New For You:

Updates in Testing and Treatment Options for Hereditary Breast and Ovarian Cancer

Tuesday, November 17, 2015

To listen to the presentation by phone,

Dial: 800-862-9098

Code: SHARSHERET

WELCOME

Shera Dubitsky, MEd, MA

Director of Navigation and Support Services

Sharsheret

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THANK YOU

And the Cooperative Agreement DP14-1408 from the Centers for Disease Control and Prevention

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OUR MISSION

Sharsheret is a national not-for-profit organization supporting young Jewish women and their families facing breast cancer. Our mission is to offer a community of support to women, of all Jewish backgrounds, diagnosed with breast cancer or at increased genetic risk, by fostering culturally-relevant individualized connections with networks of peers, health professionals, and related resources.

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BACKGROUND

- 1 in 40 Ashkenazi Jews carries a BRCA gene mutation
- 80% risk of breast cancer
- 40% risk ovarian cancer

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UPDATES IN TESTING AND TREATMENT OPTIONS

Sheila Solomon, MS, LGC
Genetics Program Coordinator
Sharsheret

Inherited Cancer Genetic Counselor
GeneDx

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AGENDA FOR THIS EVENING

- Welcome!
- Review and Updates in Inherited Breast Cancer and Ovarian Cancer
- Next Steps for You and Your Families

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WHAT IS GENETIC ABOUT BREAST CANCER AND OVARIAN CANCER?

- Cancer is a common disease
- Cancer can occur in family members even when there is no hereditary cause
- For some families, there is a hereditary pattern to cancer…

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RISK FACTORS FOR BREAST CANCER

- Aging
- Family History
- Personal History of Cancer
- Hormonal Factors:
  - Beginning periods before age 12
  - Later menopause (change of life)
  - Not having biological children or having them later in life
- Lifestyle Exposure

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RISK FACTORS FOR OVARIAN CANCER

- Aging
- Family History
- Personal History of Cancer
- Hormonal Factors:
  - Not having biological children
- Lifestyle Exposure

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HEREDITARY VS. SPORADIC CANCER

All cancer is genetic, but not all cancer is hereditary

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HOW MUCH BREAST CANCER AND OVARIAN CANCER IS HEREDITARY?

- 5-10% of all breast cancers are hereditary
- 25% of all ovarian cancers are hereditary
- What does this mean for ME?

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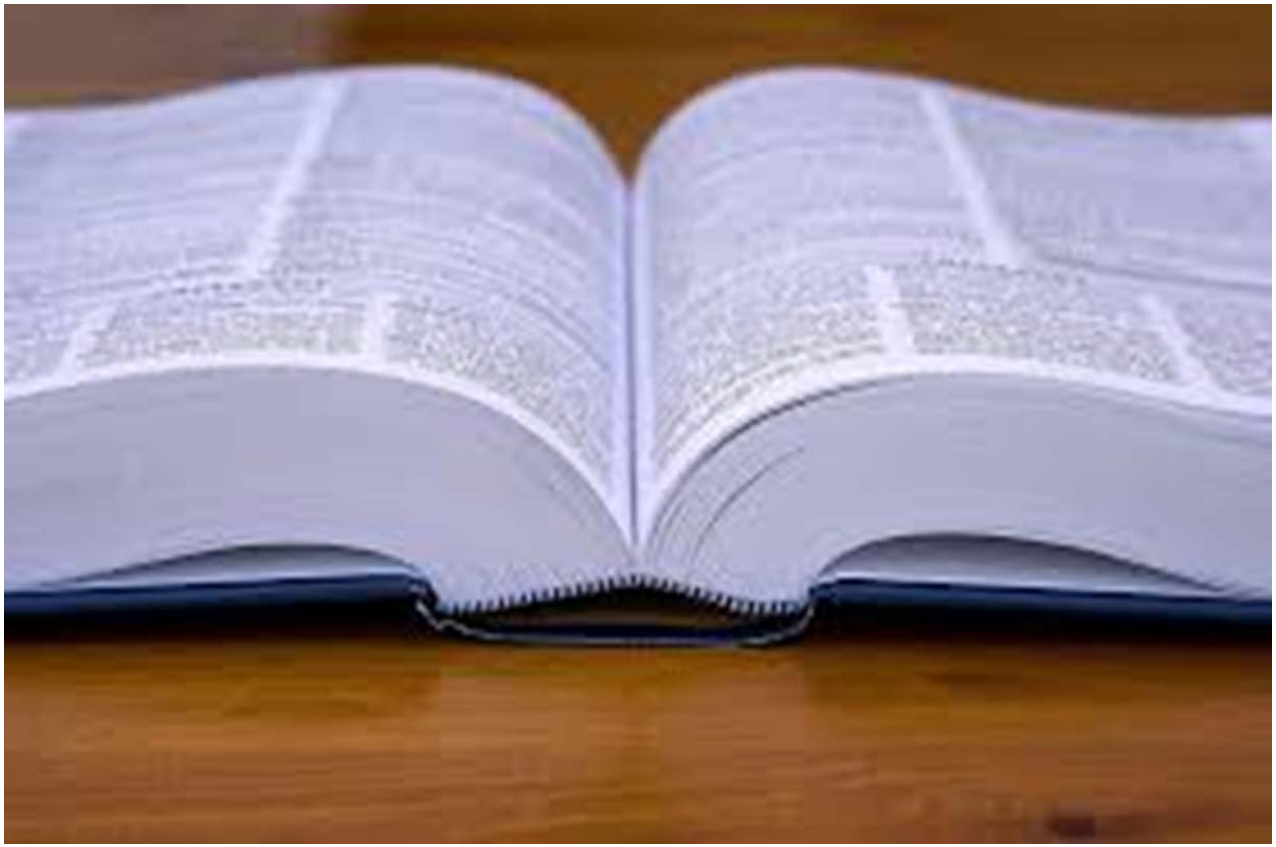
OUR GENES, LIKE BOOKS...



