Management of Neuropathic Pain After SCI

The CanPain SCI Clinical Practice Guidelines

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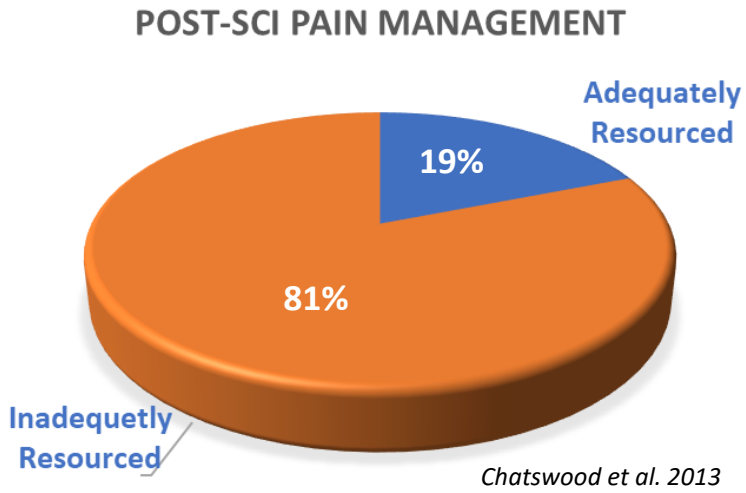
Background / Purpose

Canadian SCI Rehabilitation Sites

Craven et al. 2012

No Standard of Care or Treatment guidelines for the selection of NP management

Clinician Needs Analysis



Chatswood et al. 2013

Background / Purpose

CanPain SCI CPG Purpose:

1) **Create practical, actionable guidelines for the management of NP after SCI**
2) **Support standardized care in the rehabilitation management of NP after SCI**
3) **Identify opportunities for further research**

GUIDELINES

The CanPain SCI Clinical Practice Guidelines for Rehabilitation Management of Neuropathic Pain after Spinal Cord: introduction, methodology and recommendation overview

E Loh[1,2,3,4], SD Guy[1,3,4], S Mehta[1,3,4], DE Moulin[2,3], TN Bryce[5], JW Middleton[6], PJ Siddall[6], SL Hitzig[7], E Widerström-Noga[8], NB Finnerup[9], A Kras-Dupuis[4], A Casalino[4], BC Craven[7], B Lau[10], I Côté[11], D Harvey[12], C O'Connell[13], S Orenczuk[4], AG Parrent[3,14], P Potter[3,4], C Short[15], R Teasell[1,3], A Townson[10], C Truchon[16], CL Bradbury[7] and D Wolfe[1,3]

The CanPain SCI clinical practice guidelines for rehabilitation management of neuropathic pain after spinal cord injury: 2021 update

Eldon Loh[1,2,3,4✉], Magdalena Mirkowski[1,2], Alexandria Roa Agudelo[1], David J. Allison[1], Brooke Benton[5], Thomas N. Bryce[5], Sara Guilcher[6], Tara Jeji[7], Anna Kras-Dupuis[2], Denise Kreutzwiser[4], Oda Lanizi[8], Gary Lee-Tai-Fuy[2], James W. Middleton[9,10], Dwight E. Moulin[3,4], Colleen O'Connell[11,12], Steve Orenczuk[2], Patrick Potter[2,3], Christine Short[12,13], Robert Teasell[1,3], Andrea Townson[14], Eva Widerström-Noga[15,16], Dalton L. Wolfe[1,2], Nancy Xia[8] and Swati Mehta[1,3]

Outline

- **Development of the CanPain SCI CPG**
  - 2016 CanPain SCI CPG
  - 2021 CanPain SCI CPG Update
- **Key Recommendations**
  - Screening & Diagnosis
  - Treatment
  - Models of Care
- **Future Directions:**
  - Living Guidelines
  - Integration into Clinical Point-of-Care

