Inversions

♦ From two internal breaks

♦ Phenotypes?
  ◊ Often no overt phenotype
  ◊ Initial detection often on genetic grounds

Paracentric and pericentric inversions

Normal
Paracentric
Pericentric
Meiosis and crossing over in inversion heterozygotes

- Markers on the homologs are no longer co-linear...

Diamond Paracentric inversions
Consequences?

Pericentric inversions
Translocations

- Often reciprocal
- Double heterozygotes can be viable

Phenotypes
- can cause some serious human disorders
- Associated with specific forms of cancer
  - e.g., Burkitt lymphoma
    - one partner: chromosome 8
    - other partner: chromosome 14, 22, or 2
Non-cancer disorders

e.g., translocation Down syndrome

Robertsonian translocation between chr 14 and 21
long arms of two acrocentric chromosomes fused
Pairing and meiosis in double heterozygotes

Normal

Translocation (reciprocal)

Adjacent

Alternate

or
Consequences

- Semisterility