RNF43 gene

Associated Syndrome Name: Serrated polyposis syndrome

RNF43 Summary Cancer Risk Table

CANCER	GENETIC CANCER RISK
Colorectal	Elevated Risk

RNF43 gene Overview

Serrated polyposis syndrome [1, 2, 3, 4, 5, 6]

- Mutations in *RNF43* have been found in some individuals with a clinical diagnosis of serrated polyposis syndrome (SPS).
- Individuals with SPS develop multiple and/or large polyps in the colon and rectum. These can be hyperplastic polyps, serrated polyps, or sessile serrated adenomas. The World Health Organization (WHO) has developed detailed criteria for a clinical diagnosis of SPS (see Dekker E, el al. Gastroenterology 2020 158:1520-1523).
- Individuals with SPS are believed to have a significantly increased risk for colorectal cancer. The exact size of this risk is not known, and it is not known if this risk is present in individuals with mutations in *RNF43* who do not have a clinical diagnosis of SPS.
- Although there may be an increased risk for colorectal cancer in individuals with mutations in *RNF43*, it may be possible to reduce this risk with appropriate medical management. Since information about the cancer risks associated with *RNF43* mutations is relatively new, and there is uncertainty about the best ways to reduce these risks, it may be appropriate to interpret these results in consultation with cancer genetics professionals who have expertise in this emerging area of knowledge.

RNF43 gene Cancer Risk Table

CANCER TYPE	AGE RANGE	CANCER RISK	RISK FOR GENERAL POPULATION
Colorectal	To age 80[4, 5, 6, 7]	Elevated risk	2.8%

RNF43 Cancer Risk Management Table

The overview of medical management options provided is a summary of professional society guidelines. The most recent version of each guideline should be consulted for more detailed and up-to-date information before developing a treatment plan for a particular patient.

This overview is provided for informational purposes only and does not constitute a recommendation. While the medical society guidelines summarized herein provide important and useful information, medical management decisions for any particular patient should be made in consultation between that patient and his or her healthcare provider and may differ from society guidelines based on a complete understanding of the patient's personal medical history, surgeries and other treatments.

CANCER TYPE	PROCEDURE	AGE TO BEGIN	FREQUENCY (UNLESS OTHERWISE INDICATED BY FINDINGS)
Colorectal	*RNF43* mutation carriers who do meet WHO criteria for a diagnosis of SPS should be managed based on guidelines from NCCN and other professional societies. These guidelines include recommendations for frequent colonoscopy screenings, beginning at young ages, and surgical evaluation based on family history and personal polyp history.[1]	When identified as meeting WHO criteria for SPS	NA

CANCER TYPE	PROCEDURE	AGE TO BEGIN	FREQUENCY (UNLESS OTHERWISE INDICATED BY FINDINGS)
	Currently there are no specific management guidelines for colorectal cancer risk in *RNF43* mutation carriers who do not meet WHO criteria for a diagnosis of SPS. However, the possibility of an increased risk for colorectal cancer warrants consideration of individualized colorectal cancer risk-reduction strategies, such as the modification of standard population screening recommendations by starting screening at younger ages and/or performing screening more frequently.[8]	NA	NA

Information for Family Members

The following information for Family Members will appear as part of the MMT for a patient found to have a mutation in the RNF43 gene.

This patient's relatives are at risk for carrying the same mutation(s) and associated cancer risks as this patient. Cancer risks for females and males who have this/these mutation(s) are provided below.

Family members should talk to a healthcare provider about genetic testing. Close relatives such as parents, children, brothers and sisters have the highest chance of having the same mutation(s) as this patient. Other more distant relatives such as cousins, aunts, uncles, and grandparents also have a chance of carrying the same mutation(s). Testing of at-risk relatives can identify those family members with the same mutation(s) who may benefit from surveillance and early intervention.

References

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2. Gala MK, et al.Germline mutations in oncogene-induced senescence pathways are associated with multiple sessile serrated adenomas. Gastroenterology. 2014 146:520-9. PMID: 24512911.
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7. SEER*Explorer: An interactive website for SEER cancer statistics [Internet]. Surveillance Research Program, National Cancer Institute. [Cited 2025 Aug 12]. Available from https://seer.cancer.gov/explorer/.
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Last Updated on 10-Mar-2026