Development of the CanPain SCI CPG

Expert Panel

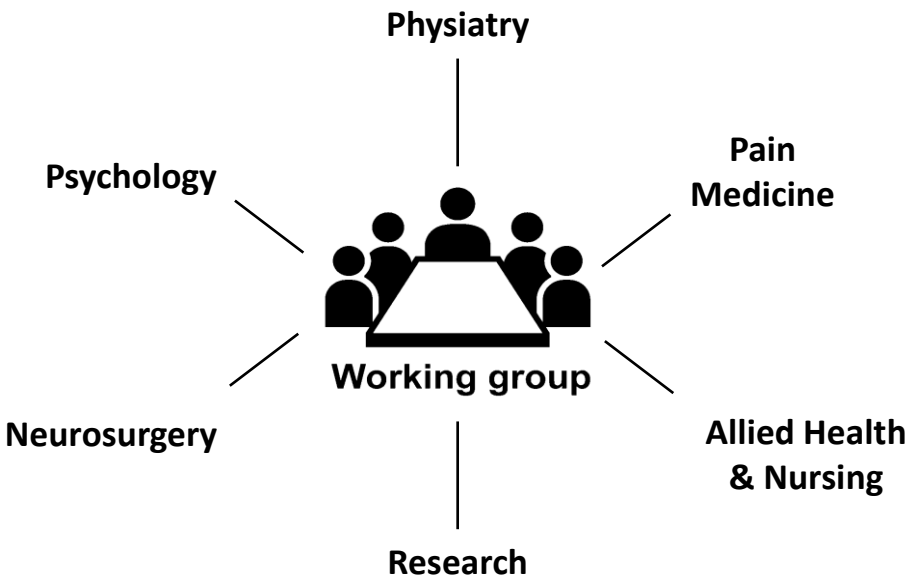
Review Process

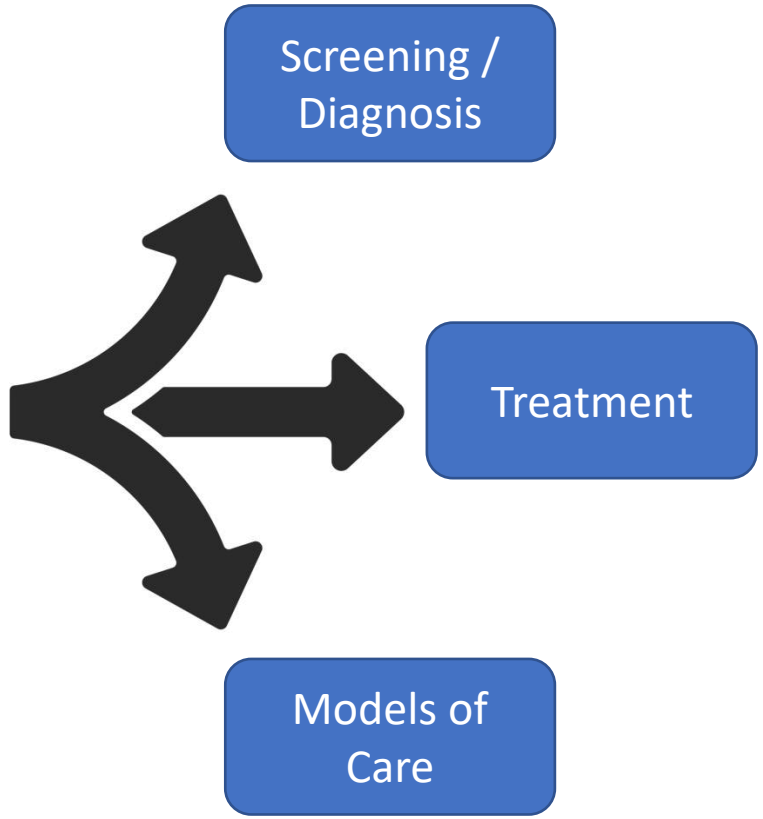
2021 Update

Development of the CanPain SCI CPG

Expert Panel

Steering Committee





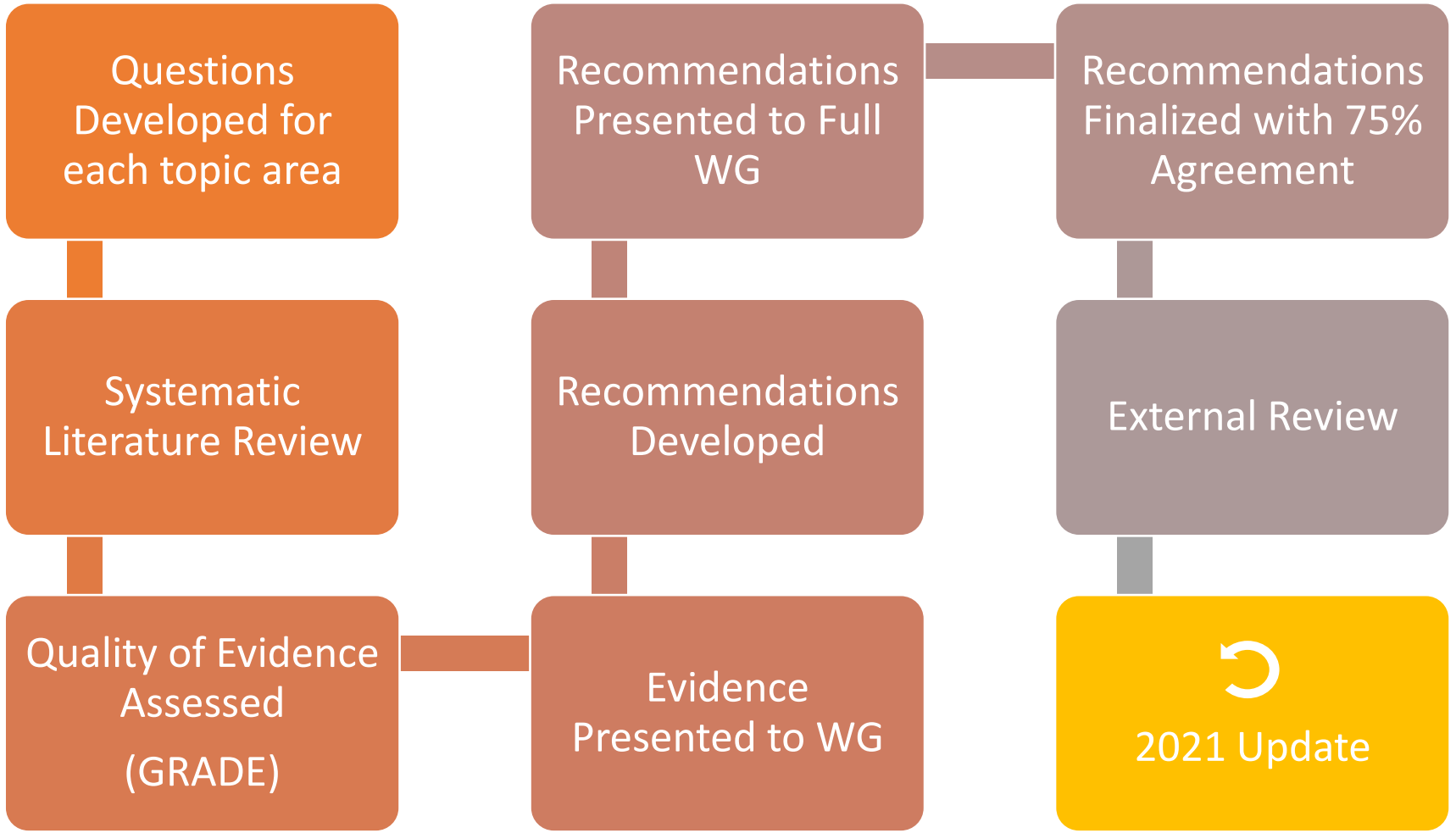
Development of the CanPain SCI CPG

Review Process

Development of the CanPain SCI CPG

Review Process

- **>50% SCI**
- **NP or Mixed Pain**
- **Key Outcome = Pain Intensity**



Development of the CanPain SCI CPG

Review Process

GRADE Levels of Evidence

Quality Level	
⊕⊕⊕⊕	High
⊕⊕⊕◯	Moderate
⊕⊕◯◯	Low
⊕◯◯◯	Very Low

- **Study Design**
- **Imprecision**
- **Inconsistency**
- **Indirectness**
- **Bias**

Questions Developed for each topic area

Systematic Literature Review

Quality of Evidence Assessed (GRADE)

