



Muscle biopsy

Neurogenetic Clinic Dept of Neurology Royal Perth Hospital

What is a muscle biopsy?

A muscle biopsy is a minor surgical procedure which involves removing a piece of muscle for analysis. You will have an open muscle biopsy under local anaesthesia. The muscle sample will be approximately 5mm x 5mm and it will be immediately sent to the pathology laboratory for examination. The final results can take up to 6 weeks, depending on how many tests are done on it.

Why have a muscle biopsy?

A muscle biopsy can give us a lot of information regarding the cause of a person's symptoms. Your doctor will have already taken a history, examined you, and possibly done other tests including blood tests, or an electromyogram (EMG). The biopsy can help identify if there is a muscle problem or a nerve problem. It can help indicate if a particular gene is faulty, and help direct molecular analysis towards a particular gene. It can also indicate if there is an inflammatory problem with the muscle which requires specific treatment. Neuromuscular diseases often have characteristic patterns of pathology which are visible under a microscope and these can help define the exact condition.

What does it involve?

A muscle biopsy can be taken from different muscles, but the most common are those of the thigh, calf or upper arm. The skin overlying the muscle is made numb with an injection of local anaesthetic. When it is totally numb an incision approximately 2cm in length is made. Once the sample is taken the incision is closed with stitches, which will dissolve over the next week. The wound must be kept dry over that week, so wrap it in plastic cling wrap when showering, and avoid baths and swimming.

Are there risks?

The risks associated with a muscle biopsy are very small. Taking the biopsy will not increase the muscle weakness. Infection or bleeding can theoretically occur but are very rare. The biopsy is done under sterile conditions to avoid infection. It is not uncommon to have a small patch of numbness around the scar which may last for a few weeks. (Prior to the biopsy, you will be asked to have a blood test to make sure you do not have a predisposition to bleeding.)

What happens to the sample?

The sample is taken to the laboratory and most of it is snap frozen. Very thin slices are cut and stained with various dyes and examined under a microscope. Some of the sample is frozen for biochemical or genetic studies. A small portion is placed in a preservative so it can be examined at very high power in an electron microscope, if required. With agreement of the patient, any unused portion of the sample is stored so it is available for any future developments in diagnosis or treatment.

Please do not take aspirin for 7 days prior to the biopsy date

After-Care

You have just undergone a muscle biopsy. During the procedure a small cut was made into the muscle, and dissolvable sutures and steri-strips have been used to hold the wound together.

To allow the wound to heal properly you should:

- 1. Keep the wound dry for at least 7 days.** The wound is covered with a waterproof dressing. You should take precautions when showering (such as not scrubbing the area, and covering the dressing with plastic wrapping) to prevent the wound from getting wet. If the dressing becomes unsealed you should replace it with another waterproof dressing that has been provided to you in the clinic. Otherwise you should not replace the waterproof dressing in the first 4 days. The skin suture may take 7-10 days to dissolve, so it may be useful to apply a new dressing, for comfort, after 7 days.
- 2. Leave the steri strips in place for one week.**
- 3. Limit moving the arm or leg where the muscle was taken.** Although you can walk around, strenuous exercise and repeated use or straining of the affected arm or leg must be avoided for 7 days.

Pain after the procedure

Some people may experience mild discomfort (similar to a bruise) for several days.

The local anaesthetic that was injected into the biopsy site will last 2-3 hours. You will be given 2 x 500mg paracetamol tablets at the conclusion of the procedure. To minimise the pain it is suggested that you have regular paracetamol or panadeine, for the first 2 days.

Avoid medications containing aspirin and any anti-inflammatory tablets such as nurofen, voltaren, or naprosyn. These may cause bleeding.

Things to look out for

You should seek medical advice if you notice any of the following:

- › Ongoing bleeding or oozing from the wound that soaks the dressing
- › Swelling or severe bruising around the area from where the muscle was taken
- › Continued excessive pain that is not relieved by regular analgesia
- › Redness in the surrounding skin or any discharge from the wound.
- › Seek medical advice if you have any other concerns.

Results

Preliminary results are generally available in 2 weeks however it can take another 4-6 weeks for advanced investigations and tests on the muscle to be completed. You will be contacted by Dr Lamont to discuss the results.