

Cancer Survivorship Symposium
Cancer and Heredity

January 16, 2017

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Counselor

Outline

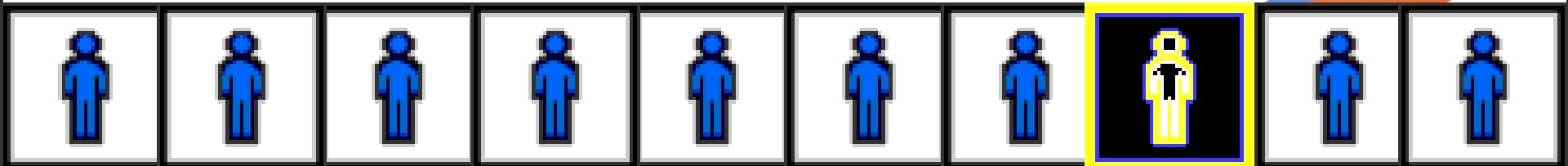
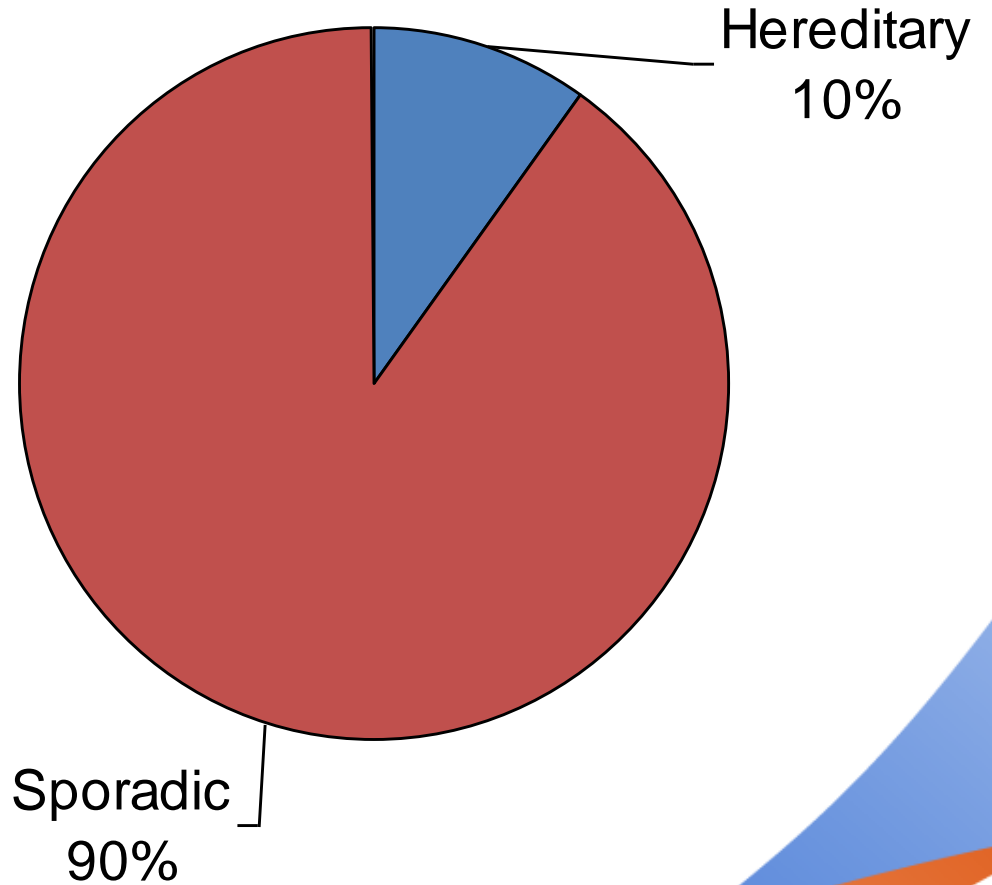
- Cancer and Heredity
- Hereditary Cancer Risk Assessment & Genetic testing at Hoag
- A case study of a family with Hereditary Breast and Ovarian Cancer

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Hereditary Cancer

How frequent is it?

