



CADTH Reference List

Guidelines on Lung Cancer Screening for High-Risk Adults Younger Than 50

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Authors: Camille Santos, Jennifer Horton

Contributors: Weiyi Xie

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Key Message

One evidence guideline about lung cancer screening for high-risk adults younger than 50 years was identified.

Research Question

What are the evidence-based guidelines regarding lung cancer screening for high-risk adults younger than 50 years?

Methods

Literature Search Methods

An information specialist conducted a literature search 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 approach was customized to retrieve a limited set of results, balancing comprehensiveness with relevancy. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. Search concepts were developed based on the elements of the research questions and selection criteria. The main search concepts were lung cancer and cancer screening. CADTH-developed search filters were applied to limit retrieval to guidelines. The search was completed on April 26, 2023, and limited to English-language documents published since January 1, 2018. Internet links were provided, where available.

Selection Criteria and Summary Methods

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. The Overall Summary of Findings was based on information available in the abstracts of selected publications. Open access full-text versions of evidence-based guidelines were reviewed when available, and relevant recommendations were summarized.

Table 1: Selection Criteria

Criteria	Description
Population	Adults at high risk of lung cancer (< 50 years)
Intervention	Lung cancer screening using low-dose CT
Comparator	Not applicable
Outcomes	Recommendations regarding lung cancer screening (e.g., appropriateness)
Study designs	Evidence-based guidelines

Results

One evidence-based guideline was identified regarding lung cancer screening for high-risk adults younger than 50 years.¹

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

Overall Summary of Findings

One relevant evidence-based guideline was identified.¹ The American College of Chest Physicians suggests that low-dose CT screening should not be routinely performed for asymptomatic adults younger than 55 years or older than 77 years who are at high risk of having or developing lung cancer.¹ This recommendation was graded as weak and was based on low-quality evidence.¹



References

Guidelines and Recommendations

1. Mazzone PJ, Silvestri GA, Souter LH, et al. Screening for Lung Cancer: CHEST Guideline and Expert Panel Report. *Chest*. 2021;160(5):e427-e494. [PubMed](#)
Refer to recommendation #2 (page 955)

Appendix 1: References of Potential Interest

Previous CADTH Reports

Lung Cancer Screening: Clinical Utility and Guidelines. Ottawa (ON): CADTH. 2020. <https://www.cadth.ca/lung-cancer-screening-clinical-utility-and-guidelines> Accessed 2023 May 01.

Systematic Reviews

Mixed Population – High-Risk Adults Older Than 40 Years

Bonney A, Malouf R, Marchal C, et al. Impact of low-dose computed tomography (LDCT) screening on lung cancer-related mortality. *Cochrane Database Syst Rev.* 2022;8(8):CD013829. [PubMed](#)

Non-Randomized Studies

Cohort Study

Ji G, Bao T, Li Z, et al. Current lung cancer screening guidelines may miss high-risk population: a real-world study. *BMC Cancer.* 2021;21(1):50. [PubMed](#)

Evidence-Based Guidelines

Low-Risk Adults Younger Than 50 Years

Donnelly EF, Kazerooni EA, Lee E, et al. ACR Appropriateness Criteria R Lung Cancer Screening. *J Am Coll Radiol.* 2018;15(11S):S341-S346. [PubMed](#)
Refer to variant 3 under summary of recommendations (page S344)

Wood DE, Kazerooni EA, Baum SL, et al. Lung Cancer Screening, Version 3.2018, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw.* 2018;16(4):412-441. [PubMed](#)
Refer to individuals with moderate-risk factors and low-risk factors (page 426)