

**BCRC Learning Collaborative:
How can genetic testing for hereditary
cancer impact patients and families?
Piri Welcsh, PhD
VP Education at FORCE**

FORCE
Facing Hereditary Cancer EMPOWERED

Percentage of population with an inherited mutation

Cancer is Common, Most Cancer is Not Hereditary



17

MILLION

people **DIAGNOSED** with
CANCER living in the
UNITED STATES*

**BREAST
CANCER**

most common **CANCER**
diagnosed in **WOMEN**
in the **UNITED STATES***

**PROSTATE
CANCER**

most common **CANCER**
diagnosed in **MEN**
in the **UNITED STATES***

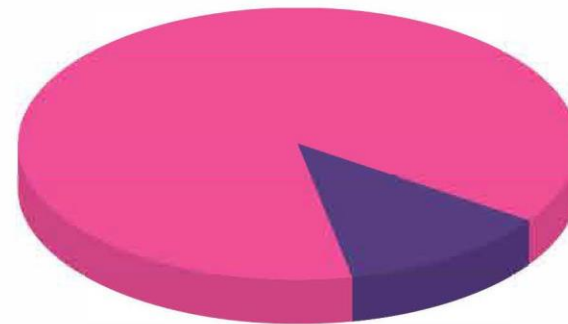


1.8 M

..... people
NEWLY-DIAGNOSED
with **CANCER** in the
UNITED STATES in 2020*

1.5 M

people **DIAGNOSED** with
COLORECTAL CANCER
..... living in the
UNITED STATES*



10% of all **CANCERS** are **CAUSED**
by **INHERITED MUTATIONS**

90% of all **CANCERS** are
NOT CAUSED by
INHERITED MUTATIONS

*Source: American Cancer Society

Some Mutations are Common Among Inherited Cancers

Inherited breast cancer

BRCA1 and BRCA2

1 in 400

Americans

1 in 40

Ashkenazi Jewish People

Other mutations
also increase
BREAST CANCER
risk:

ATM	NF1
BARD1	NBN
BRIP1	PALB2
CHEK2	PTEN
CDH1	TP53
RAD51D	STK11



risk of

**BREAST, OVARIAN,
PROSTATE,
PANCREATIC and
OTHER CANCERS**

Inherited colorectal cancer

Lynch Syndrome

1 in 300

Americans



risk of

**COLORECTAL,
OVARIAN,
ENDOMETRIAL and
OTHER CANCERS**

5 genes,
1 syndrome:

MLH1, MSH2, MSH6,
PMS2 or EPCAM

Other mutations
also increase
COLORECTAL CANCER
risk:

