



Changes that take place during adolescence

Biological

- The onset of puberty is beginning on average at age 13 versus age 16 about 80 years ago. Factors that contribute to early onset of puberty: increased fat in diet, genetics, and unstable home environment.
- Growth spurt in brain, especially in corpus callosum and the prefrontal lobes, responsible for mature judgment and decision-making skills. Until brain is fully grown, impulses are ahead of teens' ability to control them.
- Changing circadian rhythm. Melatonin, a sleep hormone, kicks in around 11 pm. Teens need 10 hrs. sleep which means they are functioning on a sleep debt over 5 days, if they have to get up early for school. Teens lose REM sleep, which makes it difficult for them to concentrate the next day.
- Production of testosterone in males, which is responsible for changes in looks, voice, cognitive skills, reproductive organs. Male teens hit puberty only a few months later than females but since they may not be growing right away, the myth is that girls mature more quickly than boys. Testosterone responsible for causing the heart to double in its volume of blood pumping and for increased number of air sacs in lungs, increased muscle mass, and increased strength.
- Production of estrogen in females, which is responsible for development of breasts, reproduction abilities, and physical growth. Most girls hit their adult height at age 14. Muscle development lags behind bone development, resulting in less strength.

Cognitive

- Logic and rational thinking lag behind impulses due to incomplete brain development. This is the reason why some teens have difficulty answering "why?"
- The beginning of abstract thinking (e.g., ability to think about your own thinking, heightened creativity, leaps in imagination, more perceptive,

pokes hole in your logic, argues just to argue). By 15 y.o., most teens have accomplished the goal of thinking abstractly, but teens often times regress to concrete thinking under stress.

Social/Sexual

- Adolescents are beginning to identify what are the most rewarding relationships in their life and what makes them so rewarding.
- Adolescents are also extending themselves away from the family and becoming more involved in society, including forming many more relationships with adults.
- Adolescents are beginning the process of dating and trying to identify their sexual identity, as well as experimenting with physical and emotional intimacy with a “partner”. Teens are also trying to learn the “mating dance” appropriate to their culture and peer group.

Emotional

- Since puberty is lasting longer in the life of a teen, it means a longer period of emotional chaos. Adolescents need help identifying their emotions, especially since they are feeling new ones for the first time.
- Female brains are more efficient at processing and verbalizing emotions. They are more open to sharing their own ups and downs.
- Male brains process emotions more slowly than females. Boys often get overlooked because they don’t display their emotional distress verbally. They often show it behaviorally.

Academic/Occupational

- Teens are beginning a process of identifying their skills and using them in the real world. Older teens struggling with the idea of career options and their “fit” in society. Teens are learning what success means in the “real world” and how they can achieve success.

Moral

- Adolescents are beginning a process of rejecting some values that were instilled in them during childhood in order to “try on” others to see “what fits”. As adolescents find themselves in risky situations, the integrity of their values is put to the test. Teens are developing a new sense of self and a

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