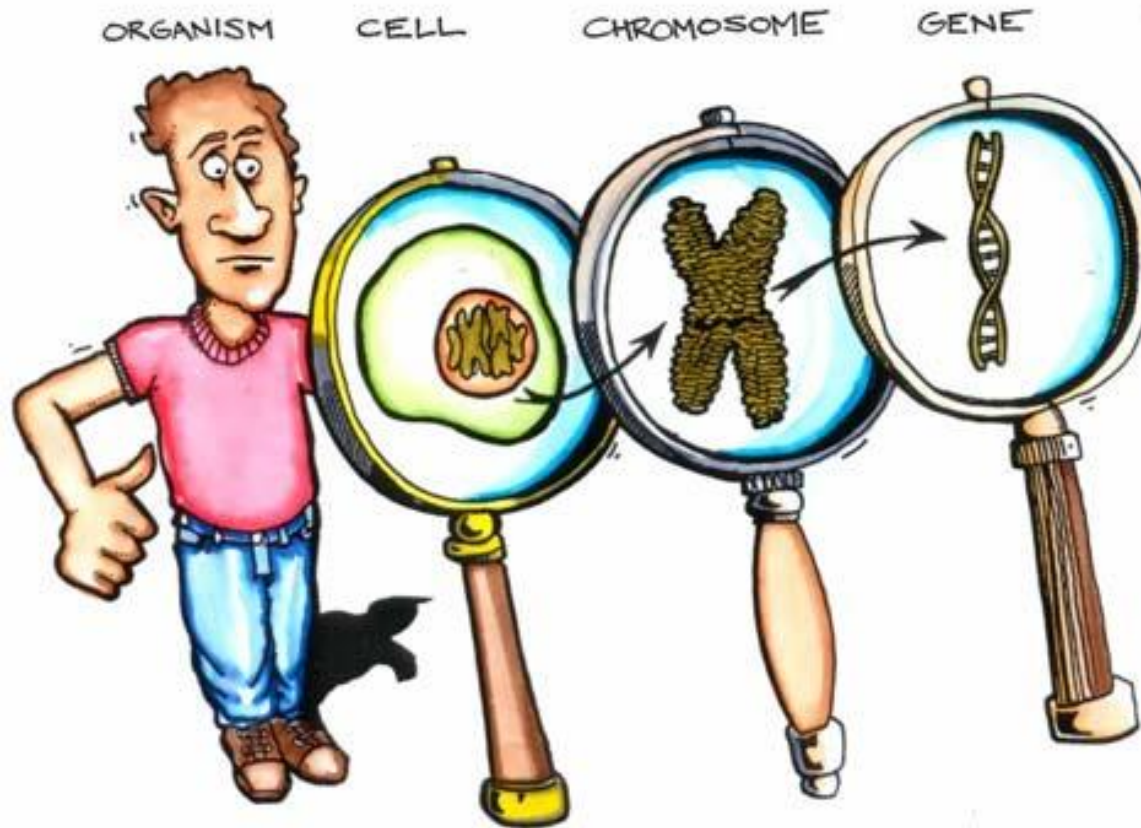


Review of Genetics

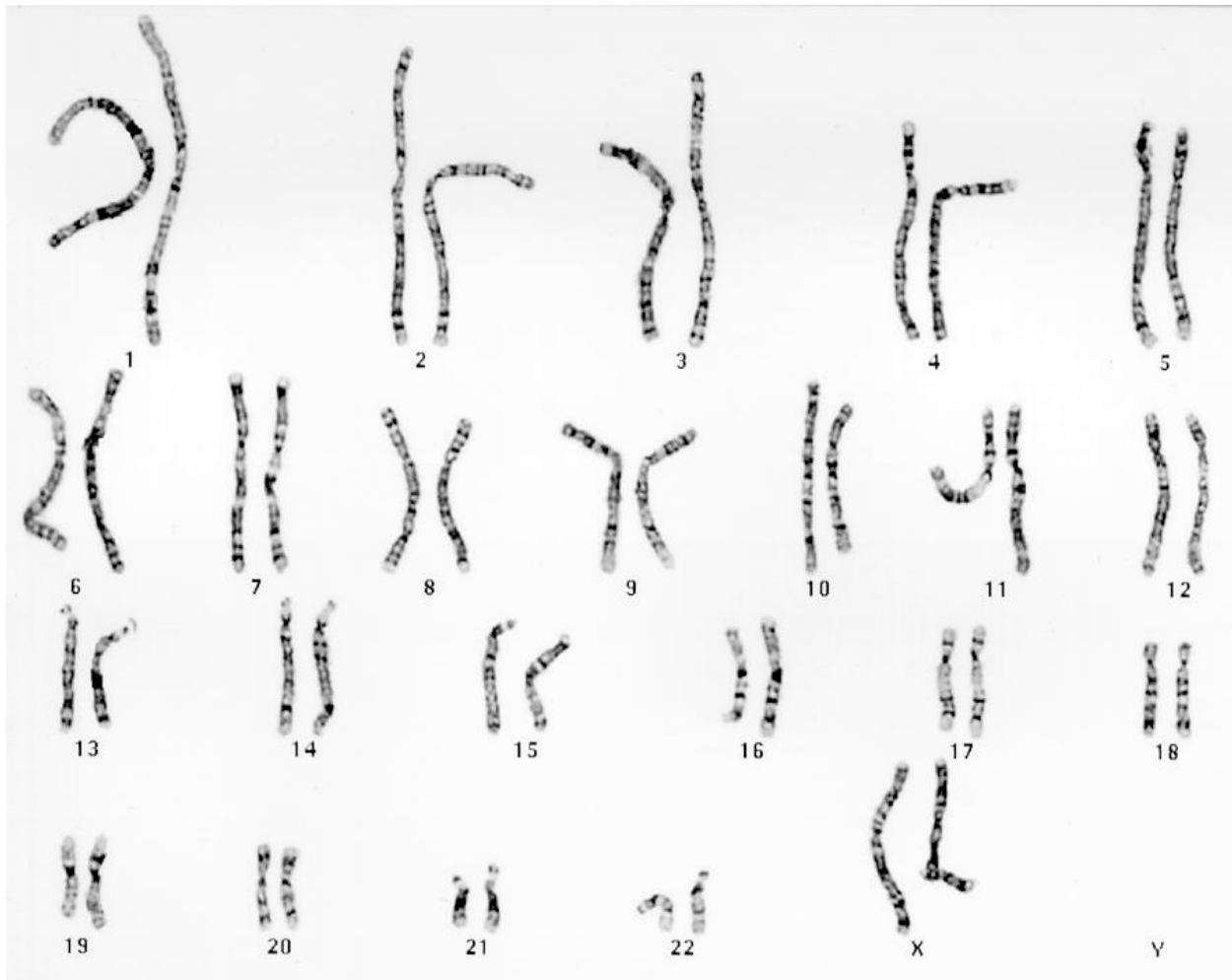
- 60-second review



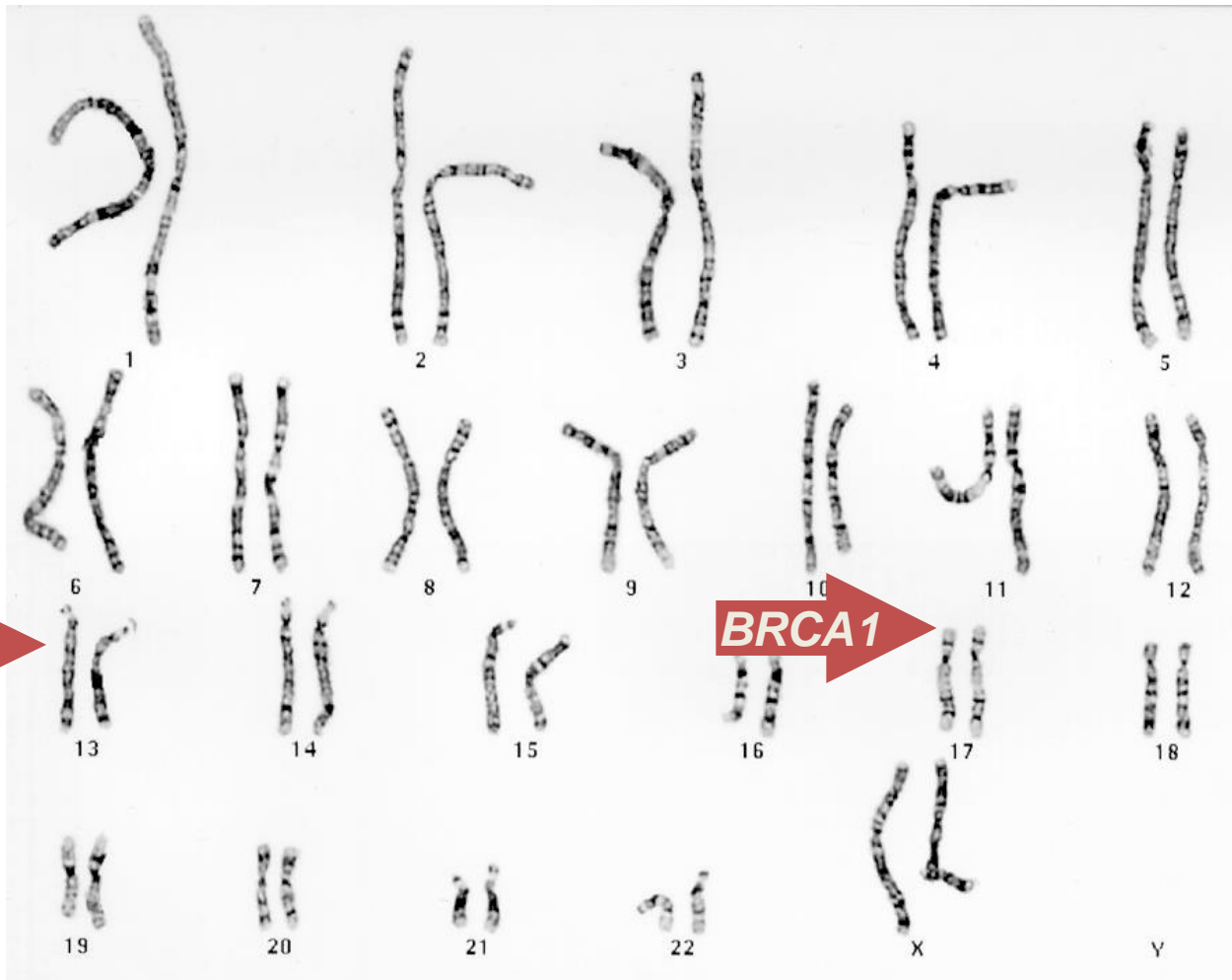
Genetics



Chromosomes and Genes



Chromosomes and Genes



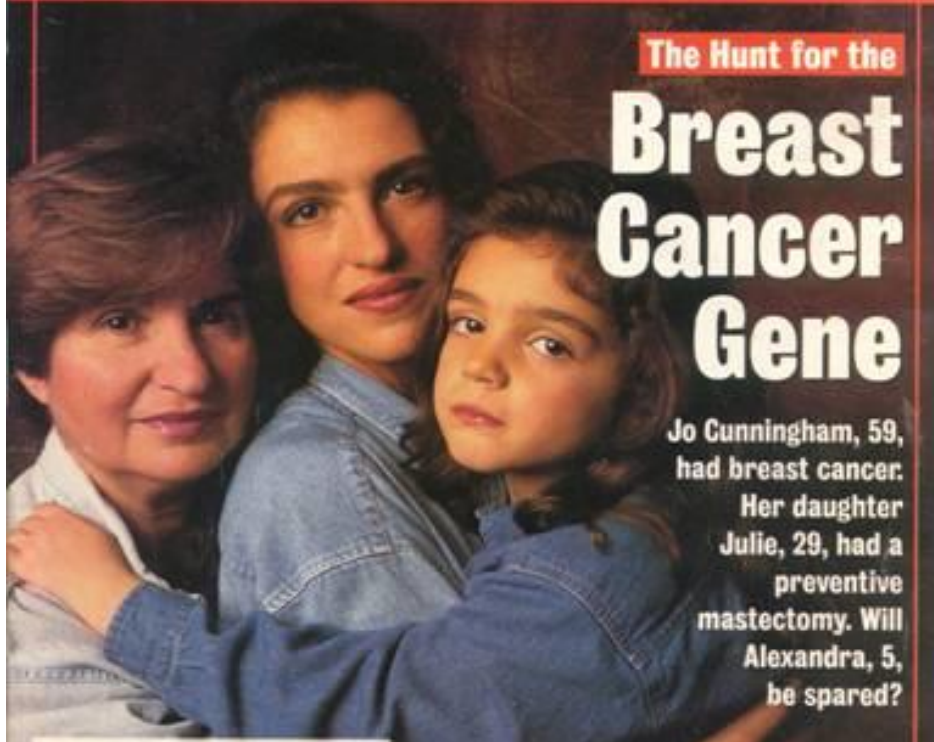
BRCA2

BRCA1

RETIREMENT BLUES: HOW SAFE IS YOUR PENSION?

