

ASSESSING EVERY PATIENT'S CANCER FAMILY HISTORY  
IS ESSENTIAL IN THE DELIVERY OF OPTIMAL CARE



Introducing Myriad myRisk™ Hereditary Cancer

Accurate knowledge of cancer risk.  
Actionable direction for patient management.



Powered by  myVision™

MYRIAD  
**myRisk™**  
Hereditary Cancer



# Knowing your patients' hereditary cancer risk is critical

- Patient management recommendations are vastly different for those with a gene mutation associated with hereditary cancer risk
- Reduce the occurrence of a first or subsequent primary cancer with comprehensive hereditary cancer risk assessment

## The Society of Gynecologic Oncology (SGO) recognizes the benefits of hereditary cancer panels<sup>1</sup>

- Cost effective approach
- Improved efficiency
- More assurance in test results

## Introducing Myriad myRisk™ Hereditary Cancer

### Accurate knowledge

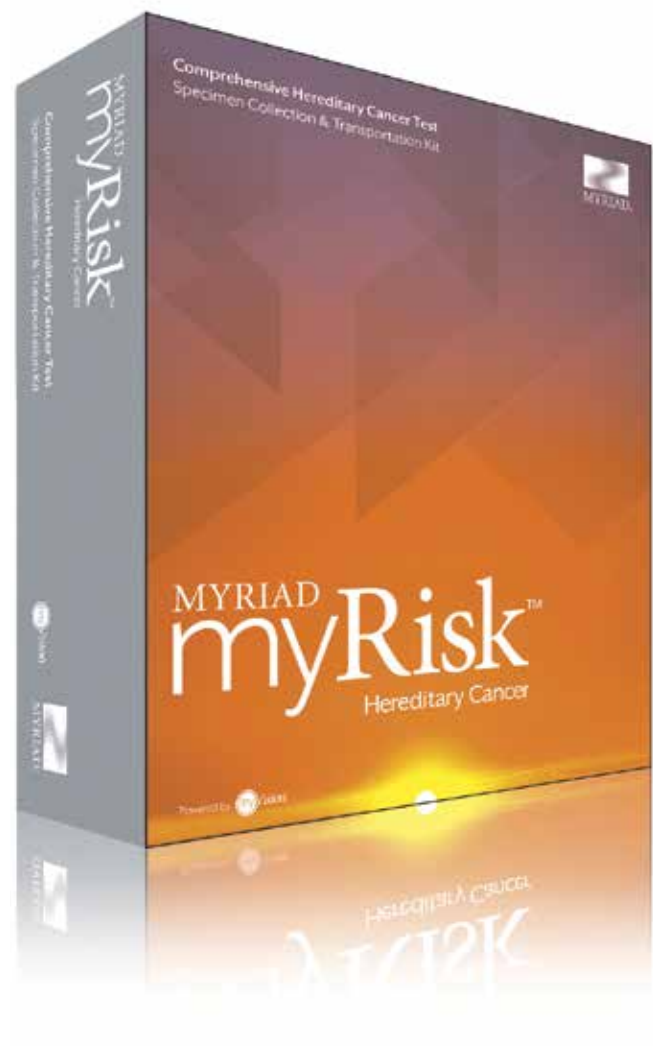
- A revolutionary hereditary cancer panel test that blends accurate genetic information and personal/family cancer history

### Actionable direction

- Specific management based on medical society guidelines are provided for both positive and negative results

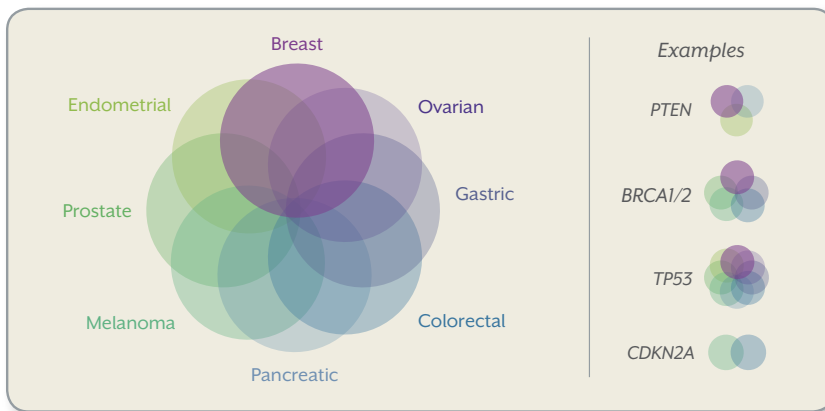
### Industry-leading turnaround time

- Average 14 to 21 days



# Mutation detection is increased 40% to 50% vs single-syndrome testing<sup>2,3</sup>

- Single-syndrome testing may not detect important genes potentially overlapping in cancer risks<sup>4</sup>
- Myriad myRisk includes 25 genes associated with eight major cancers based on heritable contribution and syndrome overlap
- Clinically actionable genes with established cancer risks are analyzed



Each cancer site is associated with multiple hereditary cancer syndromes. Gene panel includes: APC, ATM, BARD1, BMPR1A, BRCA1, BRCA2, BRIP1, CDH1, CDKN2A, CDK4, CHEK2, EPCAM, MLH1, MSH2, MSH6, MUTYH, NBN, PALB2, PMS2, PTEN, RAD51C, RAD51D, SMAD4, STK11 and TP53.

