Introduction to Maternal Infant Young Children Nutrition
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Lecture - 59
Session - 12

1st 1000 days – Health Spoken Tutorial

Hello, everyone. So, in this part, I wanted to show you a tutorial on first 1000 days. Now, I know that I had taken a live session on first 1000 days, but since this is the concluding session, I want to show you the tutorial that we have prepared, it just came out very recently and it has come out really well.

So, I thought that I will introduce that tutorial in my last session, as I mentioned to you in first 1000 days, which starts from conception to 2 years of age, but please do not forget your adolescent and pre pregnancy nutrition also, because by the time mother comes to you, she is already 2 or 3 months away, I mean, she is already passed 2 or 3 months post pregnancy, post conception.

So, do remember that preconception nutrition, pregnancy nutrition, lactation nutrition, your infant nutrition, your different holds, specifically my favorite crosscradle hold and there are other things that you also want to think of like what happens if baby falls sick, what happens when baby has diarrhea, other nutrients which are important for baby, zinc is important for baby.

So, there are all these important aspects that we have included in first 1000 days tutorial. So, that by 2 years of age, baby is absolutely healthy and also baby has the full potential to grow as far as height is concerned and also as far as IQ is concerned. Also, after this, I will discuss a few key points as concluding remark, so that I will discuss in my next part, thank you so much.

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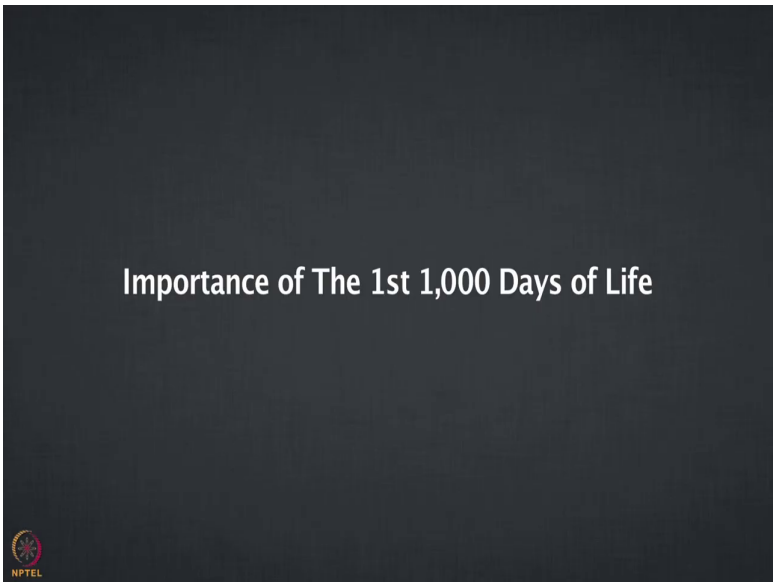

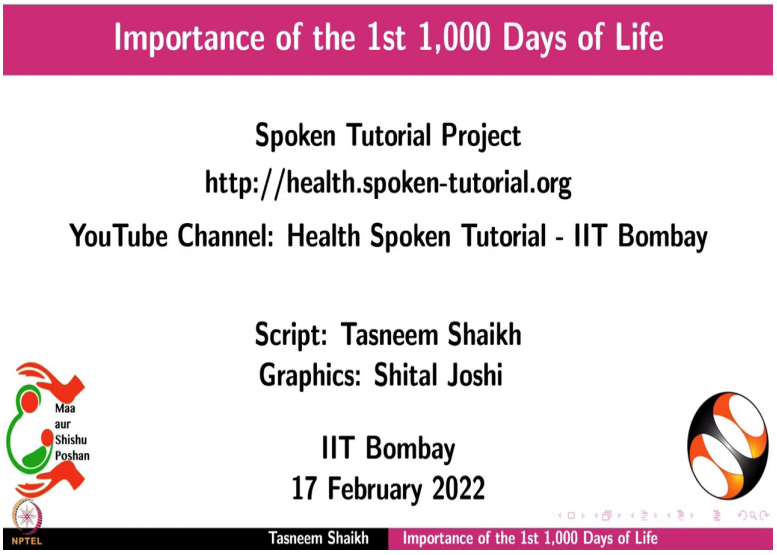

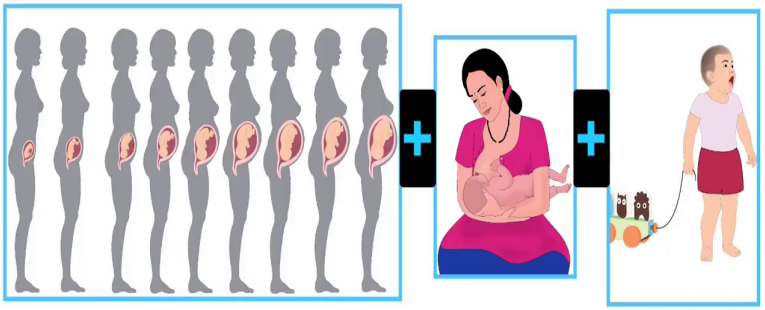

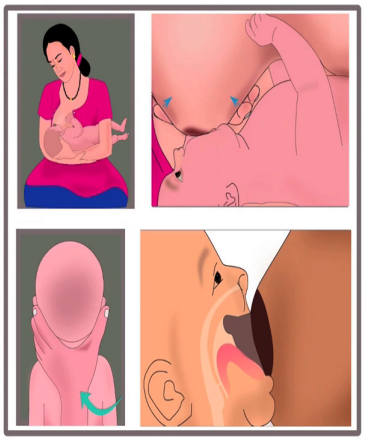


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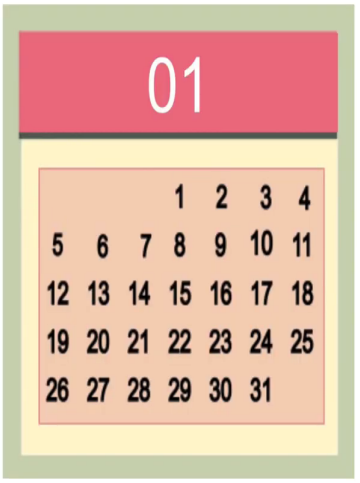
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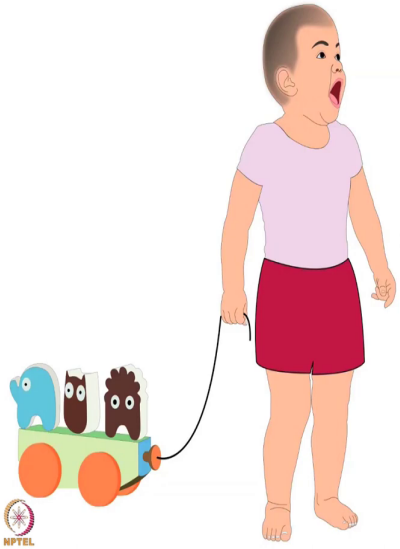


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Welcome to the Spoken Tutorial on the importance of the first 1000 days of life. In this tutorial, we will discuss the benefits of good nutrition during these days. Also, we will learn how to nourish a baby during these days. Some key topics mentioned in this tutorial are explained in other tutorials. Please visit our website for more details. Let us first understand what the first 1000 days of life are.

The first 1000 days of life start on the first day of pregnancy. They end on a child's second birthday. How well a child grows in these 1000 days decides the future. If nourished well, the child can have a healthy future. Good nutrition is necessary for a child's early development. It plays a foundational role in enabling a child to grow, learn and succeed. Let us discuss the role of nutrition at every stage in the first 1000 days.

