

Erb's Palsy

GUIDE

Presented by:



Erb's palsy can be different for every child and can range in severity from mild, temporary injury to permanent nerve damage. This guide provides information on Erb's palsy, including causes, diagnosis, prognosis, treatment options, and more. With this information, parents and caregivers can better identify the signs of Erb's palsy and determine next steps.

What is Erb's palsy?

Erb's palsy (also known as Erb-Duchenne palsy or brachial plexus palsy) is a birth injury caused by damage to the brachial plexus network of nerves during childbirth.

The brachial plexus is a network of nerves that runs down the spine. This group of nerves connects the neck and torso areas of the spinal cord to the arm. It gives feeling and control to muscles in the arms, shoulders, elbows, wrists, and hands.

When these nerves are damaged during childbirth, it may result in temporary or permanent paralysis of the arm.

According to the American Academy of Orthopedic Surgeons (AAOS), **1 out of 1,000 babies is born with Erb's palsy.**

Brachial plexus palsy is very different from cerebral palsy, another type of birth injury. Erb's palsy is caused by damage to neck nerves, whereas cerebral palsy is caused by damage to the brain.

Erb's palsy also differs from other brachial plexus injuries such as Klumpke's palsy. Klumpke's palsy is uncommon in babies and causes paralysis of the lower brachial plexus, affecting hand muscles. Brachial plexus palsy affects voluntary movement in the upper arm and range of motion in the lower arm.



What causes Erb's palsy?

Erb's palsy is often caused by **excessive pulling or stretching** of an infant's head, neck, shoulders, or arm during a difficult or prolonged delivery. Erb's palsy can develop if an infant's head and neck are pulled to the side when the shoulders pass through the birth canal.



Many cases of Erb's palsy are preventable and caused by mistakes during the birthing process.

During difficult childbirths, doctors may have to move quickly to deliver the baby and may exert extra force to remove the child from the birth canal. This can stretch the baby's neck and may result in Erb's palsy.

Erb's palsy can also develop if an infant's shoulder is stuck behind the mother's pubic bone when their head drops into the birth canal. This can stretch the brachial plexus nerves as the baby's head is pushed out.

There are also certain **risk factors** that may increase the odds of a child developing Erb's palsy.

Risk factors of Erb's palsy include:

- C-section (cesarean section) delivery
- Excessive maternal weight gain
- Forceful pulling on the arm
- Large infant size or high birth weight
- Maternal diabetes
- Second stage of labor lasting over an hour
- Small or abnormal maternal pelvis shape
- Use of assistive delivery tools such as forceps or vacuum extractor
- Other forms of medical negligence

Types of Erb's palsy

There are four main types of brachial plexus palsy. Doctors determine the type of brachial plexus palsy based on the degree of damage to the brachial plexus nerve. Symptoms can vary depending on the type of Erb's palsy present.

Neuropraxia

Neuropraxia is the most common type of Erb's palsy and occurs when a nerve is stretched but does not tear. Neuropraxia can cause a burning or stinging sensation and usually clears up on its own before a child reaches 3 months of age.

Neuroma

Neuromas are more severe than neuropraxias. When neuromas occur, scar tissue forms during the healing process and places pressure on the other healthy network of nerves. Generally, children with neuroma Erb's palsy partially heal.

Rupture

Ruptures occur when the brachial plexus nerve is torn. Ruptures require more intensive medical care since they will not heal on their own. This injury usually requires surgery to graft the damaged nerve fibers back together.

Avulsions

Avulsions are the most severe type of nerve injury and they occur when a nerve is completely torn from the spinal cord. This can cause permanent paralysis or muscle weakness in the affected arm. It can also lead to Horner's syndrome, a condition that causes drooping eyelids, small pupils, and other eye-related symptoms.

Surgery may help to repair avulsions, but the affected nerve cannot be reattached to the spinal cord.

The best and only way to learn which type of brachial palsy your child may have is to consult with a doctor. From there, your doctor can determine the best course of action for treating your child.

Erb's palsy symptoms

Erb's palsy symptoms can differ for each child. However, symptoms of Erb's palsy usually only affect one side of a newborn's body.

The majority of Erb's palsy symptoms are often mild and go away with time.

However, because Erb's palsy has varying degrees of severity, some children will experience more intense and permanent symptoms.

Mild Erb's palsy symptoms

A child can develop mild Erb's palsy symptoms when the brachial plexus nerves are stretched during their birth. Mild types of Erb's palsy stretch injuries include neuromas and neuropraxias.

Severe Erb's palsy symptoms

Some rare cases of Erb's palsy can be more severe and can result in a wider variety of symptoms.

Ruptures and avulsions are the most severe types of brachial plexus injuries and cause more intense Erb's palsy symptoms since they occur when the nerves and/or nerve roots are torn and cannot heal on their own.

