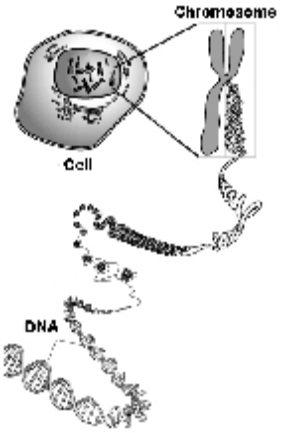
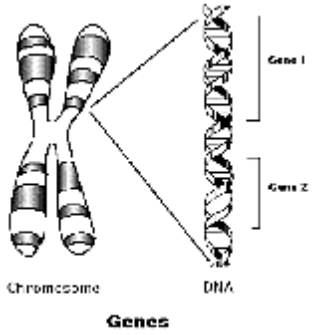
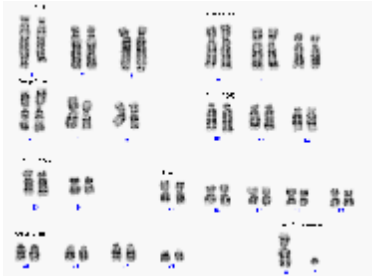
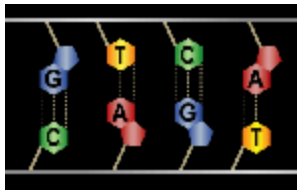
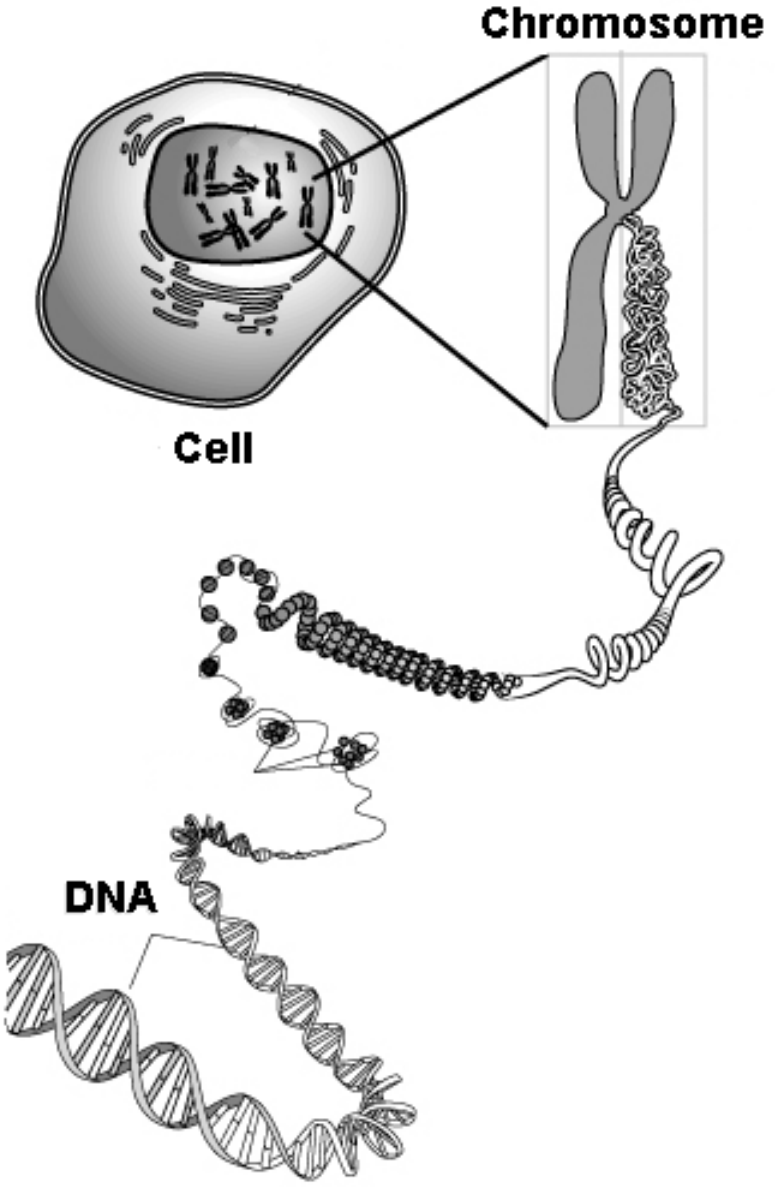
Take Inventory of Your Genetic Traits