## Associated Cancers\*

| Genes                          | Breast | Ovarian | Colorectal | Endometrial | Melanoma | Pancreatic | Gastric | Prostate | Other |
|--------------------------------|--------|---------|------------|-------------|----------|------------|---------|----------|-------|
| BRCA1, BRCA2                   | ●      | ●       |            |             | ●        | ●          |         | ●        |       |
| MLH1, MSH2, MSH6, PMS2, EPCAM† |        | ●       | ●          | ●           |          | ●          | ●       |          | ●     |
| STK11                          | ●      | ●       | ●          | ●           |          | ●          | ●       |          | ●     |
| APC, BMPR1A, SMAD4             |        |         | ●          |             |          | ●          | ●       |          | ●     |
| MUTYH                          |        |         | ●          |             |          |            |         |          | ●     |
| CDK4, CDKN2A                   |        |         |            |             | ●        | ●          |         |          |       |
| TP53                           | ●      | ●       | ●          | ●           | ●        | ●          | ●       | ●        | ●     |
| PTEN                           | ●      |         | ●          | ●           |          |            |         |          | ●     |
| CDH1                           | ●      |         | ●          |             |          |            | ●       |          |       |
| PALB2, ATM                     | ●      |         |            |             |          | ●          |         |          |       |
| CHEK2                          | ●      |         | ●          |             |          |            |         | ●        |       |
| NBN                            | ●      |         |            |             |          |            |         | ●        |       |
| BARD1                          | ●      |         |            |             |          |            |         |          |       |
| BRIP1, RAD51C                  | ●      | ●       |            |             |          |            |         |          |       |
| RAD51D                         |        | ●       |            |             |          |            |         |          |       |

\*Gene mutations may be associated with other cancers and clinical features.

†Large rearrangement only

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# The revolutionary report provides recommendations for managing patients based on genetic and familial cancer risks

The image displays three overlapping screenshots of Myriad's myRisk reports. The top-left report is the 'myRisk Genetic Result', which shows a 'RESULT: POSITIVE—CLINICALLY SIGNIFICANT MUTATION IDENTIFIED' for a BRCA1 c.68\_69del (p.Glu23Valfs\*17) mutation. The top-right report is the 'myRisk Management Tool', which provides a 'FINDINGS: NO VARIANT(S) OF UNCERTAIN SIGNIFICANCE (VUS) IDENTIFIED' and lists associated cancer risks: 'HIGH RISK: Female Breast, Ovarian' and 'ELEVATED RISK: Pancreatic'. The bottom-right report is the 'myRisk Cancer Syndrome (HBOC)', which includes a table comparing cancer and general population risks for BRCA1.

| CANCER RISK   | RISK FOR GENERAL POPULATION | RELATED TO |
|---------------|-----------------------------|------------|
| Up to 51%     | 19%                         | BRCA1      |
| Up to 87%     | 73%                         | BRCA1      |
| 20%           | 2.0%                        | BRCA1      |
| Up to 23%     | 0.2%                        | BRCA1      |
| Up to 44%     | 0.7%                        | BRCA1      |
| 12.7%         | <1%                         | BRCA1      |
| Elevated Risk | 1.0%                        | BRCA1      |

## Every report includes

- myRisk Genetic Result
- myRisk Management Tool
  - Medical society guidelines-based management considerations for both POSITIVE and NEGATIVE results
  - Management considerations may include:
    - Improved screening(s)
    - Preventive medication(s)
    - Risk-reducing procedure(s)
    - Considerations for family
    - Other management changes
  - Family history analysis (National Comprehensive Cancer Network [NCCN], the Claus model, International Cancer of the Pancreas Screening [CAPS], Amsterdam Criteria, and others)

# Red flags to further assess hereditary cancer

An individual with a personal or family history of **any 1 of the following:**

**MULTIPLE**  
2 or more cancers on the same side of the family\*

**YOUNG**  
Any 1 of the following cancers at age 50 or younger

**RARE**  
Any 1 of these rare presentations at any age

|                    | MULTIPLE | YOUNG | RARE |
|--------------------|----------|-------|------|
| Breast             | ●        | ●     | †    |
| Prostate           | ●        |       |      |
| Melanoma           | ●        |       |      |
| Ovarian            | ●        |       | ●    |
| Pancreatic         | ●        |       |      |
| Colorectal         | ●        | ●     | ‡    |
| Endometrial        | ●        | ●     | ‡    |
| Gastric            | ●        |       |      |
| Other <sup>§</sup> | ●        |       |      |

● Hereditary Breast and Ovarian Cancer (HBOC)-associated cancers<sup>||</sup>

● Lynch-associated cancers<sup>¶</sup>

Assessment criteria based on medical society guidelines. For these guidelines, go to [www.MyriadPro.com/guidelines](http://www.MyriadPro.com/guidelines). Family members include first-, second-, and third-degree blood relatives on both the mother's and the father's sides. People of certain ancestries may have a greater risk for hereditary cancer syndromes (eg, Ashkenazi Jewish ancestry).

