BRIP1 gene

Associated Syndrome Name: *BRIP1*-associated cancer risk (Women only)

BRIP1 Summary Cancer Risk Table

CANCER	GENETIC CANCER RISK
Ovarian	High Risk

BRIP1 gene Overview

BRIP1-associated cancer risk (Women only) [1, 2, 3, 4, 5, 6]

- Women with *BRIP1* mutations are believed to have a significantly increased risk for ovarian cancer.
- Some studies have found that women with *BRIP1* mutations have an increased risk for breast cancer. However, there are other studies showing no increase in risk. There may be a small increased risk limited to the triple negative subtype of breast cancer (TNBC). There are currently no medical management recommendations that address this possible risk.
- At this time, there are no known cancer risks for men due to mutations in *BRIP1*.
- Although there are high cancer risks for patients with mutations in *BRIP1*, there are interventions that may be effective at reducing these risks. Guidelines from the National Comprehensive Cancer Network (NCCN) that may apply are listed below. Since information about the cancer risks associated with *BRIP1* mutations is relatively new, and there is still some uncertainty about the best ways to reduce these risks, it may be appropriate to interpret these results in consultation with cancer genetics experts in this emerging area of knowledge.

BRIP1 gene Cancer Risk Table

CANCER TYPE	AGE RANGE	CANCER RISK	RISK FOR GENERAL POPULATION
Ovarian	To age 80[4, 6, 7, 8]	5.8%	0.9%

BRIP1 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)
Ovarian	Bilateral salpingo-oophorectomy (BSO).[9]	45 to 50 years, or earlier if there is a family history of ovarian cancer at a younger age	NA
	Other than consideration of BSO, currently there are no specific medical management recommendations for ovarian cancer risk in mutation carriers. However, the increase in risk may warrant consideration of individualized ovarian cancer risk-reduction strategies using other currently available options, such as surveillance and the use of risk-reducing agents.[9]	Individualized	NA

CANCER TYPE	PROCEDURE	AGE TO BEGIN	FREQUENCY (UNLESS OTHERWISE INDICATED BY FINDINGS)
For Patients With A Cancer Diagnosis	For patients with a gene mutation and a diagnosis of cancer, targeted therapies may be available as a treatment option for certain tumor types (e.g., PARP-inhibitors).[10]	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 BRIP1 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.

In rare instances, an individual may inherit mutations in both copies of the *BRIP1* gene, leading to the condition Fanconi anemia, complementation group J (FANCJ). This condition is rare and includes physical abnormalities, growth retardation, progressive bone marrow failure and a high risk for cancer. The children of this patient are at risk of inheriting FANCJ only if the other parent is also a carrier of a *BRIP1* mutation. Screening the other biological parent of any children for *BRIP1* mutations may be appropriate.[11]

At this time, there are no known cancer risks for men due to mutations in *BRIP1*.

References

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