Evidence Presented to WG

Recommendations Developed

Recommendations Presented to Full WG

Recommendations Finalized with 75% Agreement

External Review

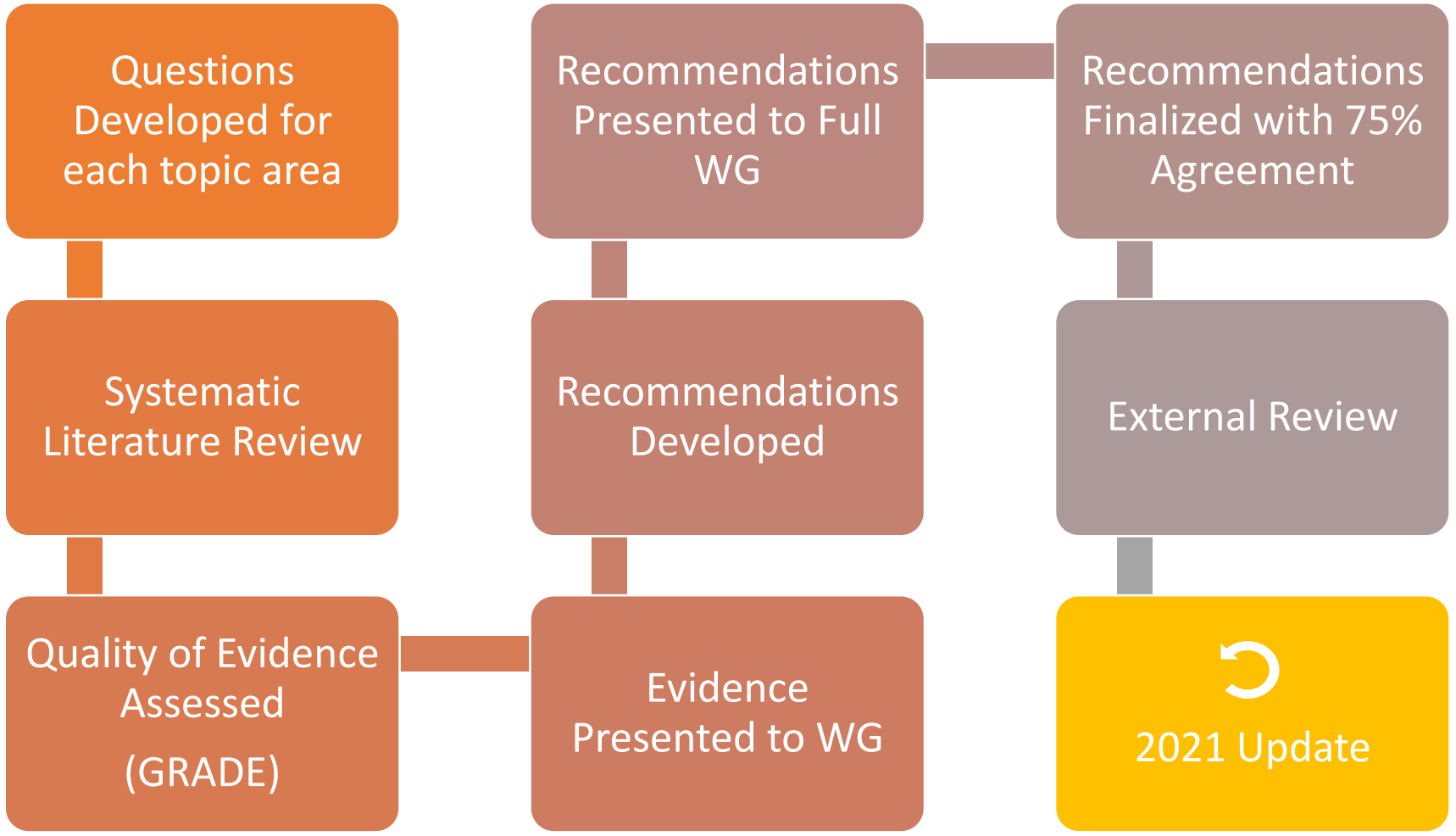
2021 Update

Development of the CanPain SCI CPG

Review Process

Line	Quality	Strength of Recommendation
First	High	Strong
Second	High/Moderate	Strong
Third	High/Moderate	Weak
Fourth	Moderate/Low	Weak

- **Quality of Evidence**
- **Balance Between Desirable and Undesirable Effects**
- **Values and Preferences**
- **Costs (Resource Allocation)**



