MAYO CLINIC LABORATORIES

Test Definition: PNBX

Peripheral Nerve Pathology Consultation

Overview

Useful For

Evaluating diseases of the nerve and disorders that affect nerve function

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
SS2PC	SpecStain, Grp II, other	No, (Bill Only)	No
COSPC	Consult, Outside Slide	No, (Bill Only)	No
CUPPC	Consult, w/USS Prof	No, (Bill Only)	No
CRHPC	Consult, w/Comp Rvw of His	No, (Bill Only)	No
NTFPC	Teased Fiber	No, (Bill Only)	No
IHPCI	IHC Initial	No, (Bill Only)	No
IHPCA	IHC Additional	No, (Bill Only)	No
LV4RP	Level 4 Gross and Microscopic, RB	No, (Bill Only)	No
CSPPC	Consult, w/Slide Prep	No, (Bill Only)	No
EM	Electron Microscopy	Yes, (Bill Only)	No

Testing Algorithm

A battery of enzyme histochemical stains or immunostains are performed; other tests can be performed as indicated at an additional charge. The reviewing neuromuscular pathologist will determine the need for additional testing.

Wet tissue for consultation: When adequate tissue is provided, routine testing will include teased fiber examination, Congo red stain, methyl violet stain, Masson's trichrome stain, leukocyte common antigen, luxol fast blue/PAS (periodic acid-Schiff) stain, KP-1 macrophage, methylene blue stain, hematoxylin and eosin stain, and Turnbull blue stain or Perl's Prussian blue stain.

Slides and blocks sent for consultation: Special stains and studies performed on the case should be sent with the case for review. In order to determine an accurate diagnosis, some of these stains or studies may be deemed to warrant repeat testing, at an additional charge, at the discretion of the reviewing Mayo Clinic neuromuscular pathologist. In addition, testing requested by the referring physician (immunostains, molecular studies, etc) may not be performed if deemed unnecessary by the reviewing Mayo Clinic neuromuscular pathologist. For all consultations, ancillary testing necessary to determine a diagnosis is ordered at the discretion of the Mayo Clinic neuromuscular pathologist. An interpretation, which includes an evaluation of the specimen and determination of a diagnosis, will be provided within a formal pathology report.

For more information see Pathology Consultation Ordering Algorithm.

Special Instructions

- Nerve Biopsy Patient Information

- Nerve Biopsy Specimen Preparation Instruction
- Pathology Consultation Ordering Algorithm

Highlights

Our consultative practice strives to provide the highest quality diagnostic consultative service, balancing optimal patient care with a cost-conscious approach that supports the rapid turnaround time for diagnostic results.

Method Name

Nerve Biopsy Surgical Pathology Consultation and Review of Outside Material

NY State Available

Yes

Specimen

Specimen Type

Varies

Additional Testing Requirements

Biopsies from different sites require separate orders and separate specimen vials.

Example:

One (1) left sural nerve and 1 left superficial peroneal nerve require 2 separate orders, one for each type of nerve.

Shipping Instructions

Ship Monday through Thursday.

Transport specimen per Nerve Biopsy Specimen Preparation Instructions (T580).

Necessary Information

The following information is required:

All requisition and supporting information must be submitted in English.

Each of the following items is required:

1. All requisitions must be labeled with:

-Patient name, date of birth, and medical record number

-Name and phone number of the referring pathologist or ordering provider

-Anatomic site and collection date

2. Nerve Biopsy Patient Information (T458)

3. Additional clinical information:

-Neurology clinical notes

-Electromyography results if performed

Specimen Required

Specimen Type: Nerve biopsy tissue, slides, or block

Supplies: Nerve Biopsy Kit (to order call 507-284-8065 or 800-533-1710)

Collection Instructions: Prepare and transport specimen per Nerve Biopsy Specimen Preparation Instructions (T580).

Forms

Nerve Biopsy Patient Information (T458) is required

Specimen Minimum Volume

4.5 cm biopsy

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Refrigerated (preferred)		
	Frozen		

Clinical & Interpretive

Clinical Information

Neuropathy is a common neurological complaint and a frequent source of morbidity in many patient populations. Direct investigation of small fiber involvement has been limited as most classical techniques (eg, electromyography, nerve conduction studies, and nerve biopsy) focus on large diameter nerve fibers and may be normal in patients with small fiber neuropathies.

Nerve biopsies provide information about nerve fibers and the interstitium of the nerve. Neuropathic abnormalities include decreased density of myelinated fibers, segmental demyelination, and axonal degeneration. Some possible interstitial abnormalities that affect nerves include necrotizing vasculitis and amyloidosis.

This consultation is for fixed tissue, slides, or blocks.

Reference Values

An interpretive report will be provided.

Interpretation

The clinical and neurological history is reviewed with the interpretation of the biopsy.

The histologic slides, special stains, and history, along with the physician's report are correlated by a neuromuscular pathologist. An interpretive report will be provided.

Cautions

Poor fixation, orientation, and improper handling of the nerve tissue may hinder the neuromuscular pathologist's interpretation of the biopsy. For more information see Nerve Biopsy Specimen Preparation Instructions. Kits containing the proper tissue fixatives and buffers are available upon request.

Clinical Reference

1. Tracy JA, Dyck PJ, Klein CJ, Engelstad JK, Meyer JE, Dyck PJB. Onion-bulb patterns predict acquired or inherited demyelinating polyneuropathy. Muscle Nerve. 2019;59(6):665-670
2. Xu M, Pinto M, Sun C, et al. Expanded teased nerve fibre pathological conditions in disease association. J Neurol Neurosurg Psychiatry. 2019;90(2):138-140
3. Dyck PJB, Spinner RJ, Amrami KK, Klein CJ, Engelstad JK, Dyck PJ. MRI-targeted fascicular nerve biopsies of proximal nerves: historic reports and illustrative case reports. In: Dyck PJ, Dyck PJB, Engelstad JK, et al, eds. Companion to Peripheral Neuropathy: Illustrated Cases and New Developments. Elsevier; 2010:3-14
4. Dyck PJ, Dyck PJB, Engelstad J. Pathologic alterations of nerves. In: Dyck PJ, Thomas PK, eds. Peripheral Neuropathy, Vol 1. 4th ed. Elsevier; 2005:733-829

Performance

Method Description

A battery of special stains and teased nerve fiber analysis will be performed if fixed tissue is provided. Nerve morphometry and electron microscopy to determine diameter size histograms and ultrastructural abnormalities may be performed based on a preliminary review by the neuropathologist.(Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

7 to 14 days: Cases requiring additional material or ancillary testing may require additional time.

Specimen Retention Time

Material made at Mayo Clinic may be retained at Mayo Clinic indefinitely.

Performing Laboratory Location

Rochester

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA

requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

88305 (if appropriate)
88313 (if appropriate)
88321 (if appropriate)
88323 (if appropriate)
88323-26 (if appropriate)
88325 (if appropriate)
88362 (if appropriate)
88348 (if appropriate)
88342 (if appropriate)
88341 (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
PNBX	Peripheral Nerve Path Consult	In Process

Result ID	Test Result Name	Result LOINC® Value
601774	Interpretation	59465-5
601775	Participated in the Interpretation	No LOINC Needed
601776	Report electronically signed by	19139-5
601777	Addendum	35265-8
601778	Gross Description	22634-0
601779	Material Received	81178-6
601912	Disclaimer	62364-5
601823	Case Number	80398-1