

# Adolescence

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Adolescence – Latin: “To Grow Up”

- Piaget – Formal Operations
- Erikson – Identity vs. Role Diffusion
- Freud – Genital Phase of Psychosexual Development

# Adolescence

## General

Transition from Childhood to Adulthood Characterized by dramatic changes in:

- Identity (a coherent sense of stable self across circumstances and including past experiences and future goals)
- Self-Consciousness (Theory of Mind/Perspective Taking)
- Cognitive Flexibility (Executive Functions)
- Physical Maturation (Ability to sexually reproduce – Puberty)

# Adolescence

## Stage Definitions

### Definitions:

- Early Adolescence (12 – 14)
- Middle Adolescence (15 -17)
- Late Adolescence (18 +)

### Puberty (Latin – “age of maturity”)

Process of physical changes by which a child’s body matures into an adult body capable of sexual reproduction to enable fertilization

# Adolescence

## Tanner Scale of Physical Development

### **Pubic hair (both male and female)**

- Tanner I no pubic hair at all (prepubertal state) [typically age 10 and younger]
- Tanner II small amount of long, downy hair with slight pigmentation at the base of the penis and scrotum (males) or on the labia majora (females) [10–11.5]
- Tanner III hair becomes more coarse and curly, and begins to extend laterally [11.5–13]
- Tanner IV adult-like hair quality, extending across pubis but sparing medial thighs [13–15]
- Tanner V hair extends to medial surface of the thighs [15+]

# Adolescence

## Tanner Scale of Physical Development

### Genitals (male)

- Tanner I prepubertal (testicular volume less than 1.5 ml; small penis of 3 cm or less) [typically age 9 and younger]
- Tanner II testicular volume between 1.6 and 6 ml; skin on scrotum thins, reddens and enlarges; penis length unchanged [9-11]
- Tanner III testicular volume between 6 and 12 ml; scrotum enlarges further; penis begins to lengthen to about 6 cm [11-12.5]
- Tanner IV testicular volume between 12 and 20 ml; scrotum enlarges further and darkens; penis increases in length to 10 cm and circumference [12.5-14]
- Tanner V testicular volume greater than 20 ml; adult scrotum and penis of 15 cm in length [14+]

# Adolescence

## Tanner Scale of Physical Development

### **Breasts (female)**

- Tanner I no glandular tissue: areola follows the skin contours of the chest (prepubertal) [typically age 10 and younger]
- Tanner II breast bud forms, with small area of surrounding glandular tissue; areola begins to widen [10-11.5]
- Tanner III breast begins to become more elevated, and extends beyond the borders of the areola, which continues to widen but remains in contour with surrounding breast [11.5-13]
- Tanner IV increased breast size and elevation; areola and papilla form a secondary mound projecting from the contour of the surrounding breast [13-15]
- Tanner V breast reaches final adult size; areola returns to contour of the surrounding breast, with a projecting central papilla. [15+]

# Adolescence

## Puberty Timing

### Puberty Onset

- girls age 10 and boys age 12
- Menarche – 12.7 years (decreasing at rate of 2.3 months per decade over past 150 years)

# Development of Adolescent Brain

Concept that brain development occurs after childhood is relatively new (1960's)

Two main changes in brain development at puberty:

- Sensory and Motor regions myelinate in childhood – Frontal Cortex continues to myelinate into adulthood
- Synaptogenesis and subsequent pruning peaks in Sensory/Motor systems in early childhood
- In the prefrontal cortex this occurs throughout adolescence



# Development of Adolescent Brain

- White Matter increases in frontal and parietal cortex from childhood through adolescence and into adulthood in a linear fashion
- White Matter increases from back to front pattern (Parietal to Frontal lobes)
- Grey Matter follows a U-Shaped curve in certain brain regions
- Frontal lobes – grey matter volume peaks with onset of puberty then declines throughout adolescence

# Adolescent Brain Development and Behavioral Correlates

## Risk taking in adolescence

- Smoking (57% by end of High School)
- Alcohol (50% 12<sup>th</sup> graders in previous 30 days)
- Cannabis (23% High School in previous 30 days)
- Sexually Active (46% of youth in High School)

