



# Peripheral Neuropathy

SAPMEA ECHO Neurology

14 April 2022

## PANEL MEMBERS

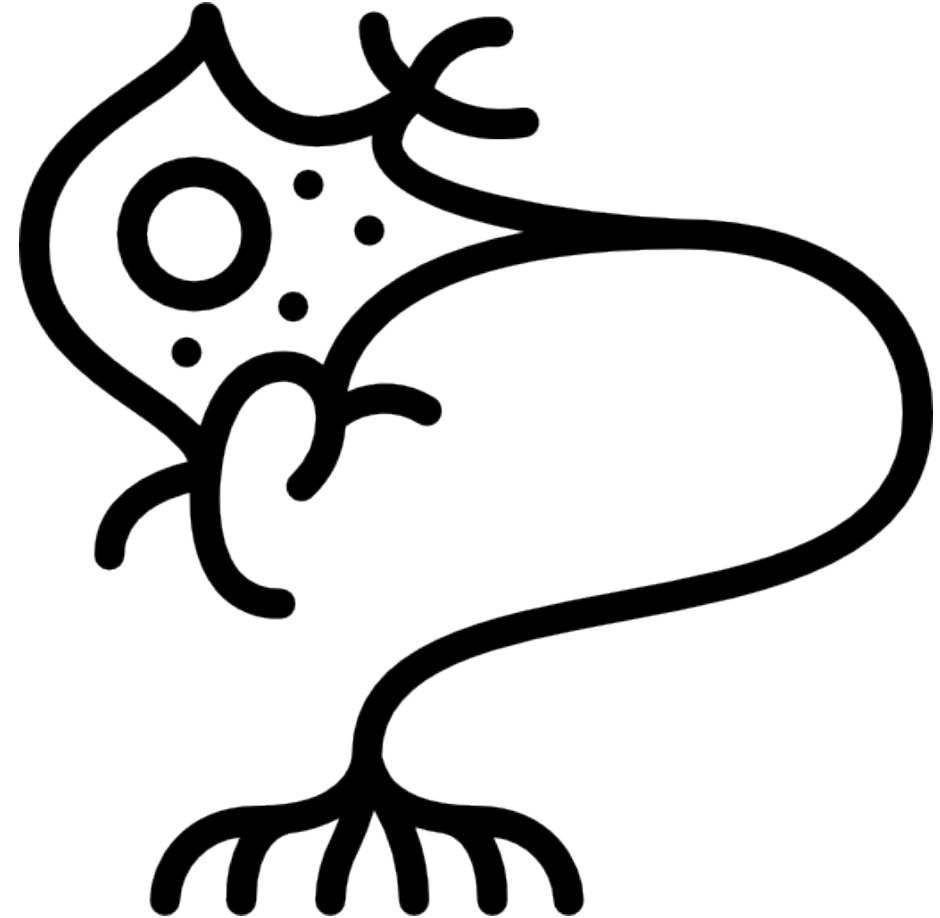
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# Topic Overview

- Approach to neuropathy
  - History and examination
  - First line evaluation
  - Red flags
  - Second line evaluation
  - When to order NCS
- Management
  - Prevent progression
  - Prevent complications
  - Minimise disability
  - Neuropathic pain
  - Medical marijuana role



# Approach to peripheral neuropathy

- Common problem with > 200 possible causes



## • Neuropathy Assessment

### • History

- Symptoms (numb, pain, weak)
- Progression and disability
- Red flags screening
- Nutrition & supplements
- Alcohol use

### • Examination of UL & LL

- Tone
- Power
- Sensation – vibration and temperature
- Reflexes

# Approach to peripheral neuropathy

- Basic Evaluation
  - Screening for common treatable causes
    - Blood tests
    - Alcohol use
    - Check medication/supplement use
  - Nerve conduction studies
    - Type (axonal/demyelinating)
    - Pattern
    - Severity

*“Active B12” not validated in general population.  
Treat neuropathy patients with low or borderline total  
B12 levels.*