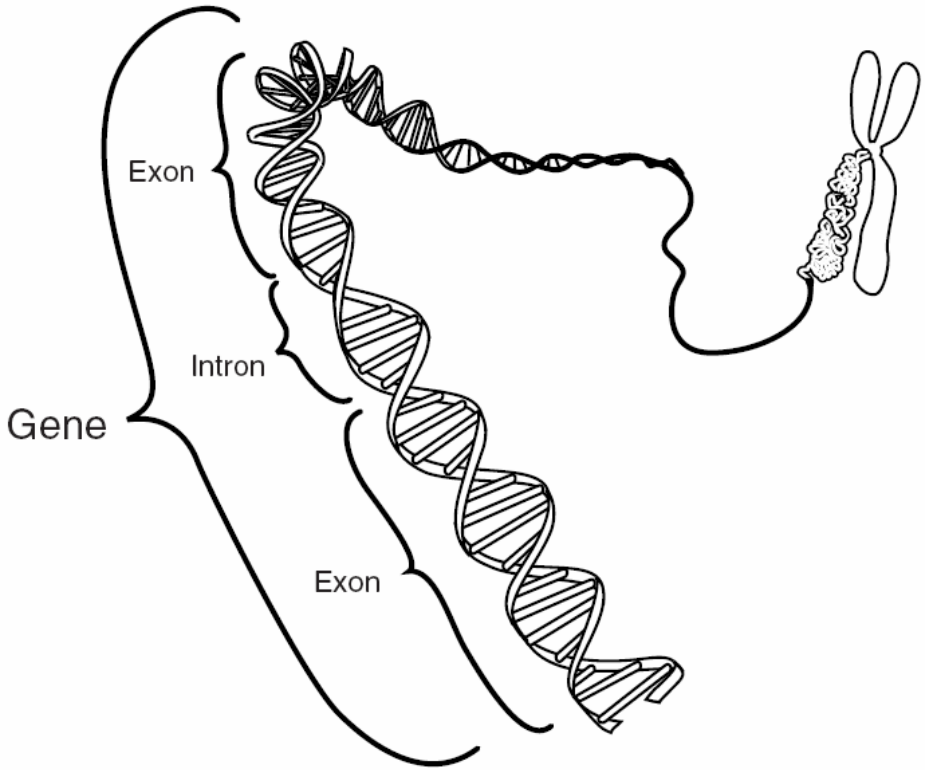


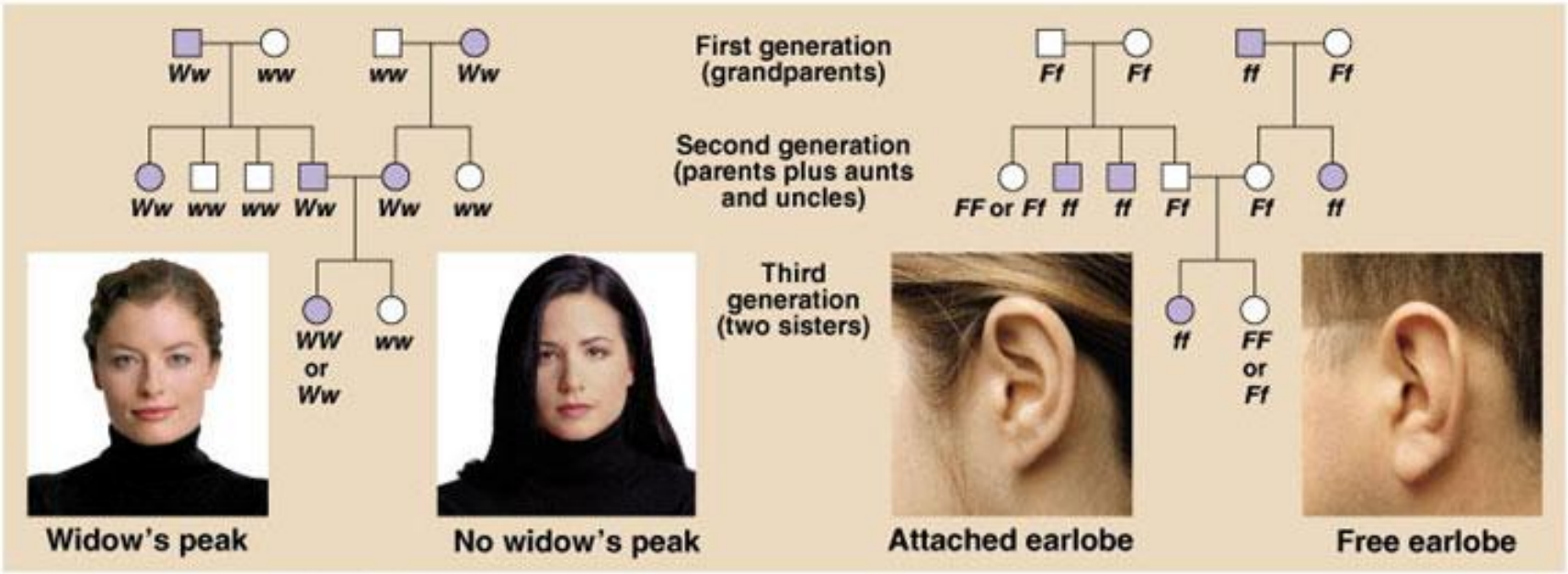


- **Humans have 46 chromosomes in the nucleus of every cell, 23 from each parent.**
