcohol use during pregnancy can cause behavioral problems in a child, mental problems or retardation and facial abnormalities - meaning smaller eyes, thin upper lip, and little groove between the nose and lips. Use can also increase the risk of miscarriages and stillbirths, or low birth weight. [Fetal alcohol syndrome](#) (FAS) is a developmental disorder that is a consequence of too much alcohol intake by the mother during pregnancy. Children with FAS have a variety of distinctive facial features, brain abnormalities, and cognitive deficits.^[5]

Smoking and Nicotine

When a mother smokes during pregnancy the fetus is exposed to nicotine, tar, and carbon monoxide. Nicotine results in less blood flow to the fetus because it constricts the blood vessels. Carbon monoxide reduces the oxygen flow to the fetus. The reduction of blood and oxygen flow results in stillbirth, low birth weight, and ectopic pregnancy. There is an increase of risk of sudden death syndrome (SIDS) in infants. Nicotine also increases the risk for miscarriages and premature births or infant mortality. There has been a link from smoking during pregnancy that led to asthma in childhood. Low birth

weight and premature births can also increase the risk of asthma if a mother smoked during pregnancy because of the effects on the respiratory system of the fetus.

Diseases

If a mother is infected with a disease, the placenta cannot filter out the virus carriers and infect the fetus. Babies can be born with venereal diseases transmitted by the mother.

Mother's diet and physical health

An adequate nutrition is needed for a healthy fetus. A lack of iron results in anemia in the fetus, the lack of calcium can result in poor bone and teeth formation, and the lack of protein can lead to a smaller fetus and mental retardation.

Mother's prenatal depression

A study found that mother's prenatal depression was associated with adverse perinatal outcomes such as slower fetal growth rates. It appears that prenatal maternal cortisol levels play a role in mediating these outcomes.[\[18\]](#)

Environmental toxins

Toxins lead to higher rates of miscarriage, sterility, and birth defects. Toxins include fetal exposure to lead, mercury, and ethanol or hazardous environments.

Low birth weight

Low birth weight increases an infants risk of long-term growth and cognitive and language deficits. It also results in a shortened gestational period and can lead to prenatal complications.