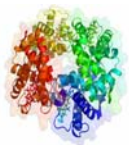
MIDTERM EXAM:
Monday
10/19

Mutations **– changes in the sequence of a DNA molecule;**
introduce new alleles into a population



H – normal hemoglobin **mutation** S – pathological hemoglobin sickle cell anemia
reverse mutation

Types of Mutations

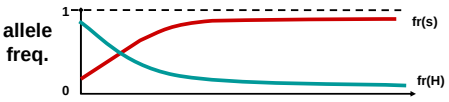
somatic **gametic**

Only gametic mutations affect allele frequency in a population

A T G G A A G C A C G T
Met Glu Ala Gly

1. **silent (synonymous)**
2. **missense**
3. **nonsence – introduce stop codon**
4. **Indels (insertions/deletions) → frame shift**

If not selected against, mutations will accumulate

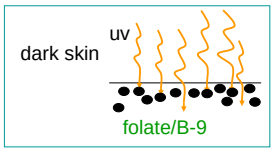


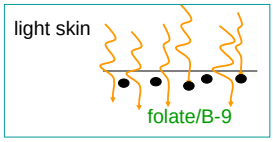
Genetic Adaptation: Skin Color

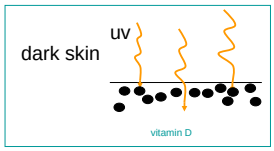
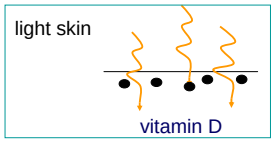
dark skin color selected for near equator because

A. it protects against degradation of folate/B-9

B. it prevents skin cancer





Skin Color

- light skin selected for far from equator because allows for production of adequate vitamin D
- individuals with light skin less likely to get rickets