HPS202/772 CHILDHOOD AND ADOLESCENT DEVELOPMENT
EXAM REVISION

Learning objectives

Topic 1. Biological and genetic development

1. Describe DNA

a. Instructions for the way our genes are encoded in our body – the way our cells are carried out
b. DNA Is the genes in the chromosome
    i. DNA Is the double helix
    ii. The chromosomes are the lines running through the double helix

2. Describe how characteristics are inherited from our biological mother and father

Meiosis the process of cell generation – when the chromosomes cross over – happens when you conceive - You have the same cross s Chromosomes from both parents cross over and there's

Mitosis – Cell repair – ongoing repair of new cells – Everyday – exact same DNA

3. Describe the following types of inheritance

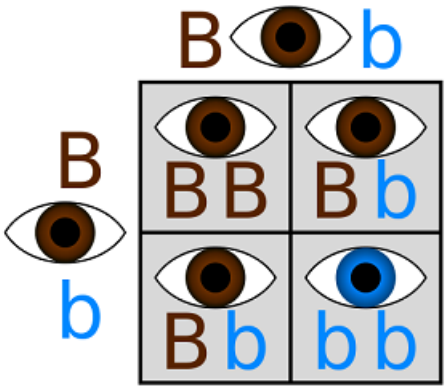
Dominant and recessive

- Dominant gene when you inherit alleles which is the type of gene
- You may inherit multiple alleles
- Brown eyes are dominant over blue eyes
- To get blue eyes you need to have two recessive genes
- Punnet square
- The only way for a recessive trait to show is if you don't have the presence of a dominant trait

Co-dominant genes

When the genes are expressed the same time

- E.g. Blood types



4. Understand the difference between genotype and phenotype

c. **Genotype**: What your genes tell you – genes transcribed by the organism – E.g. hair colour – born with brown hair
   i. **E**.g sex what your born with

d. **Phenotype**: Your appearance – physical manifestation of the gene
   i. E.g. dies brown hair to blonde thus phenotype is blond hair
   ii. E.g sex change – change gentials

5. Describe the three prenatal periods

Germinal 0-8
Stages 1 couple of weeks
- Point of conception (sperm and egg come together to form a zygote egg sperm = zygote – when the placenta forms)
- Conception and placenta

Embryonic 8-32
Stage 2. 2 months bulk of growth
– most important part for the organs – sex, brain, fat, cardio, respiratory system etc.…
– Physical growth – looks like a baby

Phetal 40 weeks (born)
Stage 3. Baby development
- Mental growth
- Autism or ADHD – More cognitive functioning
- Brain development

6. Understand the concept of a teratogen

- Bad things in reference to pregnancy
- Any substance which is harmful to the baby in the womb
- Alcohol, cigarettes, Not eating right, Different foods, Processed, packaged, additives,
- Bonolisteria – comes through meats, seafood, packaged food

7. Understands the following terms

Synapse:
- A gap between the neurons, strengthens the relationship
- A neuron which fires together wires together
- The more a synaptic connection wires together the stronger it becomes

Myelination
- Axon is the chain on the neuron

- Milan – insulates and connects and is the coating and protector
- Helps to form connections up until 25 – we deform the myelin
- Brain is still forming myelin
- More myelin you have the faster speed you have
- The faster you can connect ideas

8. The contribution of genetics and environmental factors to brain development

- Biological things
- Genetically and environmental – height
- Potential for intellect
    a. What your predisposed to compared to what your opportunities are
    b. Mental illness
        i. If your triggered by your environment and if your predisposed
    c. Sociability

9. Brain development in adolescence

Frontal lobe – Last to mylonite

- Because its about decision making
- Calculations
- Personality