This is a summary of the American Academy of Neurology (AAN) guideline regarding recommended use of laboratory and genetic testing in diagnosing patients with distal symmetric polyneuropathy (DSP).

Please refer to the full guideline at www.aan.com for more information.

**What is the yield of screening laboratory tests in the evaluation of DSP, and which tests should be performed?**

### SCREENING LABORATORY TESTING

**Weak evidence**
- Screening laboratory tests may be considered for all patients with DSP ([Level C]).
- Although routine screening with a panel of basic tests is often performed, those tests with the highest yield of abnormality are blood glucose, serum B12 with metabolites (methylmalonic acid with or without homocysteine), and serum protein immunofixation electrophoresis ([Level C]).
- When routine blood glucose testing is not clearly abnormal, other tests for prediabetes (impaired glucose tolerance) such as a GTT may be considered in patients with distal symmetric sensory polyneuropathy, especially if it is accompanied by pain ([Level C]).

**Insufficient evidence**
- Although there are no control studies ([Level U]) regarding when to recommend the use of other specific laboratory tests, clinical judgment correlated with the clinical picture will determine which additional laboratory investigations are necessary.

**How accurate is genetic testing for identifying patients with genetically determined neuropathies?**

### GENETIC TESTING

**Strong evidence**
- Genetic testing should be conducted for the accurate diagnosis and classification of hereditary neuropathies ([Level A]).

**Which patients with polyneuropathy should be screened for hereditary neuropathies?**

### GENETIC TESTING

**Weak evidence**
- Genetic testing may be considered in patients with a cryptogenic polyneuropathy and classic hereditary neuropathy phenotype ([Level C]).

**Insufficient evidence**
- There is insufficient evidence to support or refute the usefulness of routine genetic testing in cryptogenic polyneuropathy patients without a classic hereditary phenotype ([Level U]).

**CLINICAL CONTEXT**
To achieve the highest yield, the genetic testing profile should be guided by the clinical phenotype, inheritance pattern (if available), and electrodiagnostic (EDX) features (demyelinating versus axonal).
This guideline summary is evidence-based. The AAN uses the following definitions for the level of recommendations and classification of evidence for therapeutic intervention, prognosis, and screening.

**Classification of Recommendations:**
- **A** = Established as effective, ineffective or harmful (or established as useful/predictive or not useful/predictive) for the given condition in the specified population. (Level A rating requires at least two consistent Class I studies.)*
- **B** = Probably effective, ineffective or harmful (or probably useful/predictive or not useful/predictive) for the given condition in the specified population. (Level B rating requires at least one Class I study or two consistent Class II studies.)
- **C** = Possibly effective, ineffective or harmful (or possibly useful/predictive or not useful/predictive) for the given condition in the specified population. (Level C rating requires at least one Class II study or two consistent Class III studies.)
- **U** = Data inadequate or conflicting; given current knowledge, treatment (test, predictor) is unproven.

*In exceptional cases, one convincing Class I study may suffice for an “A” recommendation if 1) all criteria are met, 2) the magnitude of effect is large (relative rate improved outcome > 5 and the lower limit of the confidence interval is > 2).

**AAN Classification of Evidence for Diagnosis:**
- **Class I:** A cohort study with prospective data collection of a broad spectrum of persons with the suspected condition, using an acceptable reference standard for case definition. The diagnostic test is objective or performed and interpreted without knowledge of the patient’s clinical status. Study results allow calculation of measures of diagnostic accuracy. **Class II:** A case control study of a broad spectrum of persons with the condition established by an acceptable reference standard compared to a broad spectrum of controls or a cohort study where a broad spectrum of persons with the suspected condition where the data was collected retrospectively. The diagnostic test is objective or performed and interpreted without knowledge of disease status. Study results allow calculation of measures of diagnostic accuracy. **Class III:** A case control study or cohort study where either persons with the condition or controls are of a narrow spectrum. The condition is established by an acceptable reference standard. The reference standard and diagnostic test are objective or performed and interpreted by different observers. Study results allow calculation of measures of diagnostic accuracy. **Class IV:** Studies not meeting Class I, II or III criteria including consensus, expert opinion or a case report.

This statement is provided as an educational service of the American Academy of Neurology. It is based on an assessment of current scientific and clinical information. It is not intended to include all possible proper methods of care for a particular neurologic problem or all legitimate criteria for choosing to use a specific procedure. Neither is it intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient, based on all of the circumstances involved.

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