

# *Erb's Palsy*

*Association of Ireland*



**Muscle & Bone Surgery**  
*Your Questions Answered*

## MUSCLE & BONE SURGERY BRIEF DESCRIPTION

Depending on the amount of nerve recovery, your child may develop good use of the arm. However, even with a thorough exercise programme, some children do have stiffness of the shoulder joint on the affected side. A variety of operations can be suggested to try to improve the range of motion in the shoulder and the use and function of the arm. These operations are mainly on the muscles and ligaments around the shoulder joint. Sometimes the operation can be done on the bones themselves.

## MUSCLE SURGERY FOR PATIENTS WITH ERB'S PALSY

### • WHAT IS THE SUBSCAPULARIS MUSCLE?

The Subscapularis muscle is one of several muscles involved in the movement of the shoulder joint. Unlike the biceps muscle in the upper arm, the Subscapularis is buried deep under other muscles and cannot be felt. In children with Erb's palsy, the muscle can get too tight and block movement of the shoulder joint. Sometimes the head of the humerus can be pushed backwards out of the shoulder joint - this is called subluxation or dislocation (depending on how much it is pushed back).

The pictures in Fig 1. illustrate the **right** shoulder looking down from above and from the front. As can be seen, the subscapularis muscle takes root on the front side of the scapula (shoulder blade) and attaches to the upper arm.

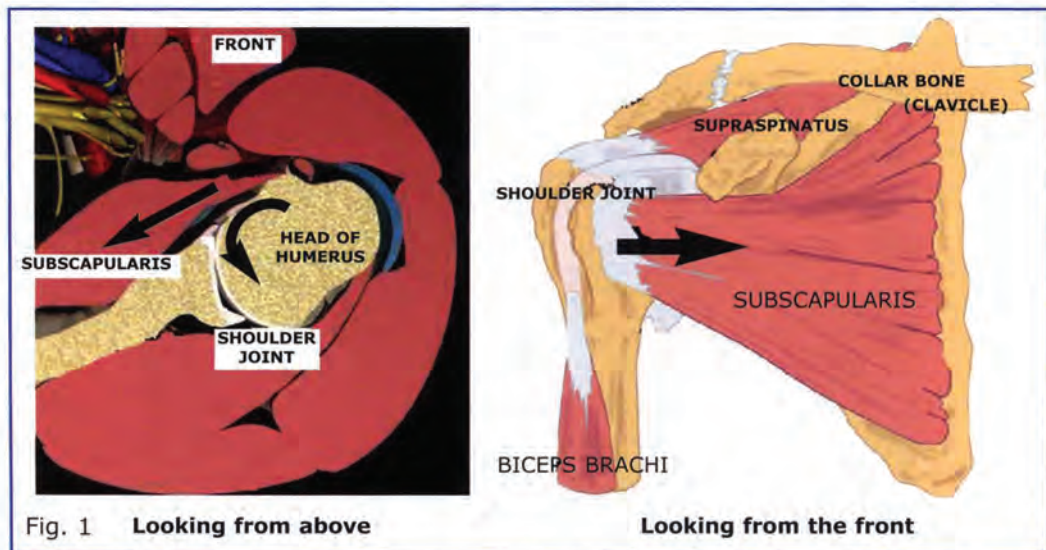


Fig. 1 Looking from above

Looking from the front



## • WHAT IS THE FUNCTION OF THE SUBSCAPULARIS MUSCLE ?

The subscapularis muscle causes the humeral head and the arm on the right hand side to rotate anti-clockwise when looked from above. This is called internal rotation of the arm). When this muscle is too tight, it stops the arm turning outwards and this also restricts elevation of the arm. In the long term, this stiff position can result in abnormal growth of the bones of the shoulder joint. It may benefit the child to have these muscles 'lengthened' or 'released' in an operation, allowing greater movement of the arm.

## • MUSCLE SURGERY AND WHAT IT ENTAILS

In the operation, the muscle is made longer (the muscle is cut in a "step" and stitched in the lengthened position) or is moved from the shoulder blade to allow for greater movement of the shoulder joint. It will then be possible to rotate the arm outwards.



The operation takes about 1 hour under general anaesthetic. The scar on the front of the shoulder will measure 2 - 3" or 5 - 6cms. The children have little pain following the operation - and any pain in the first day or two is usually taken care of with simple treatments such as Calpol. Following the operation, the arm is placed in splint for six weeks. Following the removal of the splint, the shoulder will be quite weak initially, but an improved range of motion should be noticeable straightaway.

The worst risks for the child having the operation includes reactions to the anaesthetic and infections. The chance of any serious complication (making the child worse) is most unlikely. Fortunately, most children do get a good improvement in function from the operation. For the minority of children with persistent shoulder problems, further surgery may be needed over the following years. This can include muscle transfer or bone operations.

## • MUSCLE TRANSFER

Depending on the degree of nerve recovery, muscles regain different strength. If a muscle is too weak to do useful movement, it may be possible to transfer a muscle which is working normally to act in it's place. The operation and casting is similar to the subscapularis release operation.

## BONE SURGERY FOR PATIENTS WITH ERB'S PALSY

### • BONE SURGERY AND WHAT IT ENTAILS

Sometimes, surgery to realign the humerus itself is required to improve the position of the arm in front of the child. Generally this is required when muscle surgery is not possible - or after muscle surgery when the arm is still in a poor position for function.

