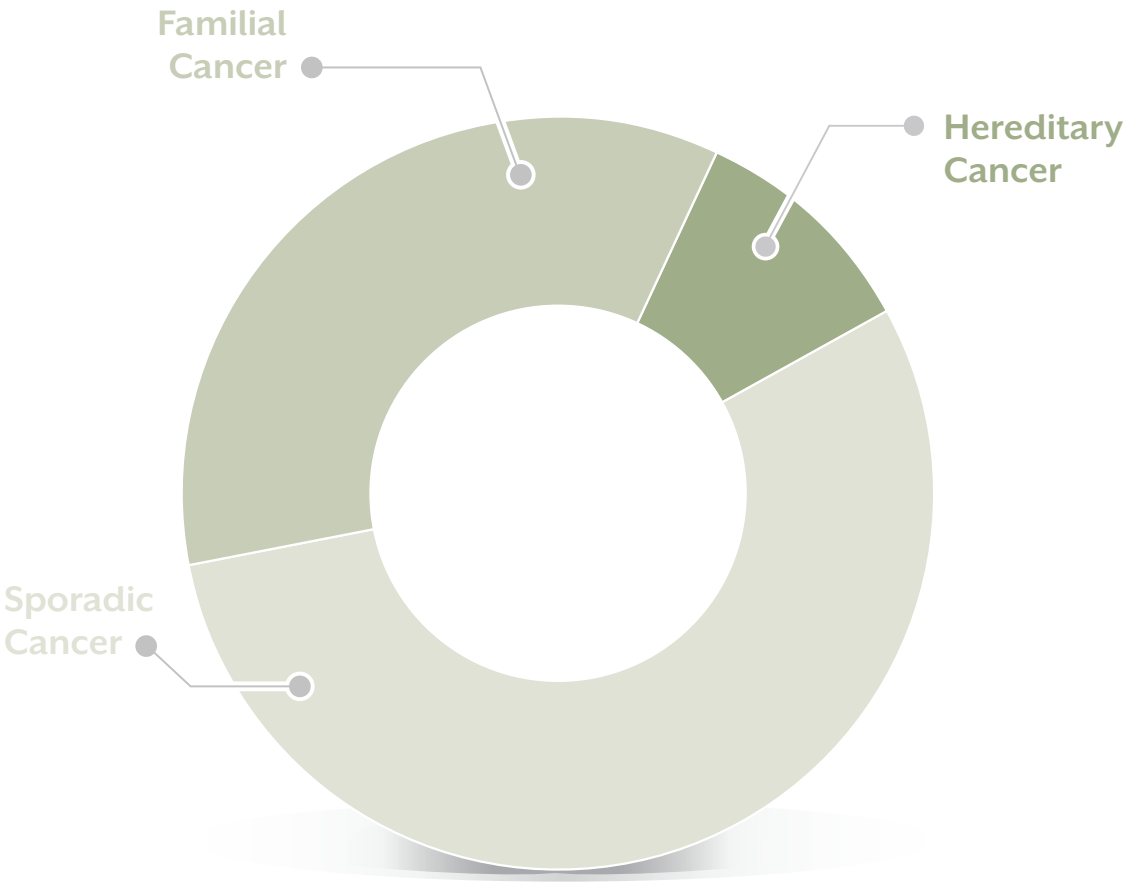
A Patient's Guide to

Hereditary Ovarian Cancer:

Is Hereditary Cancer Testing Right for You?

What is Hereditary Cancer?

Most cancers occur in people who do not have a strong family history of that cancer. This is often called “sporadic cancer”. In some families, we see more of the same kind, or related kinds, of cancer than we would expect to see when compared to the general population. This is often called “familial” or “hereditary cancer”. In those families with hereditary cancer, that cancer risk is passed down through generations by inheriting altered genes (in other words, genes with mutations) which increase the risk to develop cancer. Determining which of these families have cancer related to an inherited gene mutation is important, as the cancer risks in hereditary cancer families are much higher than the general population.



Hereditary Cancer:

Occurs when an altered gene (gene change) is passed down in the family from parent to child. People with hereditary cancer are more likely to have relatives with the same type or related type of cancer. They may develop more than one cancer and their cancer often occurs at an earlier than average age.

Familial Cancer:

Likely caused by a combination of genetic and environmental factors. People with familial cancer may have one or more relatives with the same type of cancer; however, there does not appear to be a specific pattern of inheritance (e.g., the cancer risk is not clearly passed from parent to child).

