

CADTH Reference List

Virtual Clinical Assessments for Adults With Back Pain

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Key Messages

- One non-randomized study was identified about the clinical effectiveness of virtual versus in-person clinical assessments for adults with back pain.
- No economic evaluations were identified about the cost-effectiveness of virtual versus in-person clinical assessments for adults with back pain.
- No evidence-based guidelines were identified about the use of virtual clinical assessments for adults with back pain.

Research Questions

1. What is the clinical effectiveness of virtual versus in-person clinical assessments for adults with back pain?
2. What is the cost-effectiveness of virtual versus in-person clinical assessments for adults with back pain?
3. What are the evidence-based guidelines regarding the use of virtual clinical assessments for adults with back pain?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE via Ovid, 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 comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were virtual clinical assessments and back pain in adults. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2017 and May 30, 2022. Internet links were provided, where available.

Selection Criteria

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in [Table 1](#). Full texts of study publications were not reviewed. Open access full-text versions of evidence-based guidelines were reviewed when available.

Table 1: Selection Criteria

Criteria	Description
Population	Adults with back pain and/or a back condition who require clinical evaluation
Intervention	Virtual clinical assessments
Comparator	In-person clinical assessments
Outcomes	<p>Q1: Clinical effectiveness (e.g., improvement or worsening of pain or condition; resolution of pain/condition; symptom severity; measures of functional capacity; quality of life; hospitalization; need for/avoidance of surgery; adherence to medication/treatment/therapy)</p> <p>Q2: Cost effectiveness (e.g., cost per quality-adjusted life-year, cost per health benefit gained)</p> <p>Q3: Evidence-based guidelines (i.e., recommendations regarding the use of virtual assessments for patients with back pain/conditions)</p>
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations, evidence-based guidelines

Q = question.

Results

One non-randomized study¹ was identified about the clinical effectiveness of virtual versus in-person clinical assessments for adults with back pain. No economic evaluations were identified about the cost-effectiveness of virtual versus in-person clinical assessments for adults with back pain. No evidence-based guidelines were identified about the use of virtual clinical assessments for adults with back pain. Additionally, no health technology assessments, systematic reviews, and randomized controlled trials were found.

Additional references of potential interest that did not meet the inclusion criteria are provided in [Appendix 1](#).

References

Health Technology Assessments

No literature identified.

Systematic Reviews

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Crawford AM, Lightsey HM, Xiong GX, et al. Interventional procedure plans generated by telemedicine visits in spine patients are rarely changed after in-person evaluation. *Reg Anesth Pain Med.* 2021 06; 46(6): 478-481. [PubMed](#)

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix 1: References of Potential Interest

Non-Randomized Studies

Unclear Population Age

2. Greven ACM, McGinley BM, Nakirikanti AS, et al. Telemedicine in spine surgery: outcomes for 138 patients with virtual preoperative assessment compared to historical controls. *World Neurosurg.* 2022 May;161:e495-e499. [PubMed](#)
3. Lightsey HMT, Crawford AM, Xiong GX, Schoenfeld AJ, Simpson AK. Surgical plans generated from telemedicine visits are rarely changed after in-person evaluation in spine patients. *Spine J.* 2021 03; 21(3): 359-365. [PubMed](#)

Mixed Population – Head and Spine Injury

4. Oildashi F, Latifi R, Parsikia A, et al. Telemedicine for neurotrauma prevents unnecessary transfers: an update from a nationwide program in Albania and analysis of 590 patients. *World Neurosurg.* 2019 Aug;128:e340-e346. [PubMed](#)

Mixed Population; Unclear Population Age

5. Watila MM, Duncan C, Mackay G. Evaluation of telemedicine for new outpatient neurological consultations. *BMJ Neurol Open.* 2022; 4(1): e000260. [PubMed](#)
6. Crawford AM, Lightsey HM, Xiong GX, Striano BM, Schoenfeld AJ, Simpson AK. Telemedicine visits generate accurate surgical plans across orthopaedic subspecialties. *Arch Orthop Trauma Surg.* 2021 Apr 18;18:18. [PubMed](#)

Alternative Outcomes

7. Mani S, Sharma S, Singh DK. Concurrent validity and reliability of telerehabilitation-based physiotherapy assessment of cervical spine in adults with non-specific neck pain. *J Telemed Telecare.* 2021 Feb;27(2):88-97. [PubMed](#)
8. Peterson S, Kuntz C, Roush J. Use of a modified treatment-based classification system for subgrouping patients with low back pain: agreement between telerehabilitation and face-to-face assessments. *Physiother Theory Pract.* 2019 Nov; 35(11): 1078-1086. [PubMed](#)

Economic Evaluations

Partial Evaluation

9. Cui S, Sedney CL, Daffner SD, et al. Effects of telemedicine triage on efficiency and cost-effectiveness in spinal care. *Spine J.* 2021 05; 21(5): 779-784. [PubMed](#)
10. Beard M, Orlando JF, Kumar S. Overcoming the tyranny of distance: an audit of process and outcomes from a pilot telehealth spinal assessment clinic. *J Telemed Telecare.* 2017 Sep; 23(8): 733-739. [PubMed](#)

Guidelines and Recommendations

Unclear Population Age

11. Murray T, Murray G, Murray J. Remote musculoskeletal assessment framework: a guide for primary care. *Cureus.* 2021 Jan 19;13(1):e12778. . <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7890453/>. Accessed 2022 June 01. [PubMed](#)
See: Figure 9: Cervical Clinician Resource (page 7), Figure 16: Thoraco-Lumbar Spine and SIJ Clinical Resource Showing Flexion/Extension Assessment (page 11)

Unclear Methodology; Unclear Population Age

12. Yoon JW, Welch RL, Alamin T, et al. Remote virtual spinal evaluation in the era of COVID-19. *Int J Spine Surg.* 2020 Jun; 14(3): 433-440. [PubMed](#)

Alternative Methodology (Consensus Based); Unclear Population Age

13. Iyer S, Bovonratwet P, Samartzis D, et al. Appropriate telemedicine utilization in spine surgery: results from a Delphi study. *Spine (Phila Pa 1976).* 2022 Apr 15; 47(8): 583-590. [PubMed](#)
14. Wahezi SE, Duarte RA, Yerra S, et al. Telemedicine during COVID-19 and beyond: a practical guide and best practices multidisciplinary approach for the orthopedic and neurologic pain physical examination. *Pain Physician.* 2020 08; 23(4S): S205-S238. [PubMed](#)

Additional References

15. Iyer S, Shafi K, Lovecchio F, et al. The spine physical examination using telemedicine: strategies and best practices. *Global Spine J.* 2022 Jan; 12(1): 8-14. [PubMed](#)