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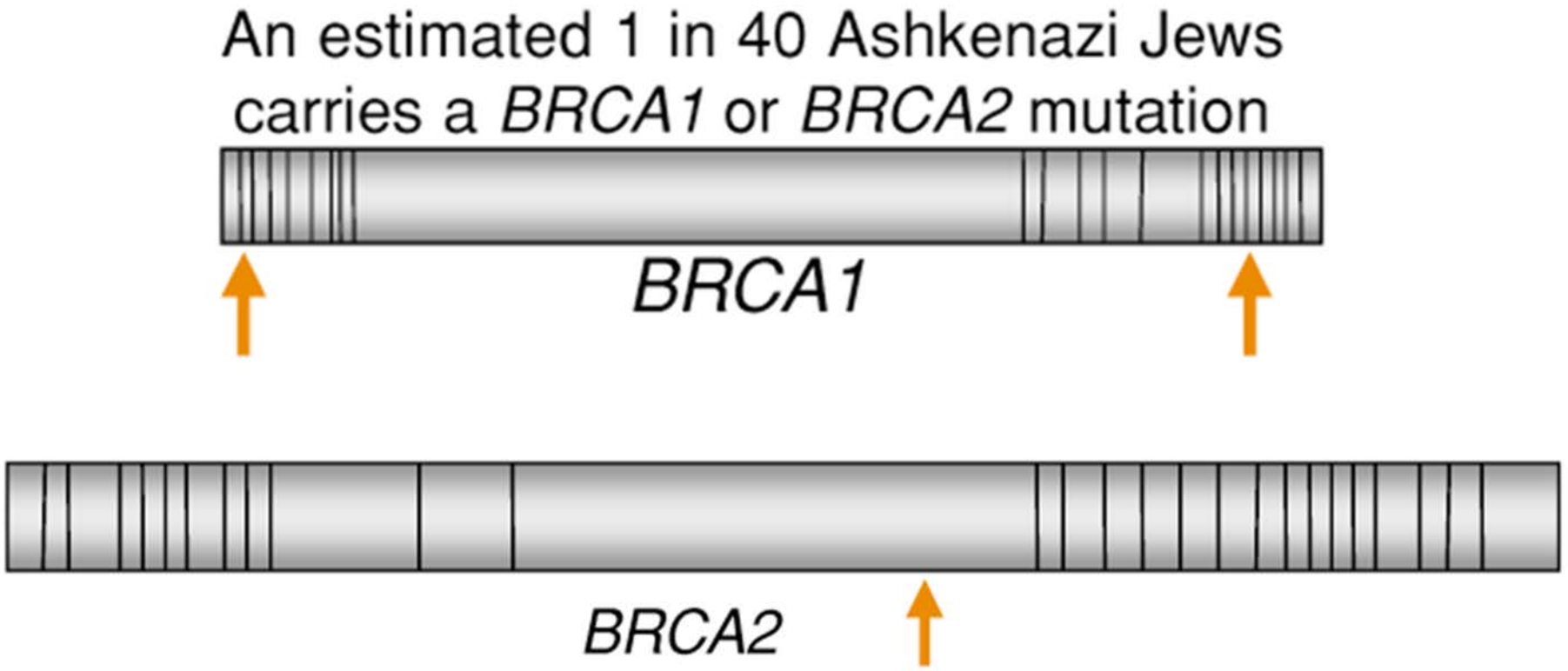
BRCA1 AND BRCA2 MUTATIONS IN THE ASHKENAZI JEWISH COMMUNITY



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WHAT IS A FOUNDER MUTATION?