Newsweek

December 6, 1999 | \$2.95



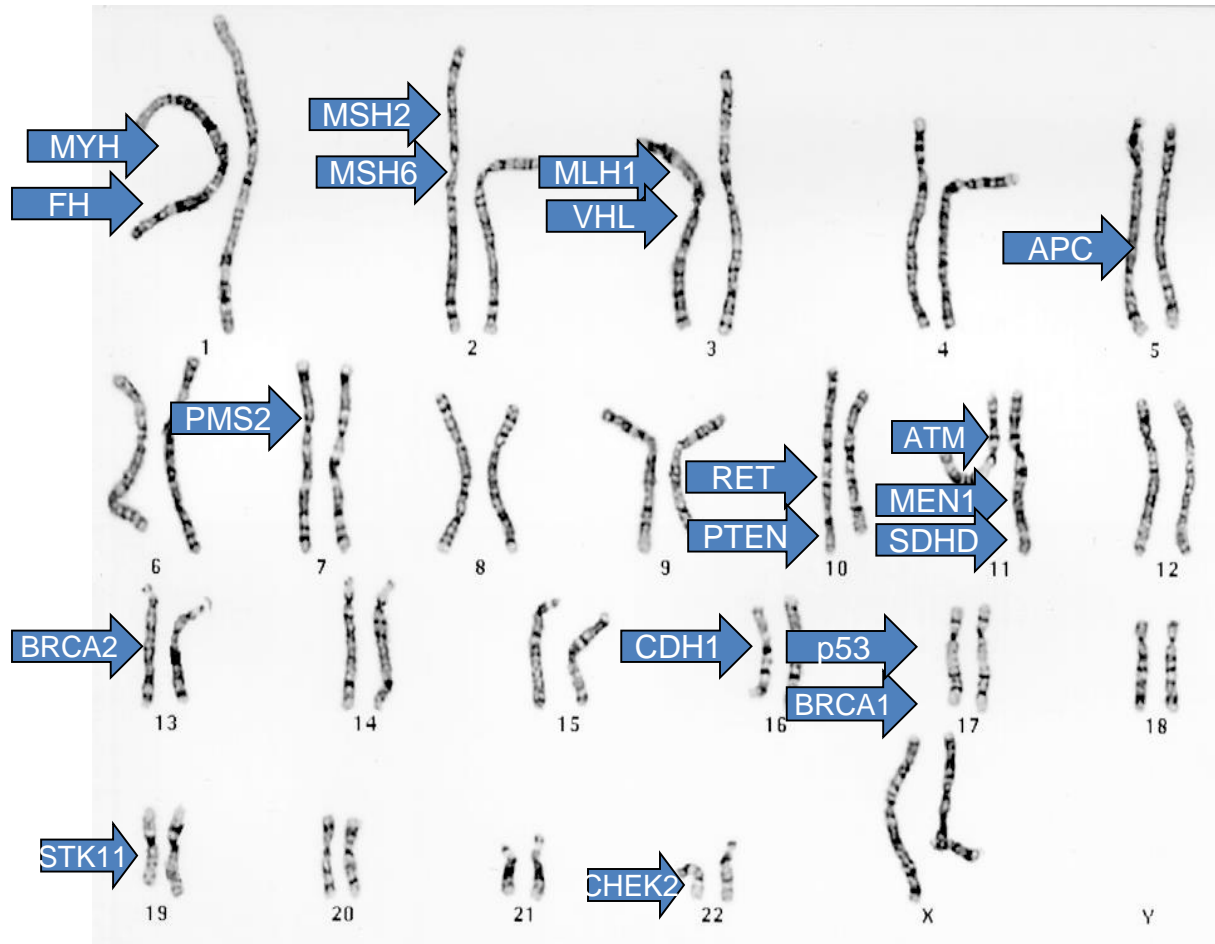
The Hunt for the

Breast Cancer Gene

Jo Cunningham, 59, had breast cancer. Her daughter Julie, 29, had a preventive mastectomy. Will Alexandra, 5, be spared?



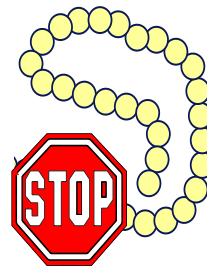
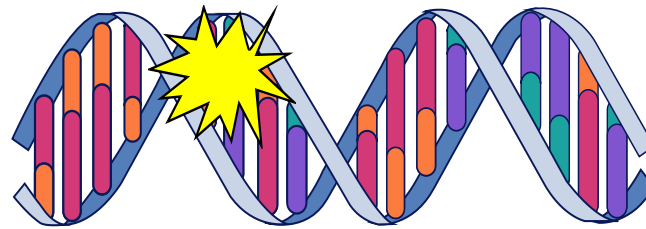
Hereditary Cancer Genes



DNA

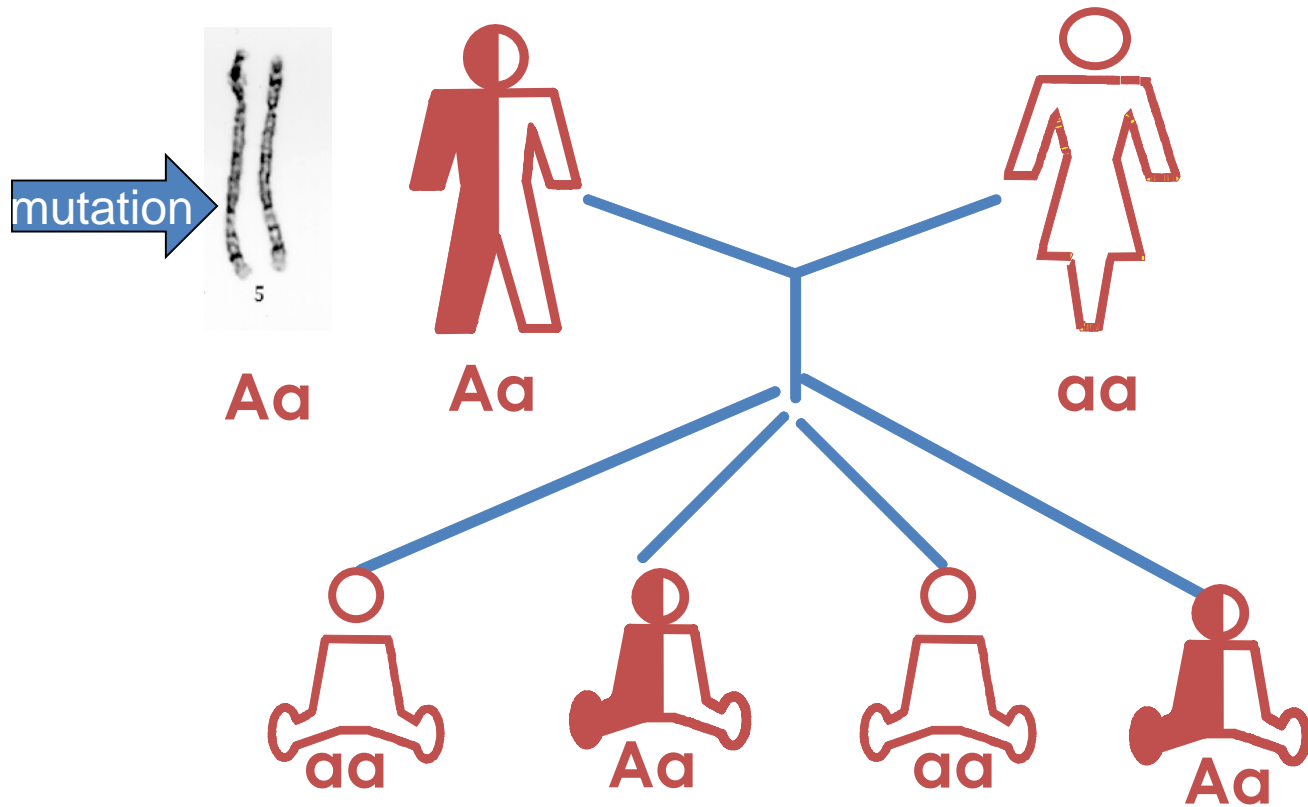


Mutation



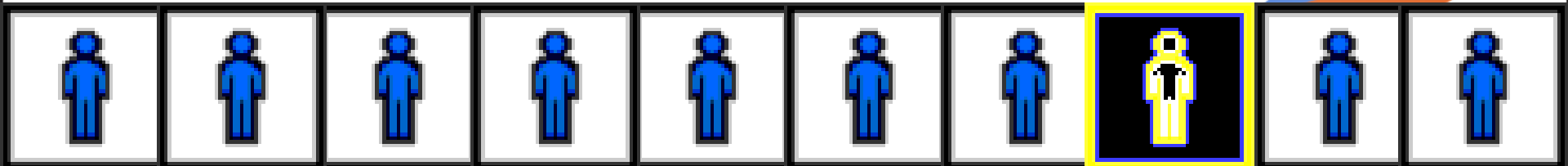
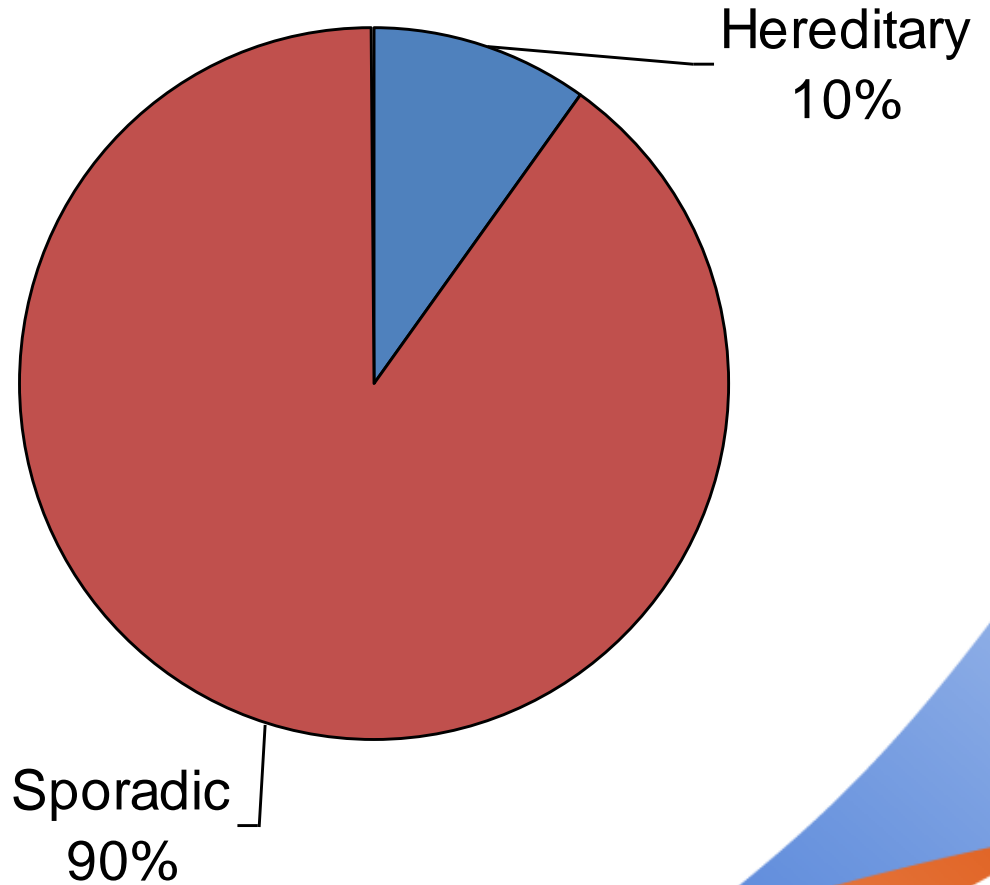
Nonfunctional or
missing protein

Dominant Inheritance



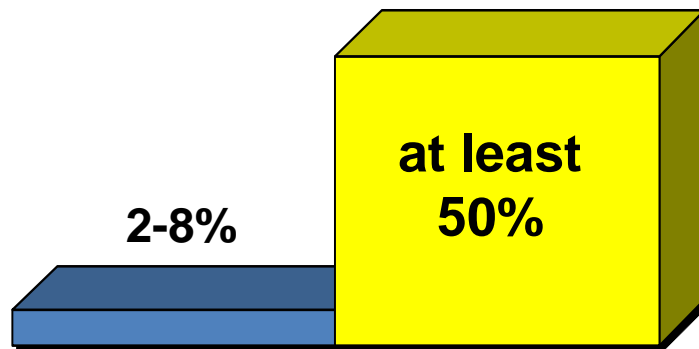
Hereditary Cancer

What are the implications?