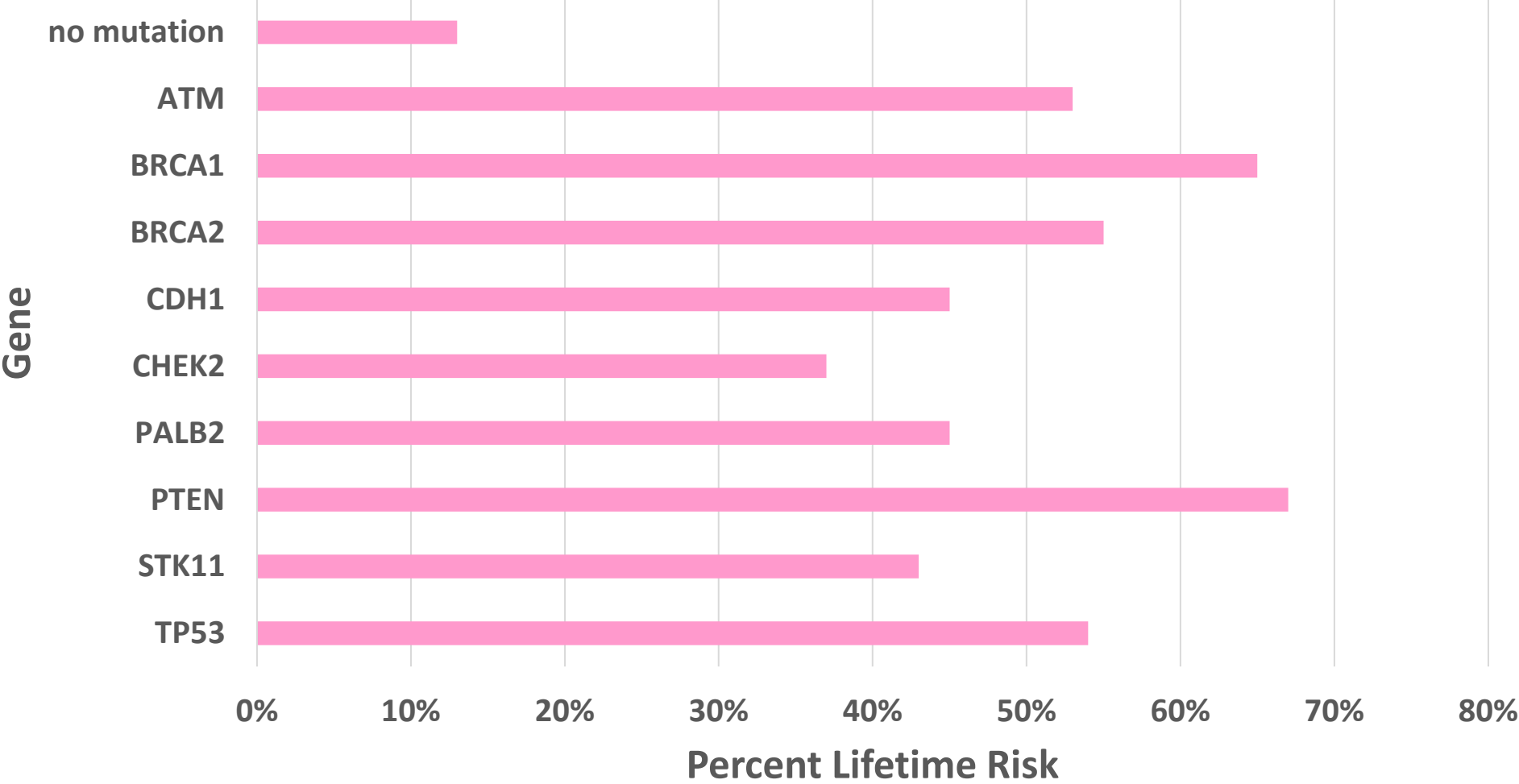
CHEK2	MUTYH
PTEN	STK11
TP53	

Annual Incidence of Hereditary Cancer

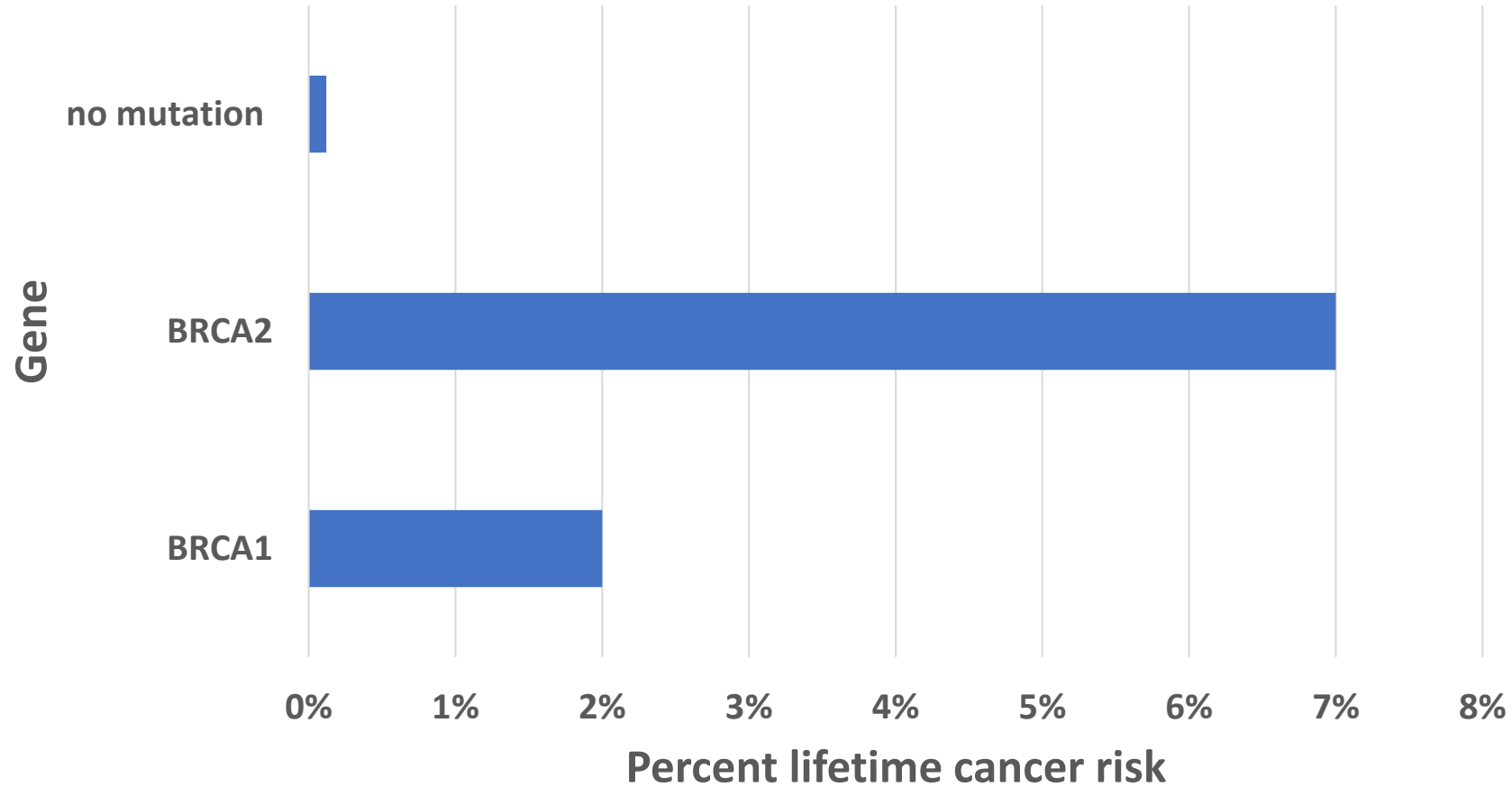
SITE	ANNUAL INCIDENCE*	% of HEREDITARY CANCER	# PATIENTS WITH HEREDITARY CANCER
Breast	255,000	12-14%	35,700
Ovary	22,000	24%	5,300
Uterus	61,000	9%	5,400
Colorectal	135,000	10%	13,500

1. Lancaster, J et al. Society of Gynecologic Oncology statement on risk assessment for inherited gynecologic cancer predispositions. Gynecologic Oncology 136 (2015) 3-7. 2. Walsh, T et al. Proceedings of the National Academy of Sciences of the United States of America. 18032-18037, November 1, 2011. Vol 108, no 44. 3. Lu KH, et al. Prospective determination of prevalence of Lynch syndrome in young women with endometrial cancer. J Clin Oncol 2007 Nov 20; 25(33): 5158-64. <http://www.ncbi.nlm.nih.gov/pubmed/17925543> 4. Ring, K. et al., Hereditary cancer panel testing in an unselected endometrial carcinoma cohort. Society for Gynecologic Oncology Abstract 626I, March 19, 2016. 5. Yurgelun, M et al. Prevalence of germline cancer susceptibility gene mutations in a consecutive series of 799 colorectal cancer (CRC) patients (pts). Abstract presented at ASCO 2016. J Clin Oncol 34, 2016 (suppl; abstr 1501)

Lifetime Risk of Breast Cancer in Women with Inherited Mutations



Lifetime Risk of Breast Cancer in Men with Inherited Mutations



90%

*of the millions of people
with a genetic mutation
causing/predisposing
them to hereditary
cancer are unaware
of their risk.*

Let's change that equation.

