

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

# Pain Management Programs for Pediatric Patients with Chronic Pain Conditions: Clinical Effectiveness, Cost- Effectiveness, and Guidelines

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## Research Questions

1. What is the comparative clinical effectiveness of pain management programs of varying treatment lengths for pediatric patients with chronic pain?
2. What is the comparative cost-effectiveness of pain management programs of varying treatment lengths for pediatric patients with chronic pain?
3. What is the comparative clinical effectiveness of inpatient pain management programs versus outpatient pain management programs for pediatric patients with chronic pain?
4. What is the comparative cost-effectiveness of inpatient pain management programs versus outpatient pain management programs for pediatric patients with chronic pain?
5. What are the evidence-based guidelines regarding pain management programs for pediatric patients with chronic pain?

## Key Findings

No literature was identified regarding the comparative clinical effectiveness or cost-effectiveness of pain management programs of varying treatment lengths for pediatric patients with chronic pain. Furthermore, no literature was identified regarding the comparative clinical effectiveness or cost-effectiveness of inpatient pain management programs versus outpatient pain management programs for pediatric patients with chronic pain. Lastly, no evidence-based guidelines were identified regarding pain management programs for pediatric patients with chronic pain.

## Methods

A limited literature search was conducted by an information specialist on key resources including Medline, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were pain management programs and pediatrics. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses and guidelines for Q5 only. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2015 and February 28, 2020. Internet links were provided, where available.

## Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

**Table 1: Selection Criteria**

<b>Populations</b>	<p>Children and adolescents (&lt; 18 years of age) with chronic (&gt; 3 months) pain disorders (i.e., pain not caused secondarily to another condition;</p> <ul style="list-style-type: none"> <li>• Chronic pain, chronic pain disorders, chronic pain syndrome, complex regional pain syndrome</li> <li>• somatoform disorders, somatic symptom disorder</li> <li>• Fibromyalgia, chronic headaches (migraines, tension type), chronic abdominal pain)</li> </ul>
<b>Interventions</b>	<p>Q1,2: Pain management programs of any length Q3,4: Inpatient pain management programs</p>

	Q5: Pain management programs
<b>Comparators</b>	Q1,2: Pain management programs of a different length Q3,4: Outpatient pain management programs Q5: Not applicable
<b>Outcomes</b>	Q1,3: Clinical effectiveness (e.g., pain symptoms, function, back-to-school/work/activity, quality of life, sleep quality, psychological symptoms) Q2,4: Cost-effectiveness (e.g., quality adjusted life years, cost per hospitalization avoided) Q5: Recommendations regarding duration of treatment programs, recommendations regarding what conditions or populations to treat at short- or long-term pain management programs, recommendations regarding outpatient or inpatient treatment options for pain management
<b>Study Designs</b>	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

## Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports and systematic reviews are presented first. These are followed by randomized controlled trials, non-randomized studies, economic evaluations, and evidence-based guidelines.

No literature was identified regarding the comparative clinical effectiveness or cost-effectiveness of pain management programs of varying treatment lengths for pediatric patients with chronic pain. Furthermore, no literature was identified regarding the comparative clinical effectiveness or cost-effectiveness of inpatient pain management programs versus outpatient pain management programs for pediatric patients with chronic pain. Lastly, no evidence-based guidelines were identified regarding pain management programs for pediatric patients with chronic pain.

References of potential interest are provided in the appendix.

## Overall Summary of Findings

No literature was identified; therefore, no summary can be provided.

## References Summarized

### Health Technology Assessments

No literature identified.

### Systematic Reviews and Meta-analyses

No literature identified.

### Randomized Controlled Trials

No literature identified.

### Non-Randomized Studies

No literature identified.

## Economic Evaluations

No literature identified.

## Guidelines and Recommendations

No literature identified.

## Appendix — Further Information

### Previous CADTH Reports

1. Multidisciplinary Treatment Programs for Patients with Chronic Non-Malignant Pain: A Review of Clinical Effectiveness, Cost-effectiveness, and Guidelines – An Update. (CADTH Rapid response report: summary with critical appraisal). Ottawa (ON): CADTH; 2019: <https://www.cadth.ca/multidisciplinary-treatment-programs-patients-chronic-non-malignant-pain-review-clinical-0>
2. Multidisciplinary Treatment Programs for Patients with Chronic Non-Malignant Pain: A Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines. (CADTH Rapid response report: summary with critical appraisal). Ottawa (ON): CADTH; 2017: <https://www.cadth.ca/multidisciplinary-treatment-programs-patients-chronic-non-malignant-pain-review-clinical>

### Non-Randomized Studies

#### *No Comparator*

3. Revivo G, Amstutz DK, Gagnon CM, McCormick ZL. Interdisciplinary Pain Management Improves Pain and Function in Pediatric Patients with Chronic Pain Associated with Joint Hypermobility Syndrome. *PM R*. 2019 02;11(2):150-157. [PubMed: PM30010052](https://pubmed.ncbi.nlm.nih.gov/30010052/)
4. Bruce BK, Ale CM, Harrison TE, et al. Getting Back to Living: Further Evidence for the Efficacy of an Interdisciplinary Pediatric Pain Treatment Program. *Clin J Pain*. 2017 06;33(6):535-542. [PubMed: PM27584815](https://pubmed.ncbi.nlm.nih.gov/27584815/)
5. Bruce BK, Weiss KE, Ale CM, Harrison TE, Fischer PR. Development of an Interdisciplinary Pediatric Pain Rehabilitation Program: The First 1000 Consecutive Patients. *Mayo Clin Proc Innov Qual Outcomes*. 2017 Sep;1(2):141-149. [PubMed: PM30225410](https://pubmed.ncbi.nlm.nih.gov/30225410/)

#### *Published Outside the Literature Search Time Frame*

6. Simons LE, Sieberg CB, Pielech M, Conroy C, Logan DE. What does it take? Comparing intensive rehabilitation to outpatient treatment for children with significant pain-related disability. *J Pediatr Psychol*. 2013;38(2):213–223. <http://www.ncbi.nlm.nih.gov/pmc/articles/pmc3695659/>

### Clinical Practice Guidelines

#### *Methodology Not Specified*

7. Pain Management Best Practices Inter-Agency Task Force Report: Updates, Gaps, Inconsistencies, and Recommendations. Washington (DC): U.S. Department of Health and Human Services. 2019. <https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf>  
See Section 2.7.1 Unique Issues Related to Pediatric Pain Management- Pages 44-45

## Additional References

### *Healthcare Utilization Analyses*

8. Spector A, Brazauskas R, Hainsworth K, Hoffman GM, Weisman S, Cassidy LD. Changes in Health Care Utilization for Pediatric Patients Treated at a Specialized Outpatient Pain Clinic. *WMJ*. 2019 Dec;118(4):164-168.  
[PubMed: PM31978284](#)
9. Ruhe AK, Frosch M, Wager J, et al. Health Care Utilization and Cost in Children and Adolescents with Chronic Pain: Analysis of Health Care Claims Data 1 Year Before and After Intensive Interdisciplinary Pain Treatment. *Clin J Pain*. 2017 Sep;33(9):767-776.  
[PubMed: PM27870657](#)