Psychology of Adolescents-

Chapter 2: Puberty and Physical Development

Puberty: “grow hairy” - biological changes of the adolescent’s Anatomy, Physiology, and Physical appearance

What sets the changes of puberty in motion/keeps them on track?
-Endocrine glands: system that produces hormones
-Hypothalamus: controls the endocrine system
-Pituitary: master gland of the endocrine system, sends out the hormones
-Gonads: controlled by the pituitary, ovaries (females) and testes (males), produce the sex hormones estrogens and androgens

The HPG axis:

- Composed of the hypothalamus, pituitary gland, and gonads (HPG)
- Creates a feedback loop:
    - When hypothalamus senses that the sex hormone levels are too low it sends a signal to the pituitary glands (GnRH)
    - In response, the pituitary glands produces more hormones (FSH, LH) that when arrived at the gonads helps increase production of sex hormones
    - The increase in hormones is what initiates physical/sexual development
    - “Set Point” = when sex hormones reach a high enough level the hypothalamus monitors this and lowers the levels of GnRH hormone

Physical development during adolescence:

- Growth spurts:
    - In Boys-
        - Starts later (12) ends later (18)
        - Boys typically end up taller because: While girls are going through their growth spurt boys are adding cm, so they are taller when they start their growth spurts (because they have those extra two years)
        - Boys end up being physically more capable because they have more muscle/less fat, bigger lungs/heart, etc.
    - In Girls-
        - Starts earlier (10) ends earlier (16)
        - Body fat increases more for girls
- Asynchronicity: body parts develop at different rates (extremities, hands/feet, are the first to hit growth spurt - lanky look)

Sexual development during adolescence:

- In Boys-
    - Testes: produce sperm cells

    - Growth of pubic hair
- In Girls-
    - Ovaries: produce eggs cells or ova
    - Growth of breasts/pubic hair
- In both-
    - Reproductive organs mature
    - Genitals become more adult-like

Tanner stages of development:

- Tanner: British expert on puberty and growth
- Tanner stages: scale used to represent the development of adolescents secondary sex characteristics throughout puberty
- Issue is that he had a very particular sample- children that were in a group home/low SES, which correlates to certain negative outcomes ex. Poor nutrition - which can affect development)

The order of pubertal events:

- Girls: breast buds, pubic hair, growth spurt, sexual reproductive organs, menarche, increased secretion of skin oil/sweat, underarm hair
- Boys: testes, pubic hair, growth spurt, growth of penis, deepening of voice, increased secretion, facial hair
- Sequence is fairly regular but timing is not

(In class) Evolutionary theory: why is menarche late in girls and sperm production earlier in boys? -it gives men more chances to have children, and girls bodies are not ready to bear a child

Puberty studies done on other cultures:

-Kikuyu culture in Kenya:

- Reversal of Western pattern: Boys show physical changes of puberty before their female peers

-African American girls:

- Many girls began developing much earlier, at age 8

-Chinese girls:

- Pubic hair began to develop about 2 years after development of breast buds/only a few months before menarche

Menarche and the secular trend:

- Menarche:
    - Girl's first menstrual period
    - Comes later in puberty
    - Canada: average age is 13 years
- Secular trend: age of menarche has gotten earlier in recent decades- theories:

    - Low SES/environment:
        - Industrialization occurred at a time when menarche was higher (working hard/in poor health conditions etc.) and then things improved
        - Physical exertion is another factor that delays puberty
        - Study done by Thomas and colleagues showed that the age of menarche is associated with life expectancy (shows that the environmental factors are affecting when you first get your period/when you die)
        - Two factors= nutrition/illiteracy rate in adults - associated with more child labour (low SES)
    - Stress in some contexts:
        - High investment in child rearing and low marital conflict (non-stressful family) associated with later period
        - Higher income and living with both parents delayed menarche
        - Family conflict associate with with earlier maturation
    - Genetic link:
        - Many girls experience menarche when their mothers did

How girls respond to puberty:

- Early-maturation = more anxious/depressed/draws attention from older boys
    - Most effects of early maturation are negative, they are at risk for a variety of problems (all girls school - tend to not experience this due to possible negative attention received from boys)
- Late maturing =have fewer problems, but may suffer from teasing/negative body image (these girls tend to be taller/leaner which is more accepted by society)
    - By their late teens, tend to have a more “socially favourable” body image (lean/model like)

How boys respond to puberty:

- Semenarche: first emission of seminal fluid
- Nocturnal orgasm (wet dream) and masturbation
- Self-conscious about penis size and involuntary erections
- Early-maturation = more popular with peers
    - Tends to lead to more positive effects (better body image, higher popularity, better at athletics)
    - Negatives of early maturation can be involved in: substance use, delinquency, sex
- Late-maturation = evidence of problems (same as early maturing girls)
    - Some research has shown that these kids show more social initiative, intellectual curiosity, less alcohol use

Why does being early or late have an impact?

- Deviance theory: don’t want to be different from the group (most seen in early maturing girls/late maturing boys)

- Stage termination theory: have to accomplish certain psychological tasks during development and when you deviate from certain stages of development you don't achieve them (ex. Early maturing girls don't go all the steps of childhood psych dev.)
- Adult resemblance theory: the more you look like an adult the higher the benefits (most prevalent to men, because society wants women to look youthful)

How parents respond to puberty:

- Parents must adapt to adolescent changes
    - Teens demand more input, fewer restrictions
    - Parent-child conflict eases across adolescence (spending less time with their parents)
    - Distancing hypothesis - less parent-child intimacy as child becomes more sexually mature
- Gender intensification - as children go through puberty, society pushes them toward traditional gender roles
- Graph (Slide 29):
    - Mothers and early adolescents talked more than mothers and younger children
    - Suggests that parent-child communication shifts from touching to talking when puberty is reached

How cultures respond to puberty:

- Puberty rites: varies depending on culture
    - Cultural rituals that signifies an entry into adolescence
    - "Sweet sixteen", quinceaneras, Bas/Bar Mitzvah
    - Common features:
        - Separation -from homes, parents, opposite sex
        - Transition -incorporation about beliefs, values, and practices of the culture
        - Incorporation -boy or girl is welcomed into adult society
- For Girls:
    - Typically begins at menarche
- For Boys:
    - No specific event for boys similar to menarche
    - More of a group mentality
    - Rites tend to be more difficult/painful

Brain development during adolescence:

- Changes in adolescence:
    - Synaptic pruning: less-used circuits are eliminated
    - Cortex shrinks, develop a more efficient brain
    - Decision-making area matures slowly
    - Pleasure center matures quickly

How puberty affects mood

- Mood swings (can be positive/negative):
    - Emotional swings usually reduced later on
    - Hormones and mood affect each other: an event can have a greater/lesser effect depending on hormonal level
    - More social stressors during adolescence can lead to higher mood swings
    - Are mood swings more biochemical or social stresses? It's hard to tell because it is all happening at the same time

Effects of puberty on body image:

- Physical changes will bring more attention to the body
- Causes can include:
    - Cultural standards
    - Media images of ideal body type (different for boys/girls)

Health Issues during adolescence:

- Sleep-deprivation
- Eating habits
    - Teens more calories than children or adults
    - Tend to have unhealthy eating habits (obesity rate has increased)
    - Drop in the level of physical activity, however regular exercise = very important
- Obesity in the U.S
    - Very high: higher levels of leptin (the "hunger hormone")
    - Increase of fast food intake, availability of junk food at school/decline of physical activity
    - Influenced by media/television