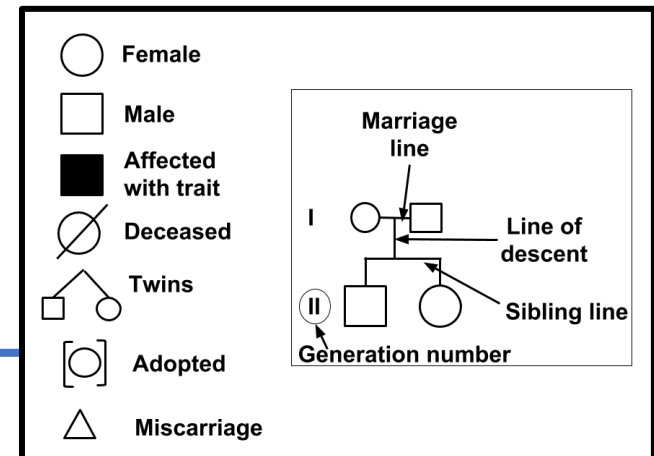
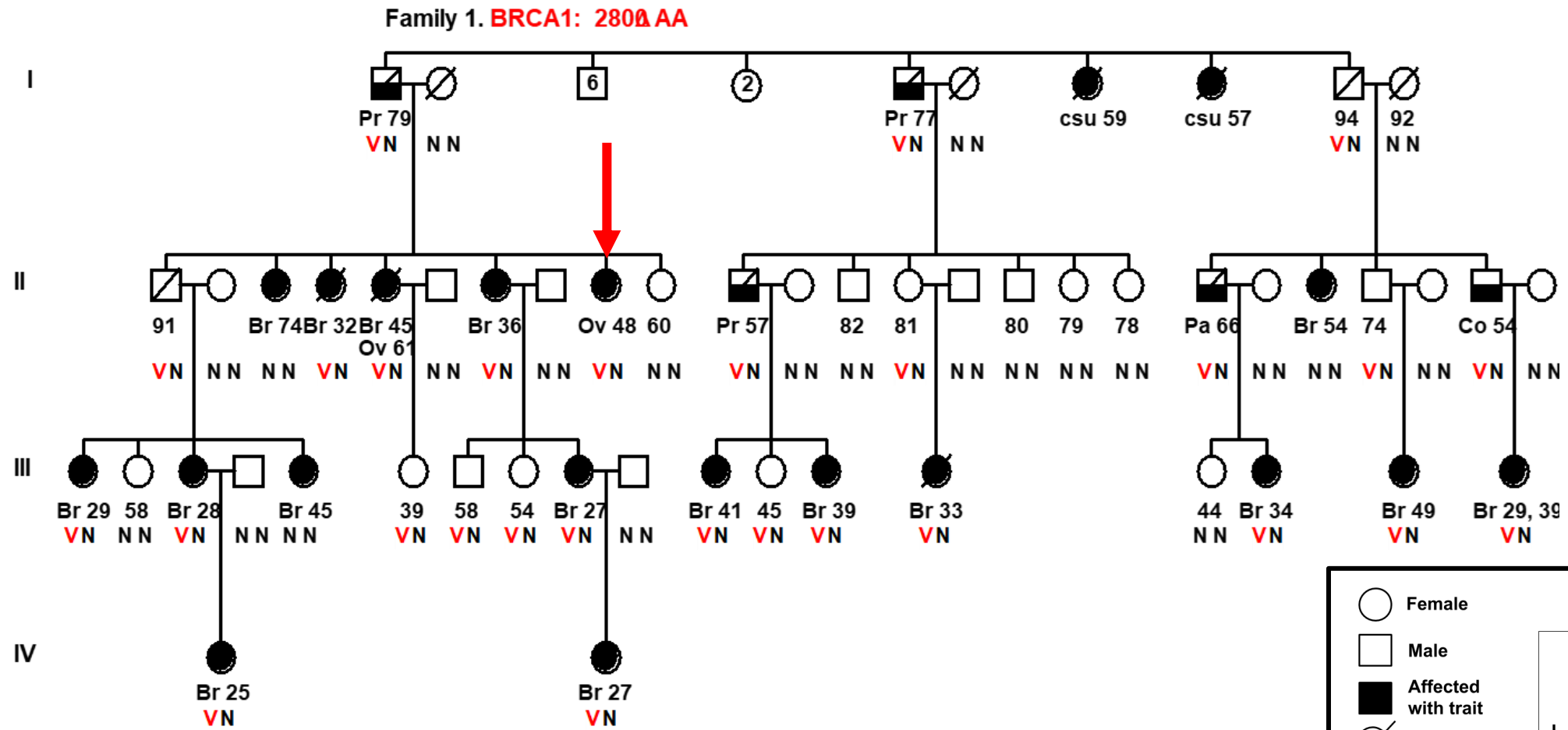


