



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 utilizing 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