Features of Hereditary Cancer

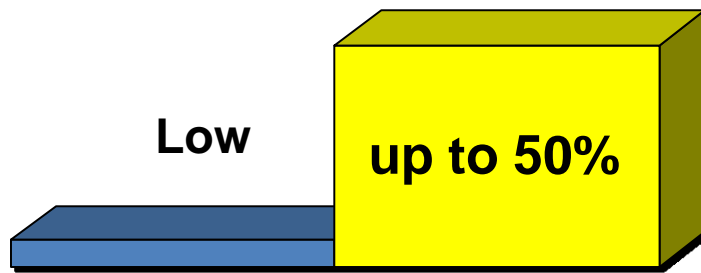
■ General Population ■ Hereditary



- Higher chance of cancer

“I’ve already had cancer”

■ **General Population** ■ **Hereditary**



- High chance of a second cancer

Your family

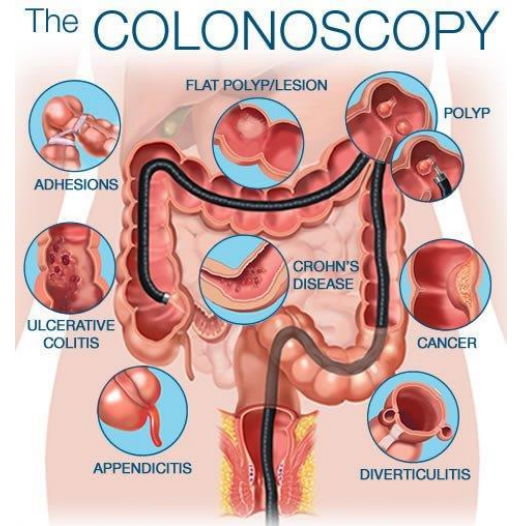


Two things that may be worse than getting cancer

- Getting it again
- Passing it to your children

Why would you want to know?

- Screening



- Chemoprevention

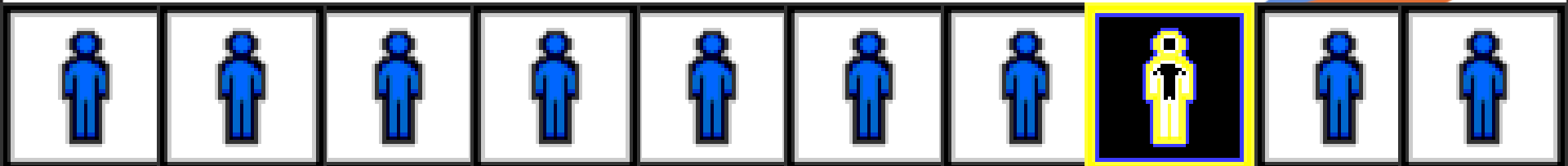
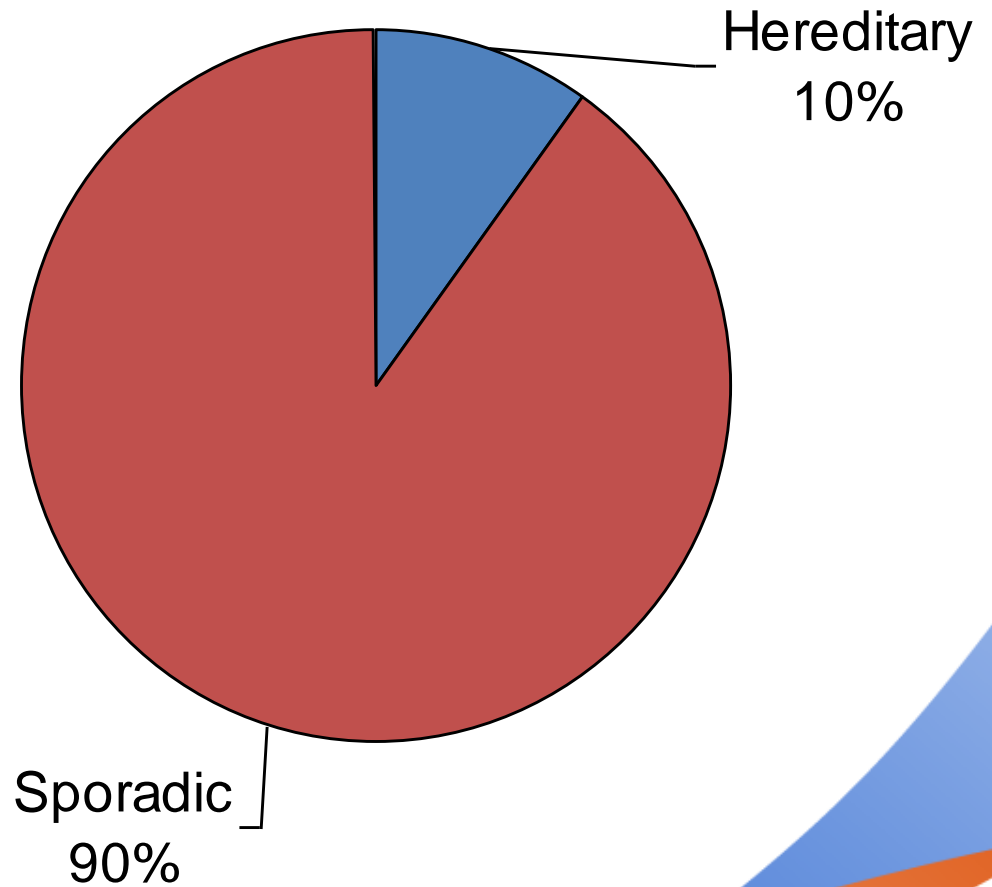


- Surgery

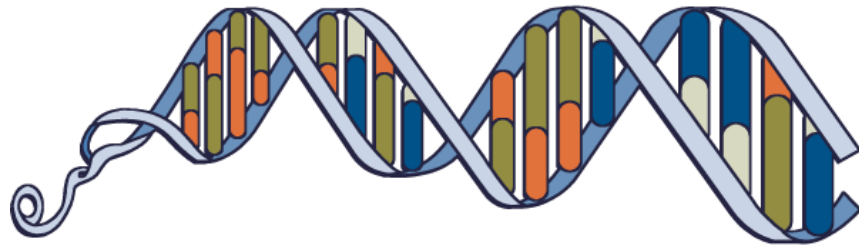


Hereditary Cancer

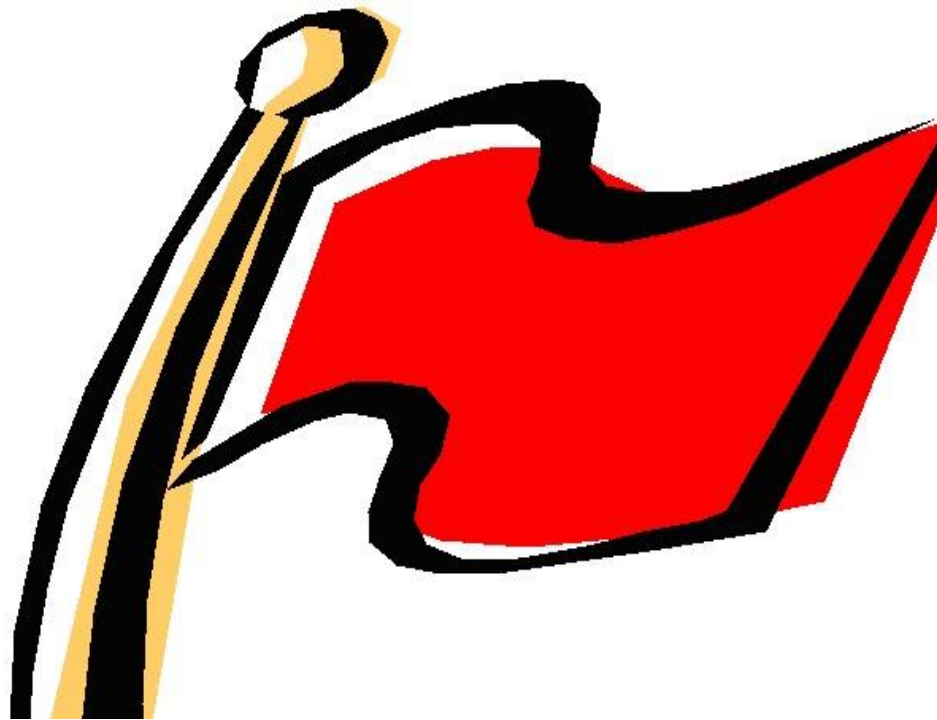
How to tell if it's hereditary?



