



Approximately 10% of all cancers are hereditary

All cancers start in the DNA. Cancer is caused by genetic changes that result in unrestricted cell growth. There are hundreds of genes that influence a person's cancer risk. Approximately 10% of cancers, known as hereditary cancers, are driven by a single gene.

Hereditary cancers	Sporadic cancers
High chance of developing cancer (up to 100% lifetime risk)	General population risk for developing cancer
Earlier age of diagnosis	Average age of diagnosis
Increased risk for multiple types of cancers (ex. breast, ovarian, pancreatic and more)	No increased risk for other cancer types
First-degree relatives have 50% chance of inheriting	Not passed down in families

Genetic testing should be offered to patients who meet criteria for hereditary cancer testing.

Early diagnosis of hereditary cancers can improve outcomes through increased surveillance to detect cancer earlier. Genetic testing should be considered for the following patients (both male and female), whether they've been diagnosed with cancer or not:

PERSONAL HISTORY:	<ul style="list-style-type: none"> • Bilateral breast cancer • Breast cancer diagnosed ≤50 y.o. • Colorectal cancer diagnosed ≤50 y.o. • Endometrial cancer diagnosed ≤50 y.o. • Male breast cancer • Metastatic prostate cancer 	<ul style="list-style-type: none"> • Ovarian Cancer • Pancreatic Cancer • Triple-negative breast cancer • Ten or more colon polyps • Ashkenazi Jewish ancestry
FAMILY HISTORY:	<ul style="list-style-type: none"> • Three relatives on same side of family with breast and/or prostate cancer • Bilateral breast cancer • Breast cancer diagnosed ≤50 y.o. • Colorectal cancer diagnosed ≤50 y.o. • Endometrial cancer diagnosed ≤50 y.o. • Male breast cancer • Metastatic prostate cancer 	<ul style="list-style-type: none"> • Ovarian Cancer • Pancreatic Cancer • Triple-negative breast cancer • Ten or more colon polyps • Ashkenazi Jewish ancestry • Positive genetic test result

1. National Comprehensive Cancer Network. Genetic/Familial High-Risk Assessment: Breast, Ovarian, and Pancreatic (Version 2.2022). https://www.nccn.org/professionals/physician_gls/pdf/genetics_bop.pdf. Accessed August 10, 2022.

2. National Comprehensive Cancer Network. Genetic/Familial High-Risk Assessment: Colorectal (Version 1.2022). https://www.nccn.org/professionals/physician_gls/pdf/genetics_colon.pdf. Accessed August 10, 2022.

Innovative Gx Hereditary Cancer Panels



Genes	Breast Cancer Panel	Colorectal Cancer Panel	Endometrial Cancer Panel	Gastric Cancer Panel	Melanoma Panel	Ovarian Cancer Panel	Pancreatic Cancer Panel	Prostate Cancer Panel
APC		X		X			X	
ATM	X						X	X
AXIN2		X						
BAP1					X			
BARD1	X					X		
BMPR1A		X		X			X	
BRCA1	X		X			X	X	X
BRCA2	X		X		X	X	X	X
BRIP1	X					X		X
CDH1	X	X	X	X		X	X	X
CDK4					X		X	
CDKN2A					X		X	
CHEK2	X	X			X			X
CTNNA1				X				
EPCAM		X	X	X		X	X	X
GREM1		X						
HOXB13								X
MCIR					X			
MEN1							X	
MITF					X			
MLH1	X	X	X	X		X	X	X
MLH3		X						
MSH2	X	X	X	X		X	X	X
MSH6		X	X	X		X	X	X
MUTYH		X	X	X	X	X	X	
NF1	X			X			X	
NTHL1		X						
PALB2	X		X			X	X	X
PMS2		X	X	X		X	X	X
POLD1		X	X					
POLE		X						
POT1					X			
PTEN	X	X	X	X	X	X	X	X
RAD51C	X					X		X
RAD51D	X					X		X
RB1					X			
SLC45A2					X			
SMAD4		X		X			X	
STK11	X	X	X	X		X	X	X
TERT					X			
TP53	X	X	X	X	X	X	X	X
TSC1							X	
TSC2							X	
TYR					X			
VHL							X	