Key Recommendations

Screening and Diagnosis recommendations

Treatment recommendations

Models of Care Recommendations

Key Recommendations

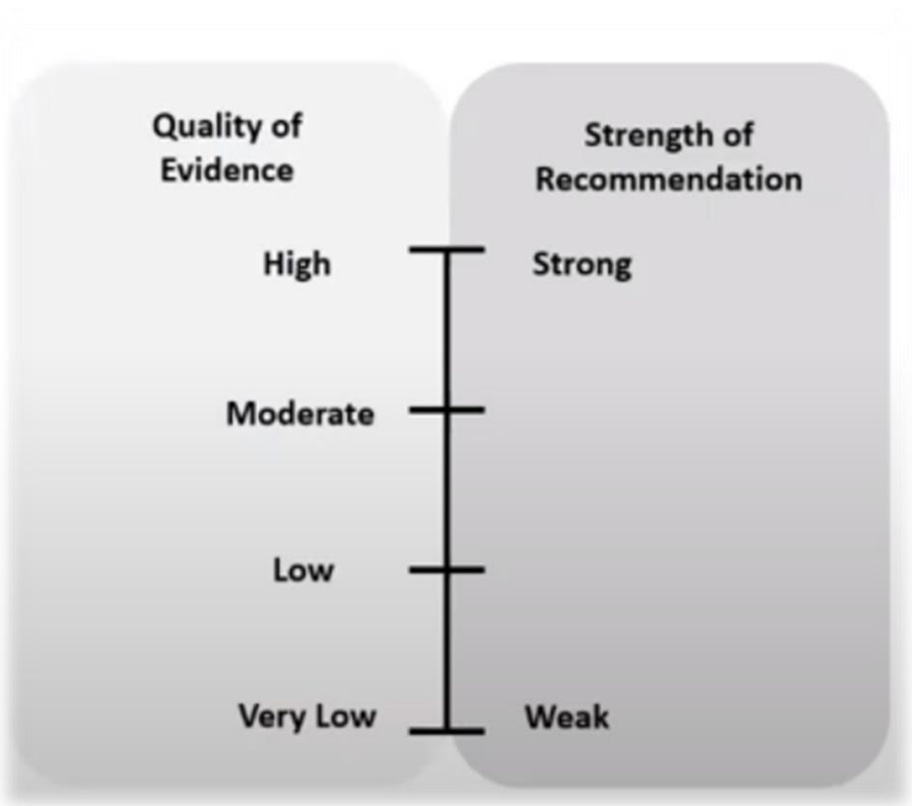
Screening and Diagnosis Recommendations

#	Recommendation
1.1	All patients with spinal cord injury must be screened for pain using a simple yes/no question.
1.2	Any member of the health-care team can, and should, screen for the presence of pain.
1.3	Screening for pain should occur on admission to rehabilitation, regularly during inpatient rehabilitation and after discharge at each follow-up.
1.4	If pain is present at screening, an assessment to determine the type of pain, its intensity and interference should be carried out.
1.5	Diagnosis of neuropathic pain, including its causes, should be informed by (1) a complete patient history, (2) a physical examination, (3) the International Spinal Cord Injury Pain (ISCIP) Classification system, and (4) investigations.
1.6	The SCIPI and NPSI can be used to supplement the diagnosis of neuropathic pain for people with spinal cord injury.
1.7	**Assess for serious underlying conditions (red flags) that may cause, aggravate, or mimic neuropathic pain and that require further investigation and prompt medical review.**

#	Recommendation
1.8	**Assess and manage psychosocial factors (yellow flags) that may contribute to pain related distress and disability**
1.9	The International Spinal Cord Injury Pain Basic Data Set (ISCIPBDS) v2.0 should be used as a standardized tool for assessing and documenting pain in patients with spinal cord injury.
1.10	The NPSI can be used to supplement the assessment and documentation of neuropathic pain.
1.11	Address patient concerns, expectations and needs as part of the neuropathic pain assessment.
1.12	Standardized evaluation of treatment response should be carried out by the healthcare team at regular intervals.
1.13	The evaluation of treatment response should include assessment of changes in pain intensity, mood and function using the International Spinal Cord Injury Pain Basic Data Set v2.0. Evaluation also includes assessment of adverse events, aberrant behavior and compliance.
1.14	**All patients with new-onset or worsening pain need to be reassessed.**
1.15	The NPSI can be used to supplement the evaluation of treatment response.