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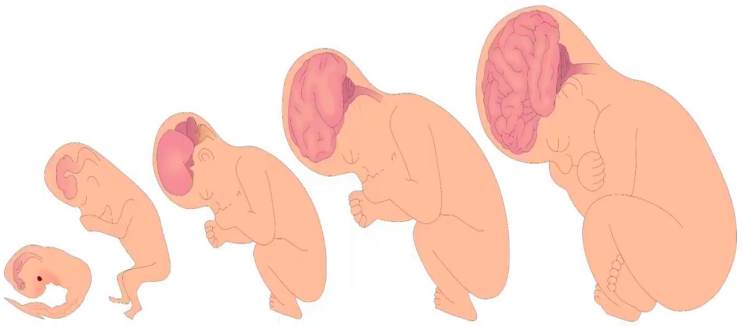

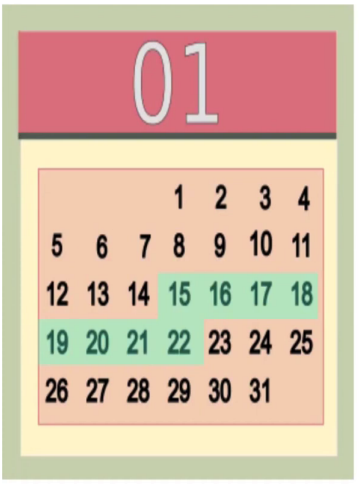
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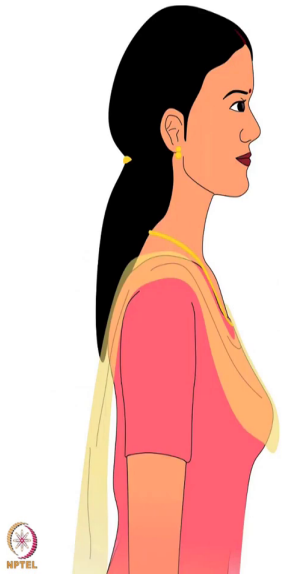

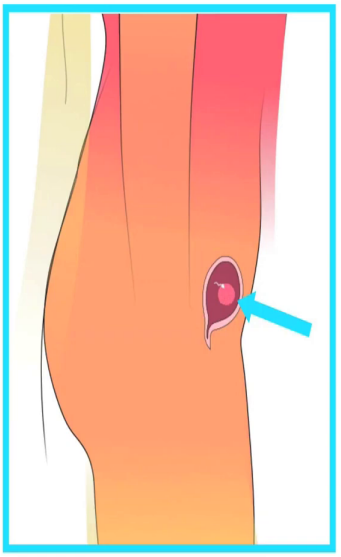

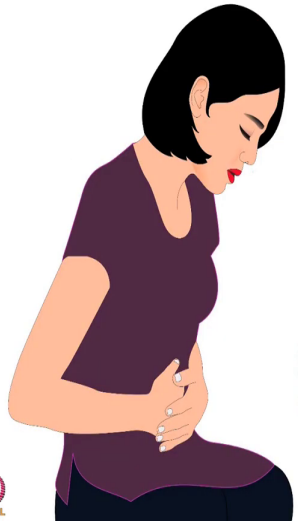

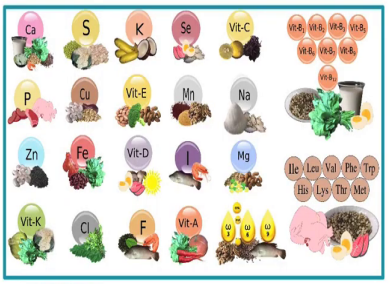
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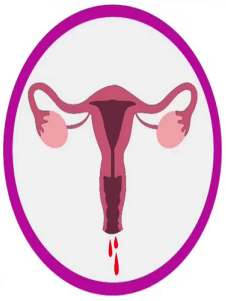

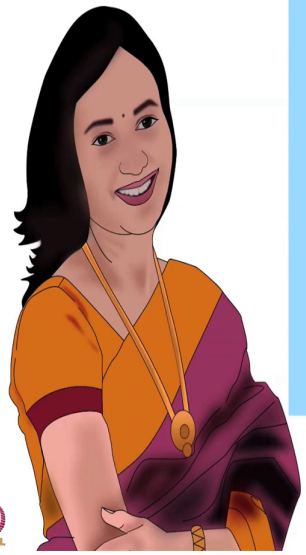

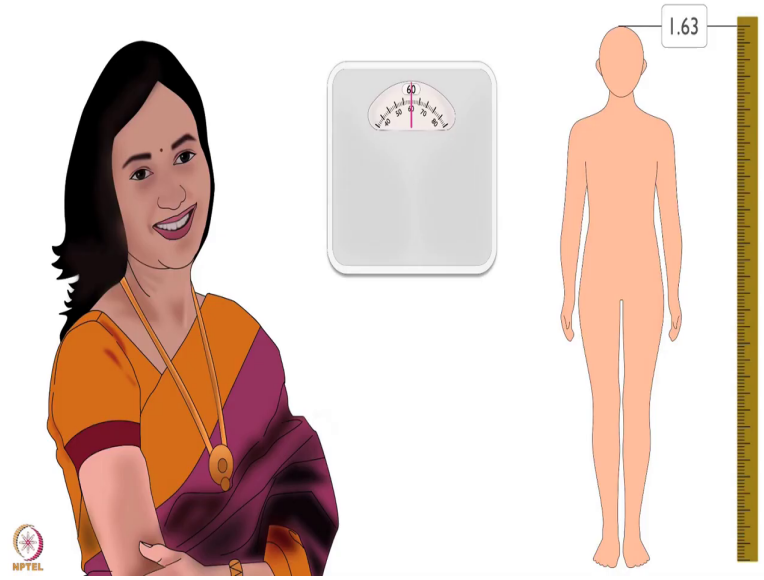

The first stage is pregnancy; the brain of the fetus begins to grow from the third week of pregnancy. Thereafter, it develops at a very high speed during the entire pregnancy. Most of the mothers are not even aware of their pregnancy during this time. Therefore, all women in their reproductive age should consume nutritious food. It is especially important for women planning a pregnancy. Healthy lifestyle, body fat and muscle percentage before pregnancy are crucial.

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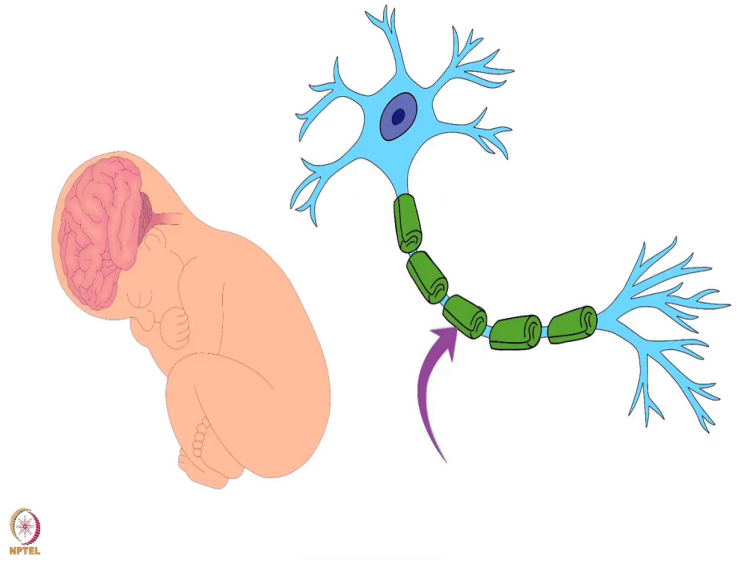