Genetic Testing



Red Flags



Features of Hereditary Cancer



- Young age at diagnosis



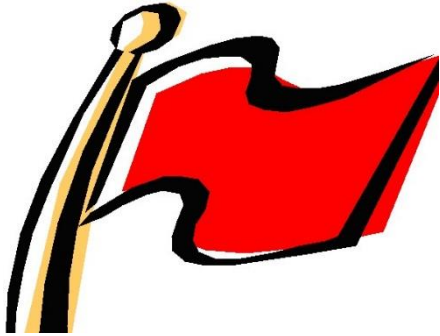
Features of Hereditary Cancer



- Person diagnosed with cancer twice



Features of Hereditary Cancer



- Rare tumor or cancer



“once in a blue moon”



Ashkenazi Jewish Ancestry

(breast, ovarian, prostate, pancreatic and colon only)



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Hereditary Cancer Program Team



Making an appointment



Family History Form

YOUR BROTHERS AND SISTERS

Please include only sisters and brothers who are related by blood. For brothers and sisters who are half-siblings, write in which parent you share (e.g. half sister through mother)




NAME	Sex M/F	Living Yes/No	Current Age (if living) or Age at Death (if deceased)	Cancer Diagnosis Yes/No	FIRST CANCER		OTHER CANCER		Cause of Death	COMMENTS
					Location or Type	Age at Diagnosis	Location or Type	Age at Diagnosis		
Judith	F	Yes	45	Yes	Breast	42				
Chrstine	F	Yes	42	Yes	Breast	40				
Helen	F	Yes	40	No						

MAIN MENU x Progeny Family History Q. x

fhqdev.progenygenetics.com/Hoag/FHQ?genlink=HJwxFZk_IUFeGIbXYsjLB9OQroVoXyVYmM6jqm9VN0%3D&locale=en_US

Apps Imported From IE Ambry Portal - Welc... GNP Echosign GeneReviews® - NC... St. Joseph Network ... ICD-10 Invitae table of risks Other bookmarks

Help Save, Finish Later



61% complete

Build your family

Please answer the questions below in order to begin constructing your family tree.

Please provide the number of blood relatives you have for each of the following relations. Your parents and grandparents will be automatically added. You can add *half siblings* and other family members later. Be sure to include both living and deceased family members.

Just a reminder: If you need time to gather information on family members, click the "Save, Finish Later" button on the top-right corner of the screen. When you log back into the questionnaire, you will return to the same place you left off.

Brothers	<input type="text"/>
Sisters	<input type="text"/>
Sons	<input type="text"/>
Daughters	<input type="text"/>
Paternal Uncles (your father's brothers)	<input type="text"/>
Paternal Aunts (your father's sisters)	<input type="text"/>
Maternal Uncles (your mother's brothers)	<input type="text"/>
Maternal Aunts (your mother's sisters)	<input type="text"/>

« Previous Next »