## INITIAL EVALUATION OF LENGTH-DEPENDENT SYMMETRIC AXONAL POLYNEUROPATHY

- **Vitamin B12**
- Fasting glucose and **HbA1C** +/- 2hr OGTT
- EPG/IEPG + serum free light chain assay
- Electrolytes, urea, creatinine
- Liver function tests (esp. GGT)
- Calcium, magnesium, phosphate
- Full blood count
- Erythrocyte sedimentation rate and C reactive protein
- Thyroid function tests
- Autoimmune screen (ANA, ENA, ANCA, RF)
- Coeliac serology

# Neuropathy Red Flags

- Acute/subacute onset
- Rapidly progressive (days/weeks)
- Disabling
- Motor predominant
- Painful
- Systemic features (e.g. wt loss)
- Young age at onset
- Non-length dependent (UL > LL or asymmetrical)
- Dysautonomia

These are clues to autoimmune (GBS, CIDP), vasculitis, paraneoplastic, amyloidosis/myeloma, hereditary and other potentially life-threatening or severely disabling neuropathies. Fortunately, 'red flag' much rarer than the usual suspects



# Approach to peripheral neuropathy

## SECONDARY EVALUATION OF LENGTH-DEPENDENT SYMMETRIC AXONAL POLYNEUROPATHY

- Additional autoimmune work up (anti-dsDNA Ab, serum ACE)
- HBV + HCV + cryoglobulins
- Syphilis serology
- HIV serology

- Not all patients without a cause need secondary evaluation
- Guided by level of clinical suspicion and clinical severity/progression

# What can a nerve conduction study tell me?

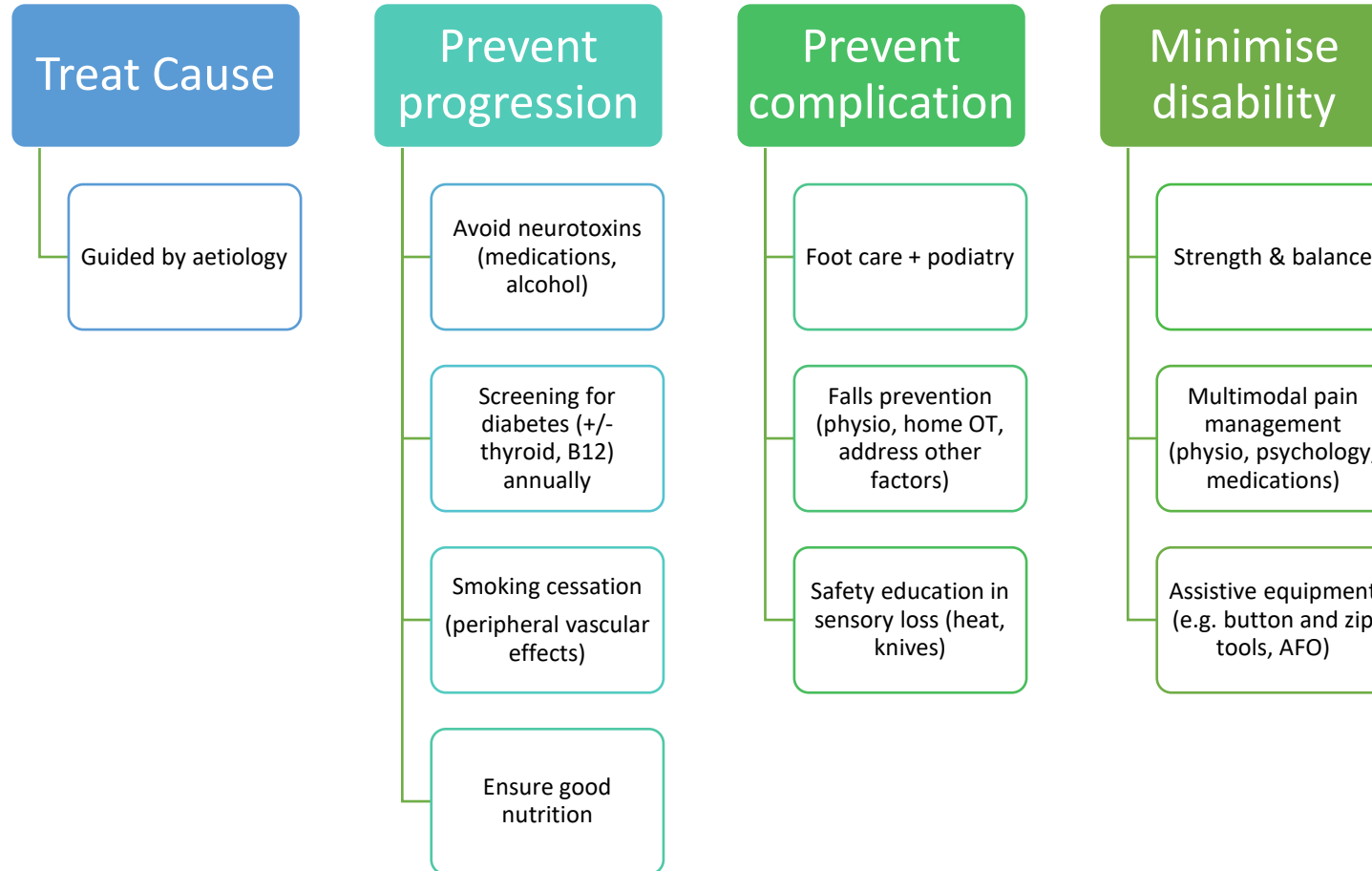
- Focal neuropathy
  - Carpal tunnel lesion
  - Ulnar neuropathy at elbow
- Polyneuropathy
  - Is it symmetrical, length dependent?
  - Is it sensory and/or motor?
  - Is it axonal or demyelinating?
- Other disorders
  - Amyotrophic lateral sclerosis
  - Myasthenia gravis
  - Radiculopathy