In rare cases, Erb's palsy symptoms can cause several long-term effects and coexisting conditions due to the brachial plexus nerve damage.

Common Erb's palsy symptoms include:

- Limp arm
- Muscle weakness
- Numbness
- Partial or complete paralysis of the arm
- Reduced grip ability
- Waiter's tip (dangling arm with fingers curved upwards)

Mild Erb's palsy symptoms include:

- Burning sensation
- Muscle weakness
- Numbness in affected arm

Severe signs of Erb's palsy include:

- Complete or partial paralysis in the affected arm
- Muscle weakness
- Significant loss of motion in the shoulder, arm, hand, and/or fingers

Other long-term effects of Erb's palsy include:

- Contractures (tightened muscles, joints, or tendons)
- Infant torticollis (stiffness of the head or neck)
- Muscle atrophy
- Stiff joints
- Numbness

Erb's palsy diagnosis

If your child is showing symptoms of Erb's palsy, it is important to contact a doctor as soon as possible to get a proper diagnosis.

A doctor will generally conduct a physical examination to check for any obvious signs of nerve damage.

Then, your doctor will use a variety of imaging tests to diagnose Erb's palsy.

Most MRIs and CT scans take a few hours to complete and often provide doctors with enough information to make a diagnosis. However, some doctors may order other tests, such as an X-ray, electromyography, or a nerve conduction study.

Common imaging scans used to diagnose Erb's palsy include:

- **CT (computed tomography) scans:** Computerized X-rays that give doctors more detailed images of muscles, nerves, bones, and other interior structures
- **MRI (magnetic resonance imaging) scans:** Conducted with radio waves and magnetic fields to find injured nerves and determine the extent of the damage

When conducting imaging tests, doctors generally search for:

- Completely torn nerve from the spinal cord (avulsion)
- Scar tissue on the nerve (neuroma)
- Stretching of the nerve (neuropraxia)
- Tears in the nerve from stretching (rupture)



Once a diagnosis has been made, doctors can determine the best treatment plan to help your child make a partial or full recovery.

Erb's palsy treatment

Some mild cases of paralysis caused by Erb's palsy in newborns can resolve on their own within a few months, but more severe cases require more in-depth treatment such as therapy or surgery.

Your child may require more intensive treatment if their range of movement and development is still delayed after six months.

The most common forms of Erb's palsy treatment are physical therapy, occupational therapy, and surgery. All of these treatment options aim to regain overall mobility and function of the affected limb.

Physical therapy

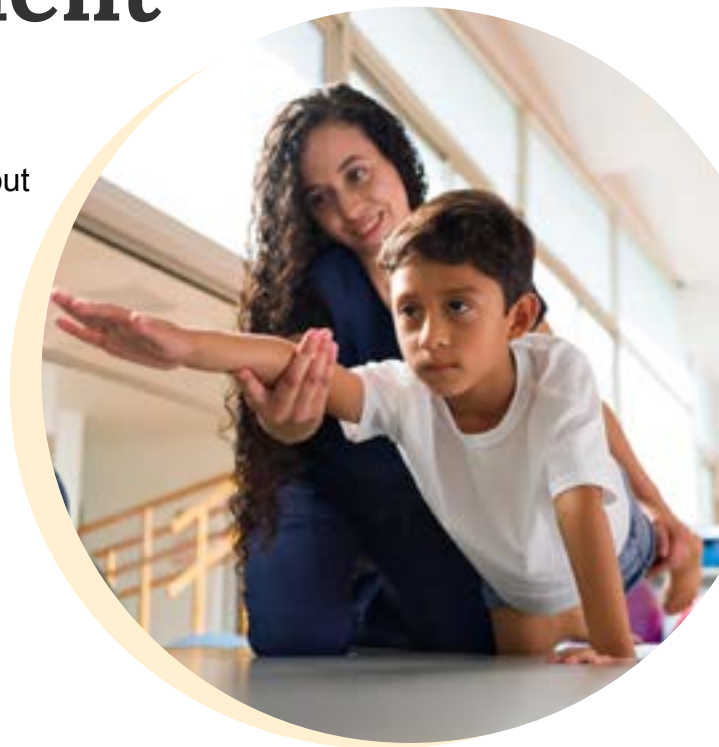
One of the main treatment methods for brachial plexus palsy is physical therapy to improve stiffness and immobility in a child's arms or shoulders. Therapists will use massage techniques, motion exercises, and exercise equipment to improve movement and strength in the affected arm.

Erb's palsy physical therapy can start as early as two weeks after the child is born, and physical therapy at home can start a week after that. In these cases, the treatment is typically conducted with a licensed physical therapist on a weekly or biweekly basis.

However, if your child is diagnosed at birth, your medical provider will likely provide you with a list of guidelines for handling your child so that you do not harm their affected arm before they start therapy.

