

The physical development of a human being



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As defined in Berk's, *Development Through the Lifespan*, physical development is changes in body size, proportions, appearance, and the functioning of various body systems; brain development; perceptual and motor capacities; and physical health. The physical development of a human being is the unique because of all of the visible changes that every human being goes through. Physical growth results from a continuous and complex interplay between heredity and environment. Humans begin to develop before they are out of their mother's womb. After conception, the zygote is what I consider the earliest development of the human being. The period of the zygote is about two weeks long. The zygote then becomes an embryo. The period of the embryo lasts from the second week on through the eighth week of pregnancy. The embryo then changes to form the fetus. The period of the fetus is from the ninth week until the end of the pregnancy. The zygote, embryo, and fetus all form in the first trimester or pregnancy. By the third trimester, the fetus is around seven and half pounds.

I weighed about eight and one fourth pounds when I was born. My mother still tells me that when I was born I had enough hair to braid. She says all my hair gave her horrible heartburn. Luckily she did not smoke or use any drugs or alcohol during the time that she was pregnant with me. All of these things can do serious harm to the fetus.

Boys tend to be a little longer and heavier than girls at birth. Babies change faster than older humans do. The human body grows and enlarges at the

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most rapid rate during the first two years. Weight is gained steadily during this time. By nine months baby fat has usually arrived and is at its highest level. This helps babies to maintain a constant body temperature. Babies become thinner during the second year. This held true for me from what I have seen of my baby pictures. Babies do not tend to be very muscular or coordinated.

The child grows and size increases, and different parts of the body grow at different speeds. There are two growth patterns that represent this. The first is called the cephalocaudal trend. During this phase the head takes up a fourth of the body and the legs take up a third. The second pattern is called the proximodistal trend. This is when the growth proceeds from the center of the body outward. During infancy, the arms and legs continue to grow ahead of the hands and feet. The brain is closer to adult size at birth than any other body part on a baby. When a child reaches the age of two, the brain is already at seventy percent of its adult weight. Some of the factors that influence this early growth are heredity, nutrition, and emotional well-being.

Over the first year of life, babies begin to organize sounds into complex patterns. During the second half of the first year, babies begin focusing on larger speech units. These larger units are critical to figuring out the meaning of what babies hear. By nine months babies begin to listen to speech for much longer periods of time, and they begin to perceive it on wordlike segments.

A child's vision goes through some extensive changes during the first seven to eight months of the child's life. The child's vision improves a great deal

throughout the first year. When a child begins some form of independent movement, they begin to better understand depth perception. When an adult moves around on his/her own, they too have a better feel for landmarks and what is around them.

The rapid growth in body size that takes place in infancy begins to slow down in early childhood. During this time boys still tend to be a little larger than girls are. When I was this age, all of my friends were boys, and they were a little larger than I was. Increasing control of the child's hands and fingers lead to a huge improvement in the fine motor skills. Their drawings become more and more complex during this time. I have some examples of pictures that I drew when I was younger, and as my age increased, my drawings became better and better. The skeleton continues to change throughout early childhood. Near the end of the preschool years, a child begins to lose their baby teeth. I lost my two front teeth first. I have many pictures without any front teeth. I lost the bottom front teeth after this. The teeth that grew back in their place were larger and had a ridged bottom. They called me Snaggle tooth.

Physical development in middle childhood is an extension of the slow growth pattern that takes place in early childhood. By age six, an average child weighs about 45 pounds and is around three and a half feet tall. On average, children tend to add two or three inches to their height. In comparison, they gain about five pounds a year. From the ages of six to eight, girls are still lighter and shorter than boys are. During this time, the lower portion of their body is growing the fastest. Also during the middle childhood years, the bones begin to lengthen and broaden. Ligaments are not attached tightly to

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the bones yet. Because of this, children of this age experience unusual flexibility. At this age, I was able to put both of my legs around my neck because I was so flexible. I began gymnastics around this age also. I began to become interested in many sports, and my flexibility along with my athleticism supported my performance in many sports. Children during this time tend to experience things like bedwetting. I never was a bedwetter, but my brother went through this stage. Also during the middle childhood ages there is a higher rate of illness in the first two years of elementary school. This is mainly because the immune system is not yet fully developed as well as the constant exposure to sick children. Along with frequent illness, children of this age are often not physically fit. Physical fitness programs can help this problem.