- What can't it tell you?
  - Small fibre and/or autonomic neuropathy
  - Exclude mild neuropathy
  - Cause of neuropathy

## When to order:

- Suspected new diagnosis of peripheral neuropathy
  - Esp. if no obvious cause if + 'red flags'
- Suspected focal neuropathy
  - At onset to confirm Dx (+/- rule out important DDx)
  - If invasive treatment being considered (e.g. CTS, ulnar neuropathy)

# Management





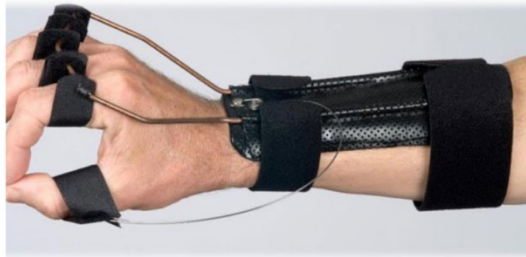
# Allied health MANAGEMENT

- Exercise can help to reduce Neuropathic pain intensity
- Focus on supportive care
  - Reduce falls risk (internal/external factors)
  - Splints and braces (many types)
  - adaptive aids as indicated
  - Reduce skin injury risk
- Lower limb:
  - Foot drop: AFO
  - Ankle instability ASO



# Allied health management

- Upper limb: Impaired dexterity → Modified cutlery (Or lagging)
- Carpal tunnel: resting night splints (Futuro)
- Radial Nerve Palsy: Futuro, custom, sometimes active splint



