

POLYNEUROPATHIE ⁺ ◦ •

POLYNEUROPATHY

Poly + Neuro + Pathy

Alcohol abuse, antibiotics, autoimmune disorders, B12 deficiency, bone marrow disorders, cancer, carpal tunnel syndrome, chemotherapy, chronic kidney disease, diabetes, drug side effects, electrocution, heavy metal toxicity, hereditary, HIV, hypothyroidism, infections, inflammatory conditions, injury, liver disease, lupus, Lyme disease, metabolic disorders, nutritional deficiencies, paraneoplastic syndromes, peripheral artery disease, radiation therapy, sarcoidosis, shingles, Sjogrens syndrome, thiamine deficiency, trauma, vasculitis, viral infections, Wegeners disease,



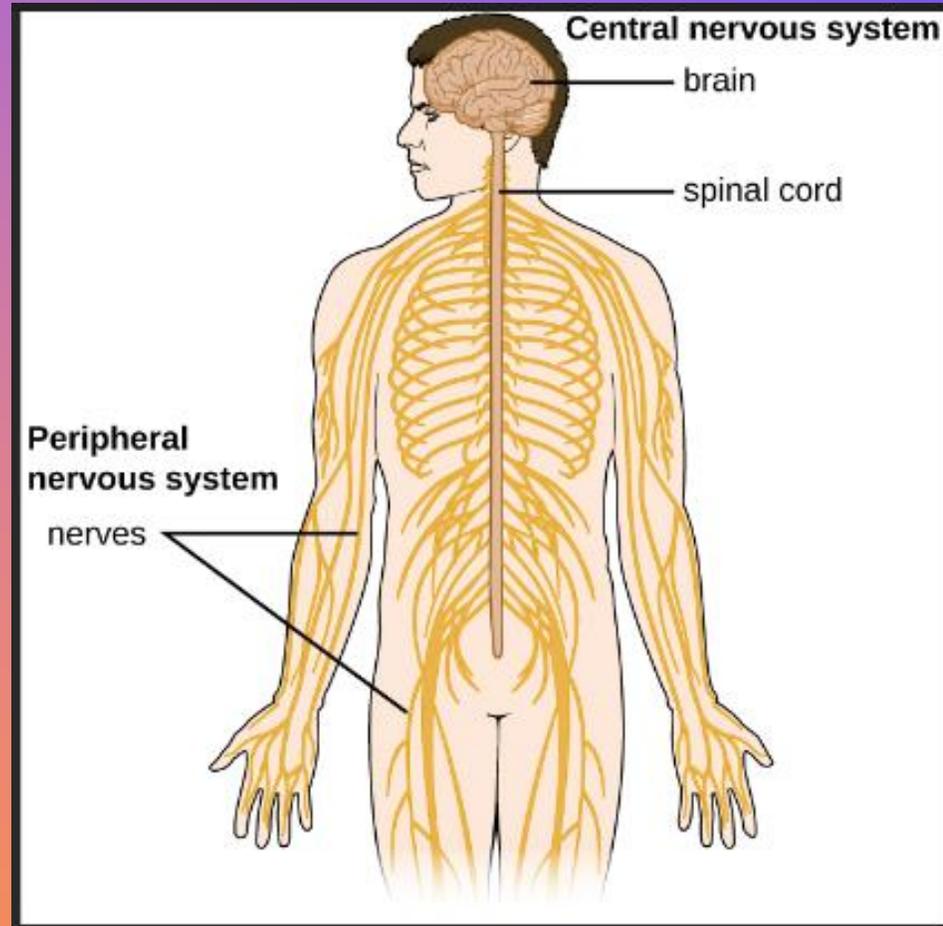
POLYNEUROPATHIES

History

Exam

Tests

LOCALIZE



PERIPHERAL NEUROPATHY: HISTORY

1. *Sensory: Pain, temperature, position (proprioception), pressure, light touch. Symptoms include burning, tingling, buzzing, heaviness, imbalance, feeling of being encased.*
2. *Motor: Muscle movement. Symptoms include weakness and atrophy.*
3. *Autonomic: (mainly) unconscious control of organ systems including heart rate, digestion, respiratory rate, pupillary response, urination, sexual arousal, sweating, and so on. Symptoms include dizziness upon standing, feeling full after eating small amounts, bowel or bladder dysfunction, abnormal heart rhythm, changes in sweat patterns.*

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PERIPHERAL NEUROPATHY: EXAM

1. *Sensation: Vibration, pinprick, proprioception*
2. *Motor: Muscle bulk, strength*
3. *Autonomic: Orthostatic BP and Pulse measurements*

