

Hereditary Breast Cancer Testing

REFERENCE GUIDE



February 2019

There is no room for doubt when it comes to making important life impacting healthcare decisions. By providing advanced confirmation genetic testing for hereditary breast cancer, we can help you make more informed and reliable healthcare decisions with your patients.

The more accurate the results,
the more insight you have to
better treat your patients.



American Society of Breast Surgeons

Breast surgeons, genetic counselors, and other medical professionals knowledgeable in genetic testing can provide patient education and counseling and make recommendations to their patients regarding genetic testing and arrange testing. When the patient's history and/or test results are complex, referral to a certified genetic counselor or genetics professional may be useful.

Adapted from ASBrS Consensus Guideline, February 2019

Why Is Genetic Testing Important?

KEY BENEFITS

Identifying patients with a genetic predisposition to cancer can allow informed recommendations and personalized medical management.

Option to modify frequency and initial age of mammogram and breast MRI

Consideration of prophylactic mastectomy or other risk-reducing measures, as appropriate

Option to tailor treatments (e.g. PARP inhibitors for *BRCA1/BRCA2*)

Identify at-risk family members

Identify Patients Who May Need Genetic Testing

If your patient and/or their family members have any of the following signs* of hereditary cancer, consider genetic testing:

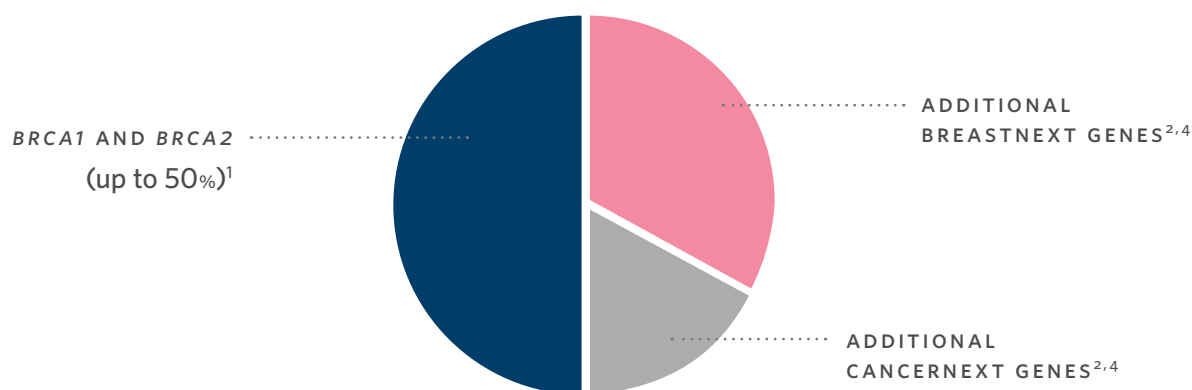
Multiple	2 OR MORE primary cancers in the same person	3 OR MORE breast or other cancers on the same side of the family
Young	BREAST CANCER DIAGNOSED ≤ 45 Y, TRIPLE NEGATIVE BREAST CANCER ≤ 60 Y	
Rare	MALE BREAST CANCER, OVARIAN CANCER, PANCREATIC CANCER	
Metastatic	METASTATIC PROSTATE CANCER AT ANY AGE	
Ancestry	ASHKENAZI JEWISH	

* Adapted from published genetic testing guidelines

Known Causes of Hereditary Breast Cancer

ORDERING THE RIGHT TEST CAN PROVIDE THE MOST ACCURATE AND COMPREHENSIVE ANSWERS

Over 246,000 cases of breast cancer are diagnosed each year and 5-10% of those are hereditary. *BRCA1/2* accounts for about half of hereditary breast cancer cases, but only tells part of the story.



Ambry collaborated in a study of >65,000 patients with breast cancer, demonstrating that *ATM*, *BARD1*, *CHEK2*, and *RAD51D* are established moderate risk genes (odds ratio >2). These genes are available on BreastNext.²

Additionally, our study of >34,000 individuals revealed that 22% of patients identified to have Lynch syndrome, only met NCCN[®] guidelines for *BRCA1/2* genetic testing.³ Therefore, CancerNext may identify unexpected hereditary cancer syndromes, which may have significant implications for medical management.

1. Castéra L, et al. *Eur J Hum Genet.*, 2014.
2. Couch F, et al. *JAMA Oncol.*, 2017.

3. Espenschied C, et al. *J Clin Oncol.*, 2017.
4. Ambry, data on file

Finding Answers Through Quality Genetic Testing

Ambry's hereditary breast cancer testing options:

