

Egypt Divided / Pops Big Moment / Best of 2012  
**TIME**  
 Want to Know My Future?  
 New genetic tests can point to risks — but not always a cure  
 BY ROBERT KOCHMA

Diseases shown on the cover: Autism, Cancer, Obesity, Parkinson's, Alzheimer's disease, Diabetes, Heart disease, Stroke, Depression, Schizophrenia, Bipolar disorder, Multiple sclerosis, Crohn's disease, Celiac disease, Sickle cell anemia, Tay-Sachs disease, Huntington's disease, Muscular dystrophy, Malignant melanoma, Hemophilia, Phenylketonuria, and Tay-Sachs disease.

"Genetics...is like the beginning of the internet in 1993"  
 ...George Church  
 Harvard Medical School

Life-like Drawing:

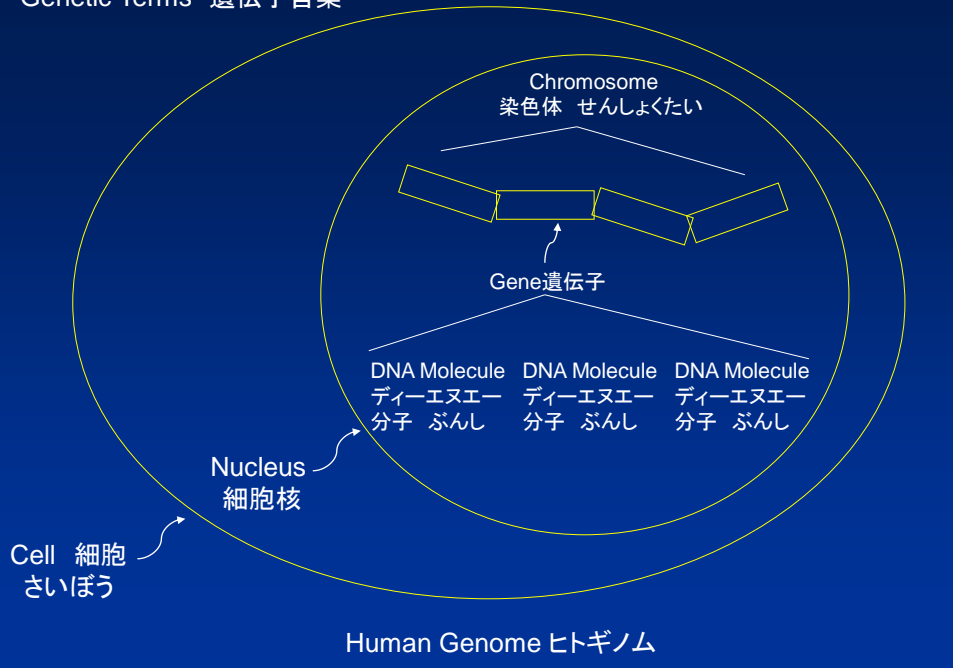
Cell -> Nucleus ->

Chromosome ->

Gene -> DNA

The diagram illustrates the hierarchical structure of genetic material. At the top is a yellow cell containing a nucleus. Inside the nucleus are several blue chromosomes. One chromosome is shown in detail as a blue X-shaped structure. Below the chromosome is a long, thin blue strand representing DNA. A specific segment of the DNA strand is highlighted with a red and yellow double helix structure, labeled as a gene.

Genetic Terms 遺伝子言葉



Who is this?

Why is she significant?



