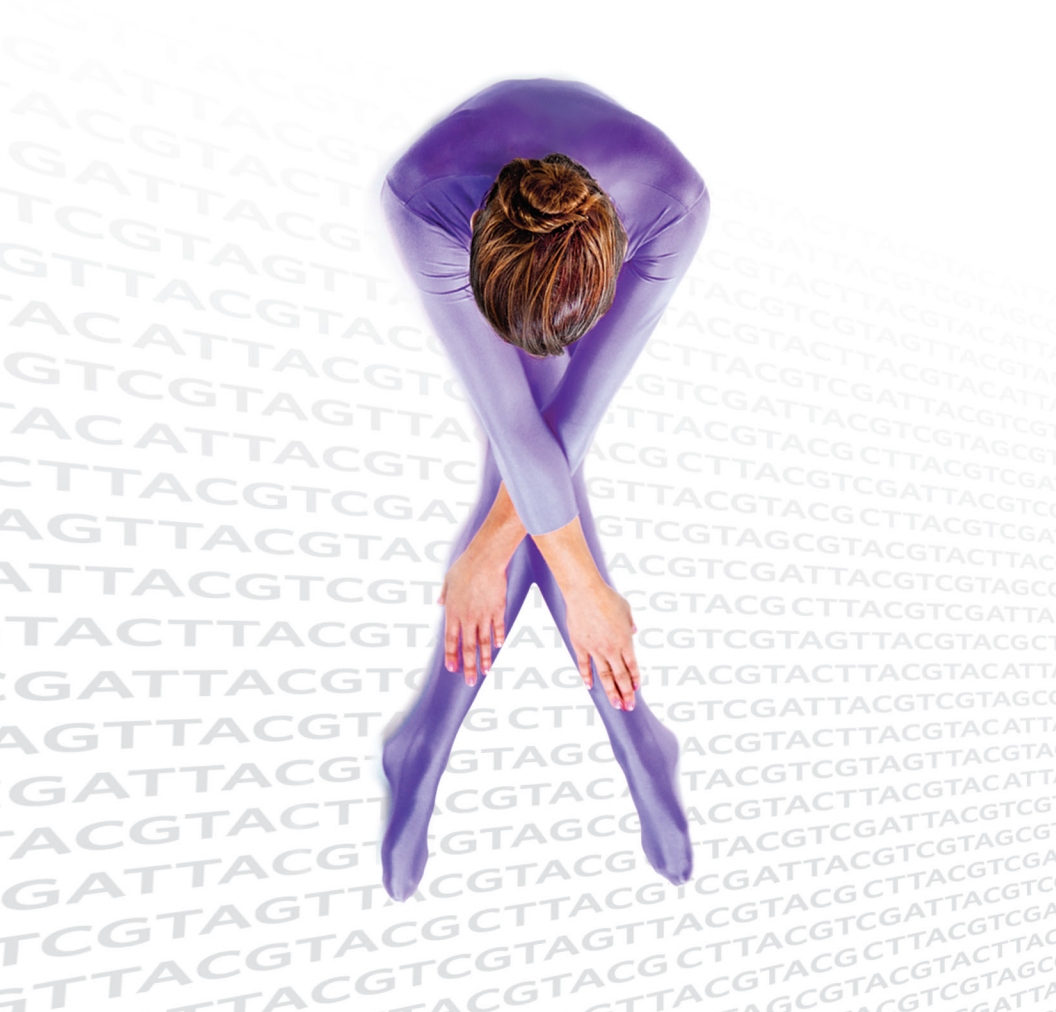
Ambry Genetics®

PancNext

Genetic testing for hereditary pancreatic cancer

PATIENT GUIDE

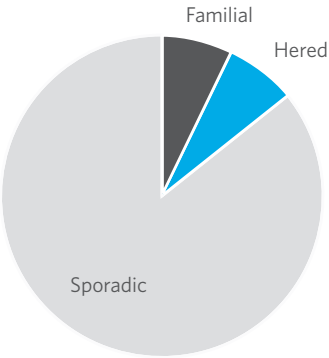


What is Hereditary Pancreatic Cancer?

Pancreatic cancer is a relatively uncommon cancer (it affects about 1 in 65 people in the U.S.). Risk factors for developing pancreatic cancer include cigarette smoking, type 2 diabetes, chronic pancreatitis, obesity, cirrhosis of the liver, and a family history of pancreatic cancer. The majority of pancreatic cancers occur at older ages in people with little or no family history of the disease and no genetic risk. These occurrences are called "sporadic" cancers and happen by chance.

Although many people have a family history of cancer, the majority of cancers are not due to inherited causes. Only about 10% of people who develop pancreatic cancer have a family history of the disease. Some of these families have "*hereditary*" (due to inherited genetic changes called mutations) pancreatic cancer. People who carry these genetic changes are born with them – they do not develop over time. Understanding if a history of pancreatic cancer is due to an inherited mutation can help clarify future risks to develop cancer and help determine options for cancer screening and prevention.

