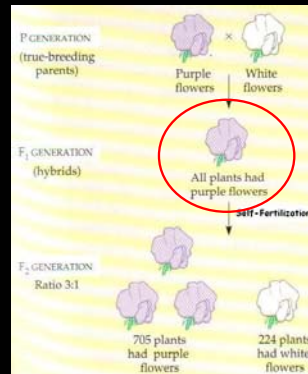


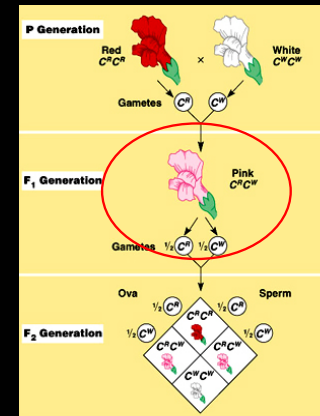
## Complete Dominance

- aka "simple" dominance
- Mendel's studies described complete dominance



## Incomplete Dominance

- *Heterozygotes* produce less red pigment than red homozygotes
- Evidence for blending hypothesis?



## Codominance

- Heterozygote does NOT express an intermediate phenotype.
- Ex. Roan cow = Red bull x white cow



## Multiple Alleles

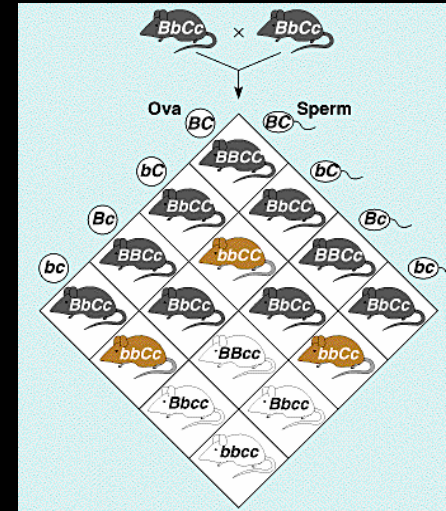
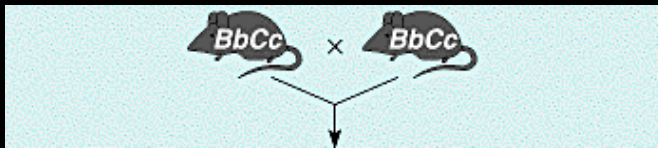
- $>3$  alleles for some characters
- Only two alleles per character in an individual!

Blood type of cells	Genotype	Antibodies made by body	Reaction to added antibodies	
			Anti-A	Anti-B
A	$I^A I^A$ or $I^A I^O$	Anti-B		
B	$I^B I^B$ or $I^B I^O$	Anti-A		
AB	$I^A I^B$	Neither anti-A nor anti-B		
O	$I^O I^O$	Both anti-A and anti-B		

# Epistasis

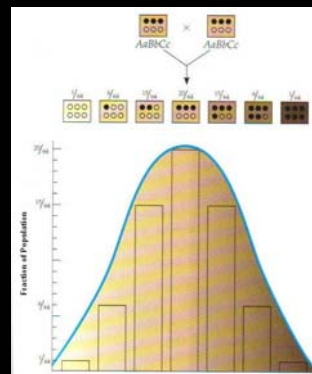
- Gr. "standing upon"
- A gene at one locus alters phenotypic expression of another gene

Black coat B Color C  
 Brown coat b No color c



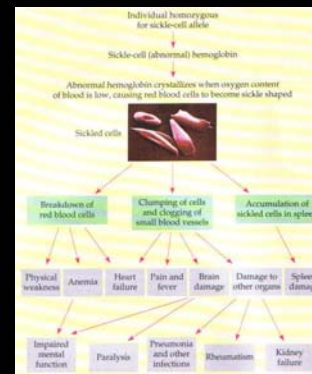
# Polygenetic Inheritance

- Additive effect of two or more genes
- P.I. indicated by a character varying along a continuum



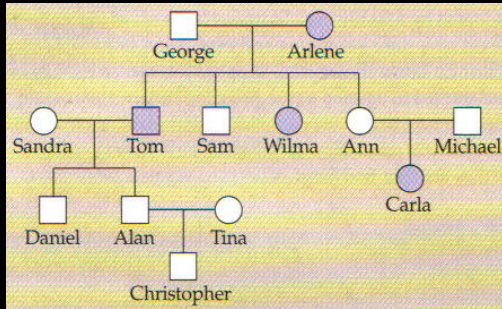
# Pleiotropy

- Gr. Pleion, "more"
- Genes having multiple phenotypic effects.
- Ex. hereditary diseases



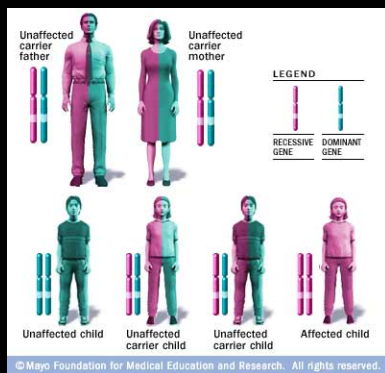
## Human Genetic Analysis: A Family Pedigree

A family's history for a trait is assembled into a family tree that describes links between parents and offspring across the generations...