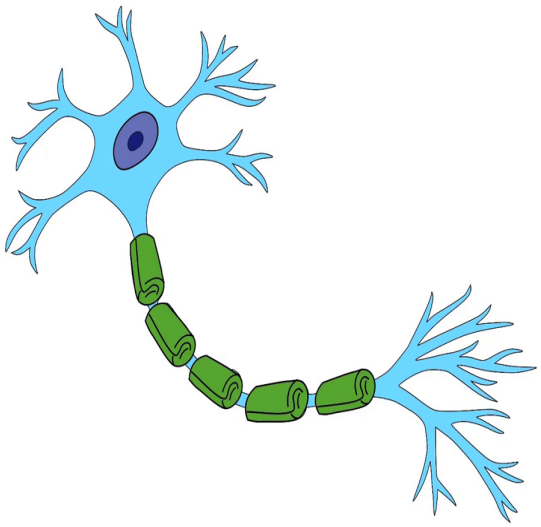

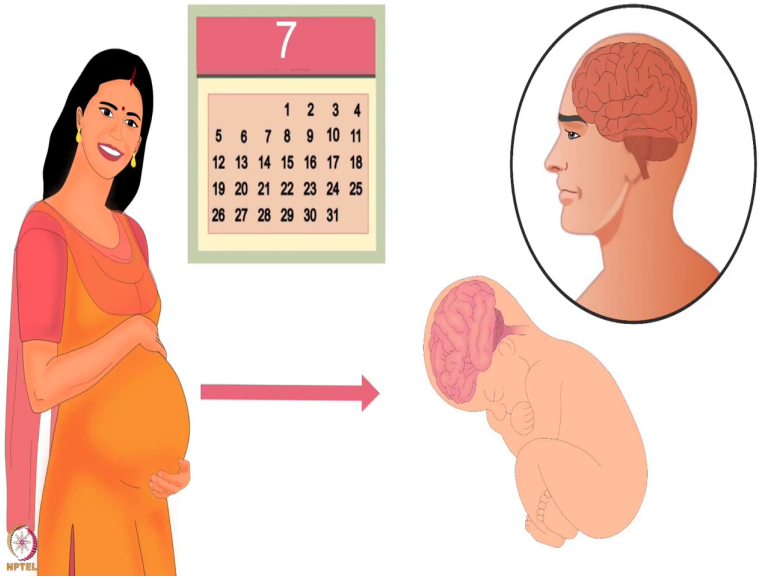
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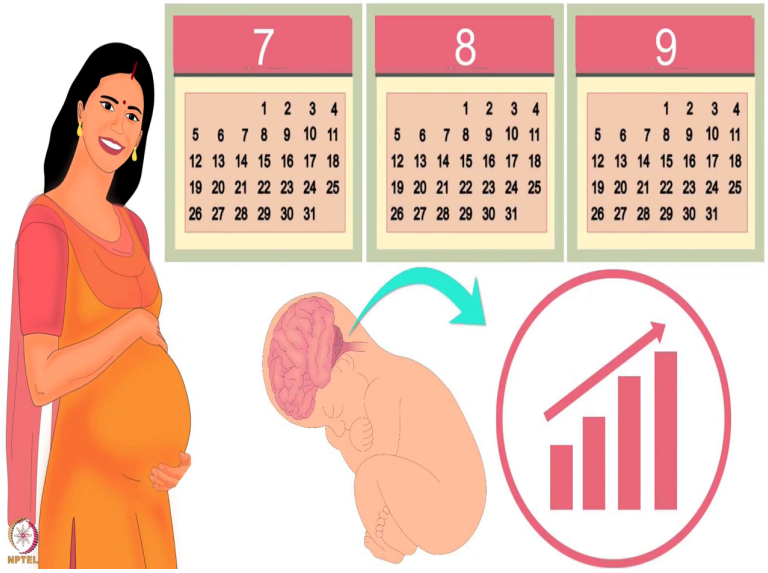
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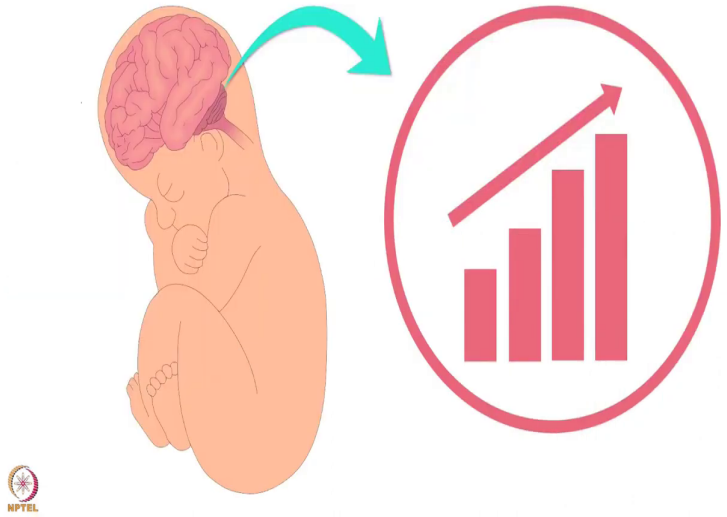

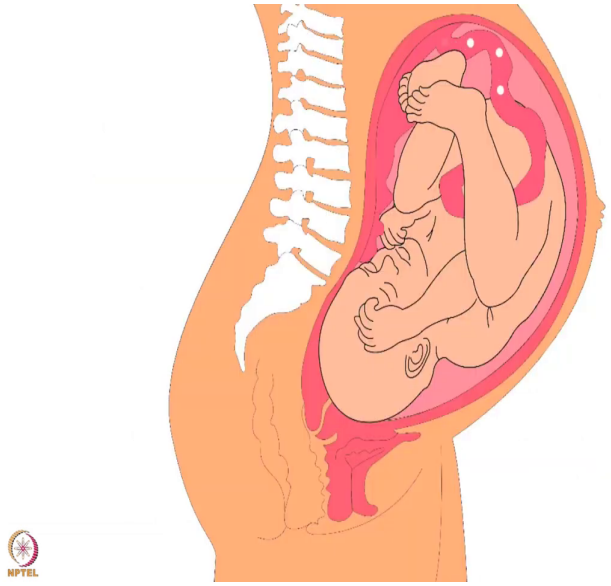

Adolescence and pre-pregnancy nutrition is explained in other tutorials. Please visit our website for more details. During the third trimester, the brain cells begin to be covered by a layer of fat. It is called the myelin sheath. This helps in passing the messages through the brain cells quickly. By 7-month brain of a fetus takes on a form that resembles an adult's brain. In the seventh, eighth and ninth months, there is a rapid growth of the fetus's brain. This rapid growth is not possible without one thing; it is the nutrition that a baby gets from the mother's diet.

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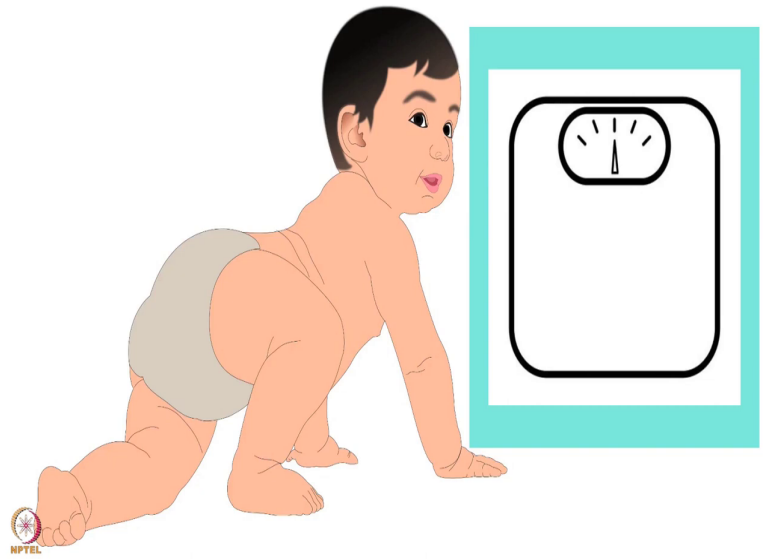