Key Recommendations

Treatment Recommendations



FIRST LINE: The following medications SHOULD be used in the treatment of neuropathic pain after SCI:

Pregabalin

Gabapentin

FIRST LINE: The following medication CAN be used in the treatment of neuropathic pain after SCI:

Amitriptyline[1]

B Options: The following CAN be used for neuropathic pain after SCI:

Oxcarbazepine

Lamotrigine (for incomplete SCI)

Tramadol

C Options: The following MAY BE CONSIDERED for neuropathic pain after SCI:

tDCS

Combined tDCS and visual illusion

Botulinum toxin A

D Options: The following MAY BE CONSIDERED for neuropathic pain after SCI:

TENS

Oxycodone

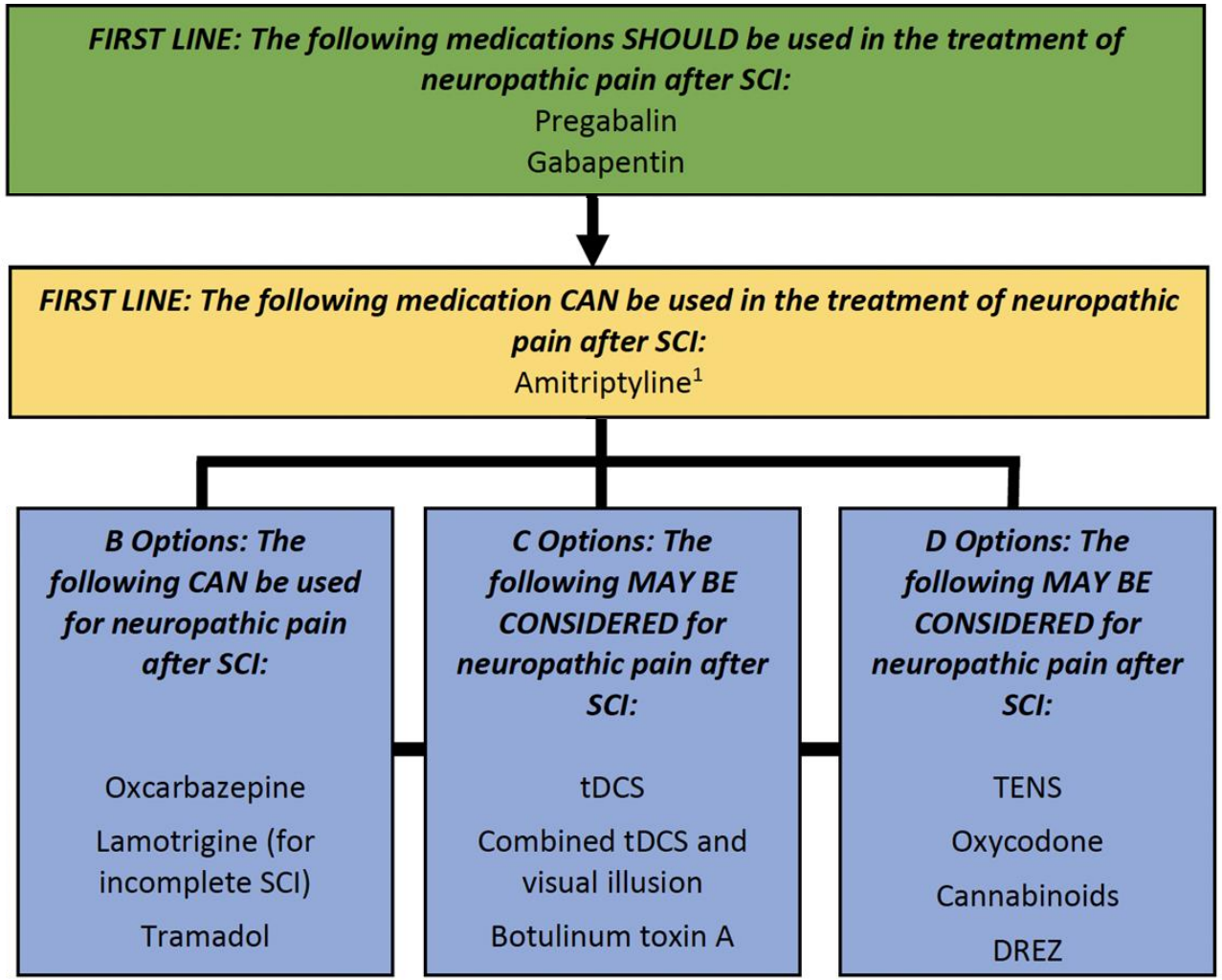
Cannabinoids

DREZ

Key Recommendations

Treatment Recommendations

First-Line Treatments	
Quality of Evidence	High
Strength of Recommendation	Strong