## Human Genetic Disorders

### Recessively Inherited Disorders



### Dominantly Inherited Disorders

Achondroplasia



Polydactyly



# Dominantly Inherited Disorders

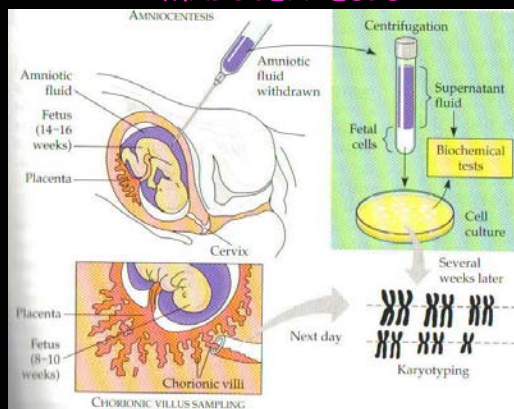
Progeria



# Genetic Counselling

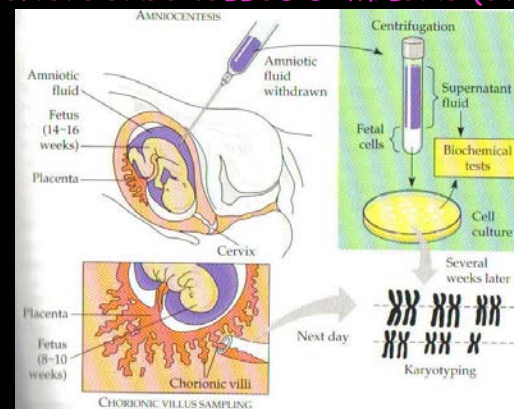
## Fetal Testing

- AMNIOCENTESIS



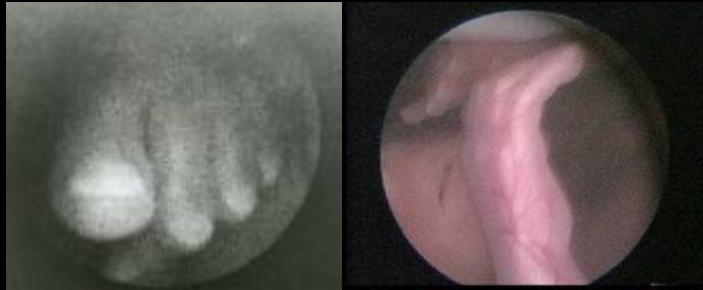
## Fetal Testing

- CHORIONIC VILLUS SAMPLING (CVS)