Double Mastectomy:  
Angelina Jolie, May 2013

<https://www.youtube.com/watch?v=wVC0dBGJXZ8>

Rocky Adams Blog



<http://rockisrocknbeads.blogspot.jp/2012/10/mastectomy-photos-without-reconstruction.html>

Rocky Adams Blog

**WARNING! CLOSE EYES NOW?**

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12 days after operation



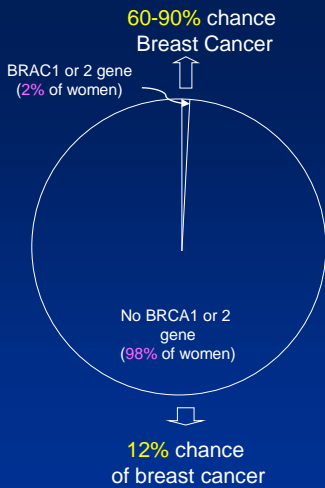
21 days after operation

<http://rockisrocknbeads.blogspot.jp/2012/10/mastectomy-photos-without-reconstruction.html>

### Breast Cancer Gene: Statistical Diagram

Statistics: 2 Percentages:

- % of women who have BRCA gene
- % chance those women get breast cancer



### Dr. Lindner's Family History

**Living With the BRCA Gene: One Family's Story**

Generations of the Price family have been affected by a mutation in the BRCA1 gene that appears to only cause the risk of breast and ovarian cancer. A patient who carries the defective gene has a 50 percent chance of passing it to her or his children. In 2003, Linda and Steve learned the first BRCA1 mutation was in DNA that she inherited and had altered the mutation from her mother. As many of her relatives believed, they have made different choices about how to manage their genetic predisposition in the life-changing result.

**Robert "Ollie" Price**, 61  
Did not know he had the gene.

**Tom of Robert "Ollie" Price**  
Another carrier died of ovarian cancer.

**Elaine Price Walsh, 67**  
Has not been tested for the gene. "I know my daughter has it. (Ollie's) cancer was diagnosed."

**Susan "Sue" Price**  
Died of breast cancer at age 48. "I had breast cancer at age 47. I did not know I had the gene."

**Analya Price Pines**  
Had cancer biopsied for the gene, but must have passed it to her daughter. "I had breast cancer in July of age 57."

**Annie Price Flowers**  
Had cancer biopsied for the gene, but must have passed it to her daughter. "I had breast cancer at age 51."

**Jean With Lindner, 64**  
Learned she had the gene at age 49, a radioactive chemical biopsy and had her breasts and ovaries removed. She later tested positive for the gene. "If I had known earlier I could have had my daughters tested to be tested as well."

**Glorie With Sparbuck, 59**  
Has not been tested. "There's no real need to know because if you are a carrier you can't do anything about it and you're not going to be a carrier of anything else."

**Dana Pines, 47**  
Tested negative for the gene.

**Brenda Pines, 41**  
Tested positive for the gene, but had her breasts and ovaries removed. "I know my mother has the gene and I'm glad I didn't. I've had a hysterectomy. I've had my breasts removed. But I've pretty much had an overall check of my body."

**Jodi Sparbuck, 41**  
Also has cancer biopsied and had cancer, she tested positive for the gene. "I have a regular mammogram to decide whether to have a further check before removing my uterus. "This one has even-though nature said that she might be a carrier. There's no doubt of my breast cancer."

**Oxley "Ox" Pines, 38**  
After her cancer biopsied for the gene, she tested positive for the gene. She also had a bilateral mastectomy and later had her uterus removed. "The genes all of the women in my family carry. I don't know if you know the link between this and the risk of ovarian cancer."

**Lois French, 37**  
Tested negative for the gene. "I have a doctor explained that the cancer my daughter would not get if she had the gene."

**Deborah Lindner, 32**  
Learned she had the gene at age 30. "I have a doctor who has been able to have her uterus removed before she was 30."

**Lois Sparbuck, 26**  
Has not been tested. "I don't really know if I have the gene. I don't know if I have the gene."

**Lisa Sparbuck, 24**  
Has not been tested. "My mother was in my family it makes me nervous of my (Sue) I'm a bit of a carrier and I'm not going to be a carrier."

Evolutionary Biology: Role of "Nature" – Emotional?



Strongest Male

Most Fertile Female

Strong Fertile Children

Species Survival

Discussion Question: Can you think of a counter example?

2015 A Reality?

