

Aspiration for Health

Family History to Promote Individual Health

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Accurate Family History

- First Step in Genomic Medicine
- Provide Gold Standard of Care
- Guide Health Promotion and Disease Prevention
- Guide Screening & Diagnostic Tests
- Guide Patient Healthcare Education

Family History Misconceptions

- Perceived as unreliable
- Perceived as time consuming & burdensome for patient and provider
- Perceived as less powerful than diagnostic & laboratory tests
- Perceived as potentially expensive

Family Histories Can Be:

- Effective
- Accurate
- Useful even if incomplete
- Inexpensive

In Identifying Hereditary & Familial Risk

Inheritance

- DNA: 50% inherited from mother and 50% from father
- Genes: One copy of each of about 30,000 genes inherited from each parent.
- Allele: Differences at the DNA level that are responsible for genetic variations.
- Phenotype: Differences in traits at the biochemical, physiological, or physical level that are caused by alleles.

Genetics Not the Topic for Today

- Autosomal Dominant Inheritance:
Example, Huntington Disease
- Autosomal Recessive Inheritance:
Example, Sickle Cell disease
- X Linked Recessive:
Example, Fragile X Syndrome
- Autosomal Recessive Disorder:
Example, Duchenne Muscular
Dystrophy

However, Family History Reveals Complex Patterns for Inheritance of Disease

- Environmental and behavioral risks combined with genes and genetic tendency make up the broad array of diseases, conditions, and disorders that affect us
- It is these diseases that we are most concerned about when conducting the Family History
- A Few Examples: Type 2 Diabetes, Heart Disease, Some Cancers, Asthma

Family history is useful for risk assessment of most common diseases

	Relative Risk
Heart disease	2.0 – 5.4
Breast cancer	2.1 – 3.9
Colorectal cancer	1.7 – 4.9
Prostate cancer	3.2 – 11.0
Melanoma	2.7 – 4.3
Type 2 diabetes	2.4 – 4.0
Osteoporosis	2.0 – 2.4
Asthma	3.0 – 7.0

CDC National Office of Genomic Medicine

Focused Family Information

- Recurrence
- Age of onset
- Severity of disease
- Multiple relatives on one side ie aunts/uncles grandparents siblings
- Incomplete history may still have important information (especially first degree relatives)

Family History and Incidence of Colorectal Cancer*

Family History	Relative Risk for CRC	Absolute Risk of CRC by age 79
No family history	1	4%
One FDR with colorectal adenomas	2.0 (95% CI = 1.6-2.6)	8%
One FDR with colorectal cancer	2.3 (95% CI = 2.0-2.5)	9%
One FDR diagnosed with colorectal cancer before age 45	3.9 (95% CI = 2.4-6.2)	15%
More than one FDR with colorectal cancer	4.3 (95% CI = 3.0-6.1)	16%

