

CADTH Reference List

Colorectal and Breast Cancer Screening for Survivors of Childhood, Adolescent, or Young Adult Cancers

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Key Message

- Five evidence-based guidelines were identified; 3 evidence-based guidelines provided recommendations for both colorectal and breast cancer screening of previous survivors of childhood, adolescent, and young adult cancers who had received radiation to the abdominal, pelvic, chest or thorax region, while 2 evidence-based guidelines were specific to breast cancer screening alone.

Research Questions

1. What are the evidence-based guidelines regarding colorectal cancer screening for previous survivors of childhood, adolescent, and young adult cancers who had received radiation to the abdominal or pelvic region?
2. What are the evidence-based guidelines regarding breast cancer screening for previous survivors of childhood, adolescent, and young adult cancers who had received radiation to the chest or thorax region?

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 screening and surveillance, and cancer survivors. Search filters were applied to limit retrieval to health technology assessments and guidelines. Comments, newspaper articles, editorials, and letters were excluded. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2011 and February 18, 2021. 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 abstracts were not available, and relevant recommendations were summarized.

Table 1: Selection Criteria

Criteria	Description
Population	Patients who have survived any previous cancer diagnoses in childhood, adolescence, or young adulthood, specifically: Q1: Patients who have received radiation to the abdomen or pelvic region (e.g., sarcomas, Wilm tumours) Q2: Patients who have received radiation to the chest or thorax region (e.g., central nervous system cancers, lymphomas, sarcomas)
Intervention	Q1: Screening for colorectal cancer (e.g., guaiac-based FOBT, FIT, or colonoscopy) Q2: Screening for breast cancer (e.g., mammography, MRI, ultrasound)
Comparator	Not applicable
Outcomes	Recommendations regarding the frequency of screening, the type of screening intervention to use, when screening should begin, when screening should stop (e.g., what requirements or age to stop regular screening)
Study designs	Evidence-based guidelines

FOBT = fecal occult blood test; FIT = fecal immunochemical test; MRI = MRI.

Results

Five relevant evidence-based guidelines were identified for this report.¹⁻⁵

Additional references of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Overall Summary of Findings

Five relevant evidence-based guidelines¹⁻⁵ were identified regarding the surveillance of breast cancer and colorectal cancer in childhood, youth, and adolescent cancer survivors. Two guidelines were exclusive to breast cancer surveillance,^{1,2} while the other 3 included recommendations for screening both breast and colorectal cancer.³⁻⁵ Guidelines by the International Harmonization Group¹ and Cancer Care Ontario² recommend the use of MRI and mammography for cancer survivors that received greater than 10¹ to 20 gray units² of chest or upper abdominal radiation before the age of 30. The guidelines from the International Guidelines Harmonization Group¹ and the Children's Oncology Group⁴ recommend that screening with mammography and MRI should occur at least once per year beginning at the age of 25 up to the age of 60, or alternatively begin screening 8 years after radiation therapy is completed (whichever occurs last). However, guidelines from Cancer Care Ontario recommends that the performance of these tests begin annually from the age of 30 to 69 years instead.²

According to guidelines from the National Comprehensive Cancer Network³ and the Children's Oncology Group,⁴ adolescent and young adult cancer survivors who received any abdominal or pelvic radiation should begin colorectal screening at age 30, or alternatively, 5 years after radiation is complete (whichever occurs last). Colorectal screening can include

colonoscopy every 5 years, which is considered the gold standard for high-risk populations, or a multi-target stool DNA test every 3 years, whichever the patient and clinician jointly decide is feasible.^{3,4} If colonoscopy or multi-target stool DNA are not feasible or acceptable to the survivor, alternative stool-based tests or structural examinations may be considered, such as annual fecal immunochemical test, high-sensitivity guaiac-based fecal occult blood test, every 5-year CT colonography, or flexible sigmoidoscopy.⁴ However, all positive test results should be followed up by colonoscopy in a timely manner.⁴ Lastly, 1 guideline from the Scottish Intercollegiate Guidelines Network⁵ recommends that general practitioners should have a “high index of suspicion” for subsequent cancer and lower threshold for specialist referrals when assessing the health concerns of childhood cancer survivors who received radiotherapy. The guideline also recommends that general practitioners encourage childhood cancer survivors to participate in national screening programs; however, at the time of guideline development, the authors did not identify any evidence regarding the benefits or harms of specific screening programs for this population, and hence did not provide recommendations for or against specific surveillance programs.⁵

