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Patient Information Leaflet Congenital Brachial Plexus Palsy

Special Care Baby Unit

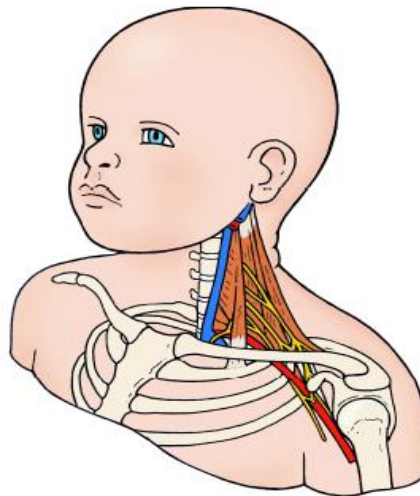
Congenital brachial plexus palsy (CBPP) is also sometimes called Obstetric brachial plexus palsy or Erb's palsy. Erb's palsy is actually the most common type of brachial plexus palsy involving the upper part of the brachial plexus (C5-7).

This leaflet is not meant to replace the information discussed between you and your doctor but can act as a useful reminder of the key points.

What is brachial plexus?

The brachial plexus is a network of 5 nerves coming from the neck into the arm. These nerves provide movement and feeling to the arm and hand. These nerves start in the spinal cord in the neck and are named C5, C6, C7, C8 and T1.

It is through these nerves that the brain sends electrical signals to the muscles and skin of the arm and hand. Each nerve supplies movement and feeling to specific areas in the arm and hand.



What is brachial plexus

It is a nerve injury that causes your baby to have difficulty moving their arm and loss of feeling to the area supplied by that nerve.

How does this occur?

It is due to injury to the brachial plexus generally during birth resulting in stretching and/or tearing of some or all of its nerves roots (C5-T1).

Sometimes during birth, after the delivery of the baby's head, the baby's shoulder may become stuck in the mother's pelvis (shoulder dystocia). At this stage it is very important for the baby to be delivered quickly.

In order to free the shoulder, a variety of manoeuvres may be used and may result in damage to the nerves of the arm. The baby may also suffer a break in the collar bone or humerus (upper arm bone) during the delivery.

Besides shoulder dystocia other risk factors include large baby, breech delivery, prolonged pushing stage of labour and instrumental delivery (forceps or vacuum).

If there is injury to one or more nerves of the brachial plexus, they are unable to transmit the signals from the brain and so the muscles that are controlled by the injured nerve will not work and the skin supplied by the injured nerve will lose feeling.

Types of Brachial Plexus Injury

There are different types of brachial plexus injury depending on whether the nerve is stretched or torn.

Assessment and Treatment

Following birth, if brachial plexus injury is suspected, your baby will have an assessment by a paediatrician. An X-ray to check whether there are any fractures would be requested if your baby is not using their arm as expected. If your baby has brachial plexus injury, a physiotherapy referral will be made, and a paediatrician outpatient follow up appointment will be arranged. It is very important that your child's arm movement is assessed and monitored over a period by the paediatrician and the physiotherapist. The majority of children with brachial plexus injuries recover with physiotherapy alone. However, some may require surgery.

To begin with, brachial plexus injury needs rest to recover rather than treatment. Gentle handling and keeping your baby's affected arm supported is important. Below are some of the ways that can help you with positioning and handling your baby in the initial days before the physiotherapy review.

- **Positioning:**

The affected arm should be well supported with the hand, elbow, and shoulder in the neutral position when handling, feeding and cuddling. Often a towel under the affected arm during sleep helps to keep the arm in a neutral position. When your baby is being picked up or carried, give their arm support with your arm or body so that the weight of their arm does not drag on their shoulder.

- **Dressing:**

When dressing, put their affected arm through the sleeve first. This leaves their non-affected arm to do the twisting and turning. When undressing take their non-affected arm out first.

Their affected arm will then easily slip out without any twisting.

During the first 48 hours it can be easier not to put a vest on your baby as it can be difficult keeping the shoulder supported when putting this over baby's head.

- **Washing:**

Keep their arm supported, as with carrying and picking up. You will have to move your baby's arm to be able to clean under their arm but try to move it gently and as little as possible for the first 48 hours.

- **Sensory stimulation:**

Because your baby is unable to move their own arm, they are unable to experience the feel of other textures and parts of their body, as they do naturally with their other arm. It is therefore important to gently stroke their arm. Do not forget to open their hand fully and massage their palm and fingers (they get a lot of sensory information from their hands).

Physiotherapy:

Your baby will be assessed by a physiotherapist within 10 working days of receiving the referral.

The physiotherapist will assess the baby's active arm movement and the range in their arm joints; will give advice on handling the baby and teach arm exercises when appropriate

The aims of physiotherapy are:

- To prevent their muscles from becoming short
- To prevent stiffness developing in the joints of the affected arm
- To encourage your baby to move their arm
- Increase your baby's awareness of their arm
- Monitor your baby's development

Do not start exercises until they have been demonstrated and advised by a physiotherapist.

The physiotherapist will arrange a follow up appointment to check exercise technique and review your baby's arm function.

If the physiotherapist and/or paediatrician feels the arm function is not progressing adequately by 8 weeks, they may suggest a referral to a specialist centre for assessment and to see if surgery is required. The babies with complete brachial plexus palsy, when the entire brachial plexus (C5-8 and T1) is involved, will need earlier referral to the specialist centre.

If your baby's arm fully recovers, they will be discharged. If there is incomplete recovery the physiotherapist will continue to monitor and advise and may refer to an Occupational Therapist if required.

Recovery:

The recovery from brachial plexus palsy depends on which nerve roots are damaged and how badly they are damaged. Recovery also depends on regular stretching/physiotherapy because the results will be suboptimal if stiffness occurs.

The majority of children with brachial plexus injuries recover with physiotherapy alone. Some require surgery.

Recovery is difficult to predict. Rapid return of muscle function is a positive sign. About two-thirds of the babies with brachial plexus injury have complete spontaneous recovery by 6 months. Most nerve regrowth and muscle function will occur during the 1st year. However, some muscle weakness may remain. 20-33% patients can have residual deficits and are therefore at risk of long-term complications.

The national support group for parents can be found online at:

<https://www.erbspalsygroup.co.uk/>

- [024 7641 3293](tel:02476413293)
- info@erbspalsygroup.co.uk

Adapted from parent information leaflet on obstetric brachial plexus palsy by Aneurin Bevan University Hospital physiotherapy services for Children and Adults with Learning Disabilities and BCUHB Paediatric Physiotherapy Service

Reference:

Smith K, Patel V. Congenital brachial plexus palsy. *Paediatrics and Child Health* 2016; **26:4**:152-6

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