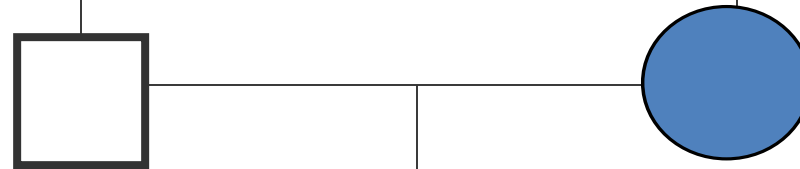


The Family Tree

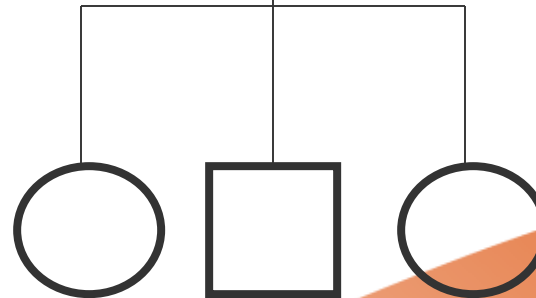
Grandparents



Parents



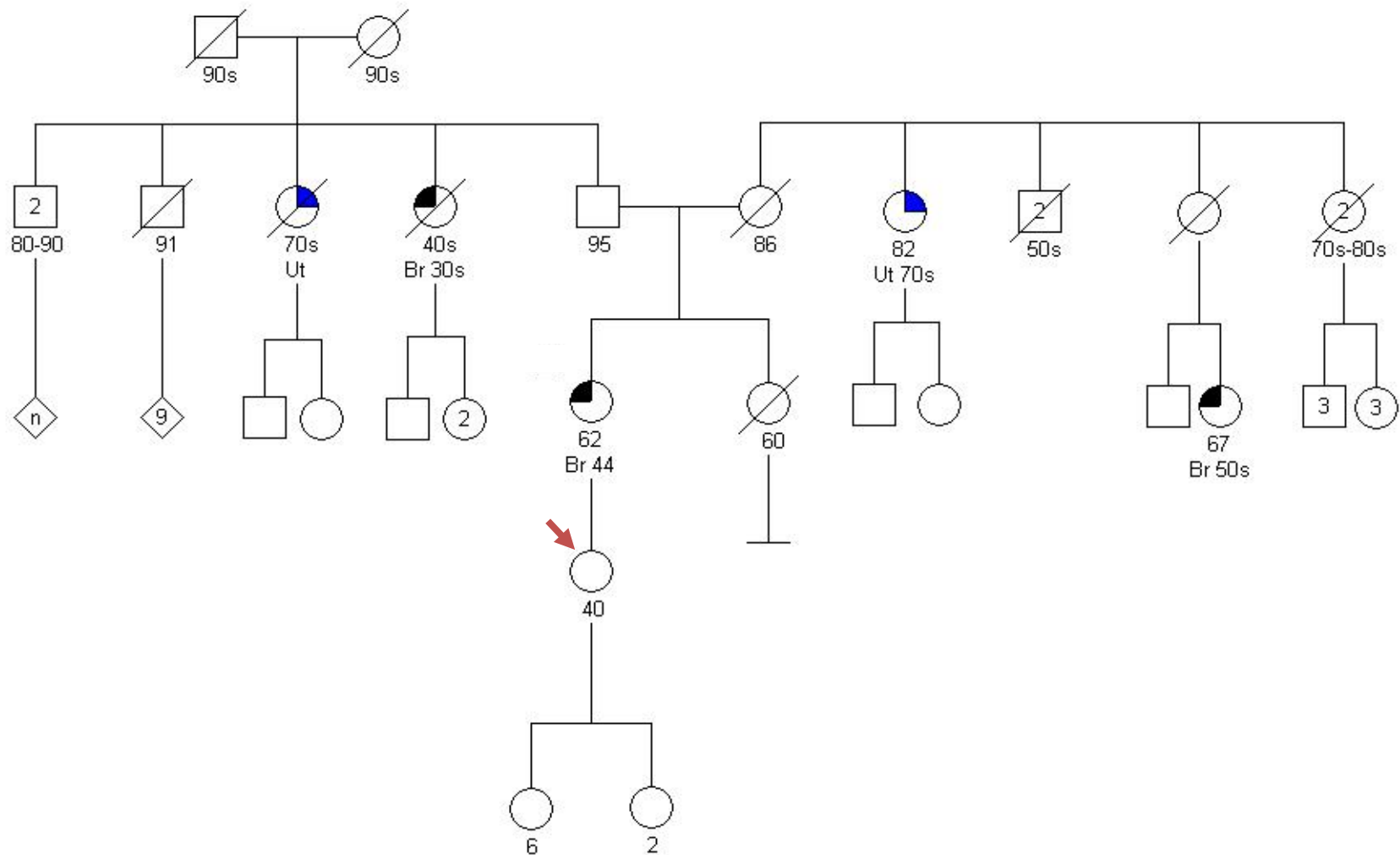
Children



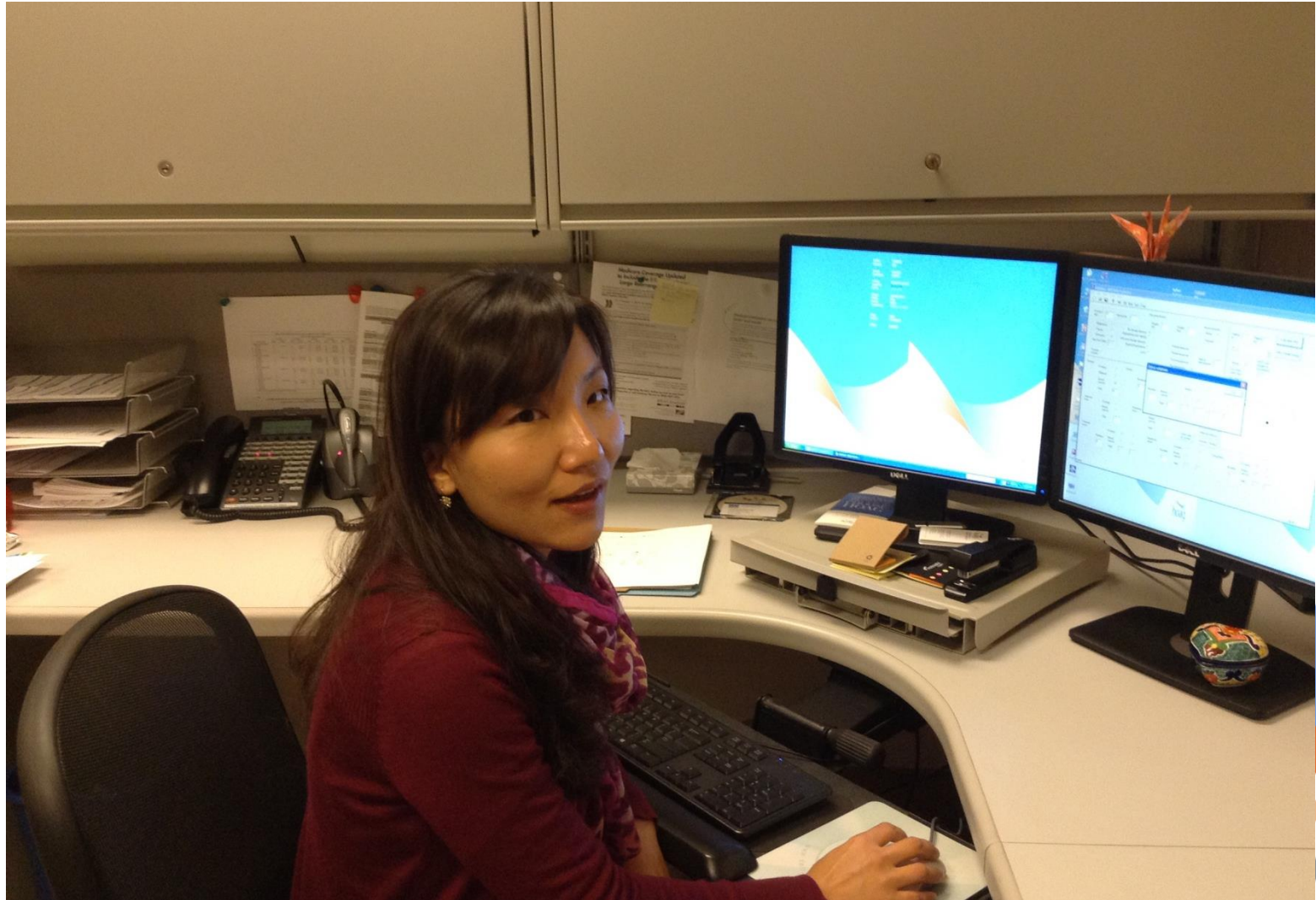
Review Medical Records



Analyze for all known hereditary cancer conditions



Computer analysis



Consultation



Genetic Counseling – what it is



- Explain genetics & answer questions
- Analyze family
- Risk assessment
- Arrange genetic testing
- Explain results
- Written summary

Genetic Counseling – what it isn't



Therapy

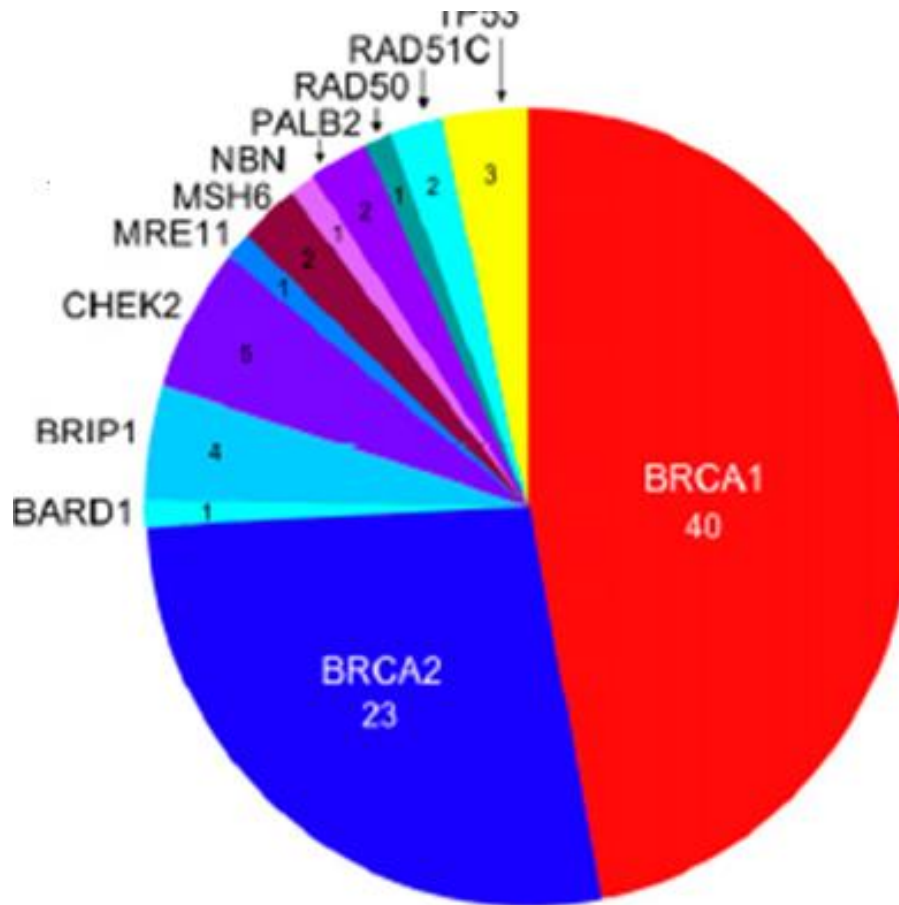
Genetic Testing



New Genes



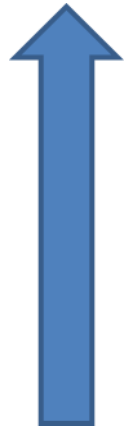
Gene Panels



Genetic Testing - Cost

2013

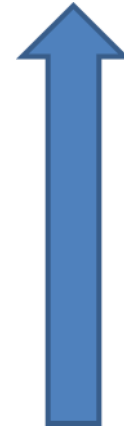
\$4000+



\$0

2017

\$475



\$0

Follow-up

- Plan for surveillance
- Keep in touch



Research



DNA banking



What Genetic Counselors Do

- Collection and documentation of detailed family history of cancer
- Review of appropriate medical records
- Pedigree assessment and recognition of cancer susceptibility syndromes
- Calculation of hereditary cancer risk
- Explanation of inheritance pattern and implications for family members
- Assistance in exploring the medical and psychological implications of genetic testing
- Review of costs, benefits and limitations of genetic testing
- Provision of informed consent, including issues of privacy, confidentiality and legal protections against genetic discrimination
- Determination of best strategy for testing within the family
- Help in obtaining insurance coverage for the testing
- Selection of appropriate genetic test and testing laboratory
- Sample collection (blood or saliva)
- Interpretation of genetic test results, which can be complex
- Provision of ongoing emotional support and assistance in informing family members
- Assistance in developing a plan for cancer screening and risk reduction, when appropriate
- Detailed summary letters sent to patients and their physicians
- Referrals to research and national support organizations, when appropriate
- For those with BRCA-positive results, participation in the Hoag-sponsored Orange County quarterly education meetings