Probably one of the most difficult transitions that humans go through physically is puberty. Puberty is the time when the body of a school-aged child turns into that of an adult. This growth is regulated by hormones that are genetically influenced. Girls usually reach puberty an average of two years before boys. During this time, extreme weight gains are common, and the skeleton begins to mature. Sex hormones control sexual maturation. Testosterone in boys brings about their facial hair and muscle growth. It also leads to muscle growth. The female organs release estrogen, and it causes breasts, uterus, and the vagina to mature. The two main categories that the changes puberty brings about can be divided into are overall body growth and the maturation of sex characteristics.

The first visible sign of puberty is usually a large growth spurt. A growth spurt is the rapid gain in height and weight. For girls, this growth spurt

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usually takes place around or after age ten and for boys it usually takes place around twelve and a half. Remember when I started to hit puberty, I was all confused about what was happening because my body was changing so quickly. I think it was around fourth grade when I started going through puberty. I was kind of chubby. Girls are usually taller and heavier than boys are during early adolescence. Most girls are completely grown by age sixteen. I was full grown by the age of fifteen. Boys usually are finished growing by the age of seventeen and a half. I have known boys, however, that have grown after the age of seventeen. In total, adolescents add about ten inches in height and around forty pounds in weight. Adolescence is a time when humans feel and look awkward because of long legs and giant feet and hands.

There are many major puberty changes that take place. In girls, their breasts begin to bud at age ten, and then their height spurt begins. Then their pubic hair appears, followed by the peak of their strength spurt and height spurt. Next their first menstruation occurs. By this time, they have achieved adult stature. By fourteen, girls breast growth is completed and at fourteen and a half, their pubic hair growth is completed.

Boys major puberty changes occur a little later than girls. First, their testes begin to enlarge at the age of eleven and a half. Pubic hair appears and the penis begins to enlarge at twelve, and then the height spurt begins. Their spermarche occurs at thirteen. At the age of fourteen, they reach the peak of their height spurt, their facial hair begins to grow, and their voice begins to get deeper. After this, the growth of their penis is complete. Then, at fifteen their pubic hair growth is complete and the peak of their strength spurt has

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occurred. Finally, after all of these changes, adult stature is reached. The most noticeable part of male puberty seems to be the voice as it cracks a lot and the facial hair. For me the most noticeable part of my puberty was the growth of my chest and the arrival of my menstrual cycle. My face seemed to become oilier during this time as well. This was not a fun part of growing up. Once again, as with all the stages of physical development, nutrition and heredity have an impact on puberty, but they mainly only deal with the timing. This age gap is characteristic of the rep

lacement of baby teeth with permanent ones. Writing becomes more legible during this time as well. Organized games with rules begin to become more and more common at this time as well. Puberty is the most distinguishable part of human physical development. After puberty, it seems like there are no more major physical changes that occur. I do not really feel like I have changed that much since I was sixteen. I weigh more, and I seem to be less flexible, but those are both things relative to daily activity.

Early adulthood is the next part of human physical development. Throughout the twenties and thirties, early adulthood development occurs. During this time, physical changes and the declines in the functioning of the body are so gradual that one can hardly even notice them. When an adult reaches the age thirty, vision starts to decline because the lens stiffens and thickens, and they can no longer see things up close as well. Some of the organs begin to decrease in function as well. When exercising, the respiratory volume decreases and the breathing rate increases with age. The amount of air that can be forced in and out of the lungs decreases up to fifty percent from the age of twenty to the age of fifty. For reasons such as this, athletic

performance peaks from the twenties to thirties and then begins to decrease. The research they have done on incredible athletes show us that the upper biological limit of motor capacity is reached by the first part of early adulthood. The declines in heart and lungpower usually show up only during exercise. From the ages of twenty to thirty, the elasticity of the skin begins and continues, and weight gains begin and continue through middle adulthood. Sexual activity increases during this time as well.