- Thumb MCP support for OA



ThumSling

North Coast  
Coolcomfort  
Neoprene

Push Brace

Actimove Rhizo Forte

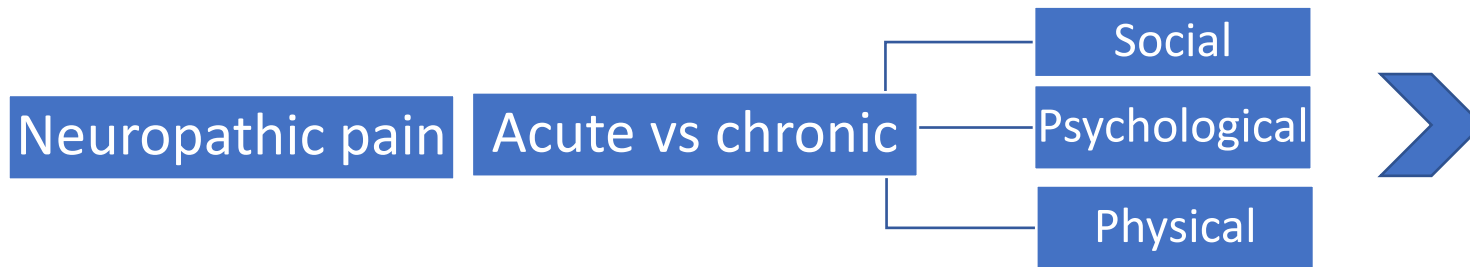
Custom Made Splint

# Community BASED follow-up

- Day rehabilitation services
  - Access for multi-disciplinary allied health (PT/EP/OT/SP/Orthotics/Nutrition and Diet)
  - Located within LHN's
- Orthotics and Prosthetics (Direct referral)
- Country referral unit
- Strength for life (50+)
  - EP/Fitness trainer/Aqua



# Neuropathic pain management



Drugs	Acute pain (nociceptive)	Neuropathic pain	Chronic pain (nociceptive with/without neuropathic)
paracetamol	effective	less effective	effective
NSAIDs	effective	less effective	effective
antidepressants (eg low dose TCAs, duloxetine)	rarely used	may be effective; first and second line	may be effective if neuropathic component
antiepileptics (eg gabapentin, pregabalin, carbamazepine)			
opioids	effective	may be effective; third line	may be effective <b>but</b> limited or no benefit long-term (>90 days) for non-cancer pain

## Acute neuropathic pain

- May take up to 1 week to achieve adequate pain relief
- Uptitrate dose slowly in community (in hospital sometimes titrated faster with monitoring)
- Always have a plan for reassessment of pain, and tapering and stopping adjuvants.

## Chronic neuropathic pain

- Review the analgesic efficacy after 4 to 6 weeks
- If adjuvant monotherapy provides a partial response, but pain relief is still inadequate, consider adding a second adjuvant.
- If effective, the adjuvant(s) may be continued short- to moderate-term (eg up to 12 weeks). Some patients with permanent nerve damage (eg spinal cord injury) may require therapy for longer than 12 weeks, with a supported self-management approach. Trial deprescribing every 3 to 6 months to assess ongoing efficacy attributable to the adjuvant, and reduce the risk of long-term adverse effects

Most commonly prescribed adjuvants are:

- TCAs—amitriptyline, nortriptyline
- Gabapentinoids—gabapentin, pregabalin
- SNRIs—duloxetine, venlafaxine

- ✓ Remember the basics (use simple analgesia)
- ✓ Start low, titrate doses slowly
- ✓ Monitor side effects
- ✓ Monitor effectiveness (allow time!)
- ✓ Re-assess
- ✓ Have a plan for tapering/deprescribing

*Choice of adjuvant will depend on individual patient factors (comorbidities, weight gain, sedation, previous experience, current medications, cost) and adverse effect profile*

Drug class (commonly used drugs)	Class considerations	Individual drug considerations
<b>gabapentinoids</b> (gabapentin, pregabalin)	<p>more rapid onset of analgesia compared to TCAs or SNRIs</p> <p>potential for misuse, dependence and withdrawal</p> <p>sedation is common</p> <p>can cause respiratory depression, especially when co-administered with an opioid</p>	<p>pregabalin has a more convenient dosing schedule and more predictable absorption than gabapentin</p> <p>if low doses are required, gabapentin may be preferred because it is less potent than pregabalin</p>
<b>serotonin and noradrenaline reuptake inhibitor</b> (duloxetine, venlafaxine)	<p>sedation is rare</p> <p>can cause <a href="#">serotonin toxicity</a></p>	<p>venlafaxine is associated with a higher incidence of adverse effects than duloxetine</p>
<b>tricyclic antidepressant</b> (amitriptyline, nortriptyline)	<p>often poorly tolerated due to <a href="#">anticholinergic effects</a></p> <p>anticholinergic effects may increase the risk of dementia in older people</p> <p>sedation is common</p>	<p>amitriptyline is the most sedating TCA and has the highest rate of anticholinergic effects</p> <p>nortriptyline is the least sedating TCA and may be preferred if combined with an opioid</p>