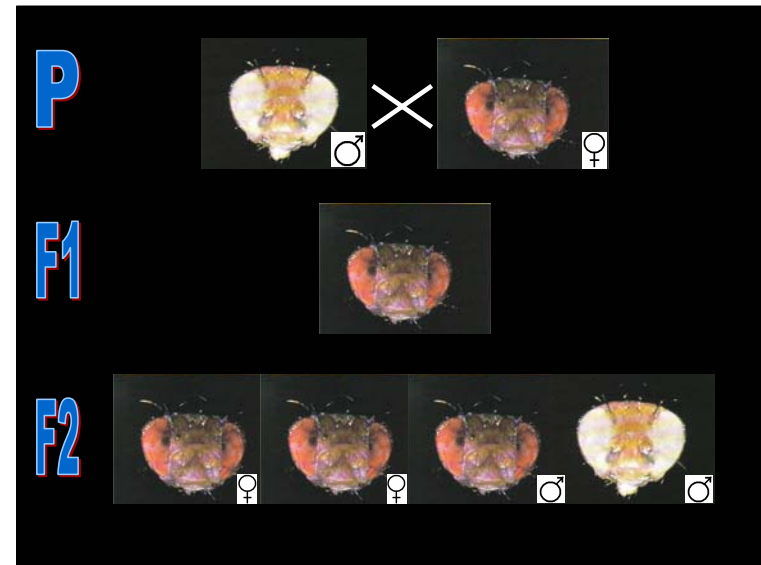
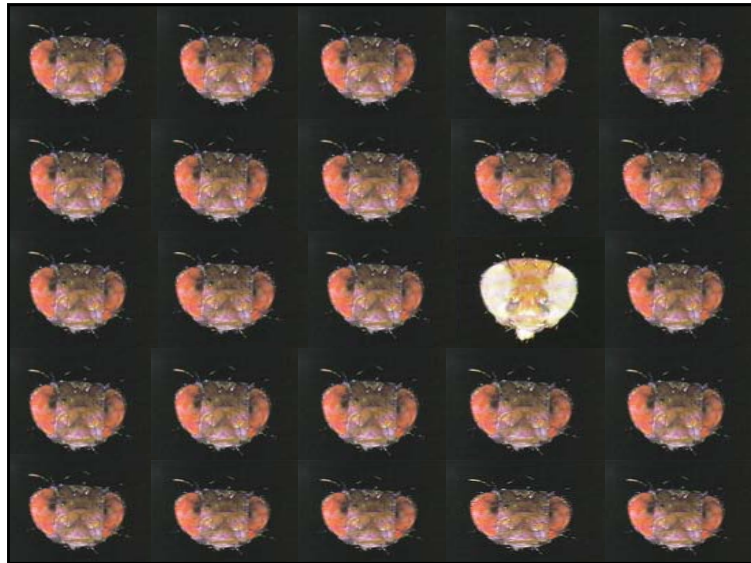


# Fetal Testing

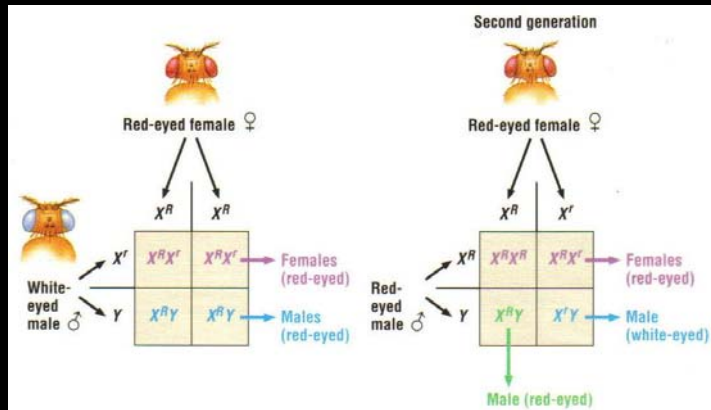
• FETOSCOPY



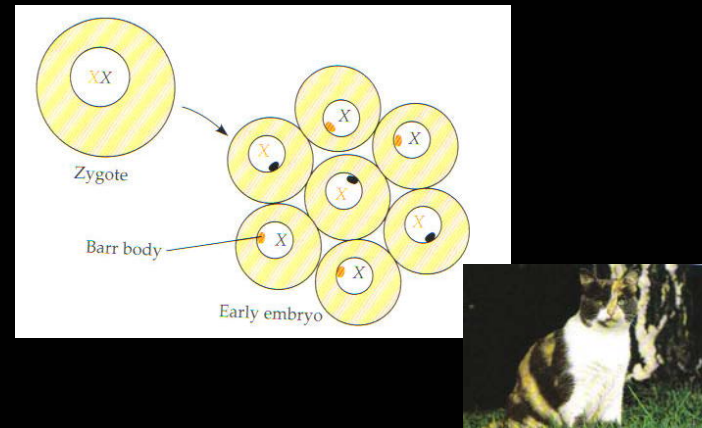
# Chromosomal Theory



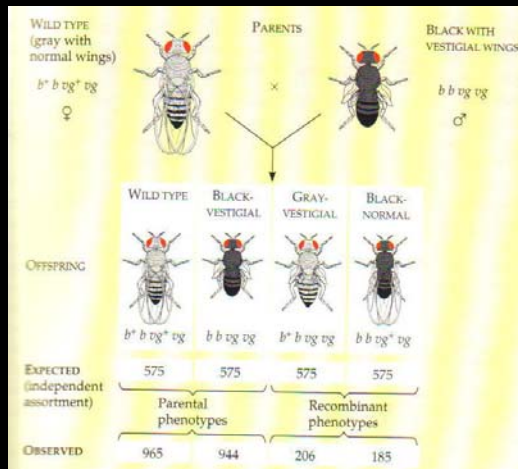
## Sex-Linked Traits



## X inactivation = a Barr Body



## Linked Genes



## Chromosome Mapping

