
Early Brain Development and Health

The early years of a child's life are very important for later health and development. One of the main reasons is how fast the brain grows starting before birth and continuing into early childhood. Although the brain continues to develop and change into adulthood, the first 8 years can [build a foundation for future learning, health and life success](#).



How well a brain develops depends on many factors in addition to genes, such as:

- Proper nutrition starting in pregnancy
- Exposure to toxins or infections
- The child's experiences with other people and the world

Nurturing and responsive care for the child's body and mind is the key to supporting healthy brain development. [Positive or negative experiences can add up to shape a child's development and can have lifelong effects](#). To nurture their child's body and mind, parents and caregivers need support and the right resources. The right care for children, starting before birth and continuing through childhood, ensures that the child's brain grows well and reaches its full potential. CDC is working to protect children so that their brains have a healthy start.

The importance of early childhood experiences for brain development

Children are born ready to learn, and have many skills to learn over many years. They depend on parents, family members, and other caregivers as their first teachers to develop the right skills to become independent and lead healthy and successful lives. How the brain grows is strongly affected by the child's experiences with other people and the world. Nurturing care for the mind is critical for brain growth. Children grow and learn best in a safe environment where they are protected from neglect and from [extreme or chronic stress](#) [↗](#) with plenty of opportunities to play and explore.


Parents and other caregivers can support healthy brain growth by speaking to, playing with, and caring for their child. Children learn best when parents take turns when talking and playing, and build on their child's skills and interests. Nurturing a child by

Understanding their needs and responding sensitively helps to protect children's brains from stress. Speaking with children and exposing them to books, stories, and songs helps strengthen children's language and communication, which puts them on a path towards learning and succeeding in school.

Exposure to stress and trauma can have long-term negative consequences for the child's brain, whereas talking, reading, and playing can stimulate brain growth. Ensuring that parents, caregivers, and early childhood care providers have the resources and skills to provide safe, stable, nurturing, and stimulating care is an important public health goal.


When children are at risk, tracking children's development and making sure they reach developmental milestones can help ensure that any problems are detected early and children can receive the intervention they may need.

Learn more about supporting early childhood experiences:

- [Tracking developmental milestones](#)
- [Preventing abuse and neglect](#)
- [Positive parenting tips](#)
- [Healthy childcare](#) 

A healthy start for the brain

To learn and grow appropriately, a baby's brain has to be healthy and protected from diseases and other risks. Promoting the development of a healthy brain can start even before pregnancy. For example, a [healthy diet and the right nutrients](#) like sufficient [folic acid](#) will promote a healthy pregnancy and a healthy nervous system in the growing baby. [Vaccinations can protect pregnant women from infections](#) that can harm the brain of the unborn baby.

During pregnancy, the brain can be affected by many types of risks, such as by infectious diseases like [Cytomegalovirus](#) or [Zika virus](#), by [exposure to toxins](#), including from [smoking](#) or [alcohol](#), or when pregnant mothers experience stress, trauma, or mental health conditions like [depression](#). Regular health care during pregnancy can help prevent complications, including premature birth, which can affect the baby's brain. [Newborn screening](#) can detect conditions that are potentially dangerous to the child's brain, like [phenylketonuria \(PKU\)](#). 

Healthy brain growth in infancy continues to depend on the right care and nutrition. Because children's brains are still growing, they are especially vulnerable to [traumatic head injuries](#), infections, or toxins, such as [lead](#). Childhood vaccines, such as the measles vaccine, can protect children from [dangerous complications like swelling of the brain](#). Ensuring that parents and caregivers have access to healthy foods and places to live and play that are [healthy and safe](#) for their child can help them provide more nurturing care.

Learn more about the recommended care:

- [Before pregnancy](#)
- [During pregnancy](#)
- [Around birth](#)
- [During infancy](#)
- [During early childhood](#)

What does CDC do to support early brain health?

CDC is committed to supporting early brain health through evidence-based programs and partnerships within communities. Below are just a few examples of CDC programs that support early brain health:

- [Learn the Signs. Act Early](#)
- [Legacy for Children™](#)
- [Early Hearing Detection and Intervention](#)
- [Essentials for Childhood](#)
- [Concussion Prevention](#)

- Lead Prevention
- Fetal Alcohol Spectrum Disorder Prevention
- Childhood Immunization
- Treating for Two
- Preconception Care
- Infant and Toddler Nutrition
- Addressing Health Disparities in Early Childhood