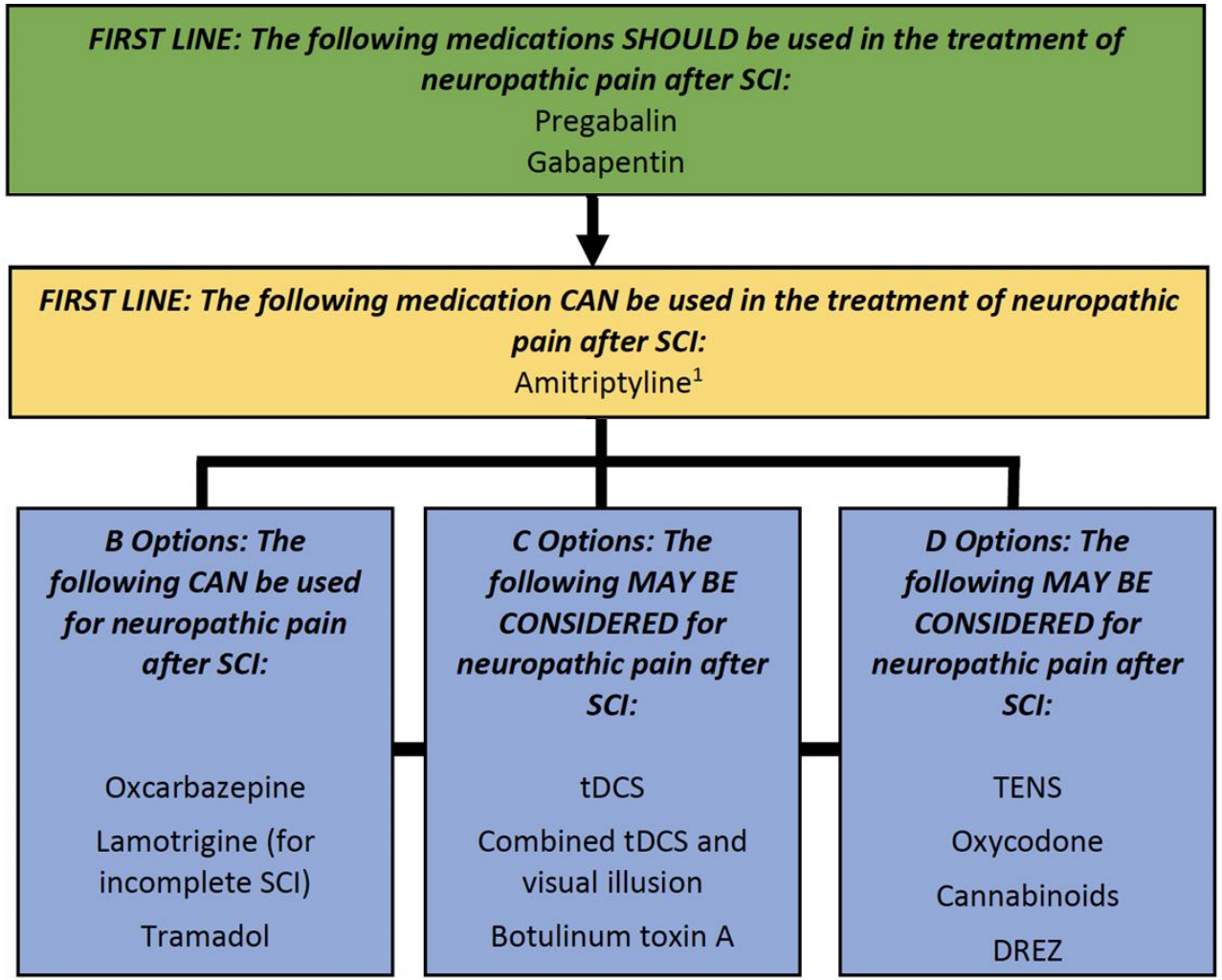
Key Recommendations

Treatment Recommendations

B-Options	
Quality of Evidence	High/Moderate
Strength of Recommendation	Strong

C-Options	
Quality of Evidence	High
Strength of Recommendation	Weak

D-Options	
Quality of Evidence	Moderate/Low
Strength of Recommendation	Weak



Key Recommendations

Treatment Recommendations

Principles of Managing Neuropathic Pain after Spinal Cord Injury

G1. Those with NP after SCI should be encouraged to pursue self-management strategies that they find beneficial for pain intensity reduction, coping with pain, and improving functional abilities.