Aging is more extreme for those who lead less active lives. Also, the reproductive capacity tends to decline with age. For women it begins to decline especially after the age of thirty five, and for men it starts to decline after the age of forty. From thirty to forty years of age, vision declines along with hearing and the skeletal system. Women begin to experience problems with fertility, the hair begins to turn gray and thin out, and sexual activity decreases.

Middle adulthood is the next age group where significant changes occur physically in human beings. It is merely a continuation of the changes that begin in early adulthood. This is the time when vision and hearing really decline a noticeable amount. Humans in this age group lose ability to see as well in dim light, and seem to always need a pair of bifocals. Hearing aids seem to start appearing a little bit at this time in some people as well. Mens hearing declines much faster than womens. I notice more old men that cant hear than I do old women. The epidermis becomes not as firm and results in wrinkling of the skin. Skin spots become prevalent around the age of fifty. Crows feet are among the first major wrinkles to appear. Massive sun exposure earlier in life tends to make the skins wrinkling a faster process,

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and smoking seems to have a similar effect as well. Muscle mass start to decline a lot in the forties as well, and at the same time, fat is put on at a more rapid rate. Around this time, women begin to experience menopause, which is the end to the reproductive capacity. There is no male counterpart for menopause, but men do experience some decline in their sperm count and semen. The mineral capacity in the bones begins to decline, even though the bones are broadening. The loss of bone mass and bone strength causes height to decrease in some people.

From the ages of fifty to sixty, the human eye no longer has its accommodative ability at all. Hearing loss at this time extends to all frequencies. It remains only for the highest tones. Skin of course, keeps on getting wrinkles and age spots are more common. Menopause is the major reproductive change that women undergo during this time. Height drops because of lower bone mass, which continues to decline.

Late adulthood seems to be the time when everything declines physically. When I think about old people, the two words that come to my mind are wrinkles and saggy. From the ages of sixty to eighty, many things are deteriorating physically. Neurons begin dying at rapid rates. Vision continues to decline, and people at this age have a harder time distinguishing colors. Also, depth perception and sensitivity to glare worsen. This age is the hearing aid age. Hearing continues to decline throughout the frequency range. Sometimes sense of smell lessens as well. Loss of touch in fingertips is common. The stress during exercise becomes greater because of the continued decline in respiratory and lung functions. Risk of illness is much greater in this late stage of life because the aged immune system. This age

group also tends to experience some difficulty in going to sleep at night; this occurs in men more so than women. Hair obviously continues to thin and gray and wrinkles become much worse and skin sags and is thinner. Because of the fact that the body is losing lean muscle mass during this time, height and weight continue to lessen. This leads to increased risk of osteoporosis. Sex becomes not as intense. It seems like every part of the human body lessens or worsens after a person reaches late adulthood.

Once a human reaches eighty or older, everything described previously just continues and gets worse. Mobility, however, goes away, and it gets harder to get around. This is because of the diminishing muscle and bone strength. Wheel chairs and walkers and canes are used as an aid in movement when mobility no longer exists. Death comes after or even during this stage. There are three ways that death occurs generally. The first way is the agonal phase. During this phase, gasps and muscle spasms happen when the body can no longer sustain life. The second phase is clinical death. This is when a short interval follows in which heartbeat, circulation, breathing, and the brain functions all stop. Resuscitation is still available at this stage. In the third stage of death, mortality, the person actually passes into permanent death.

Soon afterward, this dead person becomes shriveled looking, and has thus undergone all of the physical development a person goes through in a lifetime. Physical development is the only type of development that one can actually witness. Every person generally goes through some form of the same development through each age group. The human body is very unique and all of these changes that we experience are what makes us so interesting.