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COMING TO AMERICA

1 in 40 Ashkenazi Jews with a BRCA1 or BRCA2 mutation

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CANCER RISKS IN BRCA1 AND BRCA2 MUTATION CARRIERS

- BRCA1
  - Breast 40-85%
  - Second Breast 40-60%
  - Ovarian 24-54%
- BRCA2
  - Breast 40-85%
  - Second Breast 40-60%
  - Ovarian 11-27%

Other cancer risks include: Prostate, Pancreatic, Male Breast Cancer and in some families Gastric and Melanoma

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MALE BREAST CANCER

- Accounts for ~1% of all breast cancer (rare)
- BRCA1 Mutation Carriers
  - Male breast cancer risk elevated over the general population
- BRCA2 Mutation Carriers
  - Up to 7% male breast cancer risk

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UPDATES IN BREAST CANCER AND OVARIAN CANCER GENETICS

- BRCA1 and BRCA2 are not the only players in the game – Panels are here to stay
- Lifestyle Changes
- Population Screening
- Treatment Updates
- Online Research Databases and Studies

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IT'S MORE THAN JUST BRCA1 AND BRCA2

Gene	Cancers Linked with Gene Mutations
ATM	Breast, Pancreatic, Colon
CDH1	Breast, Diffuse Gastric
CHEK2	Female and Male Breast, Ovarian, Endometrial, Colon, Others
PALB2	Female and Male Breast, Ovarian, Pancreatic
PTEN	Breast, Thyroid, Endometrial, Colon
STK11	Breast, Pancreatic, Small Intestine, Others
TP53	Breast, Brain, Leukemia, Lymphoma, Lung, Others

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INHERITED CANCER PANEL TESTING FOR MULTIPLE GENES

- Many laboratories offering Next Generation Sequencing
  - Analysis of many genes at the same time
  - Fraction of the price from years' past
- Panels provide more information in a single test
- Important to discuss options with a certified genetic counselor or genetics healthcare provider prior to ordering testing

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PANEL OUTCOMES IN JEWISH PATIENTS

- Rinsky et al (2015)
  - Studied 3,532 patients with Ashkenazi Jewish heritage undergoing Panel Testing
  - AJ Panel Testing:
    - BRCA1 and BRCA2 non-founder mutations: 20%
    - CHEK2 mutations: 16.9% (majority were founder mutation)
    - ATM mutations: 12.3%
    - Many other genes with mutations
- What does this mean to ME?

CANCER RISKS IN CHEK2

- Leedom et al (2015)
  - Studied the family histories of cancer in over 500 individuals with CHEK2 mutations
  - No significant difference between the type of mutation in CHEK2
  - Cancer risks observed in patients with CHEK2 founder mutations can be generalized to all CHEK2 mutations
  - What does this mean for ME?

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NEWER GENES LINKED WITH BREAST CANCER IN YOUNG WOMEN

- Andolina et al (2015) studied 848 young women with breast cancer diagnosed at age 45 or younger
  - Inherited cancer panel testing
  - 1 in 10 women had a BRCA1 or BRCA2 mutation
  - 61% of the mutations were not in BRCA1 or BRCA2
  - In fact, half of mutations in newer described genes
  - What does this mean for ME?

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LIFESTYLE MODIFICATIONS

- Breast self awareness
  - Normal breast look/feel
  - Personal and family history risk factors
  - Mammograms