# Development of Adolescent Brain

- It is a myth that impulsivity increases in Adolescence – it decreases from childhood to adulthood and is probably related to myelination of prefrontal cortex
- Sensation seeking (risk taking) and sensitivity to rewards increases during adolescence but it is specific, salient and context dependent – probably related to synaptogenesis in grey matter and nucleus accumbens

# Changes in Behavior and Cognition after Puberty

## Executive Function

### Executive Function:

- Selective attention – ability to filter out unimportant information
- Decision making – ability to manipulate multiple constructs mentally
- Voluntary response inhibition – suppress impulses that negatively impact future goal attainment
- Working memory – holding in one's mind a plan to carry out in the future

# Changes in Behavior and Cognition after Puberty

## Social Cognition

### Social Cognition

- Self-Awareness - is the capacity for introspection and the ability to reconcile oneself as an individual separate from the environment and other individuals
- Theory of Mind – ability to understand (and to infer) others by attributing mental states such as beliefs, desires and intentions (motives) to others that are different from one's own

# Changes in Behavior and Cognition after Puberty

## Perspective Taking

### Perspective Taking

- The ability to take on the viewpoint of another person
- Critical for successful social communication and interaction
- One theory is we understand others by mentally simulating their actions and thoughts

Functional neuroimaging suggests this is mediated between frontal and parietal cortex

# Adolescence Developmental Domains

1. Problem Behaviors
2. Parent-Adolescent Relationships
3. Puberty and its Impact
4. Development of Self
5. Adolescents and Peers
6. Adolescents and Siblings

# Problem Behaviors

- Not a period of “Normative Disturbance”
- Majority of adolescents do not develop social, emotional or psychological problems
- “Growth of Competencies” is more than “Avoidance of “Problems”



# Problem Behaviors

## Experimentation vs. Enduring Patterns

- Majority of adolescents experiment with alcohol and most have been drunk at least once – very few become problem drinkers
- Majority of adolescents do something illegal – very few develop criminal careers

# Problem Behaviors

## Origin of problems in adolescence

- Most teenagers with patterns of delinquency and criminal behavior had earlier childhood home/school/social problems
- Many teenagers who develop depression or internalizing disorders in adolescents had anxiety or other psychological distress in childhood

# Problem Behaviors

## “Adolescence-Limited” vs. “Life Course Persistent”

- Substance use, unemployment and delinquency are higher in adolescent than adult populations
- Most grow up to be sober, gainfully employed, law abiding adults

# Parent-Adolescent Relationships

- More research focus on parent-family conflict than closeness and companionship
- Bickering and squabbles increase between parents and teenagers during early adolescents; not clear why this is so
- This increase in conflict is accompanied by a decline in reported closeness and in the amount of time parents and adolescents spend together
- Transformation in the parent-adolescent relationship results in an increase in number of parents reporting difficulty adjusting to adolescent individuation and autonomy-striving

# Parent-Adolescent Relationships

- This disequilibrium typically followed by establishment of parent-adolescent relationship that is less contentious, more egalitarian and less volatile
- “Authoritative – warm and firm” parenting vs. “authoritarian, permissive or indifferent parenting” style – children have higher competence and greater psychosocial maturity
- Holds true in adolescence – “Authoritative Style (high responsiveness, high demandingness)” results in greater adolescent adjustment, school performance and psychosocial maturity

# Puberty and its Impact

- Pubertal maturation leads to a more egalitarian parent-adolescent relationship
- Pubertal development and family relational transformation are linked - Earlier and faster pubertal maturation occurs in girls raised in homes characterized by less closeness and more conflict and when biological father is not present

# Puberty and its Impact

## Early versus Late Maturation – Boys

- Early – more popular and have more positive self-image; greater risk for delinquency, antisocial behaviors, drug and alcohol use, truancy and precocious sexual activity. Increase in risky behavior may be mediated by friendships with older peers
- Late – Lower self-esteem and stronger feelings of inadequacy

# Puberty and its Impact

## Early versus Late Maturation – Girls

- Early – more emotional problems, lower self-image, higher rates of depression and anxiety and disordered eating risk. Also more popular and at higher risk for delinquent activities, substance use, school problems and early sexual intercourse. Spend more time with older adolescents (particularly boys) and these relations contribute to psychological difficulties.

