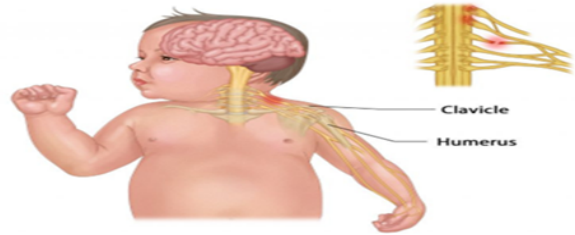


## Brachial Plexus Birth Injury

### What is it?

An injury occurring at birth causing compressions, stretching of any part of the brachial Plexus, resulting in disrupted motor or Paralysis of corresponding muscles. **Erb's Palsy** and **Klumpke's Palsy** are two different types of Brachial plexus injuries.



#### **Brachial Plexus Injury**

The brachial plexus is a group of nerves that come from the spinal cord in the neck and travel down the arm. These nerves control the muscles of the shoulder, elbow, wrist and hand, as well as provide feeling in the arm. These nerves can be stretched, compressed, or torn during birth, resulting in significant injury.

### **ERB'S PALSY**

- A physical injury during newborn delivery or by traumatic force downward on the upper arm and shoulder, damaging the brachial plexus.
- Refers to paralysis of the upper brachial plexus.
- C5, C6, C7 involvement; results in internal rotation of shoulder, wrist, and finger flexion; unable to move shoulder "waiters tip" positioning.
- **Muscles Affected:** deltoid, bicep, brachialis, infraspinatus, supraspinatus, serratus anterior, rhomboids, levator scapulae, and supinator.

### **KLUMPKE'S PALSY**

- A physical injury during newborn delivery or by traumatic force downward on the lower arm, wrist, and hand damaging the brachial plexus.
- Causes loss of sensation and paralysis in the lower arm, wrist, and hand. It can occur in newborns with nerve damage from complications during labor and delivery.
- Refers to paralysis of the lower brachial plexus.
- C8, T1 involvement; impacts hand function and paralysis result in claw hand.
- **Muscles Affected:** Intrinsic muscles of the hand, flexors of the wrist, and fingers (flexor carpi ulnaris and flexor digitorum profundus).

### WHAT IS OT'S ROLE?



- Maintain integrity of the joints during the recovery process
- To achieve maximal UE muscle use at a tolerable pain level as the nerve is recovering
- Encourage play using non-preferred side
- Educate in safety and protection due to sensory loss
- Maintain strength in unaffected muscles
- Assist in returning to productive activities
- UE Range of motion exercises and stretching
- Splinting
- Joint compression and weight bearing to facilitate muscle contraction
- Bilateral motor planning activities
- Facilitating optimal alignment in the shoulder and scapula to promote smooth movement in all directions
- Provide home UE muscle stretching and strengthening exercise program for families