Clinical practice guidelines for the prevention, early detection, and management of colorectal cancer: Risk and screening based on family history. Summary of Recommendations.

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The guideline recommendations on pages 3-7 of this document were approved by the Chief Executive Officer of the National Health and Medical Research Council (NHMRC) on 28 September 2023 under section 14A of the National Health and Medical Research Council Act 1992. In approving the guideline recommendations NHMRC considers that they meet the NHMRC standard for clinical practice guidelines. This approval is valid for a period of five years.

NHMRC is satisfied that the guideline recommendations are systematically derived, based on the identification and synthesis of the best available scientific evidence, and developed for health professionals practising in an Australian health care setting.

This publication reflects the views of the authors and not necessarily the views of the Australian Government.

Summary of recommendations for risk and screening based on family history

This section covers screening for colorectal cancer (CRC) in asymptomatic individuals who are at higher-than-average risk based on their family history of CRC, so that preventative measures or early treatment may be offered to improve health outcomes.

These recommendations are intended to guide decision-making in determining who should take part in targeted screening for CRC based on their family history. All recommendations and practice points included should be considered for implementation in practice.

Principles of clinical judgement and shared decision-making using a culturally sensitive and safe approach apply when implementing the recommendations in these guidelines.

The 2023 guideline chapter includes evidence-based recommendations (EBR) and practice points. For each EBR, the Working Party assigned a strength (weak or strong), after considering the volume, consistency, generalisability, applicability, and clinical impact of the body of evidence. Recommendations and practice points were developed by Working Party members. The choice of recommendation and wording reflects the assessment of the evidence.

The summary of recommendations for risk and screening based on family history can be downloaded as a separate document.

Risk based on family history of colorectal cancer

	Evidence-based recommendation	Strength
1	**Category 1**[#] An individual should be advised that their risk of developing colorectal cancer is: • near-average risk if they have no family history of colorectal cancer (no first-degree or second-degree relatives) (Ochs-Balcom 2021) • above average, but less than twice the average risk if they have only one first-degree relative with colorectal cancer diagnosed at age 60 or older (Tian 2019). [#]*Excludes an individual known to have or known to be related to someone with a genetic predisposition to colorectal cancer*	Weak

	Evidence-based recommendation	Strength
2	**Category 2[#]** An individual should be advised that their risk of developing colorectal cancer is at least two times higher than average, but could be up to four times higher than average, if they have any of the following: • only one first-degree relative with colorectal cancer diagnosed before age 60 (Tian 2021) • one first-degree relative AND one or more second-degree relatives with colorectal cancer diagnosed at any age (Tian 2019; Tian 2021). • two first-degree relatives with colorectal cancer diagnosed at any age (Ochs-Balcom 2021, Tian 2019, Tian 2021). *# Excludes an individual known to have or known to be related to someone with a genetic predisposition to colorectal cancer*	Weak

	Evidence-based recommendation	Strength
3	**Category 3[#]** An individual should be advised that their risk of developing colorectal cancer is at least four times higher than average, but could be up to 20 times higher than average, if they have any of the following: • two first-degree relatives AND one second-degree relative with colorectal cancer, with at least one diagnosed before age 50 (Tian 2019) • two first-degree relatives AND two or more second-degree relatives with colorectal cancer diagnosed at any age (Tian 2019) • three or more first-degree relatives with colorectal cancer diagnosed at any age (Ochs-Balcom 2021, Tian 2019). *# Excludes an individual known to have or known to be related to someone with a genetic predisposition to colorectal cancer*	Weak

Assessing family history

	Practice Point
4	Include both sides of the family when assessing an individual's risk category for colorectal cancer. Criteria for category 2 and category 3 can be met by inclusion of relatives from both sides of the family.
	Practice Point
5	Clinicians should be aware that medical information that patients provide about their relatives is often inaccurate (St John et al 1993, Love et al 1985, Douglas et al 1999, Ruo et al 2001, Mitchell et al 2004, Tehranifar et al 2015, Ziogas 2003). For colorectal cancer, 86% of self reported family history is correct (positive predictive value). However, a high proportion of people appear to either be unaware that their relatives have had colorectal cancer or not connected to their family history, with the percentage of all colorectal cancers in first-degree relatives that are reported (sensitivity) being 27% (Mai 2011).
	Practice Point
6	Given the potential importance of an accurate risk prediction for an individual, every effort should be made to collect reliable information on family history of colorectal cancer. An individual's knowledge of their family history may be unknown, they may not be connected to their family history, or it may change over time so it may be useful to repeat family history collection every few years.
	Practice Point
7	When there is uncertainty about an individual's family history, they should be encouraged to seek clarification within their family including details on which relatives have had colorectal cancer and their ages at diagnoses.
	Practice Point
8	If a family medical history appears to be significant but relatives' diagnoses prove difficult to confirm, it may be appropriate to seek expert help from a family cancer clinic which has resources available to confirm cancer diagnoses.
	Practice Point
9	Because of the possibility of Lynch syndrome, the accuracy of the family history of cancer diagnoses and polyp pathology should be checked carefully and updated regularly (see Lynch syndrome).

Further testing and referrals

	Practice Point
10	As with all forms of screening for asymptomatic people, those at risk of colorectal cancer should be carefully checked for the presence of symptoms, and appropriate diagnostic investigation completed before entry into a screening program.
11	For people with category 2 risk of colorectal cancer, genetic testing is not indicated at present.
12	Consider tumour testing in affected relatives for Lynch syndrome-related changes using immunohistochemistry and microsatellite instability analysis. Where a mismatch repair deficiency and reflex testing for methylation of the MLH1 promoter (or a BRAF V600E mutation) is shown to be absent in the tumour of an affected relative, referral to a family cancer clinic should be considered for a patient with category 2 risk and their family (see Lynch syndrome).
	Practice Point
13	Referral to a family cancer clinic for people with category 3 risk should be prioritised to those whose family members with colorectal cancer are on the same side of the family.

Determining screening strategies for risk categories

14	Practice point
	For people in category 2, CT colonography can be offered if the patient had an incomplete colonoscopy in the three months prior to the scan, there is a high-grade colonic obstruction or the service is requested by a specialist (Dachman 2003, Sha 2020).
	Practice Point
15	For people assessed as having category 1 risk of colorectal cancer: • iFOBT screening should be performed in line with population screening every two years from age 45 to age 74. • low-dose (100 mg) aspirin daily should be considered from age 45 to 70 (see Aspirin) in consultation with a health care professional.
	Practice Point
16	For people assessed as having category 2 risk of colorectal cancer: • colonoscopy should be offered every five years starting at 10 years younger than the earliest age of diagnosis of colorectal cancer in a first-degree relative or age 50, whichever is earlier, to age 74.

	• CT colonography may be offered if clinically indicated. • low-dose (100 mg) aspirin daily should be considered from age 45 to 70 (see Aspirin) in consultation with a health care professional.
	Practice Point
17	For people assessed as having category 3 risk of colorectal cancer: • colonoscopy should be offered every five years starting at 10 years younger than the earliest age of diagnosis of colorectal cancer in a first-degree relative or age 40, whichever is earlier, to age 74. • CT colonography may be offered if clinically indicated. • low-dose (100 mg) aspirin daily should be considered from age 45 to 70 (see Aspirin) in consultation with a health professional. • referral to a culturally safe family cancer clinic should be considered. Those carrying their family-specific mutation or having uncertain genetic status require careful cancer screening (see High-risk familial syndromes).

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