In this operation, the bone is cut and set in a better position. Sometimes wires, plates and screws are used to hold the bone in the best position. As with the other operations, a plaster cast is used to protect the healing bone for 4 - 6 weeks. Even though it is a bone operation, the child will not have any more pain than in the other operations. A scar will be present over the upper arm.

## POST SURGERY

### • WHAT TO EXPECT

After any of the muscle or bone operations, it will be necessary for the child to have a cast on. The casts/splints are designed to hold the shoulder and its muscles in a specific position, holding the correction and ensuring that whilst they are healing they don't return to their pre-operative state. As each child's shoulder will require differing amounts of correction, each cast will look slightly different, however, it will probably look similar to the one in Fig. 2.

The length of time it is required to be kept on may vary, although this is usually between 4-8 weeks. The stitches usually are dissolvable and should fall out around 6-8 weeks.

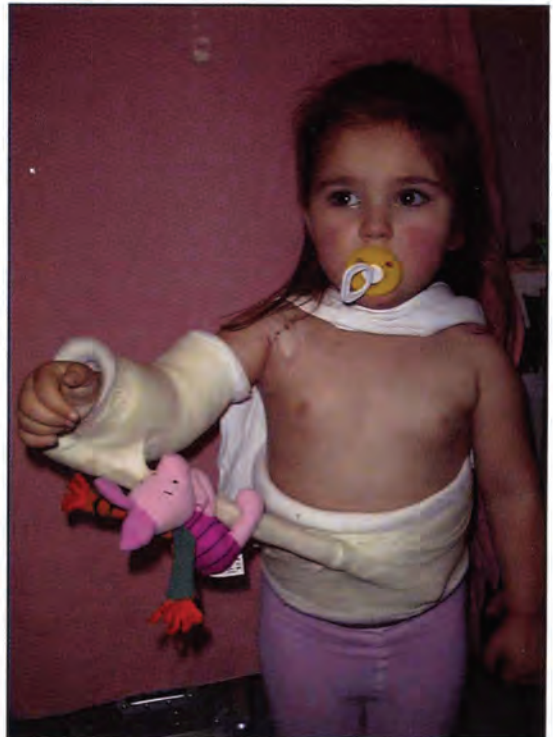


Fig. 2 Child with plaster cast



The scar should normally fade - this can take up to one year. It will always be slightly visible.

You, and your child, will need time to adjust to the cumbersome cast and you will probably find that the child will need extra support to adjust to the extra body weight. At first your child may only be able to lie down on his back. It will help to prop the child up with pillows or a bean bag as they are often happier when they can see what is going on. It might take a while before the child is able to turn over and then be able to sit or stand up and become more independent. Breast feeding may be more difficult but not impossible.

Keep the cast as dry and clean as you can. Casts absorb heat very quickly and may make your child uncomfortable, check body temperature regularly to make sure the child isn't overheating, and keep encouraging plenty of fluids in the hot weather, try a fan blowing gently to cool the child down. Baggy clothes that can be layered are best and will be easier to cope with. Using Velcro at the side seams of clothes make them easy to put on and take off.

#### • **LOOKING AFTER THE CRAWLING CHILD**

Your child will need to be supported and watched all the time until the child has become used to the cast as the child will keep trying to crawl and may be quite unstable and lose his/her balance. As the child had not been walking before the operation, he probably won't have the confidence to attempt to walk with the cast unless being supported.

#### • **LOOKING AFTER THE MOBILE TODDLER**

The day after the operation the child will be encouraged to stand. After a few minutes and some cautious steps there will be no stopping the child walking around as normal. It won't take him very long to get used to the weight of the cast and adjust the balance. Your child will also have to get used to the extra width of the cast.

## COMMON PROBLEMS ASSOCIATED WITH SURGERY

1. Heat rash - there is nothing you can do except to keep the child as cool as possible, it is not advisable to use creams or lotions as this will make the cast even more irritating. If the rash gets really bad, your doctor can prescribe an anti-fungal cream. It's worth trying a fan.
2. Beware of dropping things down inside the cast, this can be messy as well as uncomfortable for the child, and may lead to sores.
3. If the cast goes soft in places, usually caused by repeated banging into things, your local hospital may patch it up before it becomes necessary to change the whole cast.
4. Try and keep your child out of the sun as much as possible. Casts absorb heat and even the smallest amount can make your child uncomfortable.

### • AFTER THE REMOVAL OF THE CAST

The skin under the cast can get very sore, especially in the folds, i.e. the inside of the elbow. Your child may have dry skin on the arm.

After having the arm held up in the air and supported for six weeks, you might expect it to be floppy, but it won't be for long. The child will need to recommence the exercise programme to get the most benefit from the operation.

### • CONCLUSION

It is always amazing how quickly your child will adjust to the operation and being in a cast, usually more quickly than his parents. If your child does not appear "right" always contact the staff at the hospital, there is always someone there 24 hours to give you advice.



# *Erb's Palsy*

## *Association of Ireland*



The Erb's Palsy Association of Ireland was set up by parents of children with Erb's Palsy to provide information and help to other parents whose children have this condition. The Association is run solely by these parents and is striving to achieve a better recognition and understanding of the nature, causes and proper treatment of the condition.

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