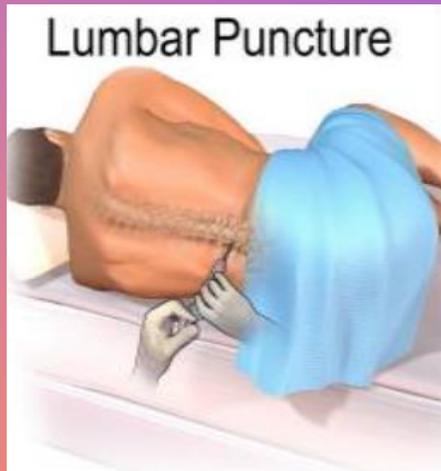
PERIPHERAL NEUROPATHY: TESTS

1. *Labs: sugar, B12, thyroid, blood tests to analyze bone marrow (SPEP, IEP, light chain), blood counts, metabolic panel.*
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2. *EMG*



PERIPHERAL NEUROPATHY: TESTS

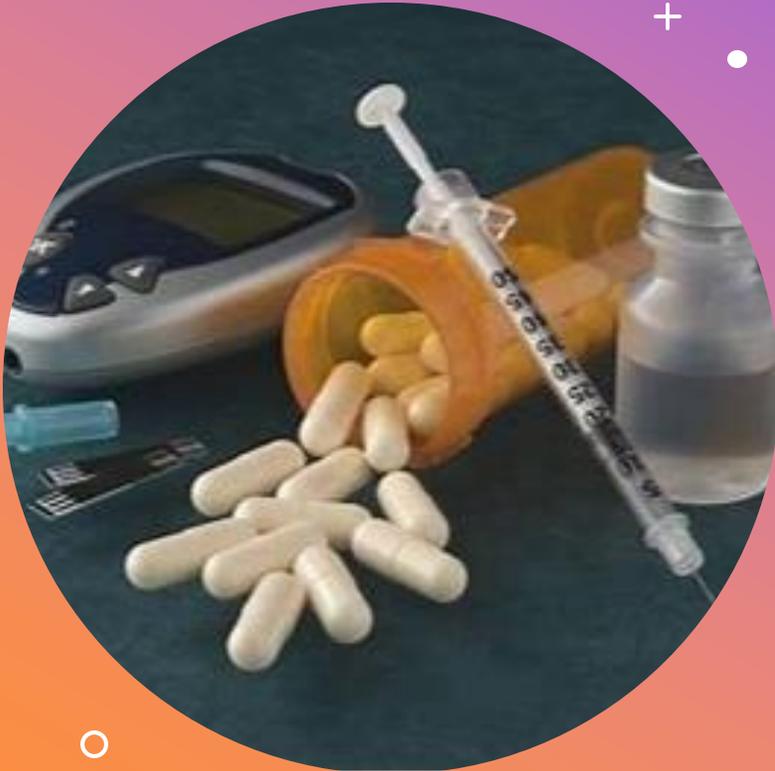
3. *Lumbar Puncture*



4. *Nerve Biopsy*

5. *Autonomic Testing*

6. *Genetic Testing*



POLYNEUROPATHY

Treatments

POLYNEUROPATHY: TREATMENT

Symptomatic

- 1. Anti-convulsants (pregabalin, gabapentin, carbamazepine, etc.)*
- 2. Anti-depressants (tricyclic anti-depressants, serotonin-noradrenaline reuptake inhibitors)*
- 3. Physical therapy, bracing (AFO)*
- 4. Acupuncture*
- 5. Surgical nerve decompression*
- 6. Cognitive behavioral therapy*
- 7. "Nutraceuticals" (diet and nutritional supplements)*

POLYNEUROPATHY: TREATMENT

Nutritional supplements

- 1. B-Vitamins (B1, B6, B12) – animal studies and non-randomized observational trials*
- 2. Vitamin C – Small randomized control trial reduced pain in diabetic neuropathy when used along with prescription medication*
- 3. Vitamin D – some evidence to suggest use before chemotherapy and other neuropathy pain. Non-placebo trials.*
- 4. Magnesium – effective in rats; mixed results in humans*
- 5. Capsaicin – topical*
- 6. A-lipoic acid (ALA)*

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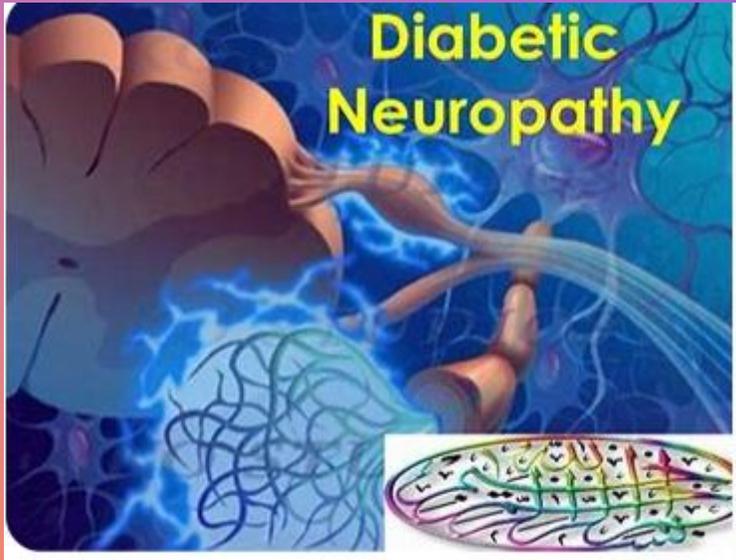
POLYNEUROPATHY: TREATMENT

