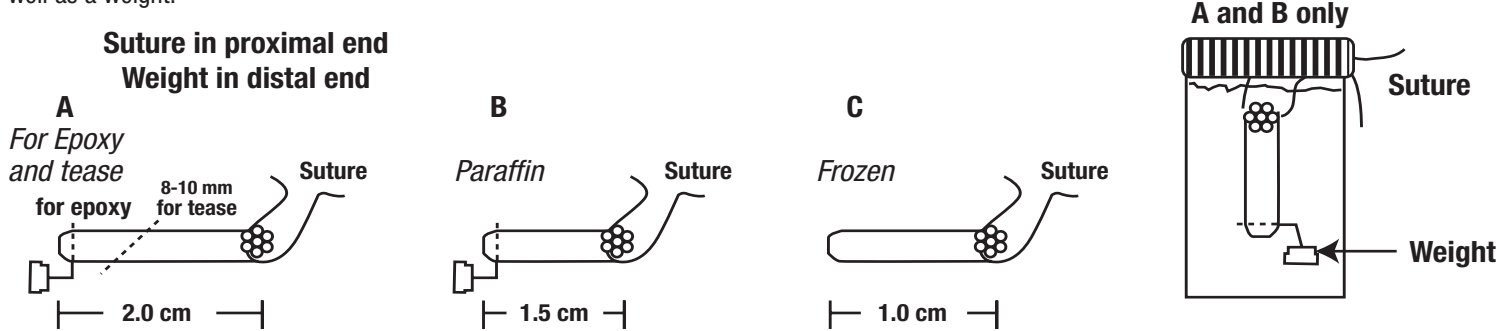




Directions for Preparing Nerve Biopsy Specimens for Study at Mayo Clinic Laboratories (MCL)

A segment of nerve approximately 5 cm long will be removed. The nerve will be divided into 3 levels (segments A, B, and C) which will be fixed and processed as described below. In order to prevent autolysis and/or drying artifacts, it is important to place nerve segments in their respective fixatives immediately after their removal in the operating room. Transfix the proximal end of each nerve specimen with a curved needle, to which a 5-0 silk or other suture material is attached. Do not tie the nerve with the suture, but use the 2 loose ends of the suture to hang the specimen in the fixative solution. Hook a small weight to the distal end of segments "A" and "B" (see diagram below). A small bent syringe needle works well as a weight.



Nerve Segments

Segment "A"

A 2 cm segment, fixed in buffered glutaraldehyde solution, will be used for teased fiber analysis and epoxy embedding.

1. Place this segment directly into a 2.5% glutaraldehyde solution in 0.025 M sodium cacodylate buffer (pH 7.37–7.39) (3% glutaraldehyde in phosphate buffer is also acceptable) for **45 minutes**.
2. **After 45 minutes**, remove segment "A" from the glutaraldehyde, cut an 8 mm to 1 cm segment (this should be the proximal end of segment "A" with the suture attached). Place in 0.15 M cacodylate buffer for shipment. This is the teased fibers segment.
3. The remaining distal segment should be returned to the 2.5% glutaraldehyde for a total of 24 hours. This is the epoxy segment.
4. After 24 hours, the epoxy segment should be placed in 0.15 M cacodylate or equivalent buffer for shipment.

Segment "B"

A 1.5 cm segment, fixed in buffered paraformaldehyde solution, will be used for paraffin embedding.

1. Place this segment directly into 4% paraformaldehyde solution in 0.025 M phosphate buffer (pH 7.37–7.39) for 24 hours (alternatively, use buffered 10% formalin).
2. After 24 hours, this segment should be placed in 0.025 M phosphate or equivalent buffer for shipment.

Segment "C" (Package and ship separately from segments "A" and "B.")

Freeze segment "C" immediately in melting isopentane. Do this by placing the segment in a metal container of isopentane suspended over liquid nitrogen. If isopentane and liquid nitrogen are not available, freeze on dry ice. Wrap the frozen nerve segment in aluminum foil, place in an unbreakable container, and ship on dry ice.

If there is difficulty in obtaining the requested length of nerve segments "A" and "B," segment "C" may be omitted.

Kits

A Nerve Biopsy Kit containing fixatives and buffer is available at an additional fee. Call 800-533-1710 or 507-284-8065 to order.

Shipping Instructions: Send Monday – Thursday Only

Ship segments "A" and "B" refrigerated. Ship segment "C" frozen on dry ice.

Note: Segments "A" and "B" must be shipped separately from segment "C." If the specimens are sent together, freezing artifact will preclude adequate interpretation.

To assist in interpretation of the specimen and for our permanent records, complete Nerve Biopsy Information (T458), **including the tentative clinical diagnosis, name of nerve biopsied, date of biopsy, and indication for nerve biopsy**. If not ordering electronically, complete and submit a Pathology Test Request Form (T246) with the specimens. Copies of the neurology clinical notes, electromyogram, and relevant test results should also be included; and the tentative clinical diagnosis should be indicated. Be sure to indicate the address or addresses where results should be sent. Place this information in the shipping box with the specimen. Biopsies received without this information will be held until the appropriate information is obtained.

If the specimen is not sent via the MCL courier service, it should be sent via an overnight express service to:

Mayo Clinic Laboratories
Attn: Peripheral Nerve Biopsy Enclosed
3050 Superior Drive NW
Rochester, MN 55901

To avoid prolonged storage of the specimen in transit, it is best to send it at the beginning of the week rather than near the weekend.

Questions

For questions or assistance with specimen preparation, call the Peripheral Nerve Laboratory at 800-533-1710 or 507-284-8065.