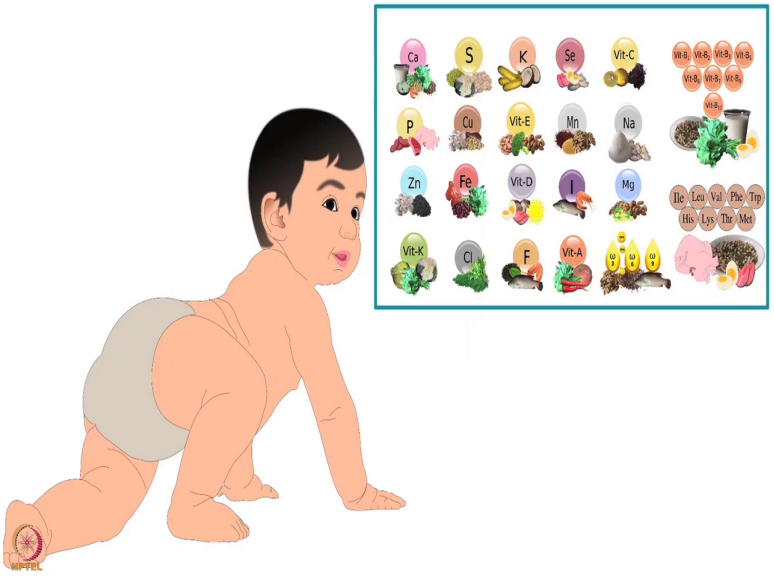
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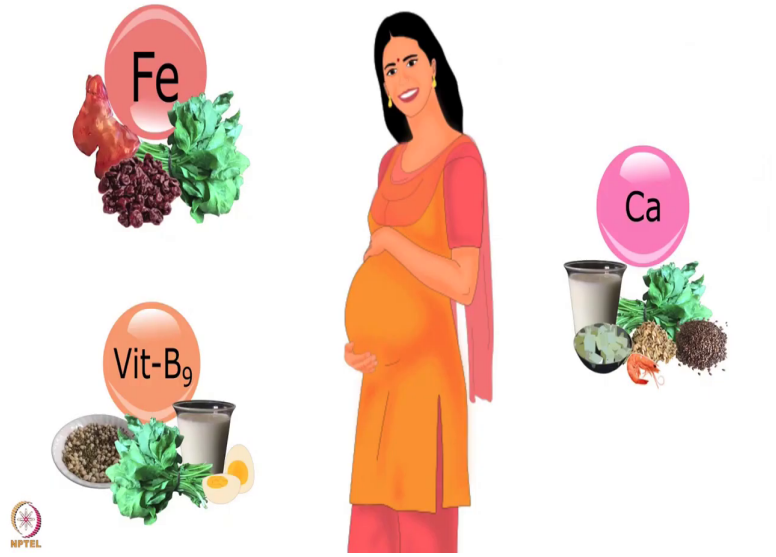
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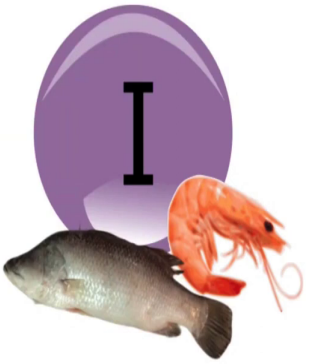
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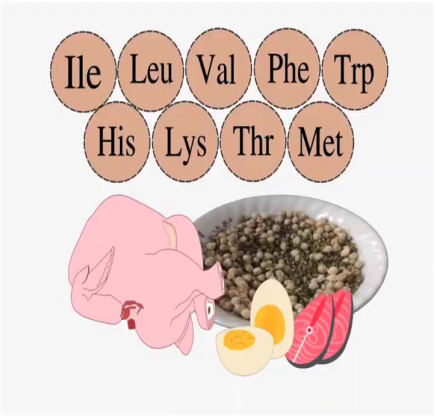
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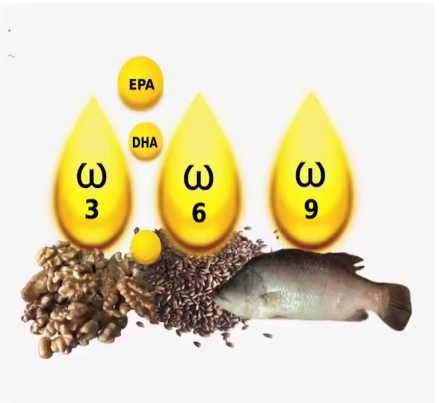
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Mother's diet decides the baby's body fat and muscle percentage. It also decides the baby's food preferences. Mother should consume a variety of nutrient dense, local seasonal foods. Adequate amounts of iron, folate and calcium should be present in her body. Consumption of iodine sources is necessary during pregnancy. She must eat adequate protein, good fats and essential nutrients.

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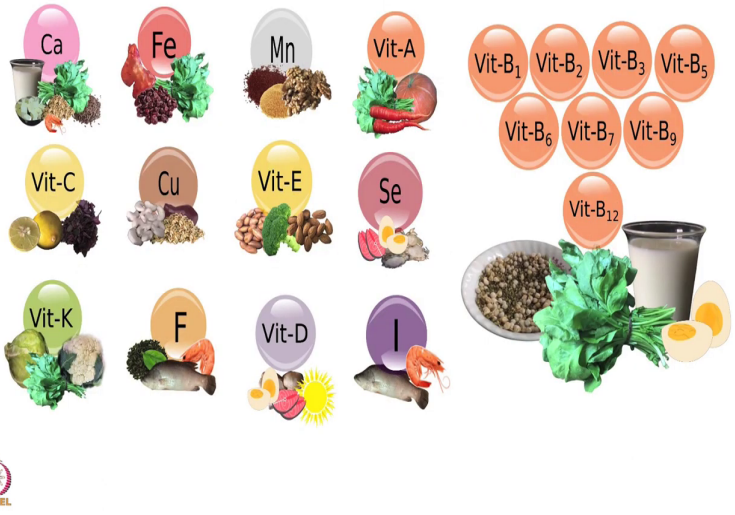

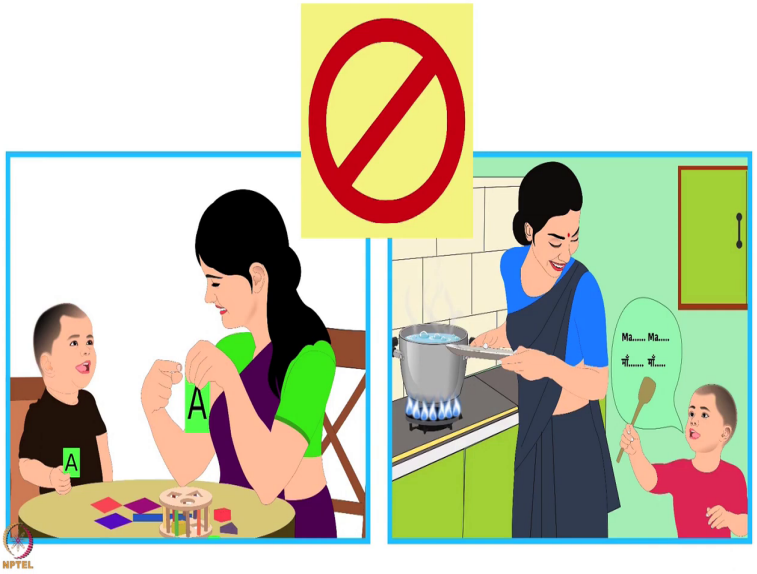
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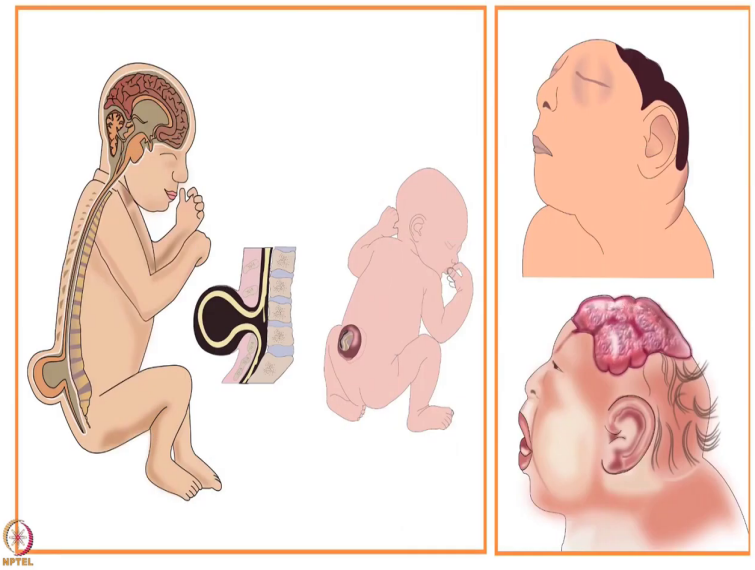


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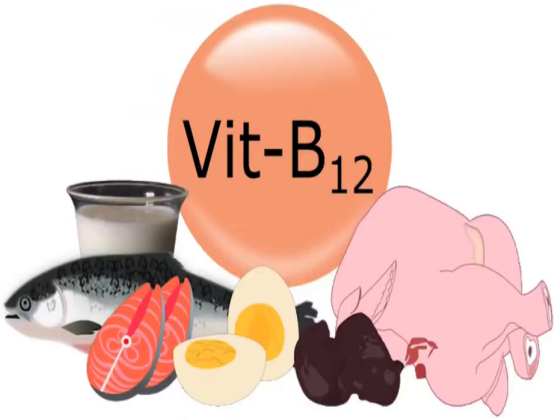
Vit-B12


