

## Indications for Testing — Hereditary Cancer

Hereditary cancer testing guidelines are developed by the National Comprehensive Cancer Network (NCCN) and other professional organizations to determine patients to consider for hereditary cancer testing. The list of indications for germline testing below are based on these guidelines, broken up by cancer type.



### BREAST CANCER<sup>1,2</sup>

#### When to consider testing:

- Breast cancer diagnosed  $\leq 65$  years of age
- Triple negative (ER-/PR-/HER2/neu-) breast cancer diagnosed at any age
- Bilateral or multiple primary breast cancers
- Lobular breast cancer with a personal or family history of diffuse gastric cancer
- To aid in treatment decisions
- Male breast cancer at any age
- Close relative with male breast cancer
- Ashkenazi Jewish ancestry with breast cancer at any age
- Personal history of breast cancer and 1 or more cases of breast cancer diagnosed at  $\leq 50$  years of age, male breast cancer, ovarian cancer, pancreatic cancer, or metastatic/high-risk prostate cancer in the family
- 3 or more total diagnoses of breast and/or prostate cancer in the family



### UROLOGIC CANCERS<sup>2</sup>

#### When to consider testing:

- Metastatic or high-risk group prostate cancer at any age
- Intermediate-risk group prostate cancer with intraductal/criform histology
- Personal history of prostate cancer and  $\geq 1$  family member(s) on the same side of the family with breast cancer ( $\leq 50$  years of age or triple negative), ovarian cancer, male breast cancer, metastatic or high risk group prostate cancer, or pancreatic cancer
- Personal history of prostate cancer and  $\geq 3$  family members on the same side of the family with breast or prostate cancer
- Ashkenazi Jewish ancestry with prostate cancer at any age
- Tumor testing showing mismatch repair deficiency (MSI-High, loss of MMR expression by IHC)



### GASTROINTESTINAL CANCERS<sup>2,3</sup>

#### When to consider testing:

- Pancreatic cancer diagnosed at any age
- Close relative with pancreatic cancer
- Colorectal cancer at any age
- Multiple primary cancers in one person (e.g. two primary colorectal cancers or colorectal and endometrial cancer)
- Tumor testing showing mismatch repair deficiency (MSI-High, loss of MMR expression by IHC)
- 10 or more GI polyps over one's lifetime (adenomatous, hamartomatous, and/or other types of polyps)



### GYNECOLOGIC CANCERS<sup>2,3</sup>

#### When to consider testing:

- Ovarian, fallopian tube, or primary peritoneal cancer at any age
- Close relative with ovarian cancer
- Early-onset endometrial cancer (diagnosed  $< 50$  years of age)
- Multiple primary cancers in one person (e.g. endometrial & colorectal cancer)
- 3 or more family members with Lynch syndrome-related cancers (e.g., colorectal, uterine, ovarian, stomach cancer, etc.)
- Tumor testing showing mismatch repair deficiency (MSI-High, loss of MMR expression by IHC)

This list is provided for informational purposes. The decision to order a hereditary cancer test should be based on the clinician's discretion. Please contact Tempus or consult the NCCN/ASCO-SSO guidelines for further information.

## Other Considerations for Testing:<sup>2,3</sup>

- Individuals with any blood relative with a known pathogenic/likely pathogenic variant in a cancer susceptibility gene
- A mutation identified on tumor genomic testing that has clinical implications if also identified in the germline
- An affected individual in whom germline testing would aid in systemic therapy and surgical decision-making
- Family history of cancer:
  - 3 or more family members with colorectal, endometrial, ovarian, and/or stomach cancer
  - 3 or more family members with breast, ovarian, pancreatic, and/or prostate cancer
- An affected or unaffected individual who otherwise does not meet other testing criteria but who has a probability of >2.5% of a BRCA1/2 pathogenic variant based on prior probability models (eg, Tyrer-Cuzick, BRCAPro, CanRisk)
- An individual with a ≥5% risk of having an MMR gene pathogenic variant based on predictive models (i.e. PREMM5, MMRpro, MMRpredict)

<sup>1</sup> Kurian AW, Bedrosian I, Kohlmann WK, Somerfield MR, Robson ME. Germline testing in patients with breast cancer: ASCO-Society of Surgical Oncology guideline Q and A. *JCO Oncol Pract*. Published online January 22, 2024.

<sup>2</sup> Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines<sup>®</sup>) for Genetic / Familial High- Risk Assessment: Breast, Ovarian, and Pancreatic V.2.2024 © National Comprehensive Cancer Network, Inc. 2021. All rights reserved. Accessed January 9, 2024. To view the most recent and complete version of the guidelines, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use of application and disclaims any responsibility for their application or use in any way.

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