\*2 or more: breast/ovarian/prostate/pancreatic cancer; 2 or more: colorectal/endometrial/ovarian/gastric/pancreatic/other cancer (ie, ureter/renal pelvis, biliary tract, small bowel, brain, sebaceous adenomas); 2 or more: melanoma/pancreatic cancer.

†Male breast cancer, triple-negative breast cancer.

‡Abnormal MSI/IHC, MSI-associated histology. Presence of tumor-infiltrating lymphocytes, Crohn's-like lymphocytic reaction, mucinous/signet-ring differentiation, or medullary growth pattern.

§Other Lynch syndrome-associated cancers, 10 or more gastrointestinal adenomatous polyps.

||HBOC syndrome-associated cancers include breast (including ductal carcinoma in situ [DCIS]), ovarian, pancreatic, and aggressive prostate cancers.

¶Lynch syndrome-associated cancers include colon/rectal, uterine/endometrial, ovarian, stomach/gastric, kidney/urinary tract, biliary tract, small bowel, pancreas, brain, and sebaceous adenoma cancers.

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# Optimize patient care with accurate results you can trust

## From Myriad, your trusted advisor

- World leader in hereditary cancer
- 20+ years of experience in cancer genetic testing
- 1 million+ patients tested
- 60,000+ providers have tested with Myriad

## Best-in-class performance

### >99.92% Analytical Sensitivity<sup>5\*</sup>

- Confidence as the gold standard for accuracy
- Validation studies show 100% concordance with Sanger sequencing and large rearrangement analysis

## Test optimization

- Optimized NGS primer library design to increase test sensitivity and specificity
- Complemented by multiple customized techniques (eg, targeted microarray)



## Powered by myVision™ variant classification

- Lifetime commitment for accurate variant interpretations
- >\$1 million invested in developing variant classification techniques and a curated database supported by 30+ scientists
- >99% certainty for variant reclassification<sup>6,7</sup>

\*>99.92% with lower bound 95% confidence interval.

### References:

1. SGO Clinical Practice Statement: Next Generation Cancer Gene Panels Versus Gene by Gene Testing. Society of Gynecologic Oncology Web site. <https://www.sgo.org/clinical-practice/guidelines/next-generation-cancer-gene-panels-versus-gene-by-gene-testing/>. Published March 2014. Accessed May 14, 2014.
2. Allen B, Tung N, Battelli C, et al. Prevalence of Gene Mutations among Hereditary Breast and Ovarian Cancer Patients Using a 25 Gene Panel. Poster presented at: 2014 ACMG Annual Clinical Genetics Meeting, March 25-29, 2014, Nashville, TN.
3. Yurgelun MB, Allen B, Kaldate RR, et al. Multigene panel testing in patients suspected to have Lynch syndrome. Poster presented at: American Society of Clinical Oncology 50th Annual Meeting, May 30-June 3, 2013, Chicago, IL.
4. Saam J, Arnell C, Moyes K, Roundy KM, Marino E, Wenstrup RJ. Evaluating the personal and family history overlap between hereditary cancer syndromes. Poster presented at: National Comprehensive Cancer Network (NCCN) 19th Annual Conference, March 13-15, 2014, Hollywood, FL.
5. Roa B, Bowles K, Bhatnagar S, et al. Development of a next generation sequencing panel to assess hereditary cancer risk that includes clinical diagnostic analysis of the *BRCA1* and *BRCA2* genes. Poster presented at: American Society of Human Genetics 2013 Annual Meeting, October 22-26, 2013, Boston, MA.
6. Bowles KR, Morris B, Hughes E, et al. A clinical history weighting algorithm accurately classifies *BRCA1* and *BRAC2* variants. Poster presented at: American Society of Human Genetics 2013 Annual Meeting, October 22-26, 2013, Boston, MA.
7. Eggington J, Bowles K, Moyes K, et al. A comprehensive laboratory-based program for classification of variants of uncertain significance in hereditary cancer genes. *Clin Genet*. 2013 Nov 8. doi: 10.1111/cge.12315. [Epub ahead of print].

# The Myriad advantage: Best in class support



## Financial support

- Most appropriate patients pay \$0
- If your patients have concerns when they receive an invoice from Myriad, they can call the telephone number on the invoice. We guarantee that we will work together to reach a solution
- Uninsured and underinsured patients who meet specific financial and medical criteria are eligible for Myriad's Financial Assistance Program



## Patient support

- Through the online MySupport360® program, Myriad connects your patients with a wealth of helpful information, expert guidance, and the ability to share their experiences with others



## Medical support

- A team of highly trained medical specialists is available for consultation
- Support is accessible by phone, e-mail, and in person

Visit [www.MyriadPro.com](http://www.MyriadPro.com) for extensive medical education and resources



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