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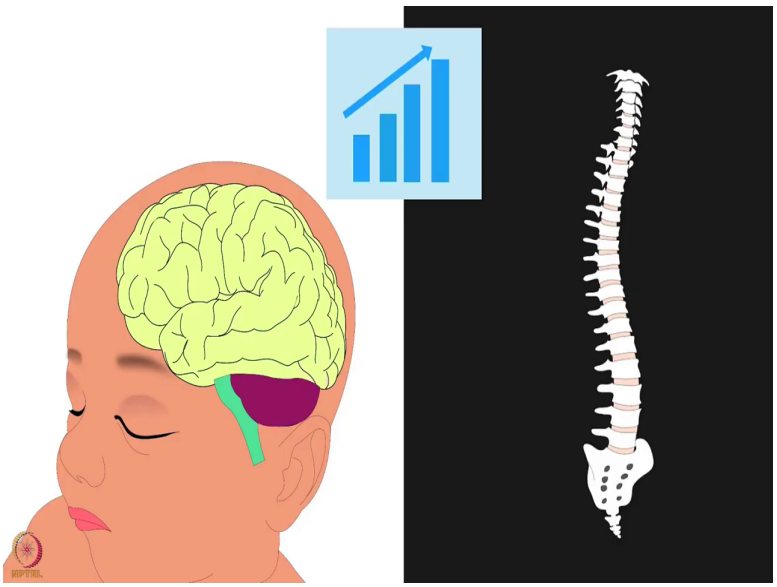

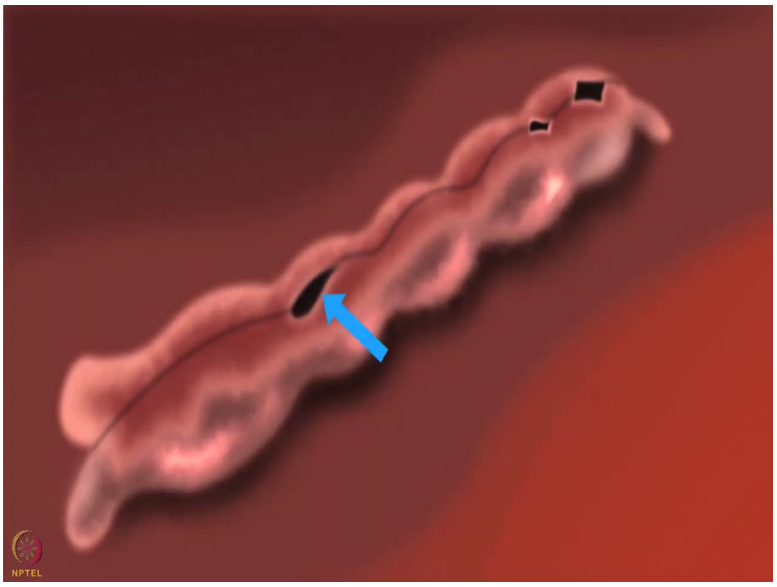

Sources of these nutrients are given in other tutorials of the same series. Otherwise, vital brain development processes can be impact. The baby could also have birth defects and cognitive defects. A well-known example is neural tube defects. Folate, B 12, and choline are needed for early development of the brain and spine. Mother must take sufficient folate during pre-pregnancy. She should take it in the early weeks of pregnancy as well. Otherwise, the development of the neural tube can go wrong. It leads to birth defects of the brain and spine.

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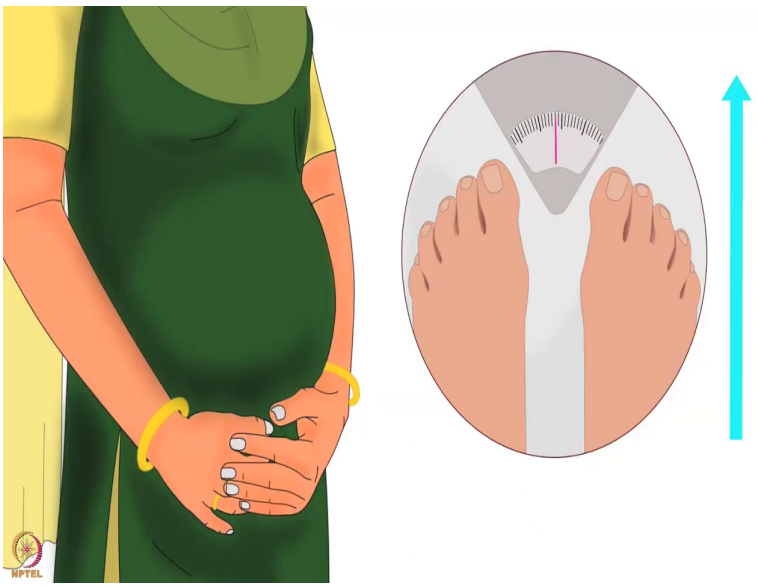

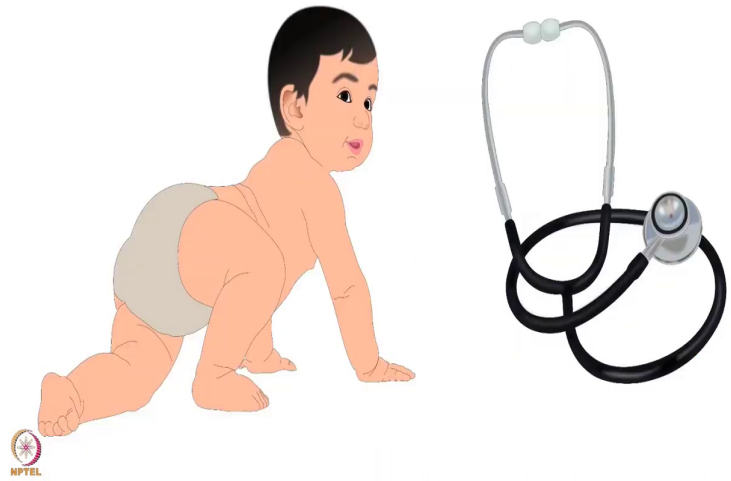

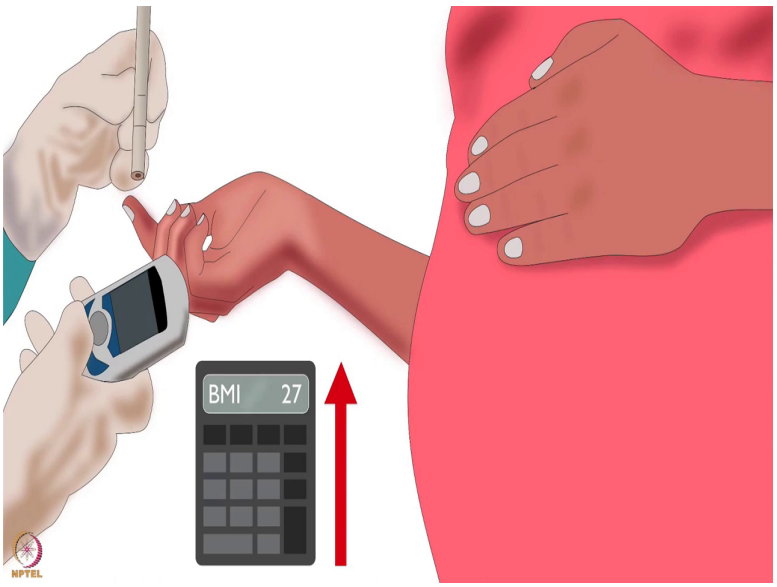
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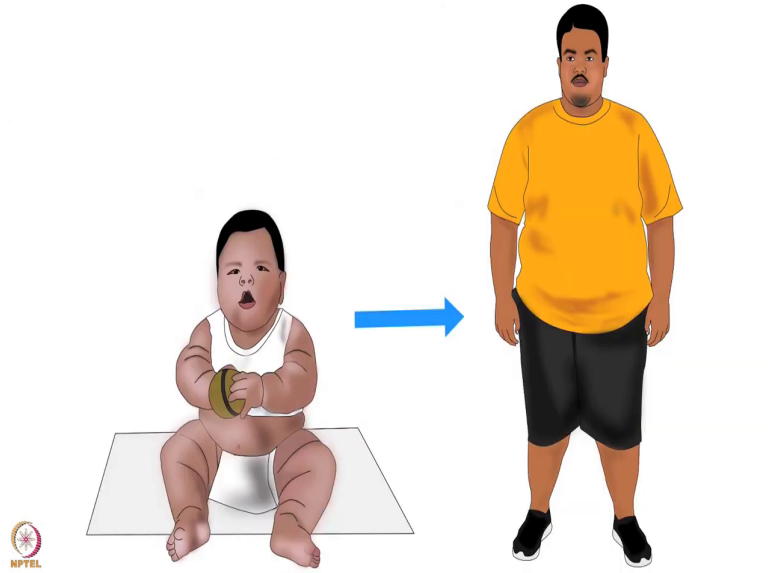