Sporadic Cancer:

Occurs by chance. People with sporadic cancer typically do not have relatives with the same type of cancer.

Hereditary Breast and Ovarian Cancer

1 in 7 Ovarian Cancers are Due to BRCA Mutations.

Hereditary Breast and Ovarian Cancer syndrome (HBOC) is an inherited condition that causes an increased risk for breast and ovarian cancer. Mutations in the *BRCA1* and *BRCA2* genes are commonly associated with HBOC.

Patients with a mutation in the *BRCA1* or *BRCA2* genes have an increased risk of ovarian cancer throughout their lifetime. Specifically, women with a BRCA mutation have up to a 44% chance of developing ovarian cancer by age 70.

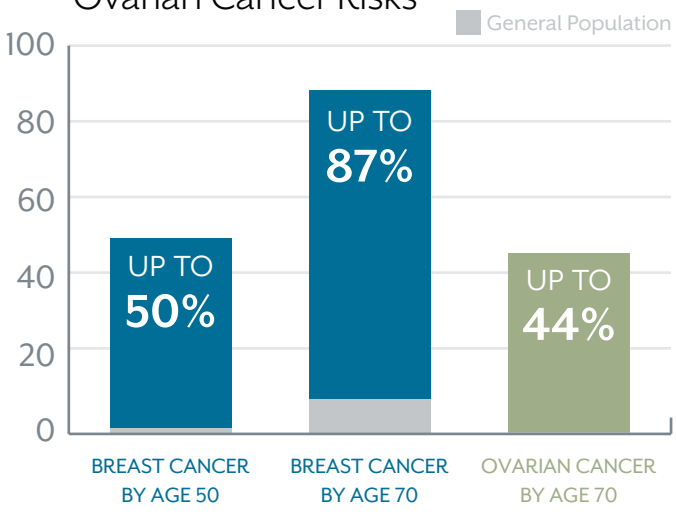
Knowing if you have a BRCA gene mutation can help you to know your risk of hereditary cancer and inform your family of their potential risk of hereditary cancer. When a patient with ovarian cancer is diagnosed with a *BRCA1* or *BRCA2* gene mutation, that knowledge is powerful.

- A BRCA mutation can be inherited from either your mother or your father and is a risk factor for ovarian, breast, melanoma, pancreatic and prostate cancer.

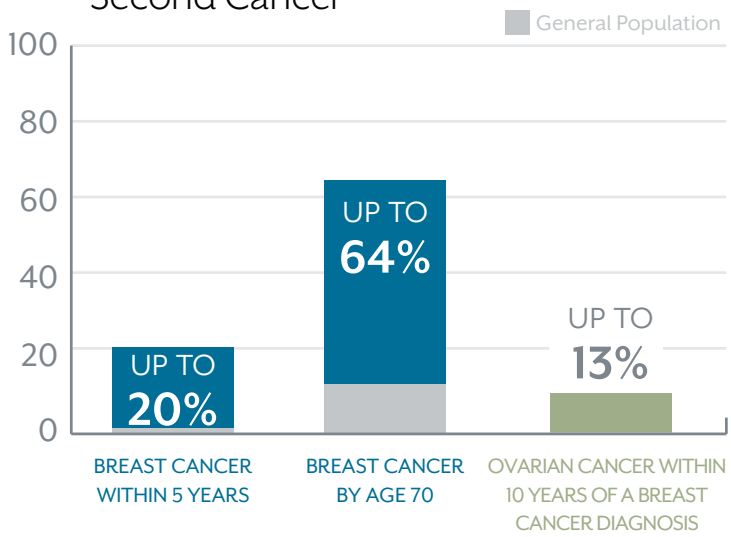
> 100% of epithelial ovarian cancer patients are at risk for a hereditary BRCA mutation.

- One test may help you identify the risk of ovarian cancer for the rest of your family. Additionally, The National Comprehensive Cancer Network (NCCN) and the Society of Gynecologic Oncology (SGO) recommend ALL women with ovarian cancer receive genetic testing regardless of family history.
- 44% of patients who have been identified with a BRCA mutation had NO history of breast or ovarian cancer in a first (parents, children, siblings) or second (aunts, uncles, cousins) degree relative.
- BRCA mutations are not only found in younger patients; over 66% of BRCA-positive patients with ovarian cancer are diagnosed over the age of 50.