References

Guidelines and Recommendations

Breast Cancer Surveillance

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2. Warner E, Messersmith H, Causer P, Eisen A, Shumak R, Plewes D. Magnetic resonance imaging screening of women at high risk for breast cancer. (*Program in Evidence-based Care Evidence-based Guideline No. 15-11 version 3, endorsed*). Toronto: Cancer Care Ontario; 2018: <https://www.cancercareontario.ca/en/content/magnetic-resonance-imaging-screening-women-high-risk-breast-cancer> Accessed 2021 Mar 8.
See: Section 1 Expert opinion and qualifying statements modified in the 2017 Endorsement, page 4.

Breast Cancer and Colorectal Cancer Screening

3. Adolescent and Young Adult (AYA) Oncology. (*NCCN Clinical Practice Guidelines in Oncology, version 1.2021*). Plymouth Meeting (PA): National Comprehensive Cancer Network; 2020: https://www.nccn.org/professionals/physician_gls/pdf/aya.pdf Accessed 2021 Mar 8. Free registration required.
See: Screening recommendations for AYA survivors.
4. Children's Oncology Group. Long-term follow-up guidelines for survivors of childhood, adolescent, and young adult cancers. Version 5.0. 2018; <http://www.survivorshipguidelines.org/> Accessed 2021 Mar 8.
See: Radiation, Section 72, Therapeutic exposure, page 90; Radiation, Section 85, Colorectal Cancer, page 194.
5. Long term follow up of survivors of childhood cancer (*SIGN publication no. 132*). Edinburgh (GB): Scottish Intercollegiate Guidelines Network (SIGN); 2013: <https://www.sign.ac.uk/media/1070/sign132.pdf> Accessed 2021 Mar 8.
See: 3.5.2 Risks associated with radiotherapy, page 9; Cancer screening and surveillance in survivors of childhood cancer, page 11.

Appendix 1: References of Potential Interest

Guidelines and Recommendations

Childhood, Youth, or Adolescent Cancer Not Specified

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See: Table 1, page 4

Intervention Not Specified

7. Michel G, Mulder RL, van der Pal HJH, et al. Evidence-based recommendations for the organization of long-term follow-up care for childhood and adolescent cancer survivors: a report from the PanCareSurFup Guidelines Working Group. *J Cancer Surviv*. 2019;13(5):759-772. [Medline](#)

Methodology Not Specified

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Clinical Practice Guidelines – *Childhood, Youth, or Adolescent Cancer Not Specified*

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See: 7. Survivorship Care
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11. Guidelines & Protocols Advisory Committee. Follow-up of colorectal polyps or cancer. Victoria (BC): BCGuidelines.ca; 2013: <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/colorectal-cancer-follow-up#surveillance> Accessed 2021 Mar 8.
See: Surveillance After 5 Years
12. Guidelines & Protocols Advisory Committee. Breast cancer: management and follow-up. Victoria (BC): BCGuidelines.ca; 2013. <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/breast-cancer-management> Accessed 2021 Mar 8.
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Guidelines and Recommendations in Development

14. International Guideline Harmonization Group for Late Effects of Childhood Cancer. Colorectal cancer; [2021]: <https://www.ighg.org/guidelines/topics/colorectal-cancer/> Accessed 2021 Mar 8.

Manuscript

15. Wilbur J. Surveillance of the adult cancer survivor. *Am Fam Physician* 2015 Jan 1;91(1):29-36. [Medline](#)

Review Articles

16. Okubo R, Wada S, Shimizu Y, et al. Expectations of and recommendations for a cancer survivorship guideline in Japan: a literature review of guidelines for cancer survivorship. *Jpn J Clin Oncol*. 2019 Sep 01;49(9):812-822. [Medline](#)