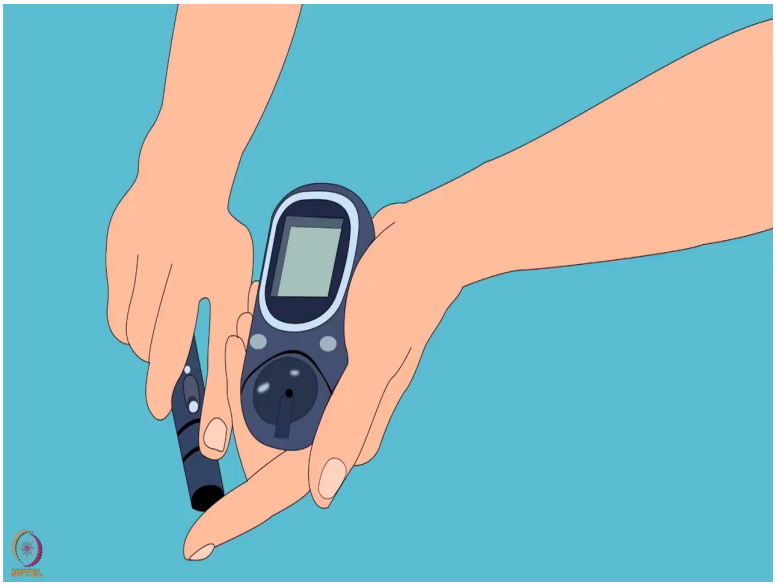

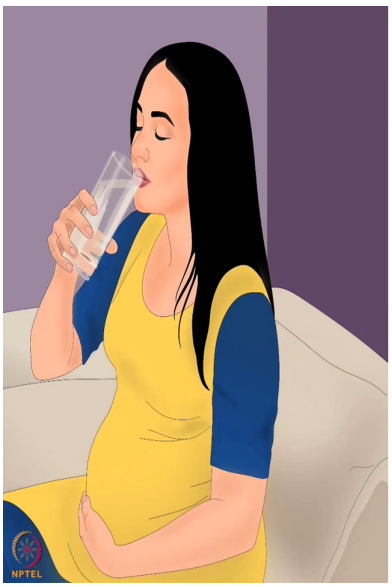

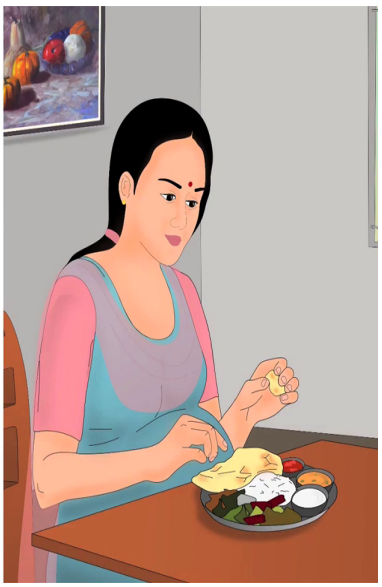

The rate of a mother's weight gain during pregnancy decides the baby's health. High weight gain in mothers who are not underweight is not good. It increases the risk of childhood obesity. Obesity during pregnancy puts women at risk for gestational diabetes. This increases the baby's risk to be obese, and diabetic later in life. A mother's lifestyle during pregnancy also plays an important role. Severe stress, depression or violence during pregnancy must be avoided.

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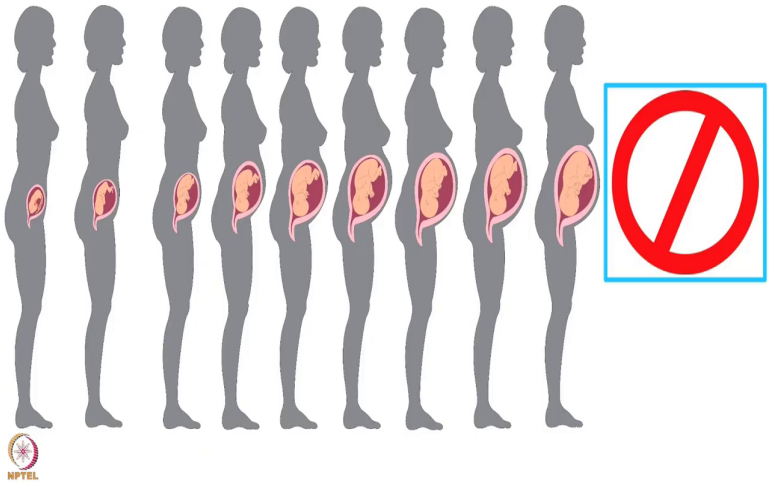

