

Helping Teens Answer the Question “Who Am I?”: Physical Development in Adolescents¹

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This is the first of a four-part series that will explore adolescence in terms of physical, cognitive, social, and moral development. This publication will focus on the physical development that adolescents experience.

The journey from childhood to adolescence is very challenging. Between the ages of 10 and 17 there are major changes in physical, cognitive, social, and moral development. The major task for adolescents is to establish their self-identity. By determining—as best they can—a sense of who they are, they attempt to move into a group that reflects or reinforces this self-identity. The group allows them to feel that they stand out from the crowd. This phase of development allows the adolescent to search for their sense of self. This is in order to answer the increasingly important question that they could not consider in earlier stages of development: “Who am I?”

Physical Development

Physical development is a critical part of adolescence. How an adolescent perceives their physical self; that is, what they think they look like and how they feel about it, directly relates to their overall sense of self-worth. Many of these feelings are influenced by their culture, the media, their peers, and their families. They are also influenced by their own initial sense of self-esteem as they enter this rapidly changing phase of physical development. We know that the changes are rapid and often drastic, resulting in rapid growth and physical maturity.

In order to examine physical development in adolescence, it may be broken down into two main stages. These smaller stages will focus on *early adolescence*, which is during the ages of approximately 10-14 for most children, and then *late adolescence*, occurring during the ages of 15-18. Many professionals are also using the term “emerging adulthood” to extend the period of adolescence into early adulthood, typically the ages of 18-23. This is the result of many American youth delaying adulthood by attending college or vocational schools prior to taking on the responsibilities of adulthood.

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Early adolescence, ages 10-14 years

During this early stage of adolescence there is a sharp increase in physical growth. Coming off the childhood spurts of 10 yrs for girls and 10 1/2 yrs for boys, changes occur in early adolescence at around age 11. Girls become taller and heavier. Their pubertal growth spurt happens about two years earlier than boys. At around age 14, however, the boys' growth spurt begins again and they pass the girls, as the girls are almost finished growing. Body changes occur during puberty that reverse some of the basic growth trends of childhood. For example, the hands, legs, and feet accelerate and then the torso, resulting in the adolescent height gain (Wheeler, 1991). This explains why adolescents often seem out of proportion for a while. They are awkward and gangly with long legs, and feet and hands that don't seem to fit the rest of their body. Then the body fills out. This explains the need for clothes that change sizes with the filling out of the frame (Berk, 2000).

Boys tend to end up larger than girls. This is a result of two extra years of preadolescent growth. Their legs are longer in relation to their body and they have broader shoulders in relation to their hips. Meanwhile, girls end up with hips that are broader in relation to their shoulders and waist. This is a result of the sex hormones acting on skeletal growth. Gains in large muscle development have leveled off by age 14 for girls. But, boys continue to experience a dramatic spurt in strength, speed, and endurance.

Puberty

Puberty also has many effects on adolescents. Puberty is the time of development when youth become physically mature and capable of reproduction. These changes in the body are controlled by the endocrine glands. These glands manufacture hormones that are released by the pituitary gland, which is located at the base of the brain. These changes are quite different for girls and boys, so it is important to examine these changes individually for each sex.

By knowing what to expect during these critical years of physical development, parents will not be surprised if their child is on the early or late side of what we know to be the age range when these signs

of puberty usually occur. Keep in mind that these ages are only an estimate and not every child fits within this range. Also, over time, we are seeing youth develop earlier, so this may be expected in future generations of teens.

Girls

For girls, on average, puberty takes about 3-4 years for completion, but may take less than a year and a half to as many as 5 years. The first sign of puberty for girls is the budding of breasts and a height spurt at the average age of 10. But it may range anywhere from ages 8-13. Some other signs of puberty include: the first appearance of pubic hair at around age 10 1/2, but again, it could be as early as 8 years old and as late as 14 years old for some girls. The first menstruation usually takes place around age 12 1/2 but some girls start as early as 10 1/2 or as late as 15 1/2, so don't be alarmed. If you have any concerns about this, however, contact your pediatrician. The first appearance of underarm hair usually occurs around age 13. Most girls have their breast growth completed at around age 14 and pubic hair growth at around age 14 1/2.

Boys

For boys, the first puberty milestone is when the testes begin to enlarge at around 11 1/2 years old. But remember, it may occur earlier or later so this could be anytime between the ages of 9 1/2 to 13 1/2 years old. Some other signs of puberty include: the first signs of pubic hair at around age 12 (or between ages 10-15); the penis begins to enlarge at about age 12 (or between ages 10 1/2 to about 14 1/2); a height spurt at around age 12 1/2; the first ejaculation occurs (usually in their sleep) at about age 13; facial and body hair begin to grow at around age 14; voices begin to deepen at about age 14; penis growth is usually completed at around age 14 1/2; and pubic hair growth is completed at around age 15 1/2.

Late Adolescence, ages 15-18 years

Late adolescence is the second phase of physical growth for adolescents and leads them into emerging adulthood. As we have seen, many of the most rapid physical changes have already occurred. During this stage, the body begins to fill out and complete the

process. As the adolescent body approaches its adult size, growth changes decrease quickly.

Height changes are nearly completed by around age 16 for girls and around age 17 for boys (Tanner, 1990). Muscle continues to develop at a more dramatic rate and in a much different pattern than fat during adolescence. Boys develop larger skeletal muscles, and greater heart and lung capacity. Boys also have an increase in red blood cells that allows them to carry more oxygen from the lungs to the muscles than those of girls, which helps them gain more muscle strength. It also explains gender differences in motor development throughout the teenage years.

Tips for Agents and Parents

Now that we have a sense of some of the important physical changes that occur during adolescence, we can use this information to help us better understand teens. It will also help us recognize their sensitive thoughts and feelings. And we can use it to help us direct them toward positive behavior and outcomes.

By the beginning of late adolescence, many of these changes are nearing completion. This allows teens to gain more acceptance and ownership of their body image. By reminding ourselves of these changes, we can become more sensitive to teens' growth experiences and treat them with the respect, compassion and consideration that will help them move smoothly through these physical transitions.

Parents can help their children by providing support and by being understanding and tactful during discussions about these changes. Preparing one's children for the initial onset of puberty (menarche for girls and spermarche for boys) will let them know what to expect. It will also minimize any stress and shame that they may feel without adequate preparation. The approach to this preparation should be gentle, but informative. It may be given in a manner that is very positive, explaining that these events are “normal” and everyone experiences them once in their life. Once the child understands that this is part of the path to adolescence and a rite of passage, they will view these changes with minimal stress and maximum acceptance.

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