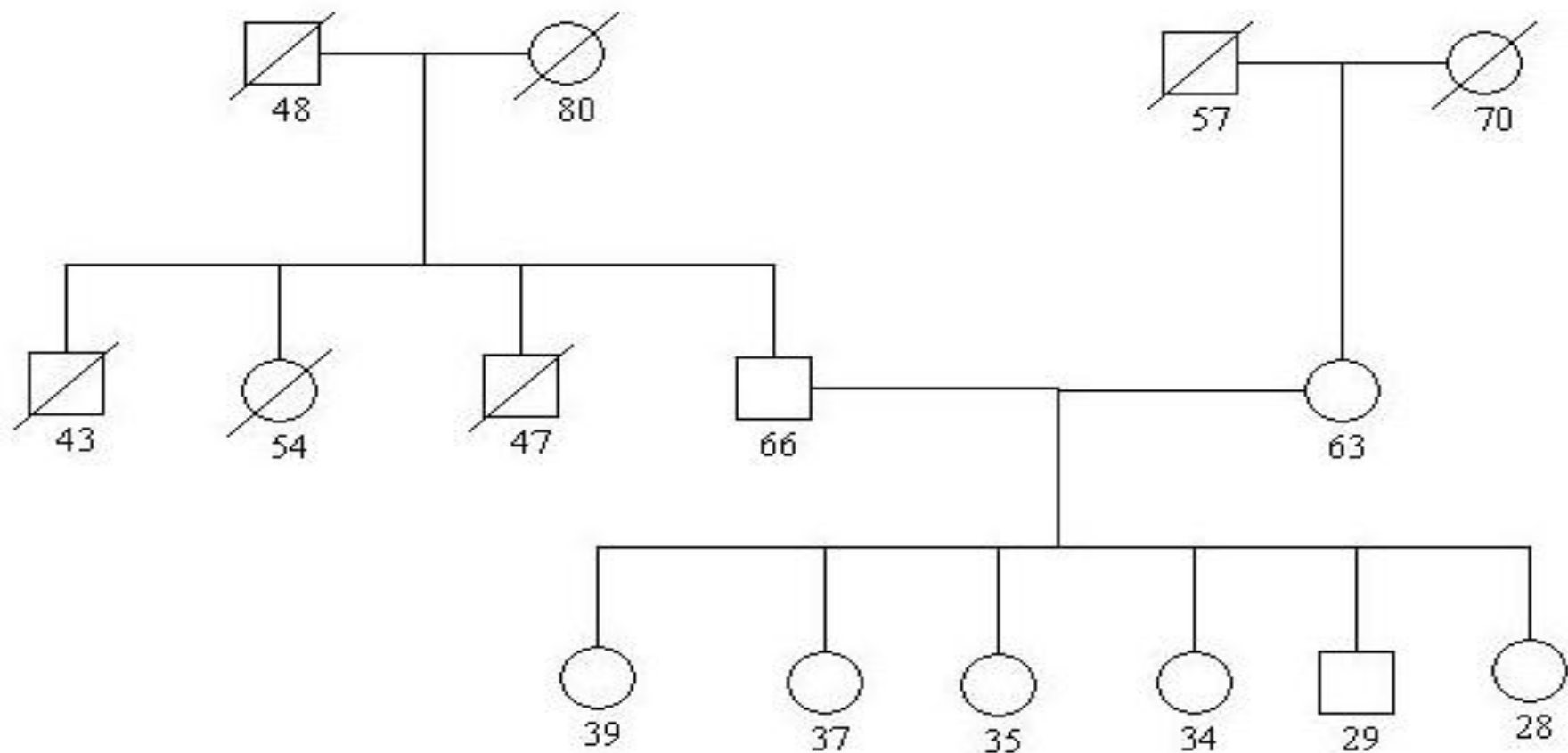
GINA

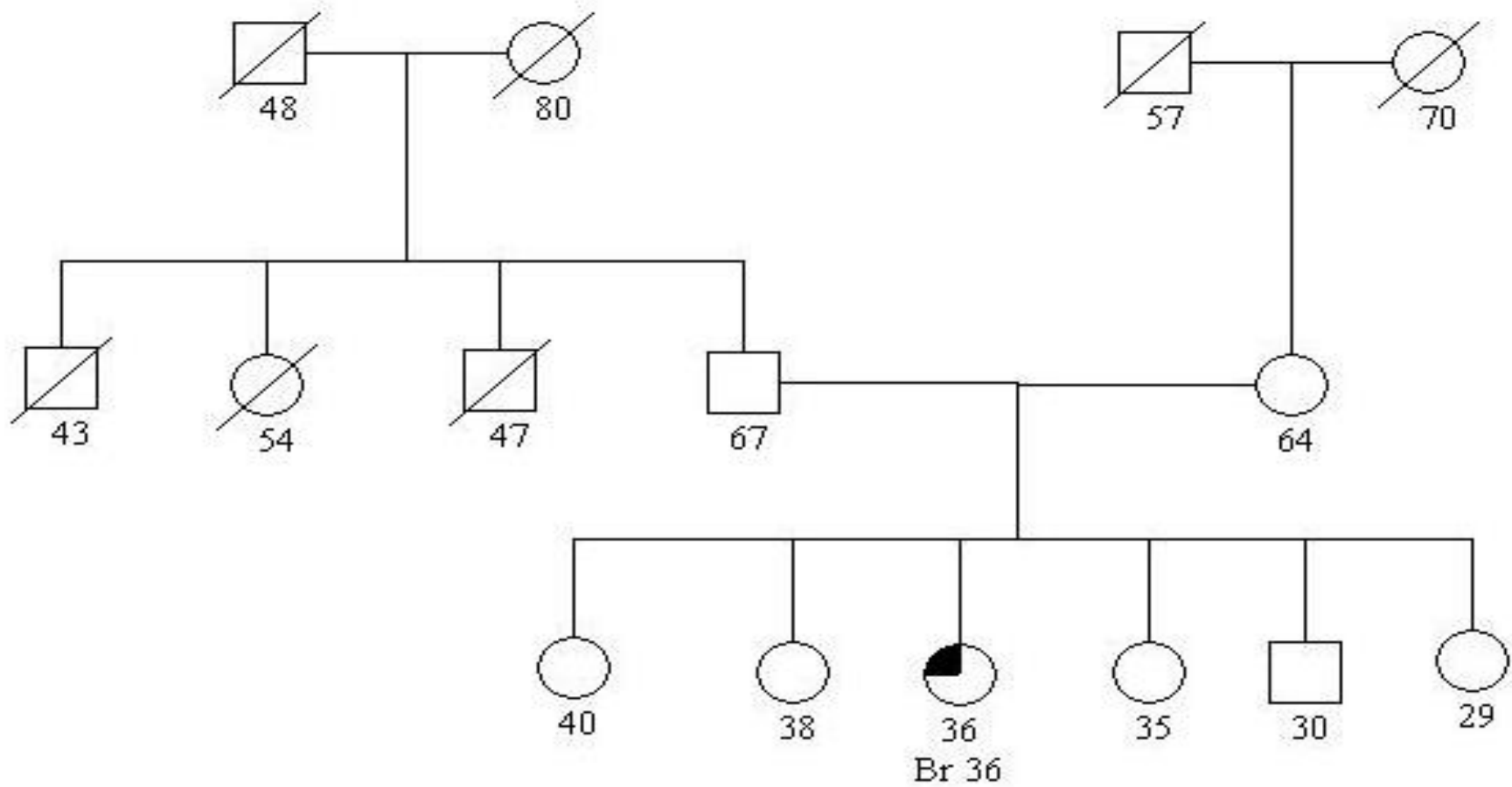
Genetic Information Nondiscrimination Act

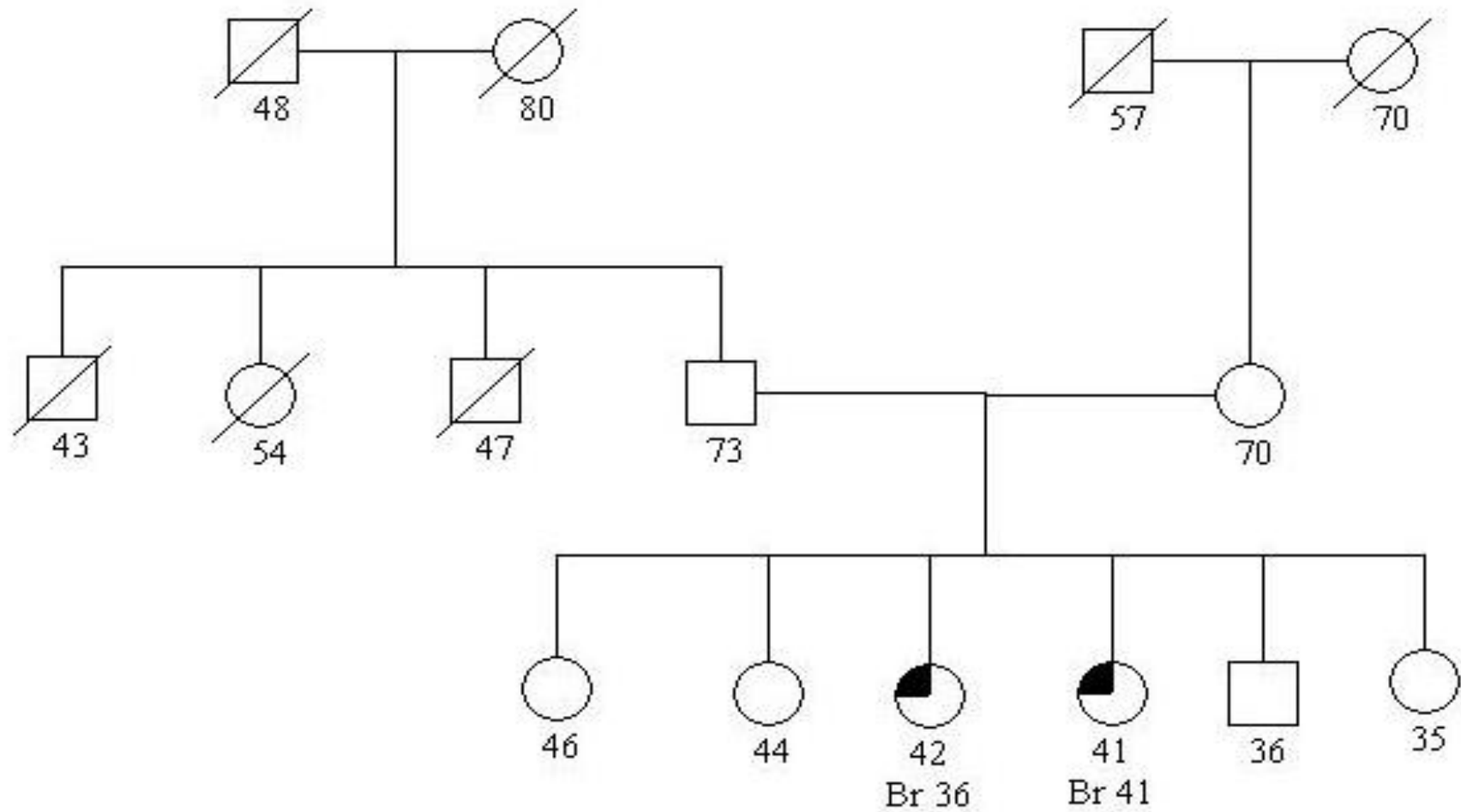
- Signed into federal law in 2008
- Provides protection from discrimination based on genetic status in health insurance and workplace

