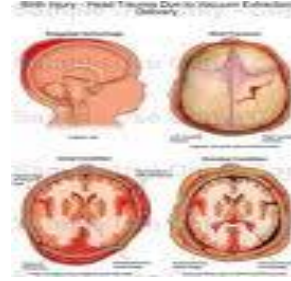


Birth injury

Birth injury is damage sustained during the birthing process, usually occurring during transit through the birth canal.

- Many newborns have minor injuries during birth.
- Infrequently, nerves are damaged or bones are broken.
- Most injuries get better without treatment.



A difficult delivery, with the risk of injury to the fetus, may occur when the birth canal is too small or the fetus is too large (as sometimes occurs when the mother has diabetes). Injury is also more likely when the fetus is lying in an abnormal position in the uterus before birth. Overall, the rate of birth injuries is much lower now than in previous decades because of improved prenatal assessment with ultrasonography and because cesarean delivery may be done in certain circumstances.



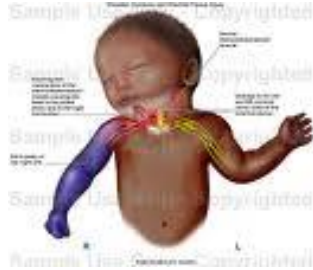
Head and Brain Injury: In most births, the head is the first part to enter the birth canal and experiences much of the pressure during the delivery. Swelling of the scalp and bruising are common but not serious and resolve within a few days.

Blood may accumulate below the thick fibrous covering (periosteum) of one of the skull bones. This blood accumulation is called a cephalohematoma. Cephalohematomas feel soft and can increase in size initially after birth. Cephalohematoma do not need treatment and disappear over weeks to months.

Fracture of one of the bones of the skull may occur. Skull fractures are very rare. Unless the fracture forms an indentation (depressed fracture), it heals rapidly without treatment.

Bleeding in the brain (intracranial hemorrhage) is caused by the rupture of a blood vessel within the skull. Bleeding in the spaces around the brain results from deformity of the skull bones during delivery or from a lack





of oxygen. Bleeding in the brain is much more common among very premature infants. It results from inadequate blood flow to the brain

(ischemia) or a diminished amount of oxygen in the blood (hypoxia).

Most infants with bleeding do not have symptoms. But bleeding may cause sluggishness (lethargy), poor feeding, or seizures.

Bleeding can occur in several places within the skull.

- Subarachnoid hemorrhages occur below the innermost of the two membranes that cover the brain. They are the most common type of intracranial hemorrhage, usually occurring in full-term newborns. Newborns with subarachnoid hemorrhages many y occasionally have seizures during the first few days of life but ultimately do well.
- Subdural hemorrhages, which occur between the outer and the inner layers of brain covering, are now much less common because of improved childbirth techniques. A subdural hemorrhage can put increased pressure on the surface of the brain. Newborns with subdural hemorrhages may develop problems, such as seizures or high levels of bilirubin in the blood.
- Intraventricular hemorrhages occur into the normal fluid-filled spaces (ventricles) in the brain. Intraparenchymal hemorrhages occur into the brain tissue itself. Intraventricular and intraparenchymal hemorrhages usually occur in very premature newborns and occur more typically as a result of an underdeveloped brain rather than a birth injury.

All newborns who have a hemorrhage receive supportive measures, such as warmth, intravenous fluids, and other treatments to maintain body functions, until they recover. Subdural hemorrhages should be treated by a surgeon.

Nerve Injury: Rarely, nerve injuries may occur. Pressure on the facial nerve caused by forceps used to assist delivery or by the fetus's head lying against the mother's pelvis can result in weakness of the muscles on one side of the face. This injury is evident when the newborn cries and the face appears asymmetric. No treatment is needed, and the weakness usually resolves by 2 to 3 months of age.

During a difficult delivery of a large infant, some of the larger nerves to one of the newborn's arms can be stretched and injured. Weakness or paralysis of the newborn's arm or hand results. Extreme movements at the shoulder should be avoided to allow the nerves to heal. Very rarely, the arm remains weak after several weeks. In this case, surgery may be needed to reattach torn nerves.

Occasionally, the nerve going to the diaphragm (the muscular sheath that separates the organs of the chest from those of the abdomen) is damaged, resulting in paralysis of the diaphragm on the same side. In this case, the newborn may have difficulty breathing. Injury of the nerves to the newborn's arm and diaphragm usually resolves completely within a few weeks.

Injuries to the spinal cord due to overstretching during delivery are extremely rare. These injuries can result in paralysis below where the injury occurred. Damage to the spinal cord is often permanent.

