Children’s Services

Skin and muscle biopsies – a guide for families

What is a skin and muscle biopsy?

A skin and muscle biopsy is a minor surgical procedure (operation) in which a small sample of skin and a small sample of muscle is removed and examined. The biopsy is performed under general anaesthesia, usually as a day case. The samples are sent to a laboratory where the samples are examined for various abnormalities.

Why is an operation needed?

Biopsies are undertaken to aid diagnosis of a condition and help determine whether the condition is related to a problem of the muscle, nerve or the neuromuscular junction (neuromuscular). Neuromuscular conditions often have characteristic patterns which are visible under a microscope and these can help determine the exact condition. Sometimes changes in the biopsy may be related to a more widespread problem in the body.

Who will perform the operation?

Once your child’s paediatric neurologist has discussed the need for skin and muscle biopsies with you, they will refer your child to the paediatric surgery team at Addenbrooke’s Hospital.

You will be asked to complete a health screening questionnaire when your child is added to the waiting list; you will be contacted by the preoperative assessment team in relation to this.

The paediatric surgical booking coordinator team will contact you about a date for the operation. Once a date has been agreed the paediatric surgical team will inform your child’s paediatric neurology team.

What does the operation involve?

- The skin and muscle biopsies are usually taken from the left thigh although sometimes other sites are used for specific tests.
- Once anaesthetised the skin is cleaned with an antiseptic agent.
- A small incision (cut) is made which is approximately 2.5cm in length.
- A very small piece of skin is removed and then a very small piece of muscle is taken. The muscle tissue is then subdivided into two to three sections, each approximately the size of an orange pip.
**Can I be with my child during the operation?**

Although you cannot be with your child in the operating room, you will be able to go with your child to the anaesthetic room and, if you wish, it is usually possible for you to be with your child as they go to sleep with the anaesthetic. Once the operation has been completed and your child is waking up from the anaesthetic you will be able to be present with them in the recovery area. Children remain in the recovery area until they are fully awake from the anaesthetic and can then be transferred back to the ward.

Most children will be able to go home after a few hours of monitoring on the ward but, if your child does need to remain in hospital overnight, a bed is provided for one parent to stay with their child.

**Are there any risks or complications?**

Complications from this procedure are rare but can include:

- Infection
- Bleeding
- The need for a repeat biopsy if the initial sample was inadequate in size or quality.
- Numbness around the scar which may last for a few weeks.
- Small protrusion of muscle through the incision

With all neuromuscular conditions, care must be taken when using anaesthetics. For all children undergoing muscle biopsy it is assumed that the child is at risk of an adverse reaction (called malignant hyperpyrexia) which causes high temperatures, changes in heart rate and blood pressure and changes to alertness and muscle tone. These symptoms are seen very soon after the anaesthetic medicines are given rather than many hours or days afterwards. Malignant hyperpyrexia is very rare but to prevent it the anaesthetist will take precautions with certain medicines.

If your child has a cold, cough or illness such as chicken pox the operation will need to be postponed to avoid complications. Please telephone us (the telephone number is provided at the end of this leaflet) to discuss, prior to coming to hospital.

**What other tests are needed and is there an alternative to having the biopsy taken?**

Children are only referred to the surgical team for biopsies to be taken when a conclusive diagnosis cannot be made through other alternative tests.
Before undergoing skin and muscle biopsies an echocardiogram (ultrasound of the heart) is required to ensure your child’s heart and its function is normal. If the echocardiogram is abnormal then discussion with a cardiologist (doctor who specialises in hearts) is required before the skin and muscle biopsies are taken.

**What happens to the samples collected?**

The samples are transported to the laboratory and most of the muscle biopsy is frozen. Very thin slices are cut and stained with various dyes and examined under a microscope. A sample of muscle is delivered to the laboratory and divided up to permit examination in several different ways. For example, some tissue is prepared for examination with a microscope to look for abnormal structure. Another piece of the tissue is specially prepared for testing whether or not the muscle is working normally. The skin biopsy may need to be used for analysis of genetic and functional studies.

**Looking after your child at home**

- The wound site may be painful for a few days and so painkilling medicine such as Paracetamol should be given. Always read the instructions on the bottle.
- The wound should be kept clean and dry for five days so your child should not be bathed for five days after surgery. Sponge washes are allowed. This is to prevent infection.
- Sometimes a dressing is put on over the wound. This dressing may fall off on its own. However, if still in place by the time your child is allowed a bath, the dressing can be soaked off in the bath.
- Your child should have the following day off school but should then be able to resume normal activities.
- The wound should heal quickly but if there are signs of redness or pus or your child experiences pain which is not helped by giving paracetamol you should seek advice from your GP as antibiotics may be required.
- Unfortunately your child will be left with a small scar. Although scars fade over time it will not fade completely.

**How long does it take to get the results and how will I be informed of these?**

How long it takes to get the results depends on the number of different tests that need to be performed. Investigations need to be thorough and carefully conducted to get accurate results. Preliminary results of muscle will be available within six weeks and sometimes these will give a specific diagnosis. When one does not emerge, the information gained may point towards further tests. The biopsy also rules out particular conditions that may have been suspected. Final tests results may only be available a few months after the biopsy is taken.
Once the consultant neurologist has received the results an appointment will be arranged to discuss the results and follow up. You will usually receive information about this appointment approximately six weeks after the biopsies are taken.

Chaperoning:

During your child’s hospital visits your child will need to be examined to help diagnose and to plan care. Examination may take place before, during and after treatment, is performed by trained members of staff and will always be explained to you beforehand. A chaperone is a separate member of staff who is present during the examination. The role of the chaperone is to provide practical assistance with the examination and to provide support to the child, family member/carer and to the person examining.

Contact details:
If you have any questions or require further information please contact:

| Paediatric surgery nurse specialist: 01223 586973 |
| Paediatric surgery booking coordinators: 01223 348188 |
| Paediatric neurology team: |
| Ward: |

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:

If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 256998, or email: interpreting@addenbrookes.nhs.uk For Large Print information please contact the patient information team: patient.information@addenbrookes.nhs.uk