- **Each chromosome consists of very tightly packed double helix DNA.**

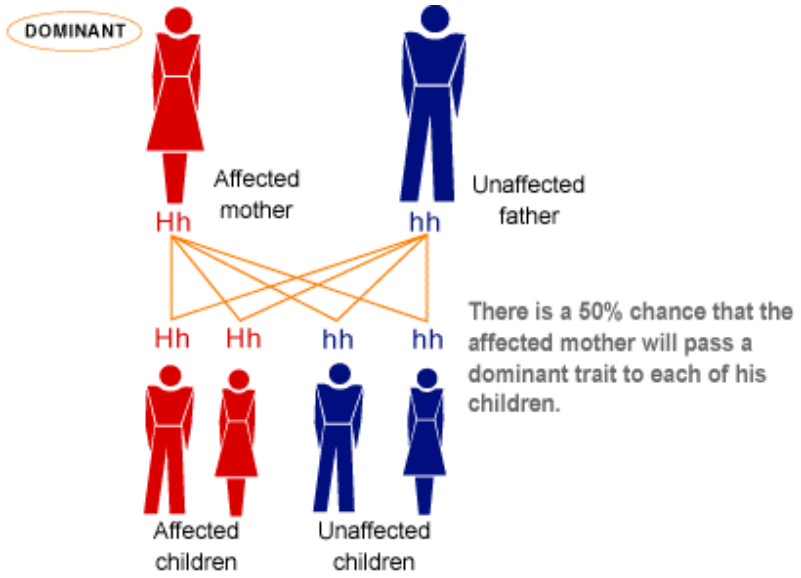
- **Genes are stretches of DNA found on chromosomes.**