* National Cancer Institute, Genetics of Colorectal Cancer (PDQ), 10/07

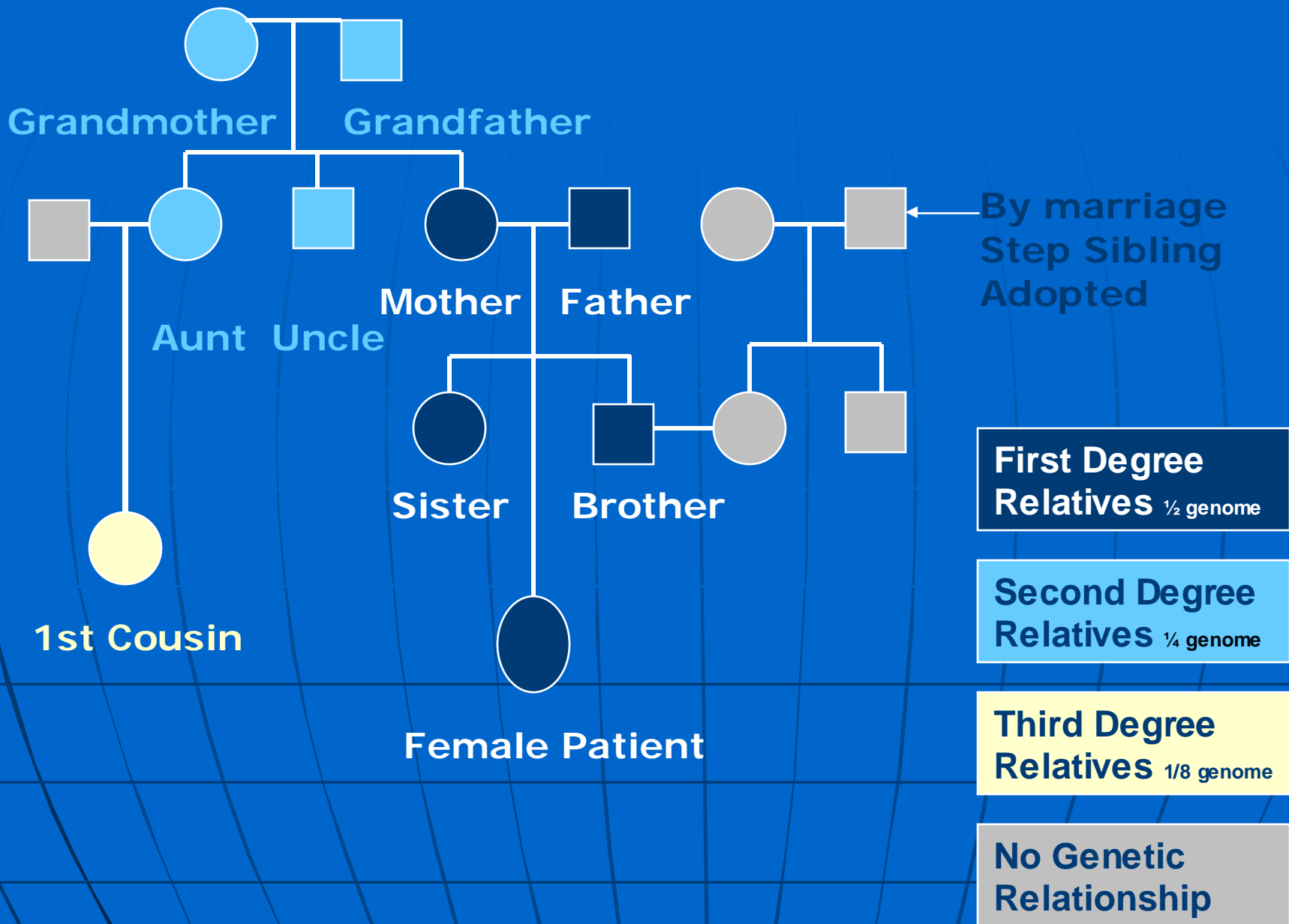
Benefits of Using Family History

- Health Promotion
- Primary Prevention
- Facilitates Understanding of Individual Risks
- Personalizes Interventions
- Guides Further Genetic Tests as Needed
- Family history highlights need to minimize disease risk caused by other factors such as hypertension and high cholesterol levels.

Graphical Pedigree is the Standard Format to Chart Family History

- Allows graphical identification of a 3 generational history
- Diagrams the history in a way that is easily interpretable
- Follows a standardized format
- Combines Family Medical History with Individual's Medical History