PANCREATIC CANCER BREAKDOWN



There are many different genes known to cause hereditary pancreatic cancer.

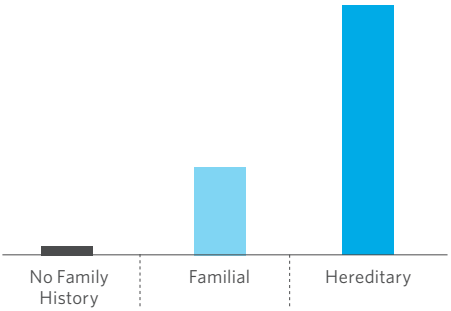
Many families with a history of pancreatic cancer do not have an identifiable genetic cause. These "*familial*" cases may be due to other genes, shared factors such as environment and lifestyle, or a combination of all of these.

What is Your Risk for Pancreatic Cancer?

A healthcare provider can help you learn about your chance of developing pancreatic cancer.

- A person with no family history of pancreatic cancer is most likely at average risk, which is about 1% over a lifetime. People with risk factors for pancreatic cancer (described on page 1) may have a higher risk.
- For the person with a family history of pancreatic cancer, genetic testing may help determine his/her risk of developing cancer.
- If a person has had pancreatic cancer, genetic testing may help determine if he/she has an increased risk for additional cancers.
- Defining a person's pancreatic cancer risk helps his/her healthcare providers make personalized recommendations for cancer screening and prevention.

LIFETIME PANCREATIC CANCER RISKS



If you have a family history of pancreatic cancer and/or a gene mutation, your doctor may recommend specific tests to screen for pancreatic cancer.

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Is Hereditary Pancreatic Cancer Testing Appropriate for You?

Genetic testing may be appropriate if you have a personal history and/or family history of any of the following:

- ☐ Pancreatic cancer diagnosed younger than age 60
- ☐ More than one cancer in the same person (like pancreatic and colorectal or breast cancer)
- ☐ 2 or more family members with pancreatic cancer*
- ☐ 3 or more family members with pancreatic, breast, colorectal, uterine, ovarian, and/or melanoma*
- ☐ Multiple close family members with pancreatic and other cancers*

* On the same side of the family

NOTES

PancNext Genes and Associated Cancer(s)

GENE	ASSOCIATED CANCER(S)	SYNDROME NAMES
APC	Colorectal, duodenal pancreatic, thyroid liver, CNS	Familial adenomatous polyposis (FAP) Attenuated FAP
ATM	Breast, pancreatic	
BRCA1, BRCA2	Breast, prostate, ovarian, pancreatic, male breast	Hereditary breast ovarian cancer (HBOC)
CDKN2A	Melanoma, pancreatic	Cutaneous malignant melanoma syndrome Familial atypical mole-malignant melanoma (FAMMM) syndrome
MLH1, MSH2, MSH6, PMS2, EPCAM	Colorectal, uterine, stomach, ovarian, small bowel, and others	Lynch syndrome
PALB2	Breast, ovarian, pancreatic, male breast	
STK11	Colorectal, breast, small bowel, pancreatic, ovarian	Peutz-Jeghers syndrome (PJS)
TP53	Breast, sarcoma, brain, adrenocortical, leukemia, and others	Li-Fraumeni syndrome (LFS)

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Possible Genetic Test Results

If you or your family member has genetic testing, you will receive one of three possible results:

RESULTS	EXPLANATION
Positive	• A mutation was found in one of the genes tested • Increased risk for cancer specific to the gene that has a mutation • Gene-specific cancer screening and prevention recommendations • Offering genetic testing to adult at-risk relatives for the specific mutation is recommended
Negative	• No changes, or mutations, were found in any of the genes tested • Cancer risk(s) are based on personal and family history • Cancer screening and prevention recommendations based on family history • Genetic testing most likely will not be appropriate for family members
Variant of Unknown Significance (VUS)	• A genetic change was found but it is unclear if this change causes an increased risk for cancer or not • Cancer risk(s) are specific to the family history of cancer • Cancer screening and prevention recommendations based on family history • Family studies may be helpful

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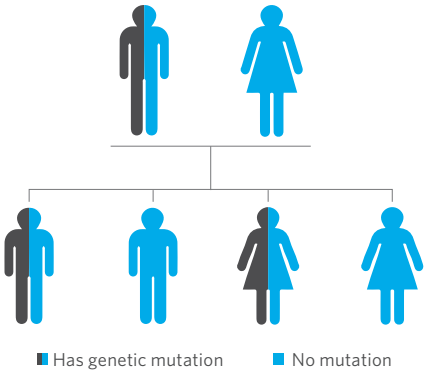
If You Test Positive for a Gene Mutation

- Cancer screening will most likely begin in young adulthood
- Screening will be recommended for cancers specific to the gene in which the mutation was found
- Cancer prevention options will be discussed
- Family members may be offered testing to find out if they carry the same mutation

What This Means for a Family

There is a 50/50 random chance to pass on a genetic mutation in a PancNext gene to your sons and daughters. The image below shows that both men and women can carry and pass on these mutations.