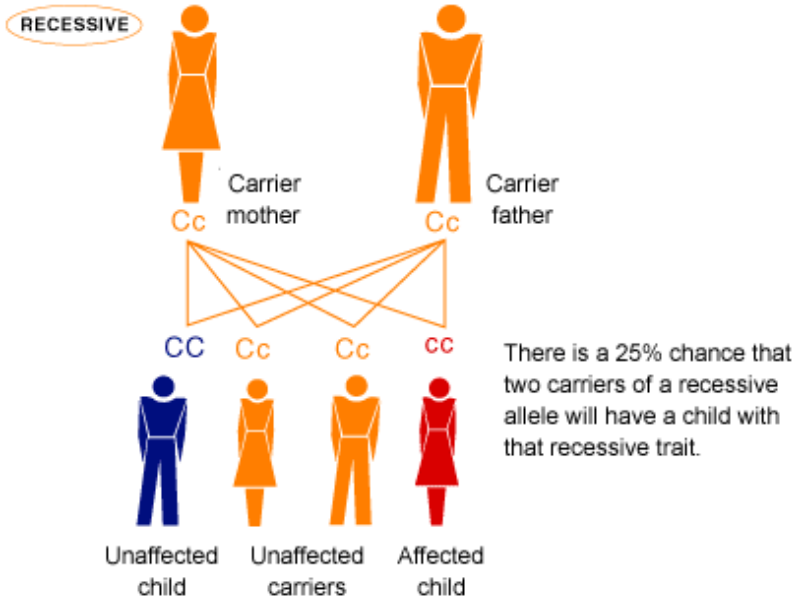
- **Each gene codes for a different physical trait.**





- **The genes you inherit from your parents determine your physical traits.**
- **Genes and traits are considered dominant or recessive, although in some cases it is not always clear.**

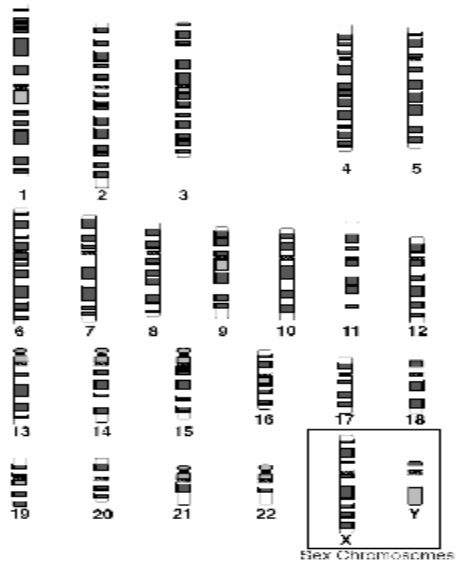




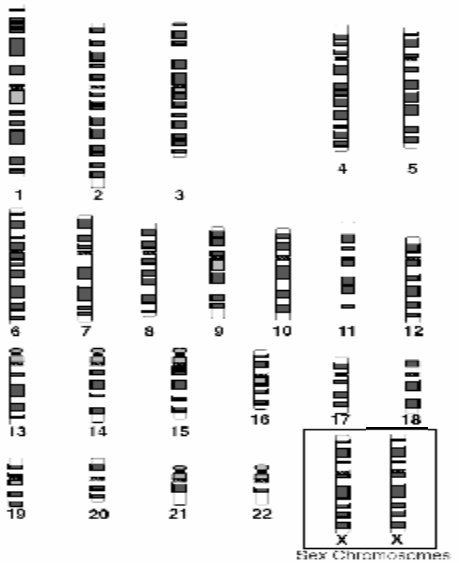
- **Dominant traits occur when only one copy of the dominant gene is inherited.**

- **Recessive traits are usually rare because you need to inherit a recessive gene from <u>both</u> parents.**

Male or Female?