Outline

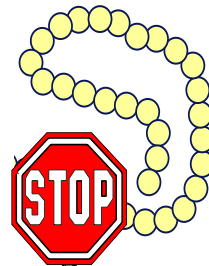
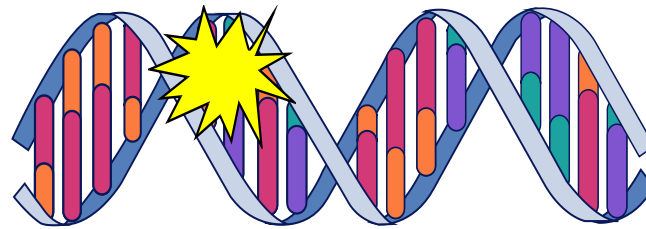
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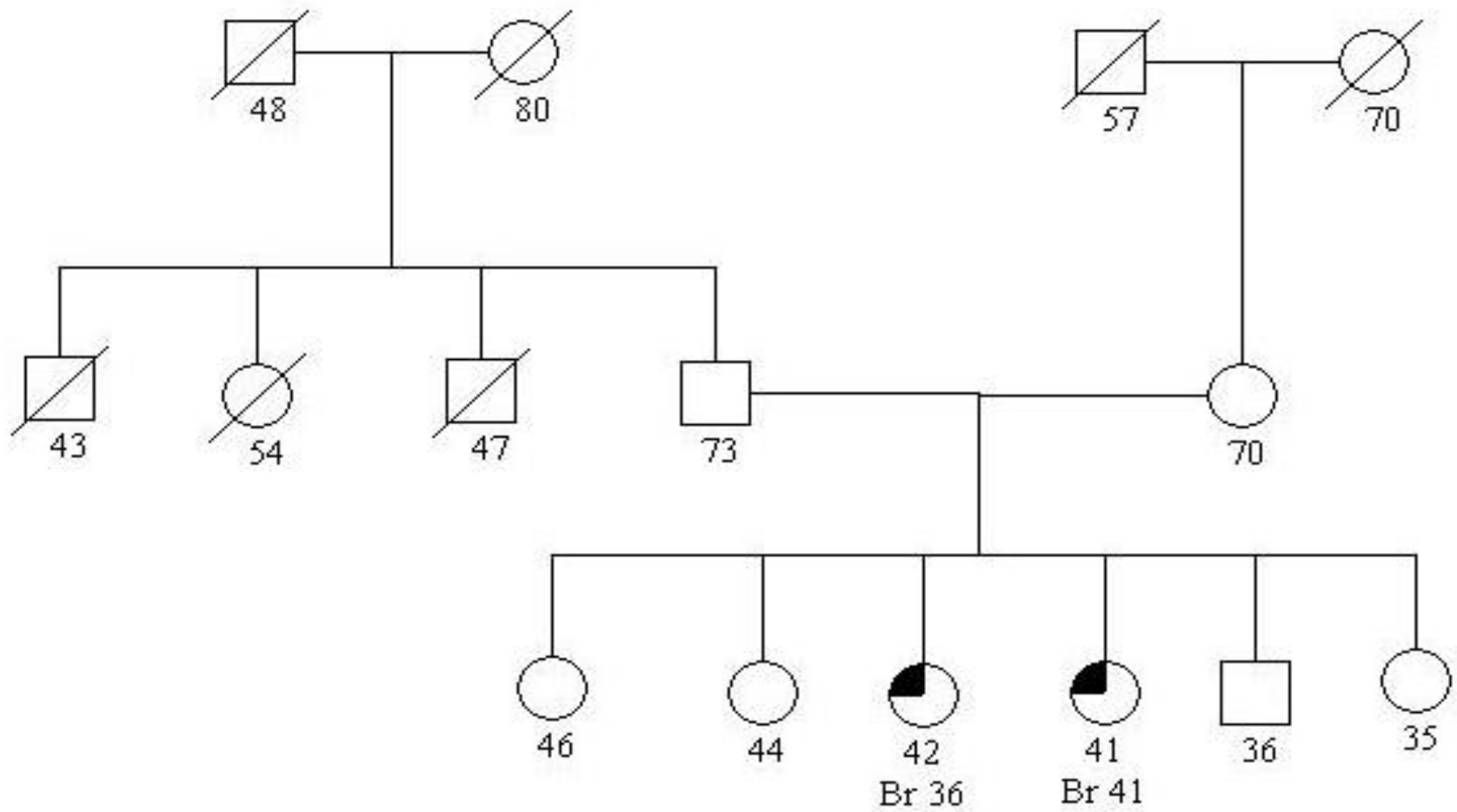


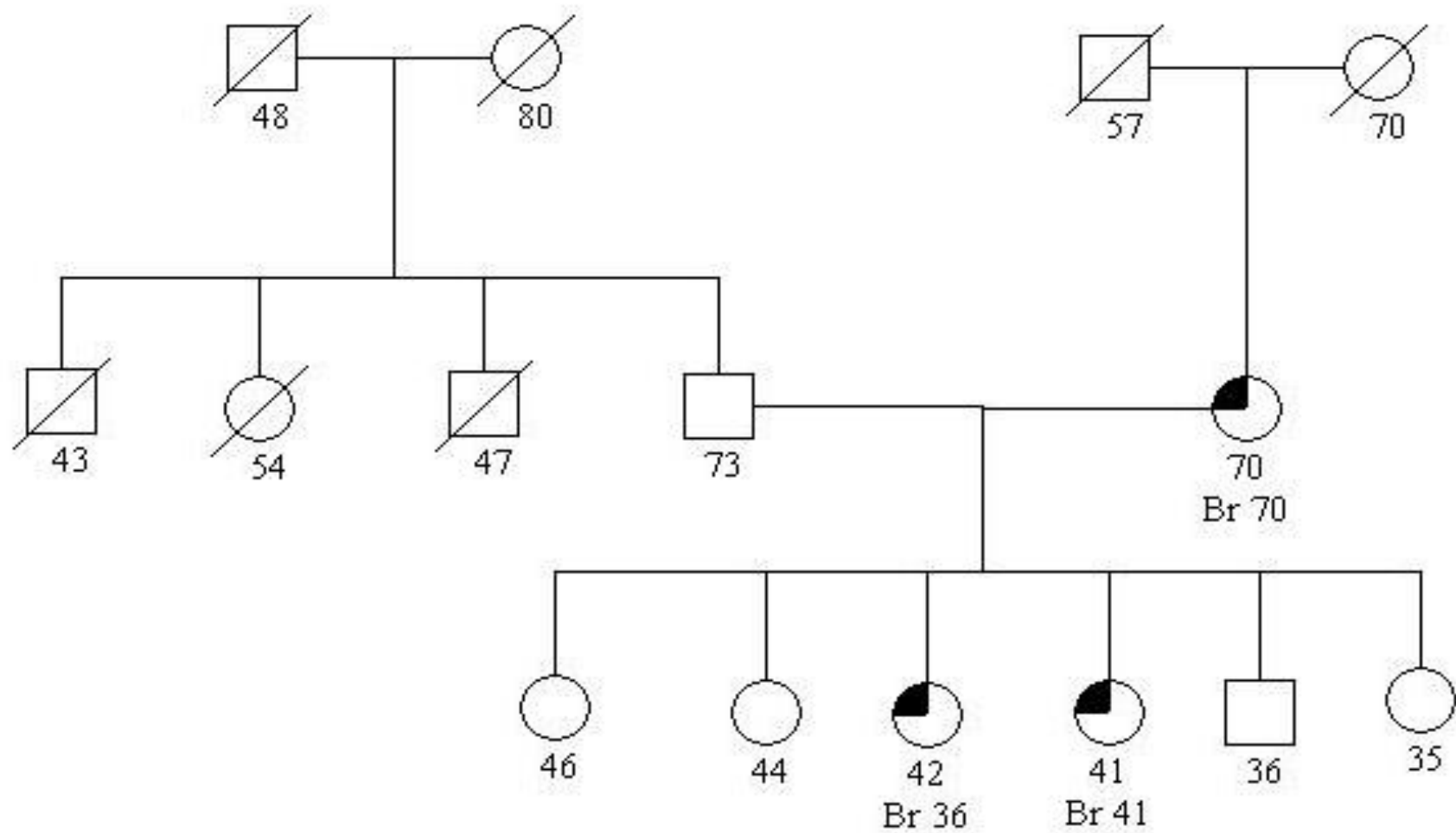


Positive (Deleterious Mutation)



Nonfunctional or
missing protein





Options for BRCA carriers

- Screening



YES, I DID HAVE MY MAMMOGRAM TODAY... WHY DO YOU ASK?

- Chemoprevention



- Surgery



...Or not

Jeopardy!

JEOPARDY!

Hereditary
Cancer

Genetic
Testing

Genetic
Counseling

100

100

100

200

200

200

300

300

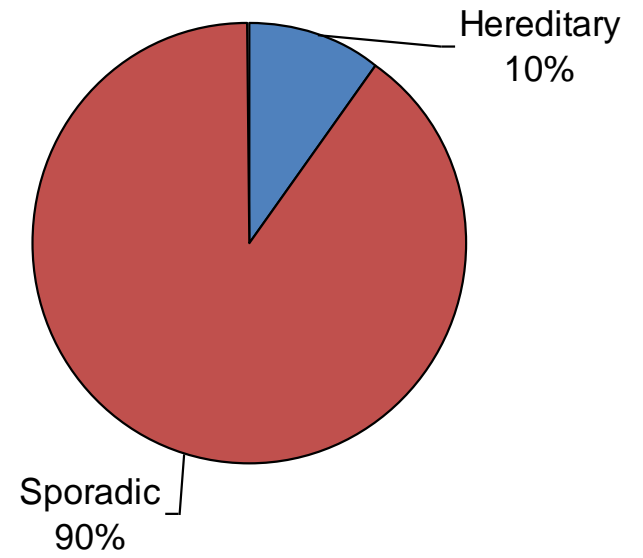
300

Most cancers are hereditary.
True or False



Answer

False



Which test is more accurate:
blood or saliva?



Answer

Both tests are accurate



Do people with cancer gene mutations
always get cancer?



Answer

No



Breast cancer genes only come from the mother's side: True or False

Answer

False

50% of the time, the gene mutation
comes from the father



Genetic testing costs thousands of dollars and is never covered by insurance



Answer

False
(but it used to be true)



Can I get genetic testing even if I don't meet insurance criteria?



Answer

Yes,
(out-of-pocket cost of \$100-\$475)



Genetic Counseling appointment is scary:
True or False



Answer

False



Would my insurance cover genetic counseling?

Answer

Yes

Genetic counseling is covered by most insurance plans (exception is Medicare)



Would I lose my insurance if I have the
“gene”?



Answer

No.
LAW (GINA)



CONGRATULATIONS!

Thank you



How Genetics Works

Please feel free to contact us for
more information

Questions?

