

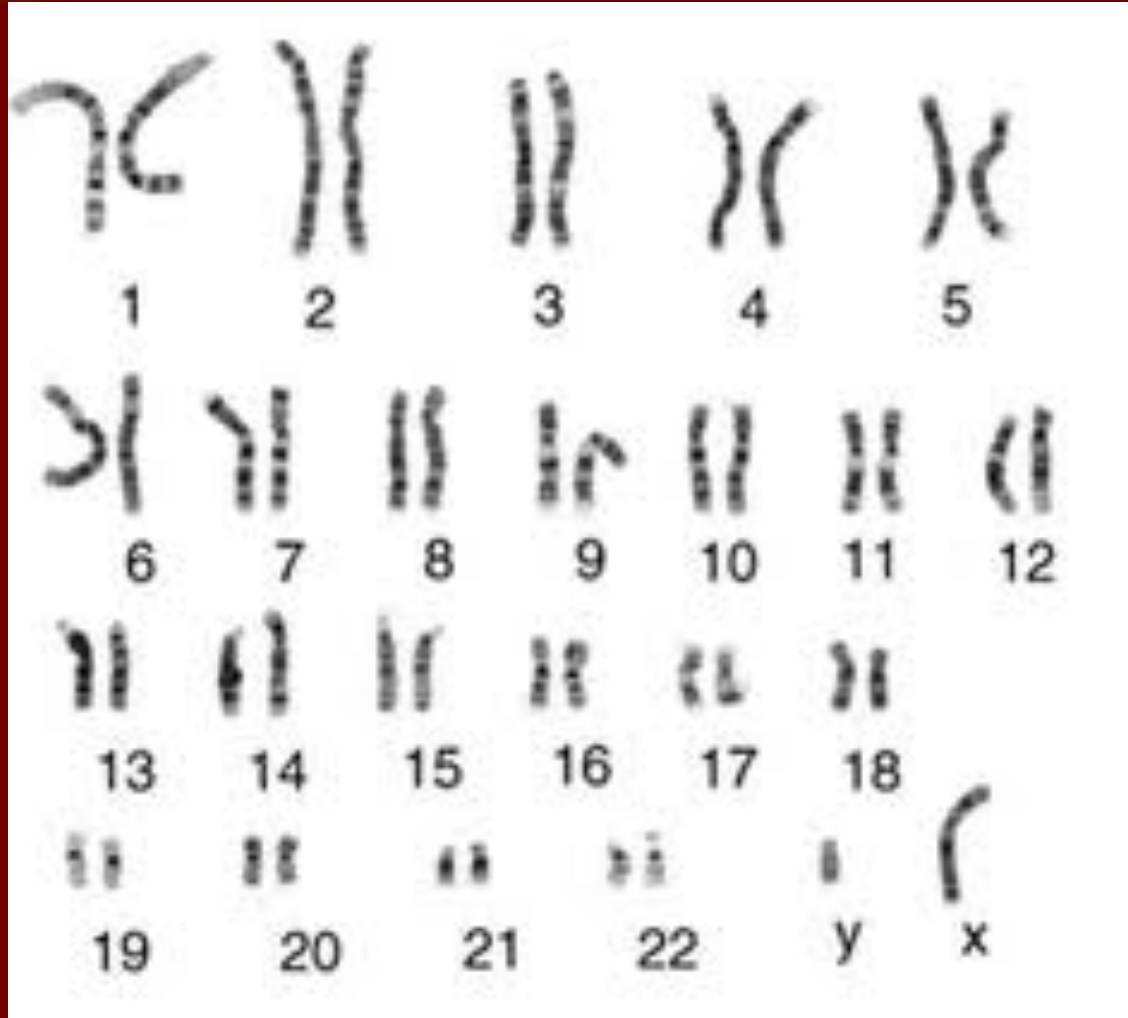
# Ch 15.1: Human Chromosomes

Essential questions:

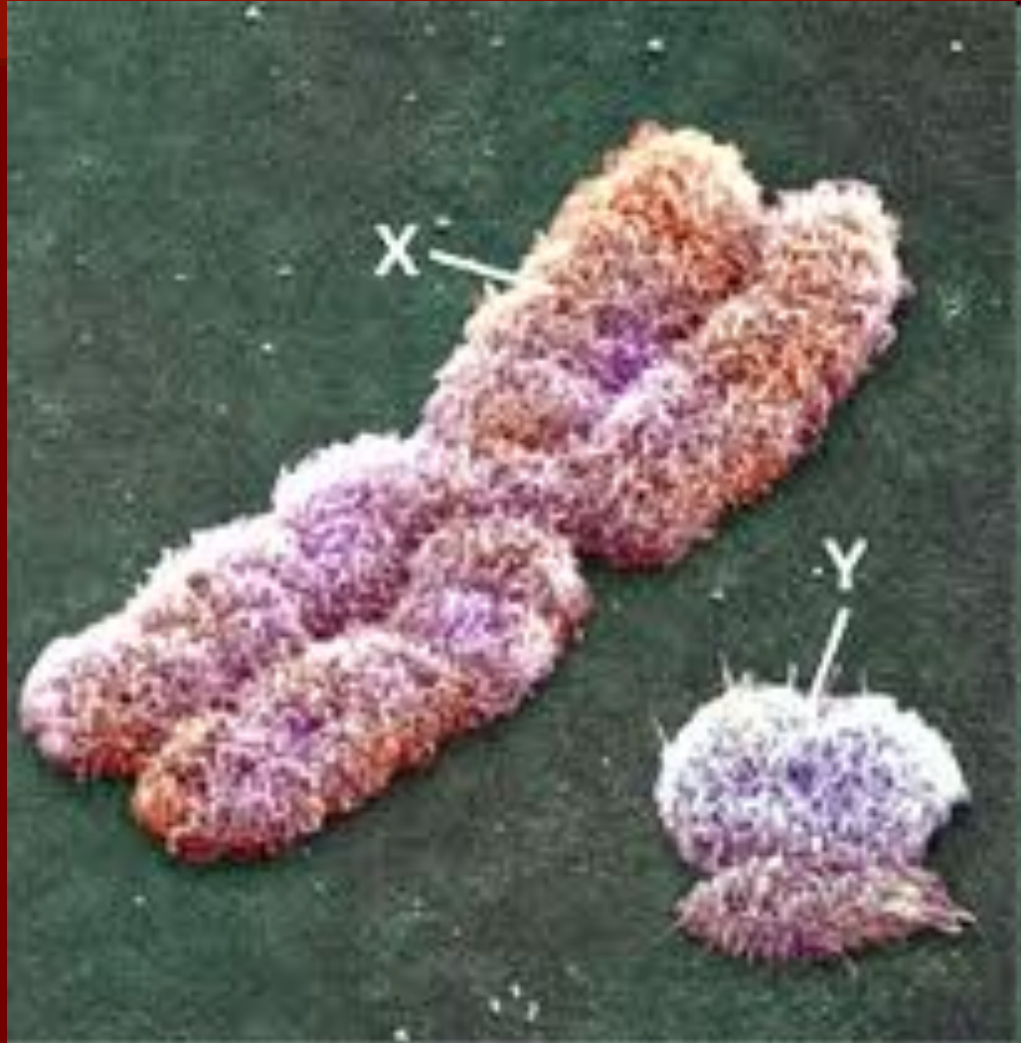
- How are human karyotypes used?
- What patterns of inheritance do human traits follow?
- How can pedigrees be used to analyze human inheritance?

# ■ Karyotypes

- Genome
- Karyotype

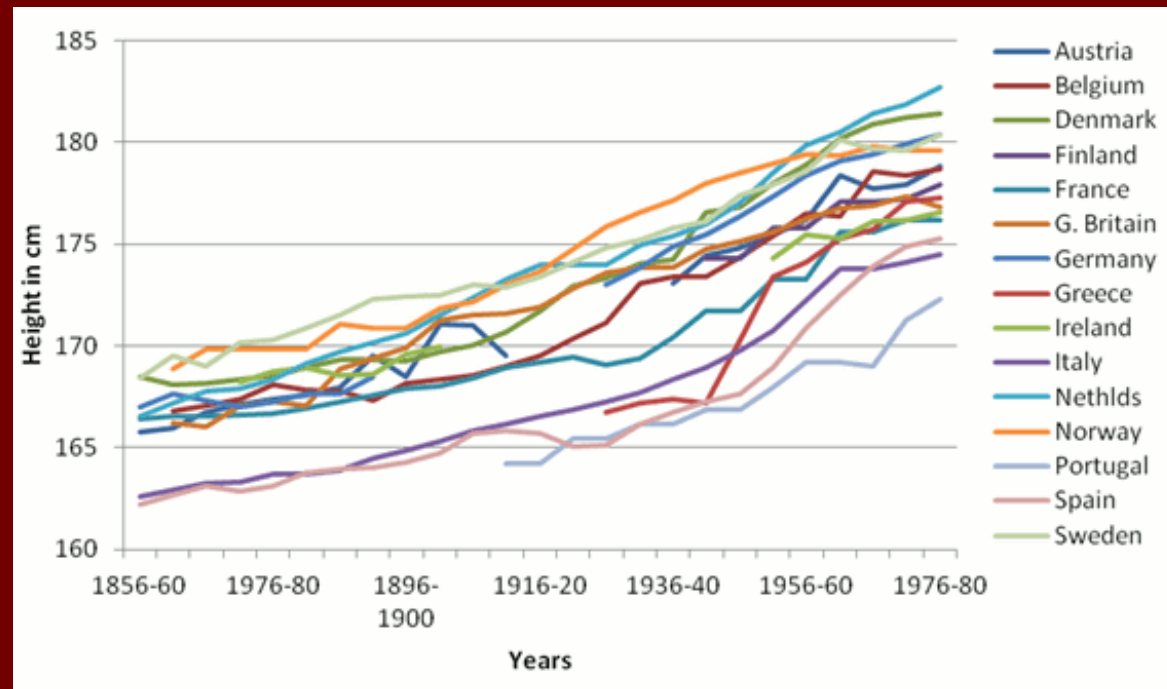
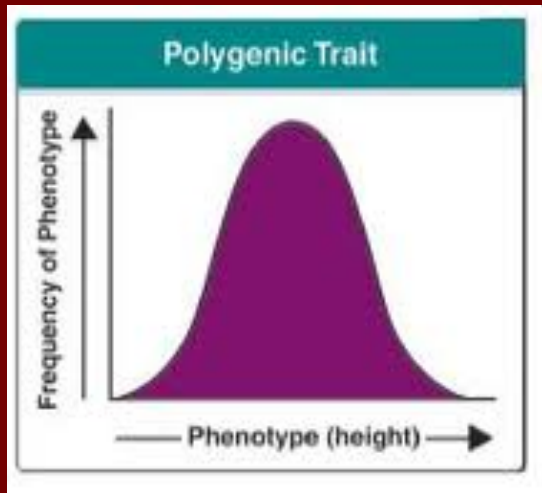