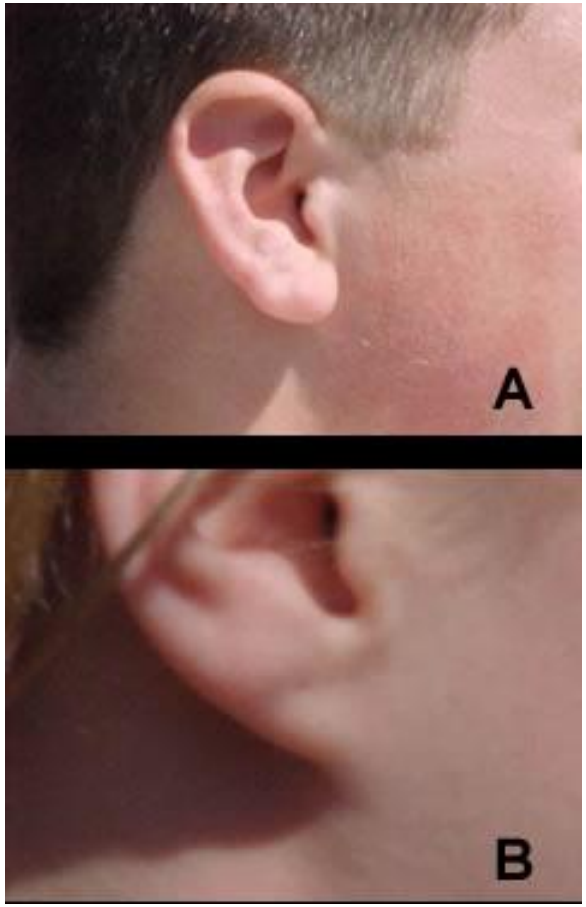
Male (XY)



Female (XX)

- **Your sex is determined by whether you get an X or Y chromosome from your father. Everyone receives an X from their mother.**

Earlobes



- **Detached earlobes are believed to be dominant, but more than one gene may be involved.**

- **Attached earlobes are considered recessive.**

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Tongue Rolling

- **Rolling**

- **Rolling is thought to be dominant, but identical twin studies have cast doubt on this observation.**

- **Non-rolling**

- **Non-rolling is thought to be recessive.**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Ear Wiggling

Ear wiggling may be connected to tongue rolling in males.

- **Can move ears = <u>Dominant</u> (although this may be variable)**

- **Can't move ears = <u>Recessive</u>**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Dimples

- **Dimples are thought to be <u>dominant</u>.**

- **No dimples is <u>recessive</u>.**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Hand Clasping

Hand clasping is believed to be determined by genetic factors, although it is unclear if one trait is dominant over the other.

- **Left Thumb on Top**

- **55% of people place their left thumb on top**

- **Right Thumb on Top**

- **44% place their right thumb on top.**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Cleft Chin

- **Cleft chins are <u>dominant</u>, although variable penetrance may influence expression.**

- **No cleft is <u>recessive</u>.**

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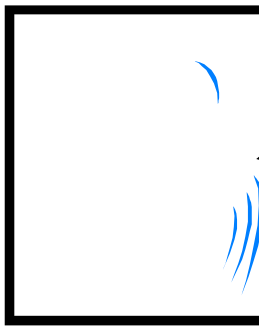
Widow's Peak



- **A widow's peak hairline is considered dominant.**
- **No widow's peak is considered recessive.**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Hair on Middle Segment of Finger

- **Hair**

- **No Hair**

- **The presence of hair on the middle segment of *any* finger is dominant.**
- **No hair is recessive.**

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM

Phenylthiocarbamide (PTC) Tasting

PTC is a bitter flavor compound that often causes people to dislike certain foods, such as broccoli, coffee, or beer.

- **PTC tasting is <u>dominant</u>.**

- **75% of individuals can taste the bitter flavor of PTC.**

- **Non-tasting is <u>recessive</u>.**

- **25% of individuals find the paper tasteless.**

Image Sources:

Chromosomes and Genes: The National Human Genome Research Institute, www.genome.gov
Genes and Inherited Traits: Pearson Education, www.pearsoned.com
Dominant/Recessive Traits: Cooperative Research Centre, www.genecrc.org
Male or Female: The National Human Genome Research Institute, www.genome.gov
Earlobes: Windows to the Universe, www.windows.ucar.edu
Tongue Rolling, Hand Clasping: Genetic Science Learning Center at the Univ. of Utah, gslc.genetics.utah.edu
Ear Wiggling, Dimples, Cleft Chin, Widow's Peak, & PTC Tasting: Microsoft Word Clip Art, office.microsoft.com/clipart/
Hair on Middle Segment of Finger: Koshland Science Museum, www.koshlandscience.org