1. *Laser Therapy*

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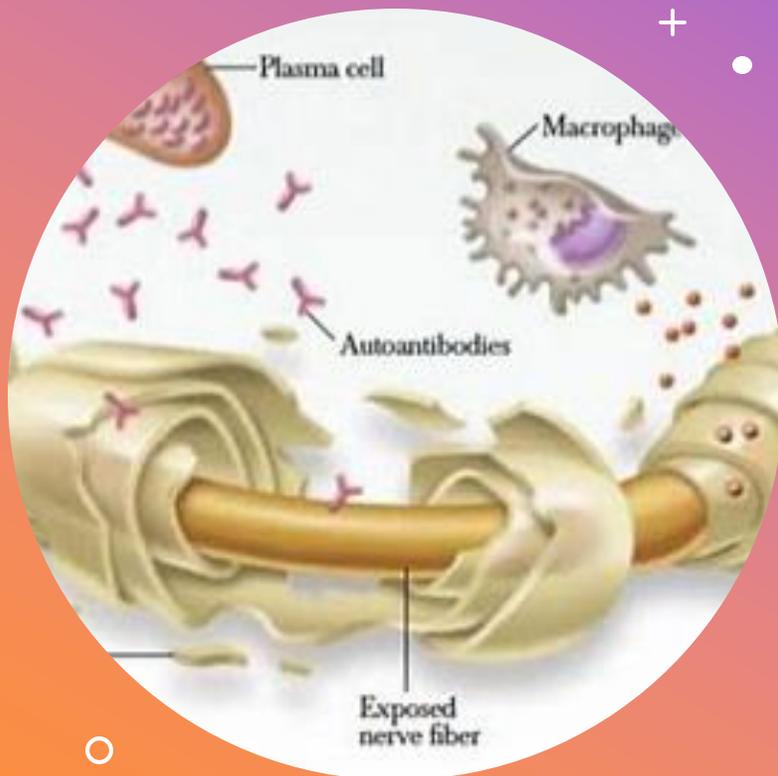


DIABETIC NEUROPATHY

Diabetes can do “anything” to the nerves
Classically, presents with sensory symptoms in the feet and later the hands. Balance and autonomic dysfunction may follow. Weakness is rarer and later.

Glucose control, weight control, other vascular risk factors.

CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY (CIDP)



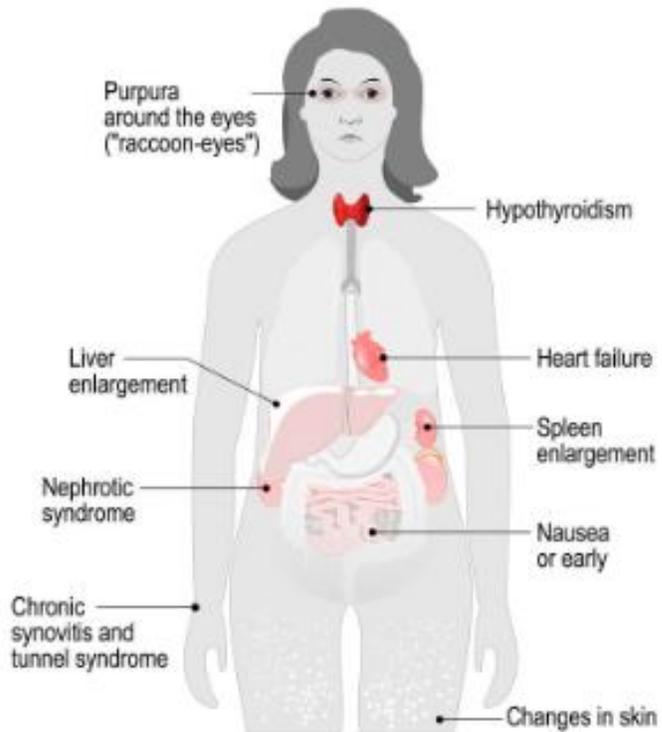
Classically presents with weakness AND sensory changes in both the arms and the legs.

EMG pattern is very unique

Responds very well to immune suppression or immune modification.

IVIg or steroids.

AMYLOIDOSIS signs and symptoms



AMYLOIDOSIS

Classically presents with preeminent pain and autonomic dysfunction.

This is a systemic disease so often other organs are affected. Cardiac, skin, kidney, trigger fingers, spinal stenosis, tendon ruptures, bilateral carpal tunnel syndrome, etc.

Genetic forms have new gene therapies that can slow or maybe reverse this otherwise fatal disease.

POLYNEUROPATHY SUMMARY

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There are hundreds of conditions that can affect the nerves – or cause a neuropathy

Taking a good history and physical exam can help narrow down the causes.

Additional tests are often needed (blood tests, EMG, among others)

Some neuropathies can be treated and reversed. Others have only symptomatic treatment.

Other than prescription meds, treatments such as nutritional supplements, physical therapy, bracing, stockings, acupuncture and cognitive behavioral therapy may be helpful.

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