G2. A comprehensive pain management strategy should address issues with activity, sleep, and mood that result from, or may worsen, pain. This could include both pharmacologic and non-pharmacologic strategies, as appropriate.

G3. Consider referral for SCI rehabilitation specialized expert multidisciplinary SCI rehabilitation management in order to address functional limitations including activity, mood, and sleep.

G4. An interdisciplinary pain program that may consist of patient education, CBT, self-management strategies, group discussions, exercise, or guided relaxation could be considered in those with SCI and NP.

G5. CBT could be considered to improve coping skills and reduce pain interference.

Key Recommendations

Models of Care Recommendations

Important to address the functional and psychological impact of pain

Team approach can improve timeliness of treatment to improve health outcomes, patient satisfaction and resource utilization efficiency

Consider alternate communication methods when distance is a barrier

Discharge from specialized care when stable plateau and maximal gains achieved

Future Directions

Living Guidelines

Integration into Clinical Point-of-Care

Future Directions

Living Guidelines

Traditional Approach		Living Guideline Approach	
	2-3 years		Ongoing / Presented Annually
	High Volume Onerous		Lower Volume / More Manageable
	Outdated		Current / Up to Date Recommendations

Future Directions

Integration into Clinical Point-of-Care

Screening & Diagnosis

PAIN

- Located in a region of normal sensation? → **Nociceptive**
- Located in a region of impaired sensation? → **Neuropathic**

Diagnosis informed by:

1) Complete Patient History; 2) Physical Examination; 3) ISCIP; 4) Investigations.

Supplemental Tools: SCIPI & NPSI

Assess New or Worsening Neuropathic Pain

Address patient concerns, expectations, needs

- Electric shock, shooting, squeezing, burning pain. Segmental pattern, located at NLI and/or within 3 dermatomes, or involves cauda equina → **At-Level Neuropathic**
- Electric shock, shooting, squeezing, burning pain. Located more than 3 dermatomes below NLI (but may include them) → **Below-Level Neuropathic**
- Neuropathic pain indirectly related or unrelated to SCI, such as carpal tunnel syndrome, postherpetic neuralgia → **Other Neuropathic**

Treatment Recommendations

General Treatment Principles

G1. Those with NP after SCI should be encouraged to pursue self-management strategies that they find beneficial for pain intensity reduction, coping with pain, and improving functional abilities.

G2. A comprehensive pain management strategy should address issues with activity, sleep, and mood that result from, or may worsen, pain. This could include both pharmacologic and non-pharmacologic strategies, as appropriate.

G3. Consider referral for specialized expert multidisciplinary SCI rehabilitation management to address functional limitations. (activity, mood, sleep).

G4. An interdisciplinary pain program that may consist of patient education, CBT, self-management strategies, group discussions, exercise, or guided relaxation could be considered in those with SCI and NP.

G5. CBT could be considered to improve coping skills and reduce pain interference.

Reassessment

Reassess & Document new or worsening pain

ISCIPBDS should be used

NPSI can be used to supplement

1st-Line

- **Pregabalin**
- **Gabapentin**

Should be used

- **Amitriptyline**

Can be used

Non-1st-Line

B Options:
- Oxcarbazepine
- Lamotrigine (for incomplete SCI)
- Tramadol

Can be used

C Options:
- tDCS
- Combined tDCS and visual illusion
- Botulinum toxin A

May be Considered

D Options:
- TENS
- Oxycodone
- Cannabinoids
- DREZ *(last resort)*

May be Considered

Treat appropriate to condition (e.g. carpal tunnel release, neuropathic pain medications)

Treatment Response Assessment

Standardized Evaluation

ISCIPBDS for evaluation of changes in pain intensity, mood, and function.

NPSI can be used to supplement evaluation

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