

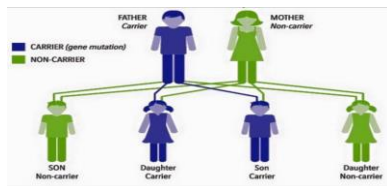
# Hereditary Cancer Risk Assessment

BRANDI K. PRESTON, FOUNDER  
HEREDITARY CANCER FOUNDATION

## Disclosures

- ▶ Patient Advocate Speaker, Myriad Genetics
- ▶ Support Ambassador, Bright Pink
- ▶ Founder, Hereditary Cancer Foundation
- ▶ City of Omaha, Mayor's Office
  - ▶ Bachelor's in Political Science
  - ▶ Not here to take pothole reports ;)

## Genetics 101



## Benefits of Cancer Genetic Testing

- ▶ Allows for individualized medical management
  - ▶ Surveillance
  - ▶ Risk reduction/prevention
- ▶ Accurate risk stratification
- ▶ Alleviates uncertainty and anxiety

## Risk Stratification

- ▶ **General Population Risk**
  - ▶ Cancer occurs by chance
  - ▶ Negative for a known deleterious mutation in the family ("true negative")
- ▶ **Familial Cancer Risk**
  - ▶ Likely caused by a combination of genetic, lifestyle and environmental factors
- ▶ **Hereditary Cancer Risk**
  - ▶ Often occurs when an altered gene is passed from parent to child
  - ▶ More likely to have relatives with the same or related types of cancers

**12-14%**  
of all breast cancers are caused  
by an inherited gene mutation<sup>1,2</sup>

SITE	ANNUAL INCIDENCE <sup>3</sup>	HEREDITARY CANCER ANNUAL INCIDENCE <sup>4</sup>
Breast	255,000	35,700

<sup>1</sup>Hereditary Cancer Society, 2007   
<sup>2</sup>Shattuck AL, et al. Hereditary breast cancer: assessing the individual's risk. J Natl Cancer Inst. 2007;99(10):750-758.   
<sup>3</sup>Shattuck AL, et al. Hereditary breast cancer: assessing the individual's risk. J Natl Cancer Inst. 2007;99(10):750-758.   
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## Hereditary Cancer “Red Flags”

### MULTIPLE CANCERS

Any 2 or more cancers on the same side of the family

- Breast
- Ovarian
- Prostate
- Pancreatic

### YOUNG CANCERS

Any 1 of the following cancers at age 50 or younger

- Breast

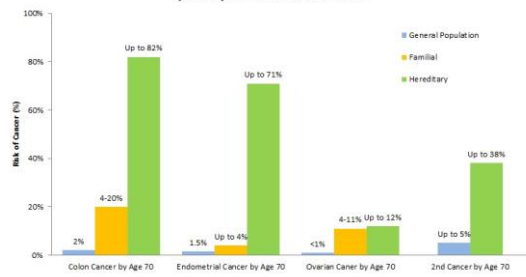
### RARE CANCERS

Any 1 of the following cancers at any age

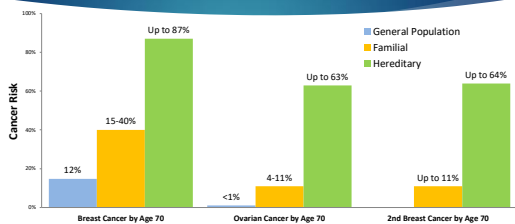
- Ovarian
- Male Breast
- Triple Negative Breast

Certain ancestries may have increased risk for hereditary cancer syndromes (e.g., Ashkenazi Jewish ancestry)

## Lynch Syndrome Cancer Risks



## Breast and Ovarian Cancer Risks



## Risk Reduction for High Risk Women

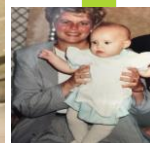
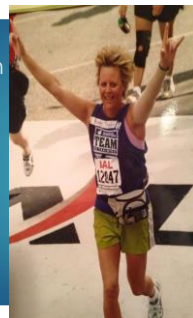
- **Oral Contraceptive**
  - Reduce ovarian cancer risk by as much as 60% in BRCA mutation carriers
- **Prophylactic Surgery**
  - Recommend bilateral salpingo-oophorectomy at age 35-45
    - Up to 96% ovarian cancer risk reduction in BRCA carriers
    - Can reduce breast cancer risk up to 65% for BRCA carriers
  - Bilateral Mastectomy
    - Up to 90% breast cancer risk reduction

