

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Disposable Handheld Vaporization Devices for Inhalation of Medical Cannabis: Clinical Effectiveness and Cost- Effectiveness

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Questions or requests for information about this report can be directed to requests@cadth.ca

Research Questions

1. What is the clinical effectiveness of disposable handheld cannabis vaporizing devices?
2. What is the cost-effectiveness of disposable handheld cannabis vaporizing devices?

Key Findings

No literature was identified regarding the clinical effectiveness or cost-effectiveness of disposable handheld cannabis vaporizing devices.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, 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 medical marijuana and medical cannabis, and vaping devices such as vape pens and e-cigarettes. Where possible, retrieval was limited to the human population. The search was also limited to English language and documents published between January 1, 2015 and March 4, 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

Population	Q1-2: Adults using cannabis for medical purposes (e.g., neuropathic pain, chronic pain, post-traumatic stress disorder, musculoskeletal disorder, mental health disorders, epilepsy, HIV/AIDS)
Intervention	Q1-2: Inhalation of cannabis vapour from any base cannabis material (e.g., dry herb, oil, wax) via a disposable handheld vaporizing device (i.e., electronic vaping pen)
Comparators	Q1-2: Inhalation of cannabis vapor from any base cannabis material (e.g., dry herb, oil, wax) via either a: <ul style="list-style-type: none"> • Reusable handheld vaporizing device (i.e., electronic vaping pen, portable vaporizers) • Tabletop vaporizing device (e.g., water-cooled, conduction heating, convection heating, radiant/infrared, forced air)
Outcomes	Q1: Clinical effectiveness (e.g., relief of signs and symptoms) and safety (e.g., excessive impairment such as panic attacks, paranoia, rapid heart rate or heart attack, uncontrollable shaking or seizures, unresponsiveness], side effects, morbidity, or mortality) Q2: Cost-effectiveness
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations

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 and economic evaluations.

No literature was identified regarding the clinical effectiveness or cost-effectiveness of disposable handheld cannabis vaporizing devices.

References of potential interest are provided in the appendix.

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.

Appendix — Further Information

Systematic Reviews and Meta-analyses

Unclear Intervention – Device not specified

1. Rabgay K, Waranuch N, Chaiyakunapruk N, Sawangjit R, Ingkaninan K, Dilokthornsakul P. The effects of cannabis, cannabinoids, and their administration routes on pain control efficacy and safety: A systematic review and network meta-analysis. *J Am Pharm Assoc.* 2020 Jan - Feb;60(1):225-234.e226.
[PubMed: PM31495691](#)
2. Meehan-Atrash J, Korzun T, Ziegler A. Cannabis Inhalation and Voice Disorders: A Systematic Review. *JAMA Otolaryngol Head Neck Surg.* 2019 Aug 8.
[PubMed: PM31393535](#)
3. Deshpande A, Mailis-Gagnon A, Zoheiry N, Lakha SF. Efficacy and adverse effects of medical marijuana for chronic noncancer pain: systematic review of randomized controlled trials. *Can Fam Physician.* 2015 Aug;61(8):e372-381.
[PubMed: PM26505059](#)

Review Articles

4. Spindle TR, Bonn-Miller MO, Vandrey R. Changing landscape of cannabis: novel products, formulations, and methods of administration. *Curr Opin Psychol.* 2019 Dec;30:98-102.
[PubMed: PM31071592](#)
5. Russell C, Rueda S, Room R, Tyndall M, Fischer B. Routes of administration for cannabis use - basic prevalence and related health outcomes: a scoping review and synthesis. *Int J Drug Policy.* 2018 Feb;52:87-96.
[PubMed: PM29277082](#)
6. Giroud C, de Cesare M, Berthet A, Varlet V, Concha-Lozano N, Favrat B. E-Cigarettes: a review of new trends in cannabis use. *Int J Environ Res Public Health.* 2015 Aug 21;12(8):9988-10008.
[PubMed: PM26308021](#)