BRCA Mutations Increase Breast and Ovarian Cancer Risks



BRCA Mutations Increase Risk of a Second Cancer



Treatment Options and Managing Hereditary Cancer Risk[1]

Increased Surveillance:

	PROCEDURE	AGE TO BEGIN	FREQUENCY
Breast cancer surveillance	Breast Awareness	18 Years	n/a
	Clinical Breast Exam	25 Years	Every 6-12 Months
	Mammography	30 Years	Yearly
	MRI	25 Years	Yearly
Ovarian cancer surveillance	Transvaginal Ultrasound and CA-125	30-35 Years in patients not electing a bilateral salpingo-oophrectofmy	Individualized

Chemoprevention

The use of drugs to prevent the development of cancer.

Patients who carry a BRCA mutation may respond more favorably to platinum-based chemotherapy. Platinum chemotherapy uses platinum-based drugs to fight particular forms of cancer. Additionally, recent FDA-approval of PARP inhibitors offer patients with ovarian cancer and BRCA mutations an additional treatment option.

Oral Contraceptives

- As much as 60% of ovarian cancer risk reduction reported is BRCA mutation carriers
- Contradictory evidence regarding increase in breast cancer risk[2]
- Oral contraceptives use for contraception is acceptable

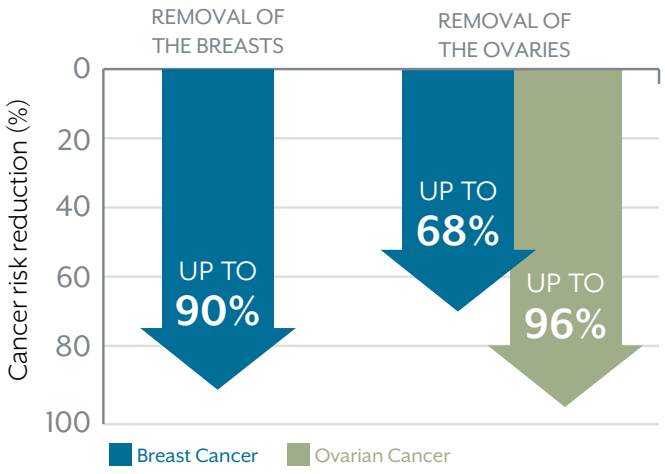
Tamoxifen

- Reduces risk of contralateral breast cancer (breast cancer in the other breast) by as much as 53%[3]

Risk Reducing Surgery

Based on individual considerations, the following surgical considerations may be recommended:

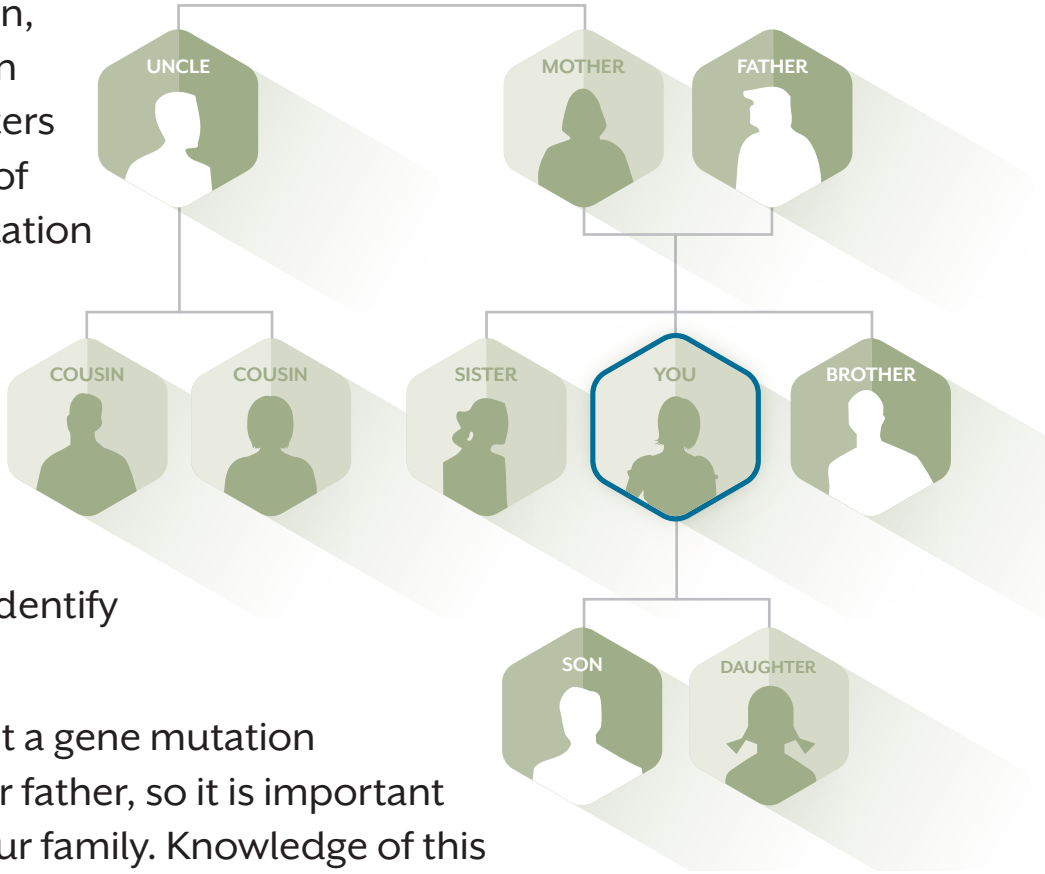
- Removal of the breasts
- Removal of the ovaries and fallopian tubes