“  
To identify a woman as a carrier only after she develops cancer is a failure of cancer prevention

DR. MARY-CLAIRE KING

## Kamie K Preston

My mom dx with breast cancer age 35  
Mastectomy, chemo, radiation  
REMISSION!  
2nd dx at age 38  
Mayo Clinic, Jacksonville  
Genetic Testing – BRCA1+



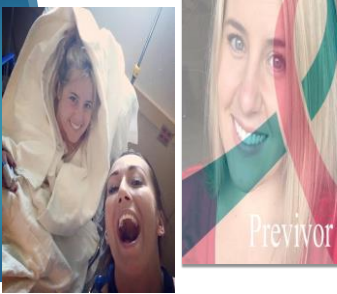
**BRCA1+**

Prophylactic, nipple-sparing, bilateral mastectomy

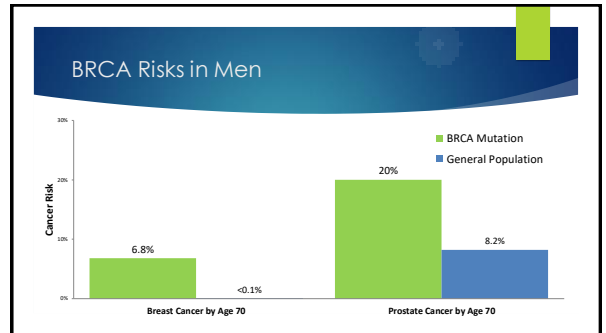
Breast cancer risk reduced from 87% to less than 2%

Annual transvaginal ultrasound and CA-125 to monitor ovaries

Will have oophorectomy at age 35



Previvor




“


**More than 90% of the BRCA mutation carriers in the United States remain unidentified.**

KRISTIN JENKINS  
MEDSCAPE MEDICAL NEWS, 2017

Yes, men too!



It's not the gene to live with...



### Peer-Reviewed Guidelines Support Panel Testing

- ▶ The following societies recognize the benefits of hereditary cancer panels
  - ▶ Society of Gynecologic Oncology (SGO)
  - ▶ National Comprehensive Cancer Network (NCCN)
  - ▶ American Society of Clinical Oncology (ASCO)
  - ▶ American Society of Breast Surgeons (ASBS)
  - ▶ National Society of Genetic Counselors (NSGC)

## ACOG Committee Opinion 478, Reaffirmed 2015

- ▶ "Family history plays a very important role in assessing the risk of inherited medical conditions and single gene disorders..."
- ▶ "It is recommended that ALL women receive a family history evaluation as a screening tool for inherited risk. Family history information should be reviewed and updated regularly, especially when there are significant changes to family history."

## USPSTF Recommends Hereditary Cancer Screening & Diagnosis be offered by Primary Care Physicians

### Preventive Healthcare Services

#### GRADE A

- ▶ High Blood Pressure in Adults Screening

#### GRADE B

- ▶ Obesity in Adults Screening and Management
- ▶ Depression in Adults Screening
- ▶ Diabetes Screening
- ▶ Hereditary Breast and Ovarian Cancer Screening

"Genetic counseling about BRCA mutation testing may be done by trained health professionals, **including trained primary care providers.**"

USPSTF, December 2013

## GINA ACT 2008

- ▶ Genetic Information Nondiscrimination Act of 2008
- ▶ GINA prohibits the use of genetic information in health insurance and employment
- ▶ Federal and state laws offer many protections against genetic discrimination
  - ▶ Federal HIPAA legislation
  - ▶ Majority of states have additional laws. (Individual state laws can be found at [cancerlegalresources.org](http://cancerlegalresources.org))

## Affordable Care Act

- ▶ BRCA testing covered as a "preventive care service" under the Affordable Care Act
  - ▶ Unaffected Patients
  - ▶ With appropriate risk factors

## Nonprofit Resources

- ▶ Hereditary Cancer Foundation
  - ▶ [www.hereditarycancer.org](http://www.hereditarycancer.org)
- ▶ Bright Pink
  - ▶ [www.brightpink.org](http://www.brightpink.org)
- ▶ One in Forty
  - ▶ [www.oneinforty.org](http://www.oneinforty.org)
- ▶ Facing Our Risk of Cancer Empowered
  - ▶ [www.facingourrisk.org](http://www.facingourrisk.org)