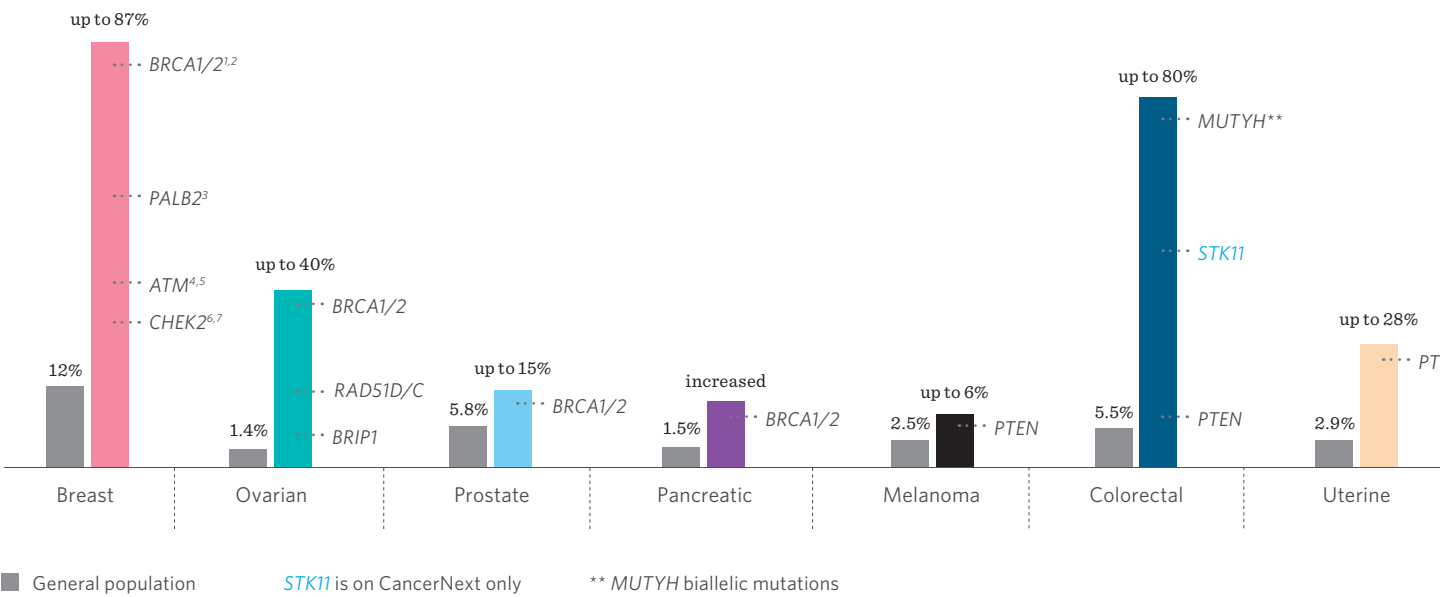
Test	Description	Turnaround Time
BRCApus	NCCN® management guidelines available for all genes	7-10 days
BreastNext	Offering more information to identify and manage hereditary breast cancer NCCN® management guidelines available for most genes	14-21 days
CancerNext	Comprehensive panel covering a broad range of tumor types, giving you more information to make better treatment and management decisions NCCN® management guidelines available for most genes	14-21 days



LEARN MORE about your patient’s breast cancer risk and better understand the impact of single nucleotide polymorphisms (SNPs) by opting into **AmbryScore**, a remaining lifetime breast cancer risk calculation. AmbryScore can only be ordered in addition to select multigene panels, including BreastNext and CancerNext, for eligible patients. Visit our website for more detailed information and eligibility criteria: ambrygen.com/ambryscore

Breast Cancer Genes and Associated Risks

POTENTIAL LIFETIME CANCER RISKS FOR PATIENTS WITH A HEREDITARY CANCER SYNDROME



References

1. Ford D, *Lancet* 1994 Mar;343(8899):692-5

2. Ford D, *Am. J. Hum. Genet.* 1998 Mar;62(3):676-89

3. Antoniou AC et al. *N. Engl. J. Med.* 2014 Aug;371(6):497-506

4. Easton DF. *Int J Radiat Biol.* 1994 Dec;66(6 Suppl):S177-82

5. Thompson D et al. *J Natl Cancer Inst.* 2005 Jun 1;97(11):813-22

6. Adank et al. *J Med Genet.* 2011 Dec;48(12):860-3

7. Cybulski C et al. *J Clin Oncol.* 2011 Oct 1;29(28):3747-52

Over 1.5 Million Tests Completed

MOVING SCIENCE FORWARD

Purposeful Confirmatory Testing

Many labs validate their tests based on certain limited studies. That's why we participated and led the largest study of its kind (20,000 cases) guiding us to utilize confirmatory testing when we see specific well-defined thresholds. Our mission is to get it right the first time.

Understanding Disease Better Through Free Data Sharing

Identifying an individual's genetic information is nothing new—it's what we do with it that is unique. When labs share genomic information, we can together accelerate the understanding of human disease. Through AmbryShare, we leverage de-identified information to collaborate with others and help people everywhere find answers.

Free Testing for Family Members

We offer specific site analysis (SSA) at no additional cost for family members following single gene or multigene panel testing of the first family member (proband) within 90 days of the original Ambry report date.

Ambry's Translational Genomics (ATG) Lab

As an advanced diagnostic lab, it's our responsibility to ensure the results you get from us are accurate and that classification is as complete and robust as possible. Our ATG lab is a unique laboratory that provides an additional service at no additional cost for you and your patients to generate more precise data potentially bringing clarity to some variants of unknown significance (VUS). This helps to actively drive down the rate of VUS results and can give you an increased understanding of your patient's results, so you can better provide medical management recommendations and improve health outcomes.

About Ambry



Just as no two fingerprints are alike, the way disease presents itself in every individual is different. Since 1999, our mission has always been about understanding disease better, so treatments and cures can be found faster. Every sample that arrives in our lab is viewed as a person with a life and a story that is unique to only them. By providing advanced confirmation genetic testing for inherited and non-inherited diseases, we can help you make more informed and responsible treatment decisions with your patients.