- Sex chromosomes
- Autosomal chromosomes



# ■ Transmission of Human Traits

- Dominant & recessive alleles
- Codominant & multiple alleles
- Many traits influenced by environment



# ■ Human Genes

## – Blood Group Genes

- Rh group – + dominant, - recess.

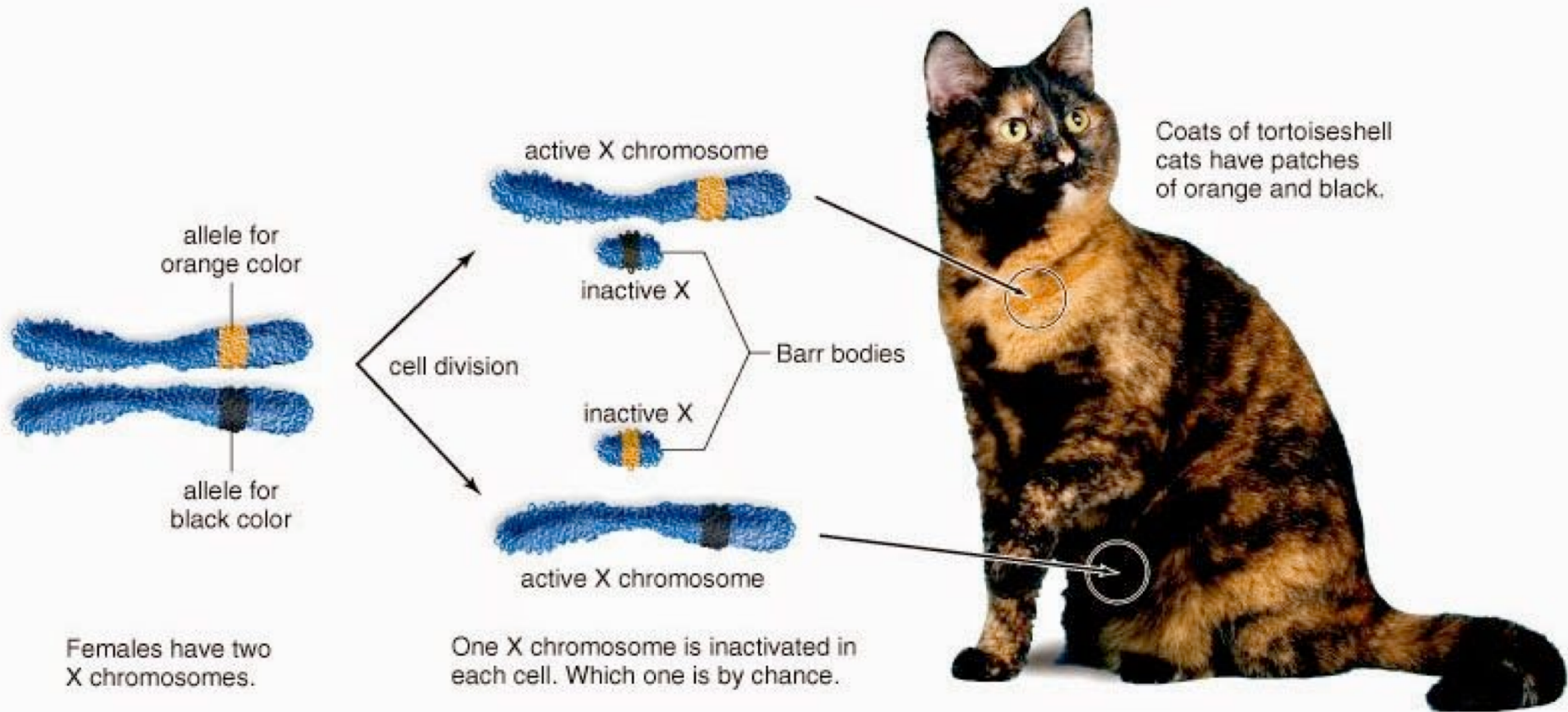
- ABO group

– 3 alleles  $I_A$   $I_B$   $i$

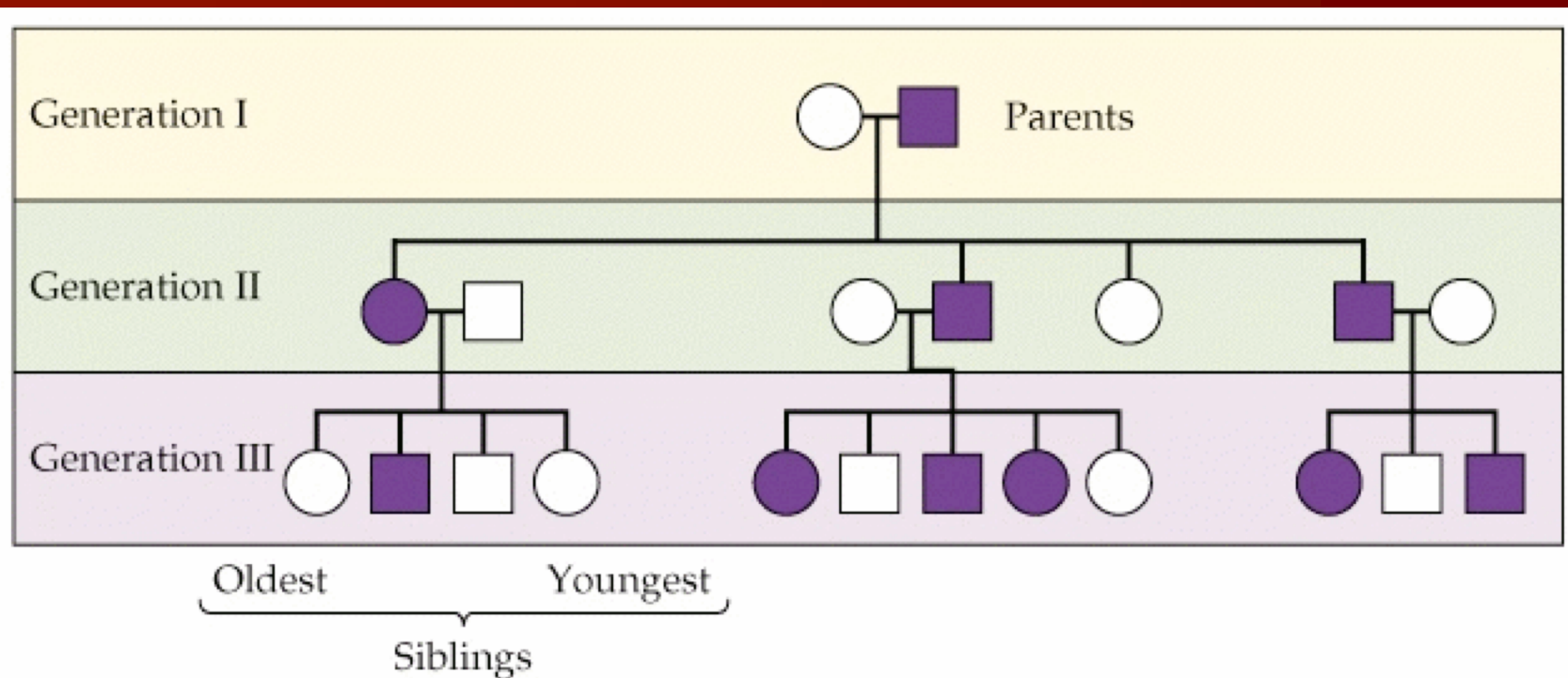
- first 2 are codominant
- $I_A I_B$  = type AB
- $I_A I_A$  or  $I_A i$  = type A
- $I_B I_B$  or  $I_B i$  = type B
- $ii$  = type O
- Universal donor – Type O
- Universal recipient – Type AB

- Sex-linked inheritance
  - Sex-linked gene
- X-chromosome inactivation

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# Human Pedigrees



Female ○ } Predominant phenotype  
Male □ }

Female ● } Phenotype of interest  
Male ■ }

○—□ Mating