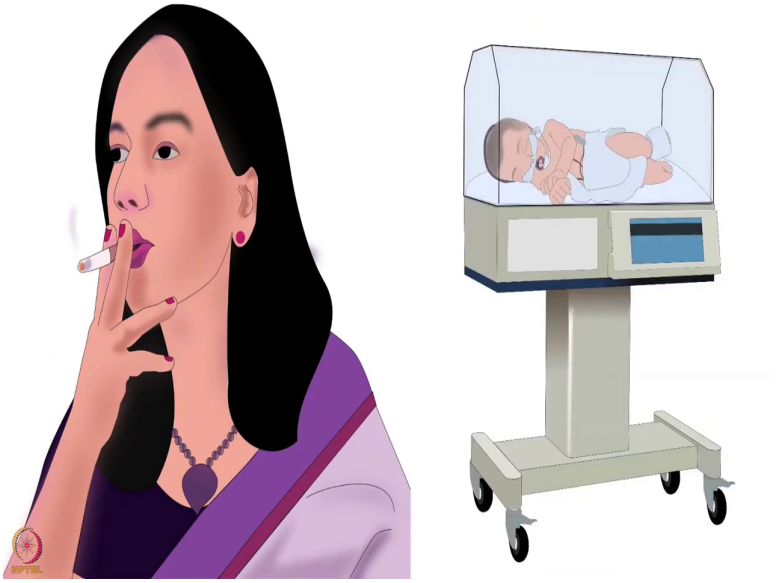

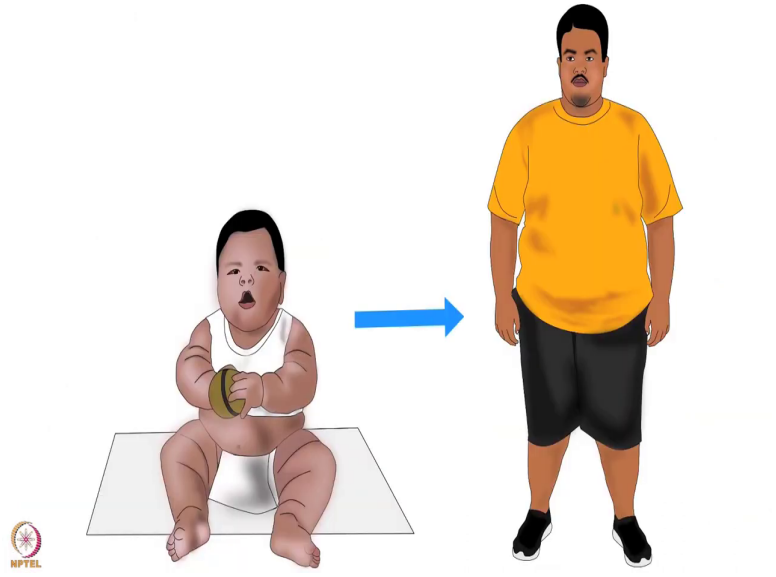

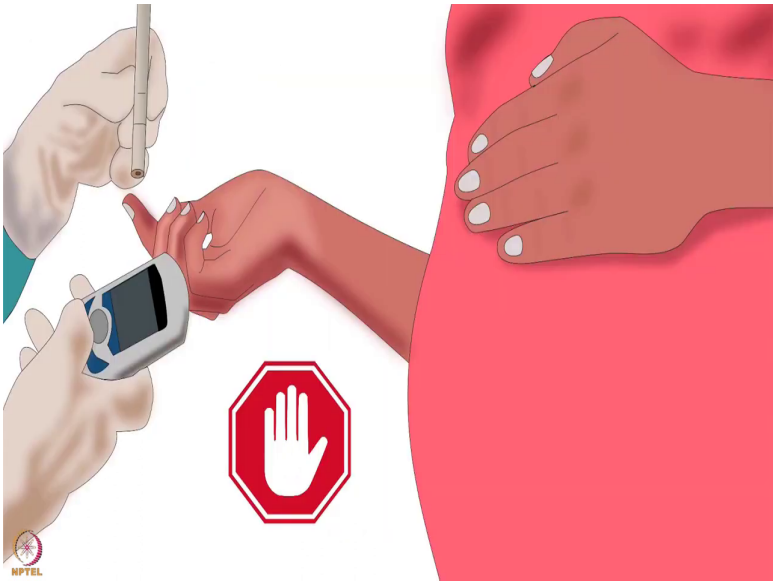


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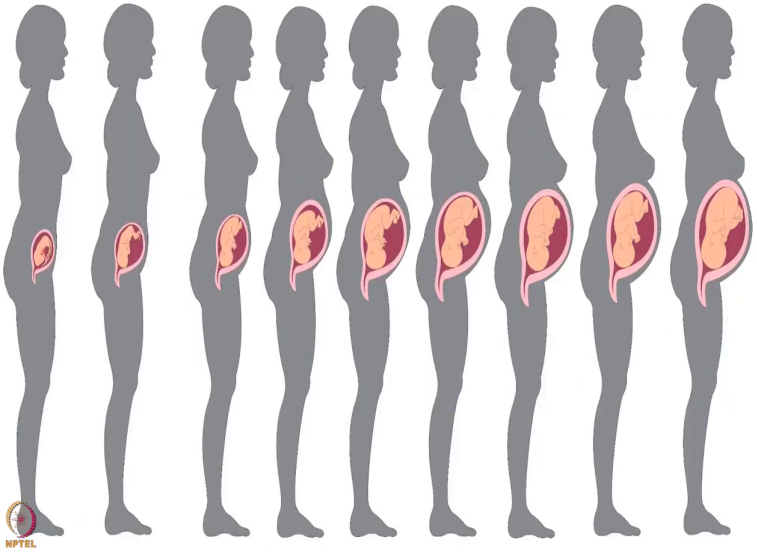

Such negative experiences can deeply affect a developing fetus. Smoking can cause low birth weight or premature delivery. It can also increase the baby's risk of obesity later in life. Alcohol and Tobacco should not be consumed. Diseases should be prevented or treated immediately to minimize nutrient loss. After the 270 days of pregnancy, infancy is the second stage of the first 1000 days.

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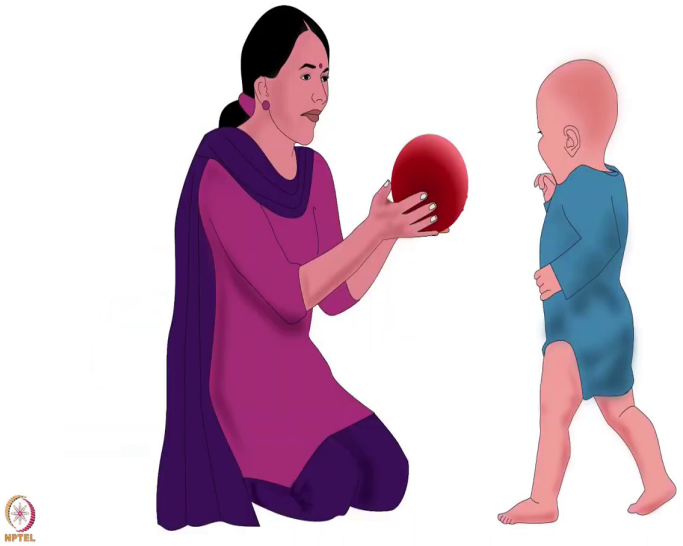

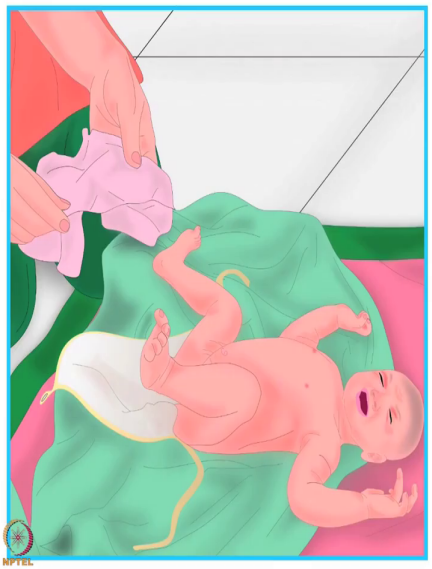

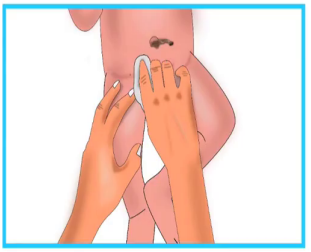

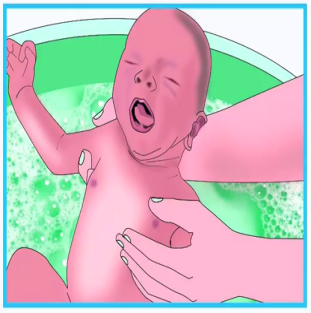

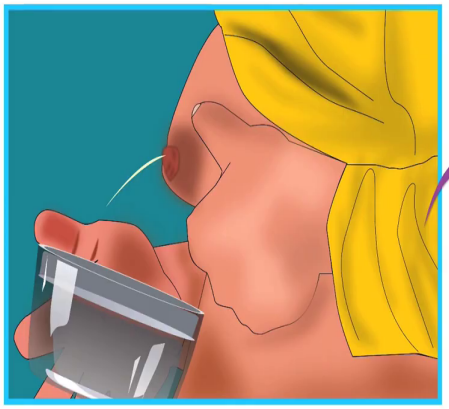

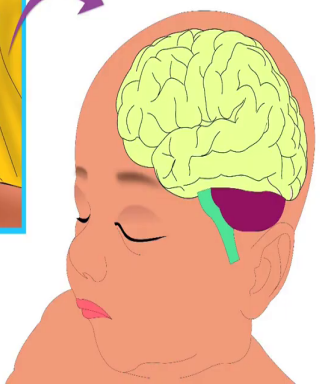

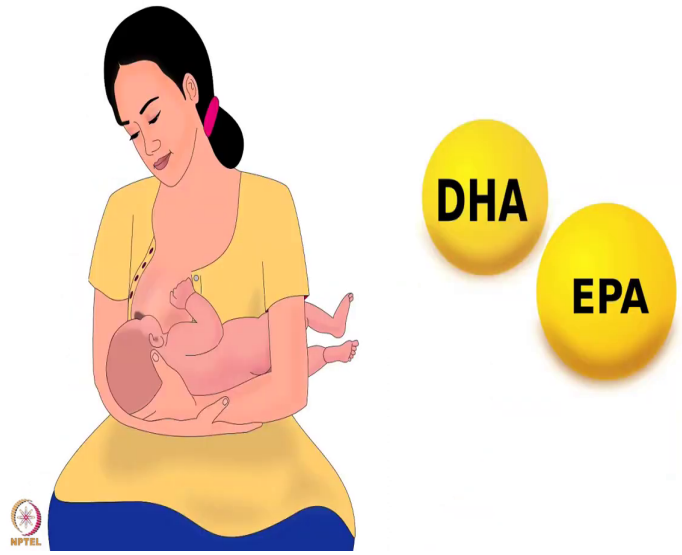
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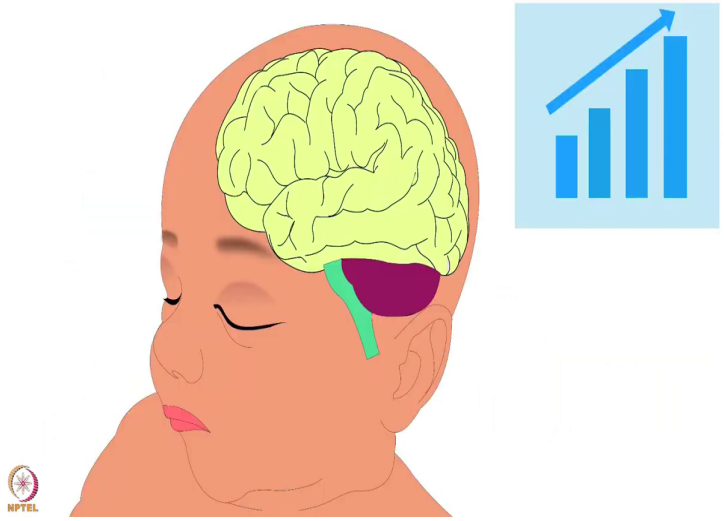

During infancy, the child's brain develops motor functions such as balance. It also develops the ability to create new memories and remember them later. At this stage, proper newborn care is required. Newborn care is explained in detail in other tutorials in the same series. Breast milk is the best food for newborns brain development.

