

CADTH Reference List

Pill Crushing Devices and Pill Swallowing Gels for Use in Health Care Settings

June 2021

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Cite As: *Pill Crushing Devices and Pill Swallowing Gels for Use in Health Care Settings*. (CADTH reference list). Ottawa: CADTH; 2021 Jun.

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Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

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Key Messages

- No relevant studies were identified regarding the comparative safety of automatic pill crushing devices versus manual pill crushing devices for health care providers and patients or the safety of pill swallowing gels for people ingesting any medication.
- No relevant evidence-based guidelines were identified regarding the use of pill crushing devices (automatic or manual) or pill swallowing gels for people in any health care setting.

Research Questions

1. What is the comparative safety of automatic pill crushing devices versus manual pill crushing devices for health care providers and patients?
2. What is the safety of pill swallowing gels for people ingesting any medication?
3. What are the evidence-based guidelines regarding the use of pill crushing devices (automatic or manual) in any health care setting?
4. What are the evidence-based guidelines regarding the use of pill swallowing gels for people in any health care setting?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the international HTA database, 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 pill crushing devices and pill swallowing gels. No filters were applied to limit the retrieval by study type. When possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2016, and May 27, 2021. Internet links were provided if available.

Selection Criteria

One reviewer screened the 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 abstracts were not available.

Table 1: Selection Criteria

Criteria	Description
Population	Q1: Health care providers Q1 to Q4: Adults who have trouble swallowing pills, cannot swallow pills, or require assistance for when ingesting pills
Intervention	Q1: Automatic pill crushing devices Q2 and Q4: Pill swallowing gels Q3: Pill crushing devices (automatic or manual)
Comparator	Q1: Manual pill crushing devices Q2: Oral liquid medication, alternative dosage form, crushed medication, any alternative pill swallowing aid, or usual care Q3 and Q4: No comparator
Outcomes	Q1: Patient safety (e.g., incidence of choking, vomiting, aspiration, or any adverse events) and provider safety (e.g., incidence of repetitive strain injury, musculoskeletal injury) Q2: Patient safety (e.g., incidence of choking, vomiting, aspiration, or any adverse events) Q3: Recommendations regarding the use of pill crushing devices (automatic or manual) in any health care setting Q4: Recommendations regarding the use of pill swallowing gels for patients in any health care setting
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

Results

No relevant health technology assessments, systematic reviews, randomized controlled trials, or non-randomized studies were identified regarding the comparative safety of automatic pill crushing devices versus manual pill crushing devices for health care providers and patients or the safety of pill swallowing gels for people ingesting any medication. No relevant evidence-based guidelines were identified regarding the use of pill crushing devices (automatic or manual) or pill swallowing gels for people in any health care setting.

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 and Meta-Analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix 1: References of Potential Interest

Clinical Practice Guidelines

1. NHS East and North Hertfordshire Clinical Commissioning Group. Crashing tablets or opening capsules in a care home setting. (Good practice guidance). Welwyn Garden City (United Kingdom): East and North Hertfordshire CCG; 2018; https://www.enhertscg.nhs.uk/sites/default/files/content_files/Prescribing/Primary_Care_Resources/Care_Home/GPG%20Crushing.pdf. Accessed 2021 Jun 1.
See: Crushing Tablets (p. 3)
2. NHS South West Yorkshire Area Prescribing Committee. Circadin MR tablets (melatonin.) Advice for crushing. 2017; <https://www.swyapc.org/wp-content/uploads/2017/01/Advice-on-crushing-Circadin-tablets.pdf>. Accessed 2021 Jun 1.
3. NHS Doncaster and Bassetlaw Teaching Hospitals. Guidance on the administration of medicines to patients who have swallowing difficulties or who are using enteral feeding tubes. 2016; <https://www.dbth.nhs.uk/wp-content/uploads/2017/10/Administration-of-Medicines-for-patients-with-swallowing-difficulties.pdf>. Accessed 2021 Jun 1.
See: Crushing Tablets (For Oral Administration) (p. 10)