

A Step-by-Step Guide for Diagnosing and Treating Peripheral Neuropathies by Primary Care Physicians

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What are Peripheral Neuropathies?

- **Numbness**, tingling, burning, pain, weakness and impaired reflexes
- **Affect 2.4%** of the world's population (**8%** or higher among **older adults**)
- Up to, **80%** of cases go **undiagnosed**
- Account for **10%** of **visits to neurologists**
- **Limited research** documented in literature

Our Aims:

- **Identify** the likely **types** of neuropathies that **family doctors** may encounter
- Develop a **step-by-step guide** for family doctors to diagnose/treat neuropathies

Methods

- A systematic literature search, initially conducted using PubMed and Google Scholar as part of an honours thesis, yielded **over 200 articles**
- Key words: Paresthesia, numbness, tingling, burning, pain, motor deficits
- A second systematic literature review, focused on neuropathy causes addressable in primary care, yielded **38 articles** published in 1980-2025
- **Classified** the types of neuropathies on **basis of ability** to manage the disorders in primary care settings

Four Categories of Neuropathies

1. Acute, requiring Emergency Care:

Guillain-Barre, Vasculitis

2. Manageable by family doctors:

Alcohol use disorder, Arsenic toxicity, Cadmium toxicity, Copper deficiency, L-dopa, Lead toxicity, Mercury toxicity, Styrene toxicity, Statins, Vitamin B1 deficiency, Vitamin B6 deficiency/toxicity, Vitamin B12 deficiency, Vitamin E deficiency

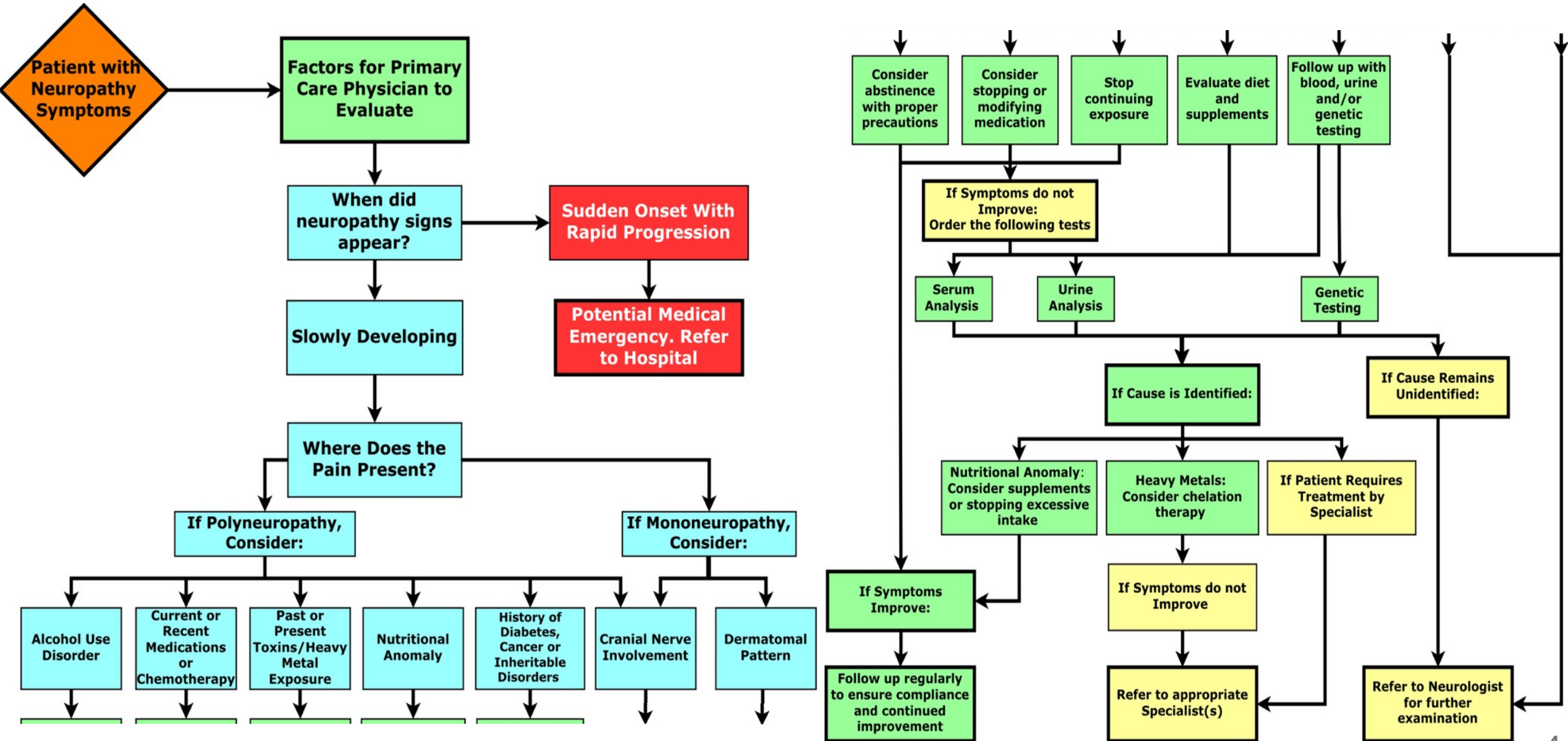
3. Mononeuropathies: refer to neurologist

Abducens nerve palsy, Bell's palsy, Compressive/dermatomal neuropathy, Glossopharyngeal neuralgia, Herpes zoster virus, Hypoglossal nerve neuropathy, Meralgia paresthetica, Oculomotor nerve palsy, Spinal accessory neuropathy, Thoracic outlet syndrome, Trigeminal neuralgia, Trochlear nerve palsy, Vagal nerve neuralgia, Vestibular neuritis

4. Polyneuropathies: refer to suitable specialist

Amyloidosis: geneticist, Charcot-Marie-Tooth disease: geneticist, Chemotherapy: oncologist, Compressive/dermatomal neuropathy: neurologist, Diabetes mellitus: endocrinologist, Fabry disease: geneticist, Lymphoma: hematologist/oncologist, Multiple myeloma: hematologist/oncologist, Osteosclerotic myeloma: hematologist/oncologist, Porphyria: geneticist, Sickle cell disease: geneticist, Tyrosinemia: geneticist, Waldenstrom macroglobulinemia: hematologist/oncologist

Diagnostic Flow Chart



Discussion

- Neuropathies **usually present first** in the primary care setting
- We identified **72 causes** of peripheral neuropathies
- **Family doctors** can **manage** or **refer 38** of these causes on their own
- Our **diagnostic flow chart** for family doctors is the **first of its kind**
- Can **help reduce delays** in diagnosing and treating neuropathies
- Any patients that family doctors manage **helps to free neurologists** to work on more complex disorders
- We are preparing a full paper for a clinical practice journal