Search Strategy and Study Selection
Chronic Pain Disorder Medical Treatment Guideline 2017 Revision

This document outlines the search strategy, study selection, and search results for the Colorado Division of Workers’ Compensation Chronic Pain Disorder Medical Treatment Guideline. It also describes how articles were selected for critique.

Search strategy

Database: PubMed, Cochrane Library

Dates when the search was done: May 2016 to December 2016

Search terms and time periods:
Time period covered by the searches for the search terms listed below: January 2011 through December 2016

- Biofeedback Pain
- Acupuncture Pain
- Opioid chronic pain
- Psychological treatment & chronic pain
- Cognitive behavioral therapy & chronic pain
- Transcranial stimulation & chronic pain
- Cannabinoids & chronic pain
- Marijuana & chronic pain
- Functional capacity evaluation & chronic pain
- Prolotherapy & chronic pain
- Epiduroscopy & chronic pain
- Botulinum Toxin injection &chronic pain
- Trigger point injection &chronic pain
- Complementary alternative medicine & chronic pain
- Interdisciplinary rehabilitation & chronic pain
- Topical medication & chronic pain
- Spinal cord stimulator & chronic pain
- Ketamine & chronic pain
- Aquatic Therapy & chronic pain
- Neuromuscular reeducation & chronic pain
- Therapeutic exercise & chronic pain
- Work conditioning & chronic pain
- Work stimulation & chronic pain
- Iontophoresis & chronic pain
- Percutaneous electrical nerve stimulation & chronic pain
- Transcutaneous electrical nerve stimulation & chronic pain
Ultrasound phonophoresis & chronic pain
Sleep disorder & chronic pain
Infrared therapy & chronic pain
Peripheral nerve stimulator & chronic pain
Alpha-Lipoic Acid & Pain
Topical Amitriptyline
Topical Ketamine
Topical Baclofen
Massage
Topical Capsaicin
Topical Non-steroidal anti-inflammatory
Topical Salicylate
Topical Lidocaine
Topical Tetracaine

Time period covered by the searches for the search terms listed below: January 2014 through December 2016

Medial branch blocks injection & chronic pain
Transforaminal injection & chronic pain
Zygapophysial blocks or facet blocks & chronic pain
Atlantoaxial or atlantooccipital injection & chronic pain
Sacroiliac injection & chronic pain
Facet rhizotomy & chronic pain
Dorsal nerve root ganglion radio frequency & chronic pain

Time period covered by the searches for the search terms listed below: January (see year listed after each set of search terms below) through December 2016

Carbamazepine & Chronic & neuropathic pain (2013)
Lamotrigine & chronic & neuropathic pain (2012)
Milnacipran & chronic & neuropathic pain (2014)
Desipramine & chronic & neuropathic pain (2013)
Methadone & chronic pain (2011)
Levetiracetam & chronic & neuropathic pain (2013)
Venlafaxine & chronic & neuropathic pain (2014)
Amitriptyline & chronic & neuropathic pain (2014)
Valproic sodium valproate & chronic & neuropathic pain (2010)
Nortriptyline & chronic & neuropathic pain (2014)
Zonisamide & chronic & neuropathic pain (2014)
Topiramate & chronic & neuropathic pain (2012)
Lacosamide & chronic & neuropathic pain (2011)
Gabapentin & chronic & neuropathic pain (2010)
Buprenorphine & chronic & neuropathic pain (2011)

**Study selection**

*Inclusion criteria:* Studies in English; human; adults; RCT, systematic review, or meta-analysis

*Exclusion criteria:* Article titles containing an obvious mismatch with search criteria and search terms were eliminated (e.g., pediatric population, wrong condition). Abstracts were reviewed to exclude articles based on the following criteria.

- Lack of relevancy to workers’ compensation population
- Major obvious errors in study protocol (e.g., lack of control group even though study was listed as an RCT)
- Study was included in a meta-analysis reviewed by Division staff (e.g., Cochrane Collaboration, BMJ Clinical Evidence)
- Study was published outside of time frame
- Cadaverous studies
- Preliminary results
- Healthy volunteers
- Studies not applicable to conditions covered by the Division’s treatment guidelines (e.g., tumor studies were excluded)
- Studies too technical in nature to meet the objective of the guideline (e.g., study comparing types of screws used in surgery).

**Search results**

Number of *articles identified* by database search: 1447

Number of *articles included* for review after exclusion criteria were applied to database search results (see criteria above): 1007

Other literature was included in addition to sources identified by searches in the electronic databases. Some references were carried over from earlier versions of the guideline. Other articles were selected by hand searches of publish literature. Articles submitted by the public and from volunteer advisory bodies to the Colorado Division of Workers’ Compensation were also reviewed. All reviewed articles were included in the full Bibliography (included in this submission), but not all references qualified to be cited in the guideline. In total, 1577 references were included in the full bibliography.
Included studies were reviewed for quality and relevancy. Some articles were excluded based on a “second tier” of exclusion criteria:

- Sample size too small (<20 per group)
- Animal study
- No outcomes of interest
- Population too old/young (<18 or >70)
- Study protocol and not an RCT
- Pilot study
- Surgical technique
- Included in a meta-analysis, systematic review, or Cochrane
- Review includes only one relevant RCT (RCT critiqued instead)
- No RCTs included (for a systematic review)
- Lack of assessor blinding (mainly drug studies)
- Inclusion criteria: ≥ 3 months of pain
- Not actually an RCT (lack of randomization)
- Narrative review
- Editorial
- Uninformative
- Not relevant or of interest
- Follow-up too short (<12 weeks)
- Study is too old (2010 or older)
- Article unobtainable or not in English
- Superseded by a more recent review
- No primary outcome
- Critiqued in previous version of our guideline.

Remaining studies qualified for critique using the Division’s Literature Critique Criteria. Studies assessed as “adequate” or “high quality” were used for evidence statements. Three levels (“some,” “good,” and “strong”) were then used to describe strength of evidence for recommendations based on the amount and quality of the supporting literature. For more information regarding literature assessment and resulting evidence statements, see Chronic Pain Disorder on the Division’s website for (a) Literature Critique Criteria, which are under “Assessment Criteria for Critiques” on the website, (b) the Evidence Summary/Table, and (c) Critiques for individual articles: https://www.colorado.gov/pacific/cdle/medical-treatment-guidelines.

Number of articles used to support evidence statements: 161