

## **What is a nerve biopsy?**

A nerve biopsy is a minor operation to remove a small sample of nerve.

## **Why is a nerve biopsy performed?**

If someone has nerve symptoms or disease, examination of a small piece of nerve may give important information on the type and severity of the disease. Establishing a diagnosis can allow specific treatment to be given. Unfortunately the findings are sometimes not specific, and a precise diagnosis may not be made even after a biopsy.

## **Which nerve is biopsied?**

We normally biopsy one of three nerves – the sural nerve (at the ankle), the superficial radial nerve (at the wrist), or the ulnar nerve (at the wrist).

## **How is the biopsy performed?**

The operation is performed under local anaesthetic. You will be asked to lie down, and a local anaesthetic will be given where the biopsy will be taken. A small cut is made, and the nerve is carefully exposed. The sample of nerve is then taken. This may be either the full thickness of the nerve, or a 'sliver'. The wound is then stitched. Self-dissolving stitches are used beneath the skin, and non-dissolving stitches in the skin. A plaster is then applied. You should let us know if you are allergic to any types of plaster. Although it is not necessary to starve before the operation, as there is no general anaesthetic, it is better not to eat immediately before (1-2 hours) the operation in case you feel sick. The operation takes around 30 minutes, but there is additional time spent in transporting you to the operating theatre, waiting and in preparation. Some people like to bring a personal stereo so that they can listen to music while waiting and having the operation.

## **What do I do after the biopsy?**

Patients are advised to stay overnight following the biopsy for rest and observation, to allow the wound to heal. Patients who have the biopsy in the arm are usually able to go home later the same day after a period of observation.

After the biopsy, you should rest your leg (if a sural nerve biopsy) for the first day, and keep the wound dry for two days. The wound will gradually heal. Sports and excessive exertion should be avoided for at least 2 weeks. The skin stitches should be removed 10 days after the operation by your GP's team.

## **What problems can there be with the biopsy?**

The wound may ooze a little, and this is normal. If there is excessive bleeding, you should seek medical advice. The wound can sometimes become infected and you should consult your GP if the wound looks red or swollen - treatment with antibiotics may be appropriate. If you have pain or discomfort after the biopsy

when the local anaesthetic has worn off, you should take simple painkillers such as aspirin or paracetamol.

Unfortunately, there is always the possibility that a nerve is not present, or the nerve biopsy is unsatisfactory (for example, because of excessive disease or technical problems). A further biopsy may then be necessary. If this is apparent during the operation, another nerve may be biopsied at the time, or you may have to return on another occasion.

### **What are the side effects of a nerve biopsy?**

As indicated above, there may be problems with bleeding, or healing of the wound. In addition, there may be symptoms due to the removal of the nerve. The sural nerve supplies sensation to a small area on the side of the foot; while the superficial radial nerve and dorsal ulnar cutaneous nerves do the same for small areas on the back of the hand. This may lead to loss of sensation, or altered sensation including a prickling sensation or discomfort, and occasionally pain in these areas. These nerves are chosen because the loss of sensation is small and they do not cause any loss of movement. Overlap with other nerves minimises the loss of sensation; and by removing smaller parts of the nerve where possible, we minimise this loss of sensation. Often patients with nerve diseases have loss of sensation in these areas already. It is sometimes difficult to determine whether any long-term changes are due to the biopsy or the underlying nerve disease.

### **What happens to the nerve biopsy?**

The nerve biopsy is processed and looked at under a microscope. Different tests are performed depending on the suspected diagnosis. The processing may take at least one week, and full analysis leading to a full report usually takes three to four weeks, or longer in more complex cases. The result is sent to the referring doctor, who will then explain the findings to you.

Any sample remaining after this analysis is stored in case further analysis or re-analysis is required in the future. The remaining nerve may also be used for research into diseases of nerve, and development of new techniques.

### **Do you have any questions?**

When you come into hospital for the biopsy, the doctor will seek your consent for the operation and provide further information. This is also a chance to ask any questions you may have.

*If you have any further questions, please talk to the clinical team. The consultant neurologists leading the biopsies are Dr Richard Orrell and Dr Lionel Ginsberg.*

**If you would like a large print or audio version of this information, please ask a member of staff.**