



Shepherd Center

What is the Brachial Plexus?

The brachial plexus is a bundle of nerves that originates from the spinal cord, then proceeds through the neck, the axilla (armpit region) and into the arm. It controls muscle movements and sensation in the shoulder, arm and hand. Injuries to this area occur by stretching or pinching of these nerves through injury and can often occur at the time of a spinal cord injury or brain injury.

Symptoms:

- Burning or stinging feeling in one side of the neck, shoulder or in one arm
- Numbness or tingling in one side of the neck, shoulder or in one arm
- Weakness or loss of movement in one shoulder or arm

Brachial Plexus Injury (BPI) Program:

Before deciding on a plan of treatment, the upper-extremity (UE) team will evaluate your condition. The physician or another team member will ask about symptoms, complete a thorough medical history and physical examination. Additional tests, such as X-rays, electromyogram (EMG) or magnetic resonance imaging (MRI) may be used to verify the diagnosis and determine the extent of the injury.

Brachial Plexus Treatments:

There are two primary treatment options for brachial plexus injuries:

- **Occupational or physical therapy** with a focus on maintaining supple joints and healthy tissue, positioning or splinting, therapeutic exercise and strengthening, teaching techniques to make the individual as functional as possible. Therapy may be appropriate alone or combined with surgical interventions.
- **Brachial Plexus Surgery:** Depending on the type and location of the brachial plexus injury, surgery may be recommended to repair the brachial plexus. Microsurgical techniques are used to improve brachial plexus function using one or more of the following methods:
 - Neurolysis: Removes obstructing scar tissue
 - Nerve grafts: Nerve tissue is inserted to bridge gaps between the ruptured or stretched nerves.
 - Nerve transfer (neurotization): Part of a functioning nerve is transferred to replace irreparably injured nerve roots to allow more rapid recovery of function.
 - Functional reconstruction: In severe cases or chronic cases, functional reconstruction may be explored through free muscle transfer, tendon transfer or bone/joint stabilization.

Timeline for Evaluation and Treatment

Your treatment will depend on the type and severity of your brachial plexus injury. The first step is for your primary physician to make a referral to the Upper Extremity Rehabilitation Clinic at Shepherd Center. Allan Peljovich, M.D., MPH, will typically see you within two weeks of the referral. At that time, he will evaluate you and may need to order further diagnostic tests. The timeline may be longer than other physician consultations as the primary purpose is to establish a baseline of nerve and muscle functioning so progress of natural recovery can be followed over the course of a year.

- Initial “watch and wait.” Some milder injuries will improve over several months, so your doctor may schedule regular appointments for three to six months to monitor your progress. Early diagnosis is still important so your physician can monitor your natural progress over the course of months.
- Surgery. If there is no improvement within six to eight months, or the injury is severe, surgery may be needed to improve nerve function.

More Information

For more information on services available in the Upper Extremity Clinic, contact case manager Velma Moore at velma_moore@shepherd.org or 404-350-3102.