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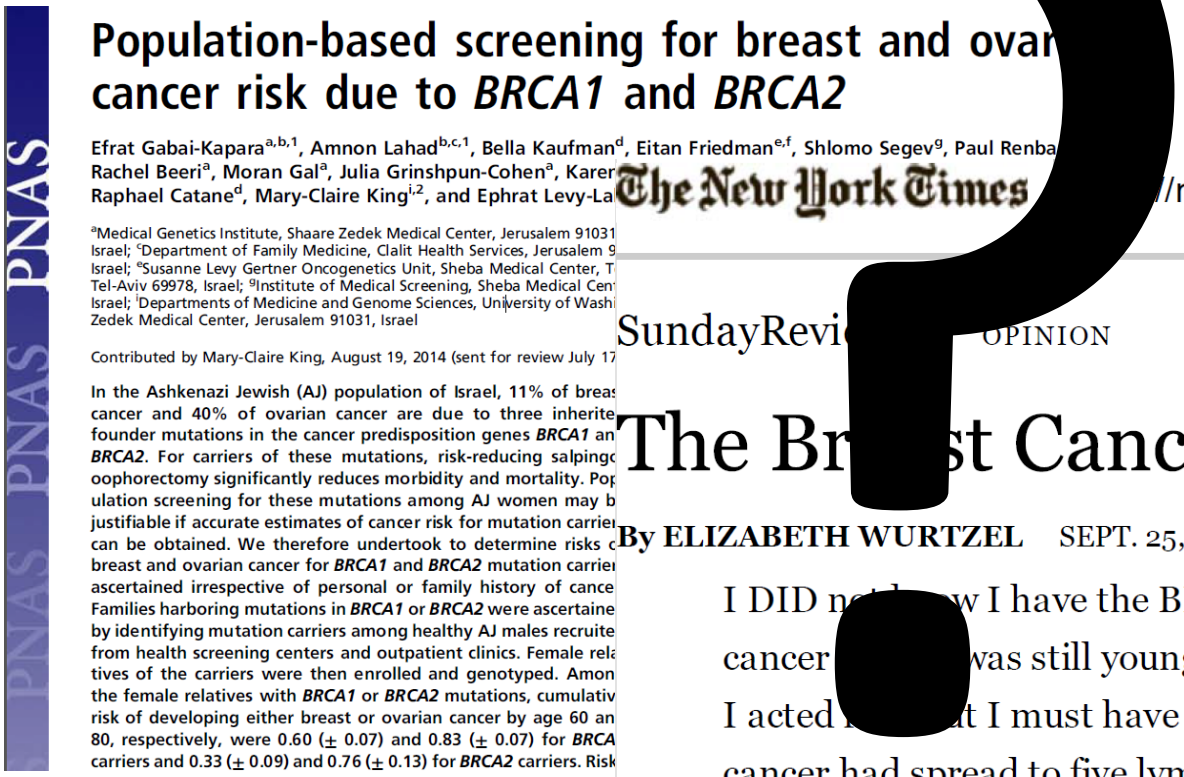
POPULATION SCREENING FOR BRCA1 AND BRCA2 MUTATIONS

- Recent public media and press



PNAS

Population-based screening for breast and ovar cancer risk due to *BRCA1* and *BRCA2*

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Contributed by Mary-Claire King, August 19, 2014 (sent for review July 17

In the Ashkenazi Jewish (AJ) population of Israel, 11% of breas cancer and 40% of ovarian cancer are due to three inherite founder mutations in the cancer predisposition genes *BRCA1* an *BRCA2*. For carriers of these mutations, risk-reducing salpingo oophorectomy significantly reduces morbidity and mortality. Pop ulation screening for these mutations among AJ women may b justifiable if accurate estimates of cancer risk for mutation carrie can be obtained. We therefore undertook to determine risks c breast and ovarian cancer for *BRCA1* and *BRCA2* mutation carrie ascertained irrespective of personal or family history of cance Families harboring mutations in *BRCA1* or *BRCA2* were ascertaine by identifying mutation carriers among healthy AJ males recruite from health screening centers and outpatient clinics. Female rela tives of the carriers were then enrolled and genotyped. Amon the female relatives with *BRCA1* or *BRCA2* mutations, cumulativ risk of developing either breast or ovarian cancer by age 60 an 80, respectively, were 0.60 (± 0.07) and 0.83 (± 0.07) for *BRCA* carriers and 0.33 (± 0.09) and 0.76 (± 0.13) for *BRCA2* carriers. Risk

The New York Times /nyti.ms/1Kz7cKk

SundayRevi OPINION

The Br st Cancer Gene and Me

By ELIZABETH WURTZEL SEPT. 25, 2015

I DID n w I have the BRCA mutation. I did not know I would likely cancer was still young, when the disease is a wild animal. I caugh I acted t I must have looked away: By the time of my double mast cancer had spread to five lymph nodes.

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TREATMENT OPTIONS UPDATE

PARP inhibitors

- What are they?
- Who can they help?

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WHAT'S NEXT?

- Stay in touch!
- Research and Public Databases
- Find a local genetic counselor:
  - National Society of Genetic Counselors

www.nsgc.org

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PERSONAL STORY

Lara, a Sharsheret Link, shares her personal story about her genetic history and experience with genetic testing.

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QUESTION & ANSWER SESSION

To ask a question, please dial *1 or enter your question into the chat box.

Questions will be addressed in the order received.

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EVALUATION

Your feedback is important to us.

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TRANSCRIPT AND AUDIO AVAILABLE

You will be able to access the transcript and audio of the webinar at:

http://www.sharsheret.org/resources/transcripts

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THANK YOU

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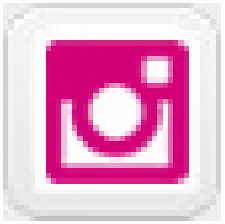

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