UT Southwestern
Harold C. Simmons
Comprehensive Cancer Center

NCI Designated Comprehensive Cancer Center

GREM1 Mutations

What You Should Know About *GREM1* Mutations

Individuals with a certain type of mutation in the *GREM1* gene, called a duplication, have a condition called Hereditary Mixed Polyposis Syndrome (HMPS) and are at an increased risk to develop various types of colorectal polyps and colorectal cancer. This specific *GREM1* duplication is common in the Ashkenazi Jewish population and is currently the only known mutation in *GREM1* that is associated with increased cancer risks.

Cancer Risks Associated with a *GREM1* Mutation

There is currently limited information regarding the specific lifetime cancer risks for individuals with a *GREM1* mutation.

- Individuals with a *GREM1* mutation have an increased risk to develop different types of colorectal polyps, including those of adenomatous, hyperplastic, and hamartomatous histology.
- Individuals with a *GREM1* mutation have an increased risk for colorectal cancer. However, the specific lifetime risk is not well established.

Risks to Family Members

Mutations in the *GREM1* gene are inherited in an autosomal dominant fashion. This means that children, brothers, sisters, and parents of individuals with a *GREM1* mutation have a 1 in 2 (or 50%) chance of having the mutation as well. Individuals with a *GREM1* mutation may develop colon polyps, colon cancer, or none of the above. Both males and females can inherit a familial *GREM1* mutation and both males and females can pass it on to their children.

Managing the Cancer Risks

The National Comprehensive Cancer Network (NCCN V2.2019) recommends the following surveillance for individuals with a *GREM1* mutation.

- Begin colonoscopy at 25-30 years of age
    - If negative, repeat colonoscopy every 2-3 years
    - If polyps are found, colonoscopy is recommended every 1-2 years with consideration of surgery if the polyp burden becomes unmanageable by colonoscopy
- Surgical evaluation, if appropriate

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