It is important to check in with your healthcare provider (HCP) annually about current updates in technology, testing and treatments. As an example, the NCCN released guidelines in 2012 that recommend detection of large genomic re-arrangements (additional mutations in both BRCA1 and BRCA2 that were not originally identified) as part of BRCA testing for all patients that meet testing criteria for the BRCA1 and BRCA2 genes. If you tested negative for a BRCA mutation, you may want to check with your HCP to confirm that large rearrangement testing was completed.

It's a Family Affair

- If you have a gene mutation, your parents, your children and your brothers and sisters could have a 50% chance of having the same gene mutation
- Other relatives such as aunts, uncles and cousins may also be at risk to carry the same gene mutation
- Testing is the only way to identify gene mutation carriers
- Remember, you can inherit a gene mutation from either your mother or father, so it is important to look at both sides of your family. Knowledge of this information may help your physician change care and may reduce cancer risk for you and your family



Myriad Promise™

Vast majority of patients pay $0 out-of-pocket.

The Myriad Promise is a program for you, the patient, should you encounter any financial hardship associated with your bill. Myriad will work directly with you towards your complete satisfaction, **GUARANTEED**.

Privacy

The Health Insurance Portability and Accountability Act (HIPAA) of 1996 created federal privacy protections that apply to all health information created or maintained by healthcare providers, health plans, and healthcare clearinghouses. Myriad Genetic Laboratories complies with HIPPA practices.

For more information on specific privacy practices, please visit: myriad.com/patients-families/the-myriad-difference/your-privacy.

Notes:

Notes:

References:

1. Daly M et al. NCCN Clinical Practice Guidelines in Oncology®: Genetic/Familial High-Risk Assessment: Breast and Ovarian. V 1.2015. Available at www.nccn.org.
2. Daly M et al. NCCN Clinical Practice Guidelines in Oncology®: Genetic/Familial High-Risk Assessment: Breast and Ovarian. V 1.2015. March 30. Available at http://www.nccn.org.
3. Pal T, Permuth-Wey J, Betts JA, et al. BRCA1 and BRCA2 mutations account for a large proportion of ovarian carcinoma cases. Cancer. 2005;104:2807-2816

Next Steps:

☐ Pursue Testing by giving blood or saliva sample

☐ Decline Testing-
Medical management based on personal and family history of cancer

☐ Undecided / Talk to Family

Who to Contact with questions: _____

Provider Testing Options to be discussed with your physician or genetic counselor.

☐ Integrated BRAC*Analysis*® with Myriad myRisk Hereditary Cancer Update Test

- ☐ Multisite 3 BRAC*Analysis*
  - ☐ **REFLEX** to Integrated BRAC*Analysis* with Myriad myRisk Hereditary Cancer Update Test if the Multisite 3 is negative.
  - ☐ **Check here** if a family member has tested positive for one of the above 3 mutations.

☐ COLARIS® PLUS with Myriad myRisk Hereditary Cancer Update Test

☐ Single Site Testing (for family of known mutation carriers) **Specify Gene:** _____ **and Mutation:** _____

Relationship: My patient is the _____ (e.g. maternal aunt) of the known mutation carrier.
Required: Include a copy of the known mutation carrier's report.

☐ Myriad myRisk Update Test

☐ Other: _____

Resources:

Your healthcare provider is always your number one resource. You are also invited to visit www.MySupport360.com, the Myriad program offering information and support for patients. You will find valuable information that will help you better understand your test result, and you will join a community of people who are on the same hereditary cancer testing journey as you.

You may also contact Myriad's Medical Services team at 1-800-469-7423 ext. 3850.

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