- Topical capsaicin and lignocaine patches have weak evidence in the treatment of peripheral neuropathic pain
- lacosamide, lamotrigine, oxcarbazepine, phenytoin, sodium valproate, topiramate -> limited evidence



# Management: Neuropathic Pain

- **The most common reasons I see for neuropathy pain management 'failing'**
  - Not using basics with the extras (i.e. not using paracetamol with a neuropathic pain medication)
  - Starting with high doses or increasing too quickly leading to side effects
  - Using doses that are too low and therefore not effective
  - Giving up on a medication too quickly before it has had chance to work
  - Using a medication 'as needed' instead of regularly
  - Unrealistic expectations of treatment



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# Management

- Vitamin supplements
  - **Only** in proven deficiency
  - Check current supplements to ensure not accidentally overdosing (esp. B6)
  - Check Natural Medicines Database for drug-drug interactions and neurotoxic side effects of other substances
- Medicinal cannabis
  - TGA approved but not PBS listed for neuropathic pain
  - Not first (or even second) line therapy
  - Cost > \$100 per week
  - Online/overseas products not regulated, can be harmful and illegal to import without permission

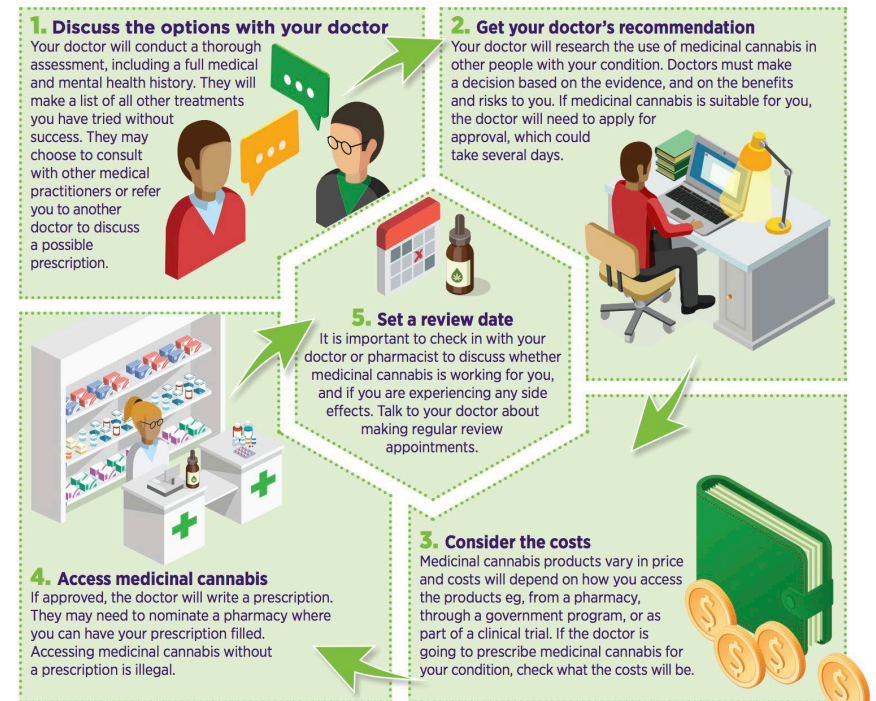


## Is medicinal cannabis suitable for me?

Medicinal cannabis may be suitable for some health conditions, where all other treatments have been unsuccessful. These include:

- ▶ chronic non-cancer pain
- ▶ epilepsy
- ▶ nausea and vomiting due to chemotherapy
- ▶ palliative (end-of-life) care
- ▶ multiple sclerosis

Your safety is important. By following these **5 steps**, you and your doctor can work together to reach the best decision for your health.



[nps.org.au/medicinal-cannabis](https://www.nps.org.au/medicinal-cannabis)

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