ASSIGNMENT 4

1. Define **critical period** of growth and development, give an example of why this is important to the development of the fetus.

* A critical period of growth is a maturational stage at which investments are particularly fruitful and vital, if an individual does not receive a stimulus during a critical period it may be difficult, ultimately less successful, or even impossible, to develop some functions later in life.
* Critical period of growth is a time during which the brain is developing. Under nutrition could impair brain development. Over nutrition can also be a problem. Obesity in infancy may cause increase in fat cells and therefore contribute to adult obesity.

1. What is meant by growth and development and what are the factors affecting normal growth and development of infants and toddlers?

* Growth means an increase in size, height, weight and length that can be measured however; development on the other hand, implies change in shape, form or structure resulting in improved working or in functioning. Improved functioning implies certain qualitative changes leading to maturity. Growth and development are the important characteristics of a living organism. Development involves a series of progressive, orderly and meaningful changes leading to the goals of maturity. Normally growth contributes to development.

The below are the factors affecting normal growth and development of infants and toddlers; Nature and nurture both contribute to the growth and development of children. Although what is endowed by nature is constant, nurture makes all the difference and here are the factors.

1. Heredity

Heredity is the transmission of physical characters or traits from parents to children through their genes. It influences all aspects of physical appearance such as height, weight, body structure, the colour of the eye, the texture of the hair and even intelligence and aptitudes. Diseases are also passed through the genes such as heart disease, [diabetes](https://parenting.firstcry.com/articles/parenting-a-diabetic-child/?ref=interlink), [obesity](http://parenting.firstcry.com/articles/obesity-in-children/?ref=interlink) and many others and these genetic factors can adversely affect the growth of a child. However, environmental factors and nurturing can bring the best out of the already present qualities in the genes.

1. **Environment**

Environment plays a critical role in the development of children and it represents the sum total of physical and psychological stimulations the child receives. Some of the environmental factors influencing early childhood development involve the physical surroundings, geographical conditions, social environment and relationships with family and peers. It is observable that a well-nurtured child does better than a deprived one and the environment they are constantly immersed in contributes to this. A good school and loving family builds in them strong social and interpersonal skills while excelling in other areas such as academics and [extracurricular activities](http://parenting.firstcry.com/articles/10-amazing-extracurricular-activities-for-kids/?ref=interlink). It is different for children who are raised in stressful environments such as poverty and broken families.

The sex of the child is another major determinant among the factors affecting physical growth and development of a child. Boys and girls grow in different ways, especially nearing puberty. Boys tend to be taller and physically stronger than girls, however, girls have faster growth during adolescence and except boys who mature over a longer period of time. The physical structure of their bodies also has differences, which make boys more athletic and suited for physical rigours. Their temperaments also vary making them show interest in different things

1. Exercise and Health

The word exercise here does not mean physical exercise as a discipline or the child deliberately engaging in [physical activities](http://parenting.firstcry.com/articles/30-indoor-and-outdoor-physical-activities-for-kids/?ref=interlink) knowing it would help them grow. Exercise here refers to the normal playtime and [sports activities](http://parenting.firstcry.com/articles/best-10-sports-for-kids-to-play/?ref=interlink) , which help the body to increase muscular strength and put on bone mass. Good exercise help children grow well and reach milestones on time or sooner. Exercise also keeps them healthy and fights off diseases by strengthening the immune system. Outdoor play exposes them to microbes that help them build resistance and prevent [allergies](http://parenting.firstcry.com/articles/allergies-in-children-causes-symptoms-and-treatment/?ref=interlink).

### 5. Hormones

Hormones belong to the endocrine system and influence the various functions of our bodies. They are produced by different glands that are situated in specific parts of the body to secrete hormones that control body functions. Their timely functioning is critical for normal physical growth and development in children. Imbalances in the functioning of hormone-secreting glands can result in growth defects, obesity, behavioral problems and other diseases. It is just as important during puberty when the gonads produce sex hormones which control the development of the sex organs and the appearance of secondary sexual characteristics in boys and girls.

