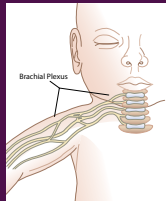


What is the Brachial Plexus?



Five nerve roots from the spinal cord form the brachial plexus. These fibers carry signals from the brain to the muscles. They let people move and feel their shoulders, arms, and fingers.

How Do Brachial Plexus Palsies Occur?

Brachial plexus palsies in infants most often occur from a tough or lengthy birth. They can also occur when a large baby must tilt their head to bring their shoulders through the birth canal. When this happens, they may stretch or disconnect some of these nerves. When healing, the nerve may form internal scar tissue (neuroma). This scar tissue may slow down or block signals from the spinal cord to the muscles. This can lead to problems with movement or sensation.

Nerve fibers can also become bruised, stretched, or even disconnected from force or pulling, such as from car or ATV accidents, sports, or other activities.

On average, nerves repair themselves at a rate of about one millimeter per day or one inch per month. This process can take many months. Sometimes, if the nerve has become severed, it can't repair itself. In this case, the muscle will not work, no matter how much time passes.



Brachial Plexus Clinic

UPMC Children's Hospital of Pittsburgh
4401 Penn Avenue, Floor 3
Pittsburgh, PA 15224
CHP.edu/BrachialPlexus

Contact the Brachial Plexus Clinic

To schedule an appointment with the Brachial Plexus Clinic at UPMC Children's Hospital of Pittsburgh, please call our office at **412-692-8650** and press the appropriate option.

The clinic takes referrals from all health care professionals. It also takes self-referrals. Families need to check with their insurance company to find out if they need a referral. They also need to know whether we can accept their insurance.

To make your first visit to the Brachial Plexus Clinic as helpful as possible, you should bring:

- Any office or examination notes from other health care providers.
- Any reports for studies from other clinics, including EMG and nerve conduction studies.
- Any imaging reports and discs from another clinic including x-rays, ultrasounds, and MRIs.

Please dress your child in easy-to-remove clothing.
The team will need to examine their shoulders and arms.

Brachial Plexus Clinic



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What Determines the Severity and Outcomes of Brachial Plexus Palsies?

How severe a brachial plexus palsy is depends on:

- The number of nerves affected.
- The amount and type of damage to the nerve.

Although the brachial plexus comprises five nerve roots, for most babies, damage only occurs in the first two nerves. When this happens, the shoulder and/or elbow muscles these nerves reach may become weak or not work at all. If all of the nerve roots become affected, then your child may find they can't move their arm at all.

It's often hard to predict whether the arm will have long-term decreased function. It's a good sign if the arm starts working again quickly. Most often, muscle strength comes back during the first year of your child's life. If your child doesn't regain most function within nine months, surgery to repair their affected nerve or nerves may help.

We'll follow your child as they heal to help with the process and decide which treatment is best. Regular visits are helpful in ensuring that your child is recovering well. Even if they don't recover complete function, most kids find they can use their arms and hands in daily life.



Treatment Options for Brachial Plexus Palsies

Time plays a major role in recovering from brachial plexus palsies. There are three main treatment options:

Time and Close Observation

For many infants with a brachial plexus palsy, their nerves may recover completely in the first year of life. We will typically ask families to return to our Clinic every three months after injury and diagnosis so that our team can evaluate progress. Some kids don't recover much with time. In this case, our team works with your family to talk through other options, which may include reconstructive surgery.

Physical and Occupational Therapy

Physical therapy can help keep your child's upper limbs flexible. Our team often begins with home exercises or outpatient physical therapy. Occupational therapists also help children become freer in their daily lives. Our team will follow your child to measure their gains in muscle strength.

Surgery

Primary brachial plexus surgery

This surgery may help if meaningful muscle function doesn't come back in the first 3 to 12 months of life. Sometimes, function starts to return but then stops. If this happens and their level of function isn't ideal, we may recommend surgery.

In babies, doctors usually use primary surgery to:

- Openly explore the brachial plexus nerves.
- Remove any scarred nerves.
- Replace scarred nerves with nerve grafts, often from your child's leg.

Secondary brachial plexus surgery

After primary surgery, we will evaluate your child. We may suggest a second surgery if we determine they haven't regained adequate function of the arm for daily living. We may also consider secondary brachial plexus surgery for children who are too old (over 1 year) for primary surgery. Secondary surgeries can include tendon transfers or bone rotations. They may help older kids with brachial plexus palsies use their arm better than before.



Why Choose UPMC Children's Hospital of Pittsburgh for Brachial Plexus Care?

Regionally, nationally, and globally, UPMC Children's Hospital of Pittsburgh is a leader in the treatment of childhood conditions and diseases, a pioneer in the development of new and improved therapies, and a top educator of the next generation of pediatricians and pediatric subspecialists.

In the Brachial Plexus Clinic, you'll have access to our multidisciplinary team of pediatric experts in:

- Plastic surgery
- Physical and occupational therapy
- Clinical social work
- Pathology
- Pain management
- Neurosurgery
- Hand surgery
- Neuroradiology
- Neurology
- Orthopaedic surgery