These guidelines include the following:

- Allow time for any inflammation from the birth injury to settle down
- Do not lift a child under the arms
- Protect the affected arm by carefully handling the baby
- When dressing the child, place the affected arm into the sleeve first, then the head and the unaffected arm



Many children with Erb's palsy are able to partially or fully recover with physical therapy.

Erb's palsy physical therapy can help relieve stiffness and return range of motion to the child's affected arm. Physical therapists will use several different range-of-motion exercises, equipment, and massage therapy to help babies regain strength.

Physical therapy treatment techniques can vary depending on the child's specific needs and severity of the injury. The physical therapist may provide parents with additional physical therapy instruction to complete at home as well.

Physical therapists and your child's doctor can also recommend changes to the therapy routine (if needed) as the child's treatment moves forward.

Occupational therapy

Occupational therapy is often used in cases of Erb's palsy that have not improved on their own after 2 to 4 months.

Occupational therapy can help a child develop the strength to perform everyday activities, such as picking up a toy or bottle. An occupational therapist will use a range of movement exercises to improve joint function and muscle tone.

Physical therapy treatment usually involves the following:

- Adaptive equipment like splints to prevent contractures
- Daily home-based stretching and exercise
- Gentle passive motion of joints
- Monthly follow-up at a clinic
- Weekly or biweekly formal physical therapy

Occupational therapy can help children complete daily activities such as:

- Bathing
- Brushing teeth/hair
- Drawing
- Drinking from a cup
- Eating with utensils
- Getting dressed
- Writing



The overall goal of occupational therapy is to help children with Erb's palsy become as independent as possible. **Starting occupational therapy early may improve the quality of life for those affected.**

Surgery

Children with severe cases of Erb's palsy will usually require surgery to repair nerve damage and paralysis in the arm, hand, elbow, or shoulder. It is important to get surgery as soon as possible since postponing Erb's palsy surgery can lower the chance of complete recovery.

Some children with more severe cases of Erb's palsy may require surgery alongside physical and occupational therapy to repair damaged nerves. The goal of these surgeries is to help the child regain range of motion and control of the affected shoulder, upper arm, wrist, and/or hand. There are several different surgery options depending on the child's needs.

Erb's palsy surgery options include:

- Bone remodeling
- Muscle lengthening
- Muscle transfers
- Nerve grafts
- Nerve reconstruction/reconnection
- Nerve transfers

Although surgery is successful for most patients with severe cases of Erb's palsy, it can take several months for a child to regain full control of the muscles in their arm and lower hand.



Erb's palsy prognosis

Thankfully, many cases of brachial plexus palsy do not have long-lasting consequences. Most mild cases of Erb's palsy usually resolve on their own around three months of age and do not have a long-lasting impact on a baby's overall development.

Further, most babies diagnosed with Erb's palsy will recover movement and feeling in the affected arm with daily physical therapy treatment, according to the American Academy of Orthopaedic Surgeons (AAOS).

However, there are many cases where Erb's palsy does not heal on its own. Sometimes, serious cases of Erb's palsy will require surgery to help restore functioning in the arm or hand.

Most mild cases of Erb's palsy usually resolve on their own around three months of age and do not have a long-lasting impact on a baby's overall development.

According to a study by Dalhousie University and the IWK Health Centre in Canada, **80% to 90% of all children diagnosed with Erb's palsy make a full recovery.**



How can I find treatment for my child?

Finding the right treatment for your child is essential in giving them the best chance at a full recovery from Erb's palsy.

If your child is showing any signs of Erb's palsy, you may wonder how to seek medical help to get them a diagnosis.

We understand how important it is to get your child the best possible care. Our team at Cerebral Palsy Guide can connect you with resources you need to help your child overcome an Erb's palsy diagnosis.

Your child deserves to live a pain-free, independent, long, and happy life. We are committed to connecting your family with every resource available to ensure that your child receives the care they need.



Our team can help you:

- Find a doctor to get a diagnosis
- Learn about effective treatment methods
- Connect with emotional support resources
- Research financial assistance options

Erb's palsy support and resources

When your child has been diagnosed with Erb's palsy, it can be difficult to know what actions to take and where to turn for support and guidance. Here are a few resources you may find useful.

[Facebook Groups:](#)

There are several Erb's palsy support groups on Facebook that provide a dedicated space for parents, families, and caregivers to share their experiences.

[United Brachial Plexus Network \(UBPN\):](#)

This nonprofit organization provides information, support, and leadership to families and those concerned with brachial plexus injuries across the globe. It also provides guidance on physical therapy you can do at home.

[United Spinal Association:](#)

In this blog post, Ellie Smith, a student teacher who was born with Erb's palsy, shares some advice for parents of children who have similar disabilities.



Call us at **(855) 220-1101** to learn more.

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