### 6. Nutrition

Nutrition is a critical factor in growth as everything the body needs to build and repair itself comes from the food we eat. [Malnutrition](http://parenting.firstcry.com/articles/malnutrition-in-children-causes-symptoms-remedies/?ref=interlink) can cause deficiency diseases that adversely affect the growth and development of children. On the other hand, overeating can lead to obesity and health problems in the long run such as diabetes and heart disease. A balanced diet that is rich in vitamins, minerals, [proteins](https://parenting.firstcry.com/articles/protein-for-kids/?ref=interlink), carbohydrates and fats is essential for the development of the brain and body.

7. Familial Influence

Families have the most profound impact in nurturing a child and determine the ways in which they develop psychologically and socially. Whether they are raised by their parents, grandparents or foster care, they need basic love, care and courtesy to develop as healthily functional individuals. The most positive growth is seen when families invest time, energy and love in the development of the child such as reading to them, playing with them and having deep meaningful conversations. Families that abuse or neglect children would detract them from a positive development. These children may end up as individuals who have poor social skills and difficulty with bonding as adults.

8. Geographical Influences

Where you live also has a great influence on how your children turn out to be. The schools they attend, neighborhood, opportunities offered by the community and their peer circles are some of the social factors affecting child development. Living in an enriching community that has parks, libraries and community centers for group activities and sports all play a role in how much the child is involved with the community.

9. Socio-Economic Status

The socio-economic status of a family determines the quality of the opportunity a child gets. Studying in better schools that are more expensive definitely has benefits in the long run. Well-off families can also offer richer learning resources for their children and afford special aid when they need. Children from poorer families may not have access to educational resources and [good nutrition](http://parenting.firstcry.com/articles/a-guide-to-nutrition-for-kids/?ref=interlink) to reach their full potential. They may also have over working parents who cannot invest enough quality time in their development.

10. Learning and Reinforcement

Learning involves much more than schooling, it is building the child up mentally, intellectually, [emotionally and socially](http://parenting.firstcry.com/articles/social-and-emotional-development-in-children/?ref=interlink) so they operate as healthy functional individuals in the society. This is where the development of the mind takes place and the child can be mature. Reinforcement is a component of learning where an activity or exercise is repeated and refined to solidify the lessons learned. An example is playing a musical instrument; they get better at playing it as they practice playing the instrument. Therefore, any lesson that is taught has to be repeated until the right results are obtained.

## 11. Stimulation

Toddlers need to play; it is vital to their learning and development. Playing can be very educational, even if your toddler does not realize it. However, having just one or two toys probably is not going cut it. Yes, this gives you license to hit the toy store, but keep in mind that children will play with anything. The more variety your toddler has, the more active his brain can be during playtime. So go ahead buy those fancy toys at the store, if possible, but do not underestimate the learning potential of an empty box or old pots and pans. Children who lack early stimulation may struggle at some point down the road with complex problem solving, according to the Permanente Medical Group.

## Sleep

Naptime is a magical time for mothers. You can get chores done, read a magazine even if it is last month's or take your own nap. Sleep, both during naps and at night, is vital to a toddler's growth and development. When he sleeps, his brain gets a chance to rest and process all the knowledge that has been crammed in there during the day. According to The National Sleep Foundation, toddlers generally need 12 to 14 hours of sleep in every 24-hour period. If he only sleeps 10 hours at night, his nap should be at least two hours. Toddlers are masters of resisting sleep, but stick to your guns. Adequate sleep contributes to proper height and weight development, according to Gerber.

## Love and Attention

Showing your toddler love and attention assures him that s/he's safe, which provides an environment conducive to reaching his full potential. Play with your child, but allow him time to play alone, too. Create a routine so he knows that he will be eating and sleeping at approximately the same time each day. This consistency comforts him and lets him focus on his own play and learning. Knowing he can trust you is also vital for your toddler's development. The World Health Organization says that parental love and attention are the most important aspect of a toddler's development.

1. What are the three classifications of under nutrition in preschool children and how is this determined?

b. What precautions should one take when preparing infant formula?