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FAQs About Genetic Testing

Q1. HOW DOES PANCNEXT GENETIC TESTING WORK?

The genetic test is done using a blood or saliva sample. Your sample is sent overnight in a special kit to Ambry (all coordinated by your healthcare provider). Once your sample arrives at Ambry, 13 pancreatic cancer genes are studied. Everyone has these genes – they each have a specific role in your body. The genetic test looks for any mutations that cause an increased risk of cancer.

Q2. CAN GENETIC TEST RESULTS BE USED AGAINST ME?

In the U.S., the Genetic Information Nondiscriminaton Act (2008) prohibits discrimination by health insurance companies and employers based on genetic information. Depending on where you live in the world, you may have different (or fewer) laws in this area.

Q3. IF I HAVE ALREADY HAD PANCREATIC CANCER, DO I NEED GENETIC TESTING?

Genetic testing is most informative when first performed in a family member who has already had pancreatic cancer. Results can provide an explanation for why the cancer occurred, and, more importantly, can provide information about future cancer risks. Genetic test results can change your ongoing medical management and can help your family members understand their risk of developing cancer.

Q4. WHAT IF I PREVIOUSLY HAD PANCREATIC CANCER GENETIC TESTING AND NO MUTATION WAS IDENTIFIED?

PancNext may be ideal because additional pancreatic cancer genes will be studied that could potentially provide the answer for you and your family. Your healthcare provider can tell us on the order form if you have had genetic testing before.

Q5. HOW SHOULD I TELL MY RELATIVES ABOUT MY GENETIC TEST RESULTS?

Genetic test results may be shared in a number of ways including by telephone call, visiting in person, letter, or email. It can sometimes be challenging because genetic testing is a very personal process, and everyone reacts to this type of news differently. Your healthcare provider may be able to help you come up with a plan to tell your family members, in a way that works best for all of you.

Test Result and Recommendations

To be completed by you and your healthcare provider when you receive your genetic test results and medical management recommendations

TEST RESULT

☐ No mutation detected

☐ Positive for a mutation in _____ gene

☐ Variant of unknown significance in _____ gene

RECOMMENDATIONS FOR YOU

RECOMMENDATIONS FOR FAMILY MEMBERS

☐ Genetic testing not appropriate for family members

☐ Genetic testing recommended for family members

FAQs about Billing and Insurance

Q1. WHAT IS AMBRY'S BILLING POLICY?

Ambry offers a variety of payment options. Many insurance plans cover genetic testing and Ambry is contracted with the majority of U.S. health plans. Your out-of-pocket cost may vary based on your individual plan. We offer personalized verification of insurance coverage and financial options for your genetic testing. A team of dedicated specialists is available to help you get access to the genetic testing you need and answer any questions you have about our payment options. Call or email our Billing department at +1-949-900-5795 or billing@ambrygen.com with any questions.

Q2. WHAT IS AN EXPLANATION OF BENEFITS (EOB)?

It is not a bill and does not require payment. Your insurance company sends you an EOB to explain any services paid on your behalf. You can contact us directly to speak with a Billing specialist with any questions/concerns about your EOB. Some genetic tests take weeks to process to receive the best results. In addition, insurance companies can take over two months to process claims, and longer if we need to send information again, and this could delay your bill.

Q3. HOW MUCH DO AMBRY'S TESTS COST?

We are committed to making the genetic testing process as simple and cost-effective as possible. Prices depend on if your insurance plan is contracted with Ambry, and if they are a private or public plan. We also offer prices when someone pays by cash, or when an institution pays. This is not necessarily what is reflected on an EOB, so please contact us directly to speak with a Billing specialist with any questions/concerns.

Q4. WHY DID I RECEIVE A BILL MORE THAN A MONTH AFTER MY TEST?

Some genetic tests take weeks to process to receive the best results. In addition, insurance companies can take over two months to process claims, and longer if we need to send information again. All of this could delay your bill, but we try our best to prevent this from happening.

Resources for Patients

These and other resources can help build a sense of community and aid in answering some common questions.

AMBRY'S HEREDITARY CANCER SITE FOR FAMILIES
patients.ambrygen.com/cancer

BRIGHT PINK
brightpink.org

FACING OUR RISK OF CANCER EMPOWERED (FORCE)
facingourrisk.org

HEREDITARY COLON CANCER FOUNDATION
hcctakesguts.org

LI-FRAUMENI SYNDROME ASSOCIATION
lfsassociation.org

PANCREATIC CANCER ACTION NETWORK
pancan.org

GENETIC INFORMATION NONDISCRIMINATION ACT INFORMATION
ginahelp.org

Find a Genetic Counselor

NATIONAL SOCIETY OF GENETIC COUNSELORS
nsgc.org

CANADIAN ASSOCIATION OF GENETIC COUNSELLORS
cagc-accg.ca

About Ambry

Ambry is a genetics-based healthcare company that is dedicated to open scientific exchange so we can work together to understand and treat all human disease faster.

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