Ambry Genetics®

Clinician Management Resource for *BRCA1*

This overview of clinical management guidelines is based on this patient's positive test result for a pathogenic or likely pathogenic variant in the *BRCA1* gene. Unless otherwise stated, medical management guidelines used here are limited to those issued by the National Comprehensive Cancer Network® (NCCN®)[1] in the U.S. Please consult the referenced guideline for complete details and further information.

Clinical correlation with the patient's past medical history, treatments, surgeries and family history may lead to changes in clinical management decisions; therefore, other management recommendations may be considered. Genetic testing results and medical society guidelines help inform medical management decisions but do not constitute formal recommendations. Discussions of medical management decisions and individualized treatment plans should be made in consultation between each patient and his or her healthcare provider, and may change over time.

SCREENING/SURGICAL CONSIDERATIONS[1]	AGE TO START	FREQUENCY
Female Breast Cancer		
Breast awareness* ▪ Women should be familiar with their breasts and promptly report changes to their healthcare provider.	18 years old	Periodic and consistent
Clinical Breast Exam	25 years old	Every 6-12 months
Breast Screening** ▪ Breast MRI with and without contrast ▪ Mammography	25-29 years old (MRI only***)	Every 12 months or individualized based on family history
	30-75 years old (MRI and mammography)	Every 12 months
	>75 years old	Individualized
Discuss option of risk-reducing mastectomy	Individualized	N/A
Consider options for risk reduction agents	Individualized	Individualized
Ovarian Cancer		
Consultation with gynecologic oncologist or gynecologist with expertise/experience in genetic susceptibility to gynecologic cancer is recommended.	Individualized	Individualized
Consideration of combination estrogen/progestin contraception (such as oral contraceptive pills) to reduce risk for ovarian cancer.	Individualized	Individualized
Recommend risk-reducing salpingo-oophorectomy (RRSO)^	35 to 40 years old	N/A
CA-125 and pelvic ultrasound are recommended for preoperative planning	Individualized	Individualized
Salpingectomy		
Salpingectomy is an option for premenopausal patients with hereditary cancer risk who are not yet ready for oophorectomy.	Individualized	Individualized
Completion oophorectomy is recommended as per gene-specific guidelines.	Individualized	Individualized
Consider continuation of combination oral contraceptive pills or hormonal IUD for continued ovarian cancer risk reduction while ovaries remain in place.	Individualized	Individualized
Hysterectomy		
Discuss the risks and benefits of concurrent hysterectomy at the time of RRSO prior to surgery.	Individualized	Individualized
Individuals who undergo hysterectomy at the time of RRSO are candidates for estrogen-alone HRT.	Individualized	Individualized

SCREENING/SURGICAL CONSIDERATIONS[1]	AGE TO START	FREQUENCY
Male Breast Cancer		
Breast self-exam training and education	35 years old	Periodic and consistent
Clinical breast exam	35 years old	Every 12 months
Consider mammogram screening	50 years or 10 years before the earliest known male breast cancer in the family (whichever comes first)	Every 12 months
Prostate Cancer		
Consider prostate cancer screening	40 years old	Clinician's discretion
Melanoma		
General risk management, such as annual full-body skin examination and minimizing UV exposure	Individualized	Annual, or at clinician's discretion
Pancreatic Cancer		
For individuals with exocrine pancreatic cancer in ≥1 first- or second-degree relative on the same side of the family as the identified pathogenic/likely pathogenic germline variant, consider pancreatic cancer screening using contrast-enhanced MRI/MRCP and/or EUS.^^	50 years (or 10 years younger than the earliest exocrine pancreatic cancer diagnosis in the family, whichever is earlier)	Annually (with consideration of shorter intervals if potentially concerning abnormalities seen on screening)
Other		
Counsel for risk of autosomal recessive condition in offspring.	Individualized	N/A

* Breast self exam (BSE) may facilitate breast self awareness. Premenopausal women may find BSE most informative when performed at the end of menses.

** Women treated for breast cancer who have not undergone bilateral mastectomy: follow screening as described

*** Mammography may be considered only if MRI is unavailable

^ See Risk-Reducing Salpingo-Oophorectomy (RRSO) Protocol in NCCN Guidelines for Ovarian Cancer- Principles of Surgery. Limited data suggest that there may be a slight increased risk of serous uterine cancer among women with a *BRCA1* mutation. The clinical significance of these findings is unclear. Further evaluation of the risk of serous uterine cancer in the BRCA population needs to be undertaken. The provider and patient should discuss the risks and benefits of concurrent hysterectomy at the time of RRSO for women with a *BRCA1* mutation prior to surgery. Individuals who undergo hysterectomy at the time of RRSO are candidates for estrogen alone hormone replacement therapy (HRT), which is associated with a decreased risk of breast cancer compared to combined estrogen and progesterone, which is required when the uterus is left in situ (Chlebowski R, *et al.* JAMA Oncol 2015; 1:296-305). HRT recommendations should be tailored depending on each patient's personal history of breast cancer and/or breast cancer risk reduction strategies. HRT is a consideration for premenopausal patients who do not carry a diagnosis of breast cancer or have other contraindications for HRT.

^^ For individuals considering pancreatic cancer screening, the panel recommends that screening be performed in experienced high-volume centers. The panel recommends that such screening only take place after an in-depth discussion about the potential limitations to screening, including cost, the high incidence of benign or indeterminate pancreatic abnormalities, and uncertainties about the potential benefits of pancreatic cancer screening. Most small cystic lesions found on screening will not warrant biopsy, surgical resection, or any other intervention.

1. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate. v2.2025. Accessed November 7, 2024. To view the most recent and complete version of the guideline, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way.

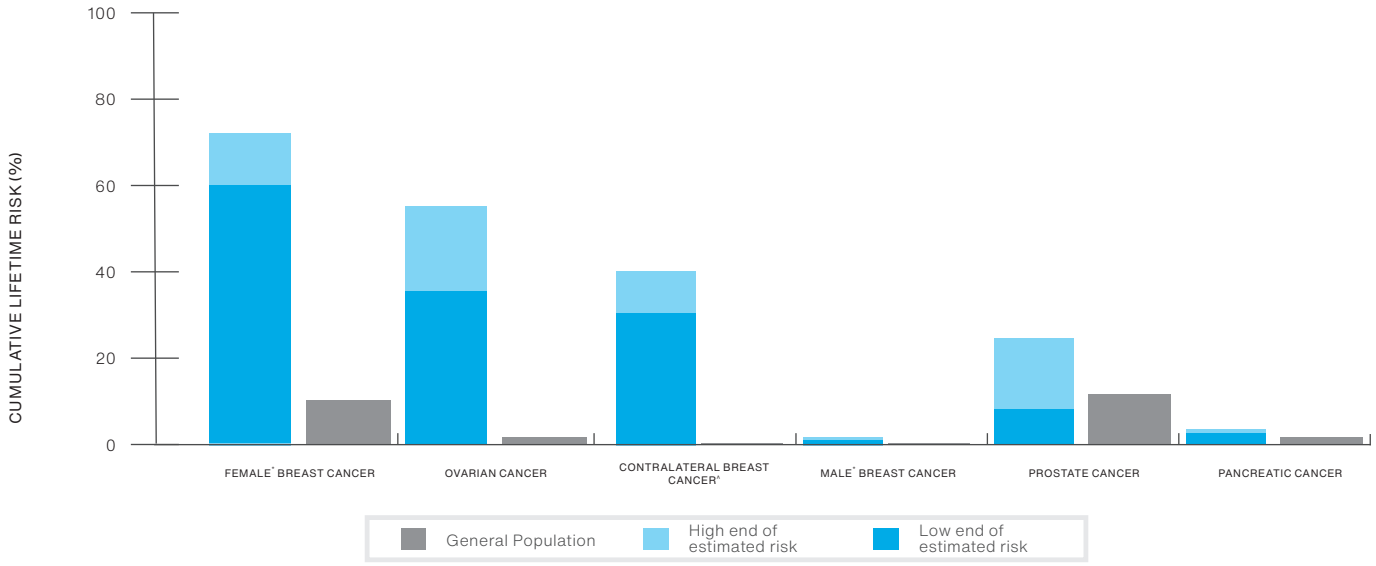
Understanding Your Positive *BRCA1* Genetic Test Result

INFORMATION FOR PATIENTS WITH A PATHOGENIC OR LIKELY PATHOGENIC VARIANT

6 Things To Know

1	Result	Your testing shows that you have a pathogenic or likely pathogenic variant in the *BRCA1* gene.
2	*BRCA1*-related cancer predisposition	People with a pathogenic or likely pathogenic *BRCA1* variant have *BRCA1*-related cancer predisposition
3	Cancer risks	You have an increased chance to develop breast cancer, ovarian cancer, pancreatic cancer, prostate cancer, and possibly other types of cancer.
4	What you can do	Risk management decisions are very personal. There are options to detect cancer early or lower the risk to develop cancer. It is important to discuss these options with your healthcare provider and decide on a plan that works for you.
5	Other medical concerns	Individuals with a pathogenic or likely pathogenic *BRCA1* variant may have an increased risk to have a child with Fanconi anemia, but only if their partner also carries a pathogenic or likely pathogenic variant in the *BRCA1* gene. Fanconi anemia is a rare condition that can cause specific physical characteristics, bone marrow failure, and an increased risk of certain cancers.
6	Family	Family members may also be at risk – they can be tested for the pathogenic or likely pathogenic *BRCA1* variant that was identified in you. It is recommended that you share this information with your family members so they can learn more and discuss with their healthcare providers.

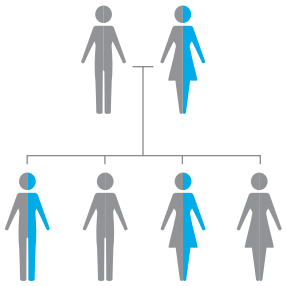
BRCA1 Cancer Risks**



* Refers to sex assigned at birth
** Refers to lifetime risk unless otherwise noted. Because risk estimates vary in different studies, only approximate risks are given. Cancer risks will differ based on individual and family history.
^ 20-year cumulative risk

BRCA1 in the Family

There is a 50/50 random chance to pass on the pathogenic or likely pathogenic *BRCA1* variant to each of your children.



Has a pathogenic or likely pathogenic *BRCA1* variant

No pathogenic or likely pathogenic *BRCA1* variant

RESOURCES

- American Cancer Society cancer.org
- Bright Pink brightpink.org
- FORCE facingourrisk.org
- ICARE Inherited Cancer Registry InheritedCancer.net
- Imerman Angels imermanangels.org
- Sharsheret sharsheret.org
- Susan G. Komen Foundation komen.org
- National Society of Genetic Counselors nsgc.org
- Canadian Society of Genetic Counsellors cagc-accg.ca

Please discuss this information with your healthcare provider. The cancer genetics field is continuously evolving, so updates related to your *BRCA1* result, medical recommendations, and/or potential treatments may be available over time. This information is not meant to replace a discussion with a healthcare provider, and should not be considered or interpreted as medical advice.

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