

MUSCLE & NERVE BIOPSY

PROCEDURE OVERVIEW

A muscle biopsy is a procedure used to diagnose diseases involving muscle tissue. Tissue and cells from a specific muscle are removed and viewed microscopically. The procedure requires only a small piece of tissue to be removed from the designated muscle. If nerve involvement is suspected, we may take a small sample of the nerve as well. Sometimes, only a nerve biopsy is performed, but the site care is identical to that of a muscle biopsy.

The tissue sample is obtained by your physician, who will make an incision (approximately 1.5 inches long) in the skin (open biopsy) and remove 3 to 4 very small pieces from your muscle (and possibly a section of the nerve).

The muscle selected for the biopsy depends on the location of symptoms, which may include pain or weakness. The muscles often selected for sampling are the biceps (upper arm muscle) or quadriceps (thigh muscle).

REASONS FOR THE PROCEDURE

A muscle biopsy is performed to assess the musculoskeletal system for abnormalities. Various disease processes can cause muscle weakness or pain. These conditions may be related to problems within the nervous system, connective tissue, vascular system, or musculoskeletal system.

A muscle biopsy helps to determine the disease process's source, ensuring the appropriate treatment is initiated.

Muscle biopsies may be performed to diagnose neuromuscular disorders, infections that affect the muscle, and other abnormalities in the muscle tissue. The following is a list of some conditions diagnosed by muscle biopsy.

- **Muscular dystrophy (MD).** A broad term that describes a genetic (inherited) disorder of the muscles. Muscular dystrophy causes the muscles in the body to become very weak. The muscles break down and are replaced with fatty deposits over time. There are many different types of muscular dystrophy.
- **Polymyositis.** A disorder that causes inflammation of many of the skeletal muscles.
- **Dermatomyositis.** A collagen disorder that causes skin, muscles, and subcutaneous tissue inflammation often results in weakened muscles.
- **Inclusion Body Myositis.** A chronic disorder that causes inflammation of the muscles.

Nerve biopsies are performed for certain types of **peripheral neuropathy**.

There may also be other reasons for your physician to recommend a muscle biopsy.

RISKS OF THE PROCEDURE

As with any surgical procedure, complications can occur. Some possible complications may include, but are not limited to, the following:

- Bruising and discomfort at the biopsy site.
- Prolonged bleeding from the biopsy site.
- Infection of the biopsy site.
- Scarring
- Nerve biopsy - numbness of your foot

BEFORE THE PROCEDURE

- Your physician will explain the procedure to you, and you will have the opportunity to ask any questions
- You will be asked to sign a consent form that gives your permission to do the procedure. Read the form carefully and ask questions if something is not clear.
- Notify your physician well in advance of the procedure if you are sensitive to or allergic to any medications, latex, tape, and anesthetic agents (local and general). **THIS IS VERY IMPORTANT.**
- Notify your physician of all medications (prescribed and over the counter) and herbal supplements you are taking regularly.
- Notify your physician if you have a history of bleeding disorders.
- **The following medications need to be held for seven days prior to the biopsy:** Aspirin, Plavix, Celebrex, Meloxicam, diclofenac, Vescepa, Lovenox, and all NSAIDs (ibuprofen, Advil, etc.), fish oil, turmeric.
- If taking anticoagulants (blood-thinners) like Xarelto or Eliquis, then you will need to discuss hold times with your prescriber.
- If you are taking prednisone or other medication that may suppress the immune system, you should discuss it with our team before your procedure.

DURING THE PROCEDURE

A muscle/nerve biopsy may be performed on an outpatient basis or as part of your stay in a hospital. Procedures may vary depending on your condition and your physician's practices. Generally, a muscle/nerve biopsy follows this process:

- You may be asked to remove clothing and will be given a gown if necessary.
- During the procedure, you will need to lie as still as possible.



- The skin over the biopsy site will be cleansed with an antiseptic solution.
 - As the physician injects a local anesthetic to numb the area, you will feel a needle stick and a brief stinging sensation.
- Your physician will then make an incision through the numbed skin, the fatty tissue under the skin, and the fascia (the covering of the muscle). After this, they will obtain the biopsy specimen. During the procedure, You may feel pressure, a pulling sensation, or cramping.
- The physician will close the opening in the skin with stitches and adhesive strips.
- A sterile bandage/dressing will be applied.

AFTER THE PROCEDURE

- **You will need to arrange for someone to drive you home after the procedure.**
- Once you are home, keeping the biopsy area clean and dry is important.
- Since self-absorbing stitches are used, they will not need to be removed as they generally fall off within a few days.
- The biopsy site may be tender or sore for 2 to 3 days after a muscle biopsy. Take a pain reliever for soreness as recommended by your physician. Aspirin or certain other pain medications may increase the chance of bleeding. Be sure to take only recommended medications.
- **Notify your physician to report any of the following:** fever, redness, swelling, bleeding, or another drainage from the biopsy site or increased pain around the biopsy site.
- You may resume your usual activities as instructed by your physician. **Usually, you will be required not to bear any weight with the biopsied leg for 2 to 3 days.** Please keep this in mind when planning for the procedure.
- Your physician may give you additional or alternate instructions after the procedure, depending on your situation.
- The muscle/nerve tissue sample will be sent to the lab for examination.



PROCESSING OF THE MUSCLE/NERVE

When at the lab, the muscle/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 3 to 4 weeks or longer in more complex cases. The result is sent to the referring doctor, who will 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 the development of new techniques.

CARE OF THE BIOPSY SITE

- Do not bear any weight with the biopsied limb for at least 48 hours. However, you will need to move it passively to prevent stiffness. After 2 to 3 days, you can start putting weight on your extremity and gradually increase your activity level with that limb. Do not forget to keep the biopsied limb elevated to prevent any swelling. You will need to avoid any strenuous exercise for two weeks after the biopsy.
- You may remove the ace bandage within 24 hours of the biopsy. On the third day after the biopsy, you will remove the dressing (gauze and tape). From then on, you will need to change the dressing every day for two weeks without applying anything over the incision site.
- The stitches are self-dissolving and, therefore, must not be removed by anyone. Adhesive strips should not be removed either, as they will fall off on their own within a couple of weeks.
- Please keep the biopsy site clean and dry, always since wetting the area might cause premature dissolution of the stitches. Do not apply aloe vera, ointment, or any topical antibiotics over the incision. You may take a shower by wrapping saran wrap around the biopsied arm or leg. If, for any reason, the incision site becomes wet, you can dry it with a blow-dryer set on cool.
- You can take over-the-counter pain medications (Ibuprofen or Tylenol) if you experience pain at the incision site.
- If you experience excessive bleeding, oozing, redness, or warmth at the incision site, please call the numbers provided below, as this might be a sign of an infection.
- Processing and interpreting the muscle specimen may take up to 4 weeks. If another physician referred you, the official report will be sent to your referring physician. Results are not given over the phone.