## Puberty and Moodiness

- Girls – no association between average mood or mood variability with puberty
- Boys – More advance pubertal status associated with positive feelings



# Development of Self

- Adolescence is developmental time when an individual examines self-characteristics to discover who they really are and how they fit into the world around themselves
- Increase in abstract characterizations about self
- Self-concepts become more differentiated and better organized
- Begin to view self in terms of personal beliefs and standards and less in terms of social comparisons

# Development of Self

- Middle adolescents self-descriptions more discrepant (shy with friends but outgoing at home) but this decreases with more consonant view of self in late adolescents
- Evaluate self both globally and along distinct dimensions – academics, athletics, appearance, social relations and moral conduct – links between specific domains of self-concept and self-esteem. Example: Appearance is most important for overall self-esteem especially among girls.
- Self-conception varies across contexts – adolescents may see themselves differently when they are with peers versus parents or teachers

# Development of Self

- Self-Esteem is stable during adolescence and increases slightly over the period.
- Self-Esteem is related to parental approval, peer support, adjustment and school success.
- Ethnic identity in minority adolescents associated with higher self-esteem and self-efficacy.

# Adolescence and Peers

- Myth – adolescent peer culture which is a separate society with values opposed to those of adults
- There are many peer cultures and little evidence to support the concept of a “generation gap”
- Despite adolescence spending less time with parents and more time alone and with peers – parental relationship influences peer interactions.
- Adolescents from warm and supportive families are more socially competent and report more positive friendships
- Authoritative parenting decreases effects of negative peer influences

# Adolescence and Peers

## Peer Influences on Adolescent Development

- Peers influence adolescents in both + and - ways; + influence academic achievement and prosocial behaviors; - drug and alcohol use, cigarette smoking, delinquency
- Peer influence is typically not coercive but through admiration and respect
- Peers are typically similar not due to effects of influence but because friends are chosen due to similar behaviors, attitudes and identities
- Adolescent peer influence is strongest in middle adolescence

# Adolescence and Peers

Crowd versus Cliques – differ in structure and function

## Crowds

- Emerge during early adolescence
- Large collections of peers defined by reputation and stereotype (jocks, nerds, brains, populars, druggies)
- Place adolescents in social network and contribute to self-identity by influencing how adolescent views themselves and others

# Adolescence and Peers

## Crowds

- Influence behavior by establishing norms for the members
- Affect self-esteem – when one is a member of a crowd with a higher status
- Crowds may divide across ethnic lines – and meaning of membership may differ across ethnic groups
- Adolescent crowds become less important, less hierarchical and more permeable between middle and late adolescence

# Adolescence and Peers

## Cliques

- Smaller peer groups based on friendship and shared activities
- Tend to be similar in terms of age, race, socioeconomic status, behaviors and attitudes
- Membership is more fluid and members may belong to multiple cliques
- Cliques evolve from single-sex to mixed-sex membership and often transform into groups of dating couples in late adolescence



# Adolescence and Peers

## Popular versus Unpopular Adolescents

- Popular Adolescents tend to have closer friendship, to be friendly and humorous
- Unpopular Adolescents (rejected adolescents) can be aggressive, withdrawn (or both), anxious and socially awkward
- Unpopular Adolescents in middle school can become more popular and accepted in later adolescents as peers become less rigid in expectations of “normality” and more tolerant of peer differences.

# Adolescence and Peers

## Friendship

- In adolescence friendships evolve into more intimate, supportive and communicative relationships
- Close friendships typically begin in same-sex pair
- Quality of relationships related to social competencies such as initiating interactions, self-disclosure and provision of support
- Friendship intimacy in girls fostered by conversation, boys through shared activities

# Adolescence and Siblings

- Sibling relationships marked by conflict and rivalry but also nurturance and support
- Sibling conflict tends to increase from childhood to adolescence
- Adolescents report more negativity in sibling compared to peer relationships
- Siblings become less influential as adolescents expand relations outside the family