No descendants? No genetic testing? NO

Red Flags for Hereditary Cancers

- **Early onset cancer** (breast, colon, or endometrial cancer under age 50)
- **Multiple primary cancers in one person** (bilateral breast cancer)
- **Certain pathology** (triple-negative breast cancer, microsatellite instability in colon cancer)
- **Rare cancers** or cancer associated with hereditary risk (male breast cancer, ovarian cancer, pancreatic cancer, metastatic prostate cancer)
- **Strong family history of cancer**
 - More cancers in a family than would be expected by chance, two or more generations affected.
 - Pattern of cancer associated with a known cancer syndrome (e.g., breast, ovarian, and pancreatic cancer; colon, endometrial, and ovarian cancer).

BRCA1 Family 1 taught us a lot!



Hereditary Cancers Tend to Develop at a Younger Age



Higher Risk for a Second or Third Cancer Diagnosis



**Genetic Test Results
May Affect
Treatment Options
and Prognosis**



People with Inherited Mutations Can Pass Their Mutations On to Their Children



You are not alone

SUPPORT



EDUCATION



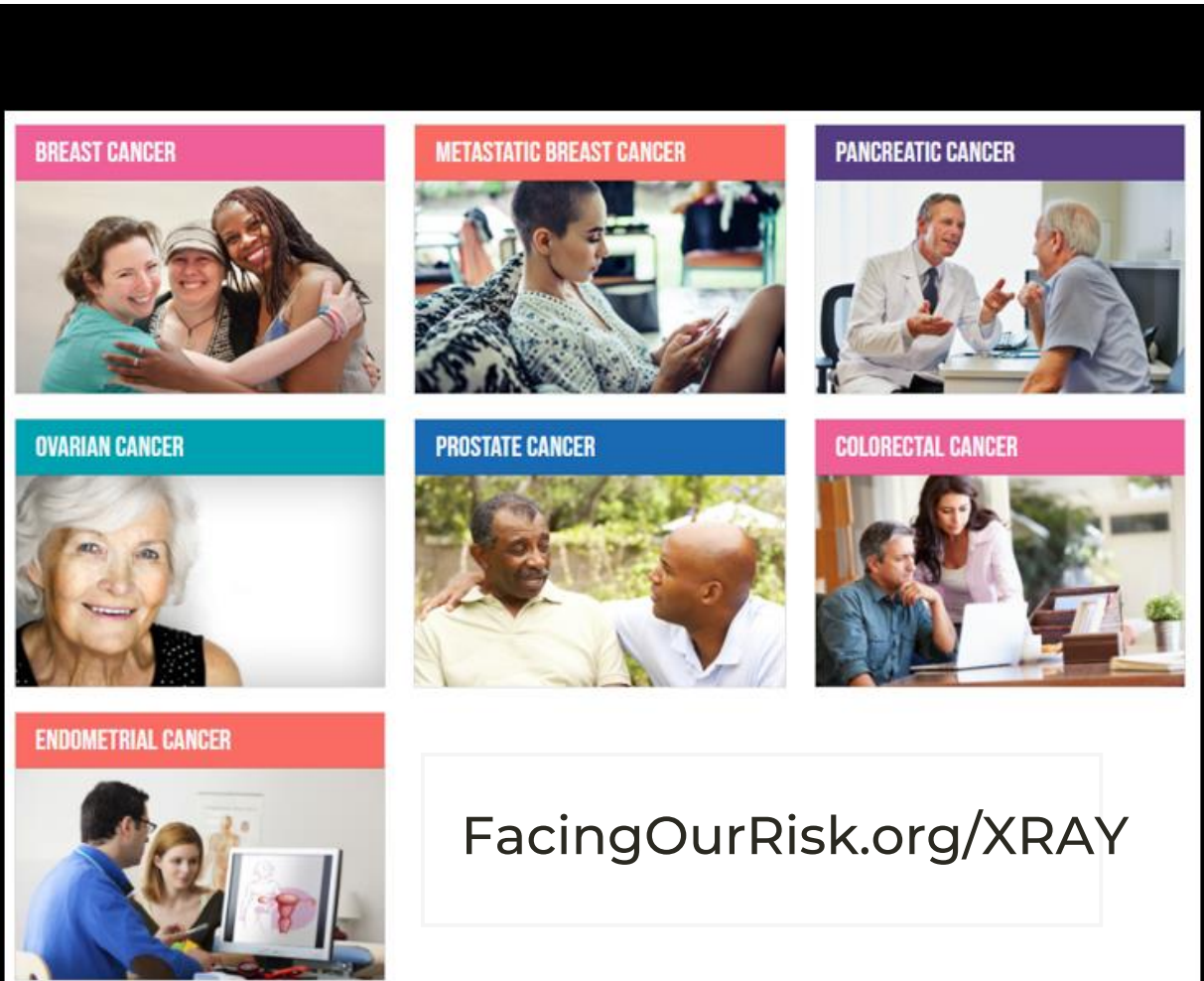
RESEARCH



ADVOCACY & PUBLIC POLICY



XRAY (eXamining the Relevance of Articles for You)



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BREAST CANCER