Perinatal Asphyxia: Perinatal asphyxia means that there has been some injury to the fetus or the newborn around the time of birth. It results when too little blood flows to the fetus's or newborn's tissues or when there is too little oxygen in the blood. There are many causes, and sometimes the exact cause cannot be identified. Some common causes include the following:

- Abnormal development of the fetus (for example, when there is a genetic abnormality)
 - Infection in the fetus
 - Exposure to certain drugs before birth
 - Pressure on the umbilical cord or a clot in one of the blood vessels in the umbilical cord
 - Sudden loss of blood
- Asphyxia can also occur if the function of the placenta is inadequate and the placenta cannot provide enough oxygen to the fetus during labor.

Regardless of the cause, affected newborns appear pale and lifeless, breathe weakly or not at all, and have a very slow heart rate. If asphyxia results from rapid blood loss, newborns will be in shock. They are immediately given fluids into a vein and then a blood transfusion. Newborns receive support of breathing and circulation as needed. Newborns are kept warm, and blood sugar levels are monitored.

Asphyxiated newborns may show signs of injury to one or more organ systems. Brain function may be affected, and newborns may experience lethargy, seizures, or even coma. Kidney function and the output of urine can be affected by the lack of oxygen but do recover. There may also be problems with the lungs and breathing.

Many survivors will be completely normal, but others will have permanent signs of neurologic damage, ranging from mild learning disorders to delayed development to cerebral palsy. Some severely asphyxiated infants will not survive. Specific causes of perinatal asphyxia should be identified if possible and treated as appropriate. For example, antibiotics are given to treat blood infections, and blood transfusions are given when too much blood has been lost. Recently, it has been shown that cooling the full-term newborn's head for several hours beginning soon after birth offers some protection to the brain from injury and thus diminishes the neurologic damage.

Bone Injury: Rarely, bones may be broken (fractured) during a difficult delivery. A fracture of the collarbone (clavicle) is most common. The upper arm bone (humerus) or upper leg bone (femur) may break during a difficult delivery. However, arm or leg fractures are very unusual. A fractured bone in a newborn is kept from moving as much as possible by use of a sling or cast. Fractures in newborns almost always heal completely and rapidly.

A b Injury to the Skin and Soft Tissues: The newborn's skin may show some evidence of minor injury after delivery, especially those areas that receive pressure during contractions or emerge from the birth canal first during delivery. Swelling and bruising may occur around the orbits of the eyes and on the face during face-first deliveries and of the scrotum or labia after breech deliveries. Usually, no treatment is

needed. Birth injury is a trauma to the baby that occurs during the birth process. The injury is generally due to tremendous pressure put upon the baby while passing through the birth canal. It can be caused by factors such as prolonged labor, a “breech” (legs first) delivery, premature birth, doctor procedures (i.e., the use of forceps), and the small size or irregular shape of the mother’s pelvis.

Types of Injuries

Many birth injuries, such as bruising, swelling, forceps scars and even the rare fracture (usually during a breech birth), are not serious and heal within a few weeks. Temporary loss of nerve or muscular function caused by bruising, pressure or swelling around the nerves can similarly resolve itself within weeks or months. However, if the nerves are torn, the resulting damage may be permanent.

Facial paralysis can be caused by pressure on the facial nerves during birth or by the use of forceps during birth. If the nerve was bruised, the condition generally improves within weeks. If torn, however, surgery may be required.

Brachial plexus injury (also known as Erb’s Palsy) is a paralysis or weakness of the arm caused by stretching of the nerves around the shoulder during birth. This damage can be caused by excessive pulling on the arm during birth or by pressure on the raised shoulders during a breech delivery. Most infants recover within 6 months, but those that do not will require surgery to make up for the nerve damage and have a poor outlook for improvement.

Cerebral palsy is a chronic disorder caused by trauma to the brain during or near the time of birth and its symptoms include the loss of movement or other nerve functions. The condition is not progressive (meaning that it does not worsen or improve with time) and its severity is determined by the type of damage done to the brain. A variety of medical mistakes, such as improper use of forceps or leaving the baby in the birth canal for too long (depriving the baby of enough oxygen), can cause cerebral palsy.

[Lucile Packard Children’s Hospital at Stanford](#) publishes more information about birth injuries. If you have suffered a brain injury due to another person's [negligence](#), you may be able to receive compensation for your injuries and your medical expenses that result from the injuries. A [personal injury attorney](#) can tell you if you have a case worth pursuing, and estimate how much you may be able to receive.

It is important for you to start looking into any possible claim as soon as possible, because every state has a [statute of limitations](#) that limits when you can file a personal injury lawsuit (for example, some states allow 2 years from the date of the injury or from when the injury was or should have been discovered). If you miss the deadline, you will not be able to bring a lawsuit. If you would like an experienced birth injury lawyer to review your case, fill out our [case evaluation form](#) and an attorney will contact you for a no-cost, no obligation evaluation.