Proportion of Shared Alleles Among Relatives



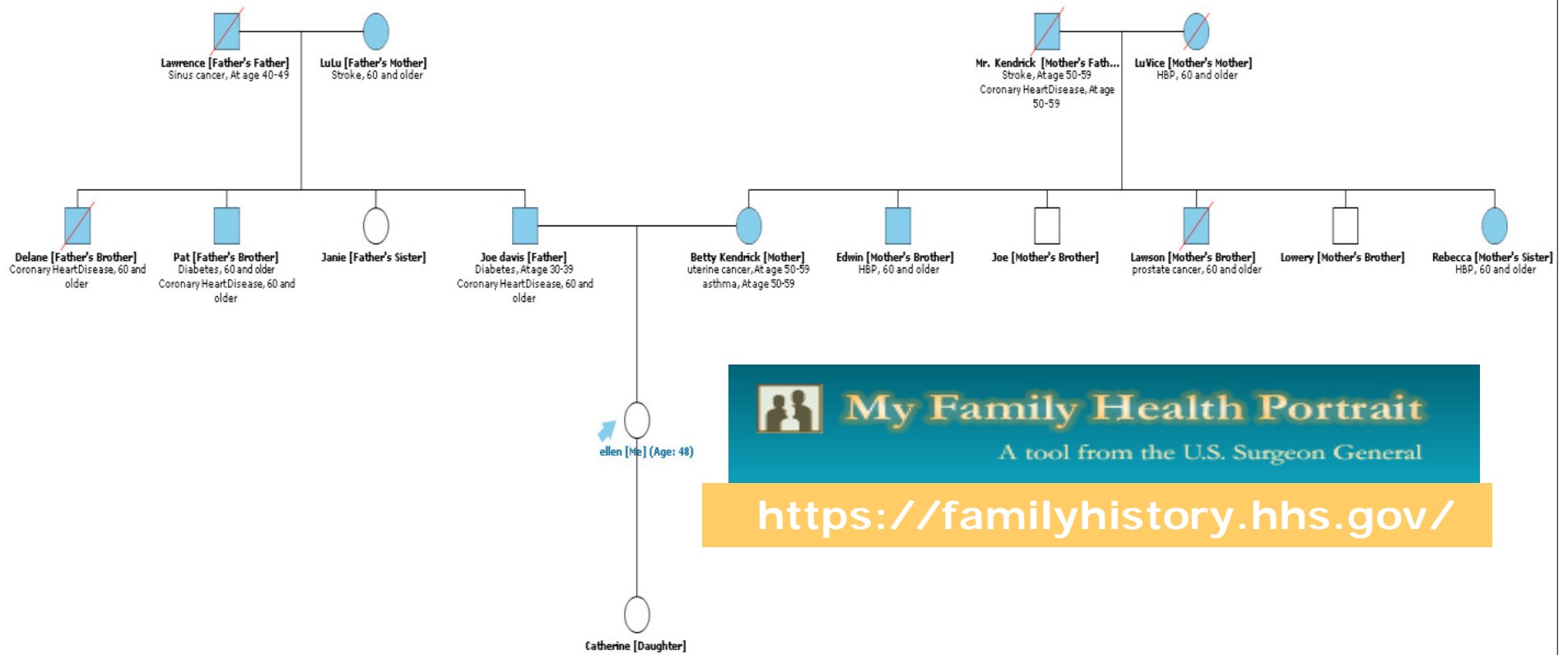
Third Degree Relatives and Beyond.....

- Collecting more family information provides a better risk assessment for disease.
- Both sides of the family can be important for risk assessment (e.g. risk for breast cancer inherited through father's side of the family).
- Some diseases may be indicators of risk for other diseases within a family (male prostate cancer in a family could indicate a risk for breast cancer among female family members).

My Family Health Portrait - Graphic Report

ellen jones - September 18, 2007

- Male Family Member
- Female Family Member
- Family Members with a History of Disease
- You
- Deceased Family Member



 **My Family Health Portrait**
A tool from the U.S. Surgeon General

<https://familyhistory.hhs.gov/>

Cousins/Nieces/Nephews:



In Conclusion

Editorial, Annals of Internal Medicine,
Oct 2, 2007

"....there is still a need to develop better methods for collecting and acknowledging family history...these methods will be useless unless families keep track of their medical history and providers use it."