METASTATIC BREAST CANCER



COLORECTAL CANCER



ENDOMETRIAL CANCER



OVARIAN CANCER



PANCREATIC CANCER



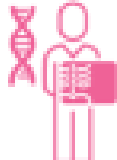
PROSTATE CANCER



HEREDITARY CANCER RISK



FORCE Search and Enroll Tool

Treatment  Choose a cancer type to search for treatment clinical trials: > Breast Cancer > Colorectal Cancer > Endometrial Cancer > Melanoma > Ovarian Cancer > Pancreatic Cancer > Prostate Cancer	Prevention, Detection & Risk  Search for studies looking at new ways to find or prevent cancer or find studies looking at genetic testing to measure inherited cancer risk. Search Now	Quality of Life & Wellbeing  Find studies addressing quality of life issues and interventions such as diet, weight management, treatment side effects, emotional health, fertility and menopause symptoms. Search Now
Surveys, Registries & Interviews  Find studies collecting health information, personal experiences and preferences to improve patient care and outcomes. Search Now	FORCE Research Search and Enroll Tool: https://bit.ly/hereditary-cancer-research	

Thank You! Questions?

Connect with FORCE

Website: FacingOurRisk.org

Helpline: 866-288-RISK

Email: info@FacingOurRisk.org

Twitter: @FacingOurRisk

Feel free to reach out with any questions...

Piri Welcsh, PhD

Email: piriw@facingourrisk.org