* Meal time should be a pleasant experience for the child in order that positive

eating attitudes and behaviors are developed.

* The child should be equipped with eating utensils that are easy to handle.
* The child should be offered only small amounts of food at a time and allow

second or third helpings, to stimulate the child’s interest.

* Snacks should be planned to enhance nutritional value of the diet. They should be served at least 1 hour prior to the meal to allow sufficient intake of food at meal time.

1. What are the key causes/determinants of malnutrition in children?

* One or a combination of factors causes malnutrition. The immediate determinants of child nutritional status are poor dietary intake (i.e., energy, protein, and micronutrients) and disease. These factors are interdependent. For instance, a child with inadequate dietary intake is more susceptible to disease, which in turn depresses appetite, inhibits the absorption of food nutrients, and competes for a child’s energy. Dietary intake must be adequate in quantity and quality, and nutrients must be appropriately consumed in right combinations for adequate absorption. The immediate determinants of child malnutrition are influenced by three underlying determinants, which are food security, adequate care for mothers and children, and a proper health environment, including access to health services. Finally, the underlying determinants are influenced by the basic determinants: the potential resources available to a country or community, and a host of political, cultural, and social factors that affect their utilization.
* Food security is achieved when a family has access to enough food to live an active and healthy life. The resources necessary to gain access to food are food production, income for food purchases, or donors whether from other private citizens, national or foreign governments, or international institutions. However, many families in developing countries are food insecure due to low accessibility to quality and quantitative food.
* The second underlying determinant of child malnutrition is care, which is the provision by caregivers of “time, attention, and support to meet the physical, mental, and social needs of the growing child and other household members” Caring for a child involves timely child feeding, health- seeking behaviors, support, and cognitive stimulation for children. The adequacy of such care is determined by the caregiver’s control of economic resources, autonomy in decision making, knowledge, and beliefs.
* The third under lying determinant of child nutritional status is health environment and services rests on the availability of safe water, sanitation, health care, and environmental safety, including shelter.
* The main factor that affects all underlying determinants is poverty. A person is considered to be in absolute poverty when he or she is unable to adequately satisfy his or her basic needs such as food, health, water, shelter, primary education, and community participation. Poverty is the main underlying cause of poor nutrition in some parts of developing countries. The effects of poverty on child malnutrition are pervasive. Poor households and individuals are unable to achieve food security, have inadequate resources for care, and are not able to utilize (or contribute to the creation of) resources for health on a sustainable basis. Poverty has a vicious cycle; it leads to inadequate food intake, undernutrition, poor physical growth and development, impaired functioning, and low productivity. Poverty imposes restrictions on food intake of poorer sections of society and the worst sufferers are reproductive age women, including young children and adolescents.

1. What are some of the risks associated with introducing complementary foods too early?

* Complementary food before age 4 months may confer immune protection (tolerance) or detriment (allergy).
* Introducing solids before 4 months of age [can also increase the risk of choking](http://health.mo.gov/living/families/wic/wiclwp/pdf/R_0618_Foods_To_Grow_On.pdf) and cause the infant to drink less than the needed amount of breast milk.
* However, introducing solids too late also can increase the risk of the toddler developing allergies. For example, one [study](http://pediatrics.aappublications.org/content/pediatrics/125/1/50.full.pdf) found that late introduction of solid foods (after 7 months of age) may actually increase the risk of food allergies, suggesting a window of opportunity when it comes to starting solids. (A 2007 [AAP report](http://pediatrics.aappublications.org/content/pediatrics/121/1/183.full.pdf?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=allergic%20disease&searchid=1&FIRSTINDEX=0&volume=121&issue=1&resourcetype=HWCIT) notes that breastfeeding is the best protection against allergic disease.)
* Human milk provides all the nutrients (including iron) that babies need for about the first 6 months of life. Once the iron stored in the baby's liver during pregnancy is used up (at about 6 months of age), iron-rich foods such as meats or iron-fortified cereals need to be added to the baby’s diet. Around 6 months is also when most babies show signs that they are developmentally ready for solid foods.

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