It contains a variety of nutrients, growth factors, and hormones. It is made up of unique components for each mother and her baby. No formula milk available in the market can be the same as mother's milk. Its impact on brain development is incomparable. Mother's milk has a high level of DHA and EPA. They are important for brain development of the baby.

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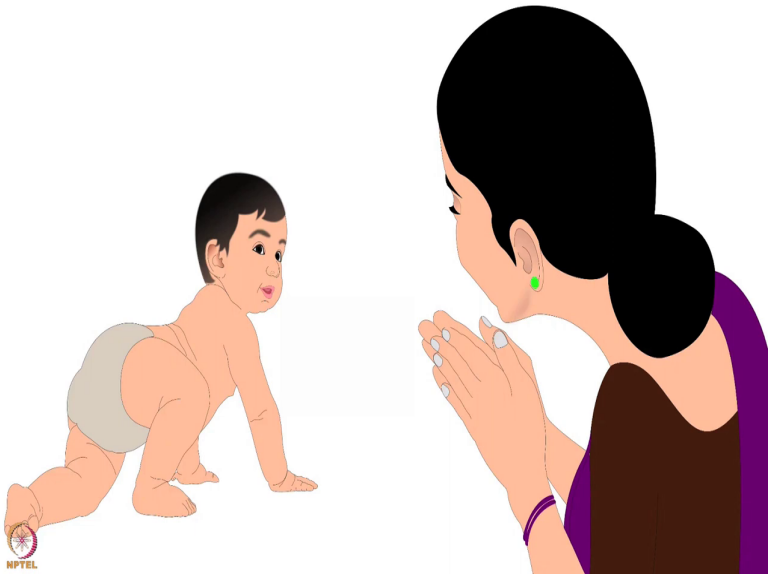

Exclusive breastfeeding for 6 months has many benefits. Breastfeeding is associated with an increase in IQ. It is also associated with getting more education and earning a better income. This is true for children and adolescents across all income levels. This brain development is not just because of breast milk, the experience of breastfeeding also contributes to it. Breastfeeding involves plenty of mother child interaction and nurturing.

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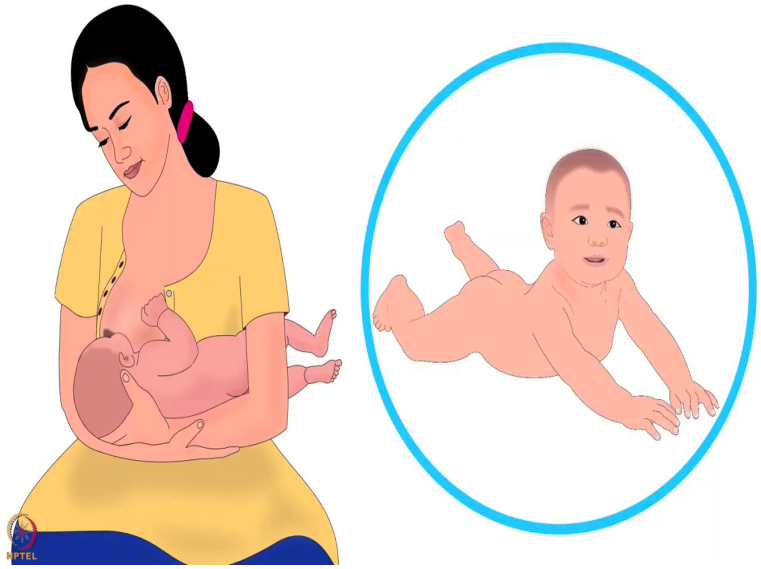

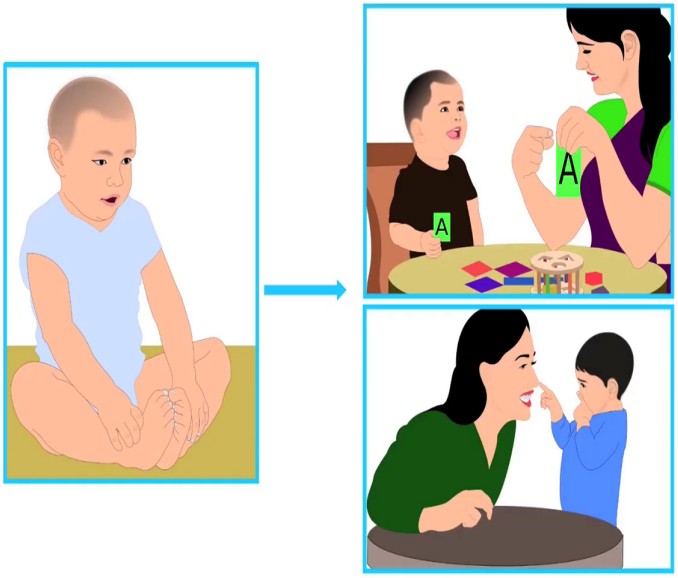
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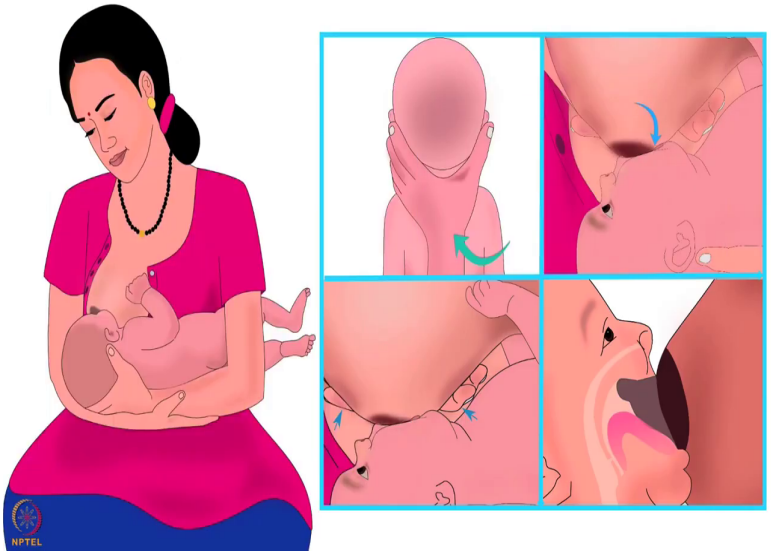

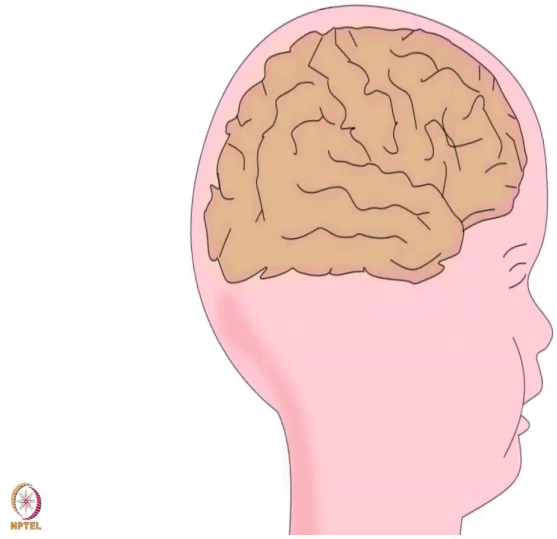

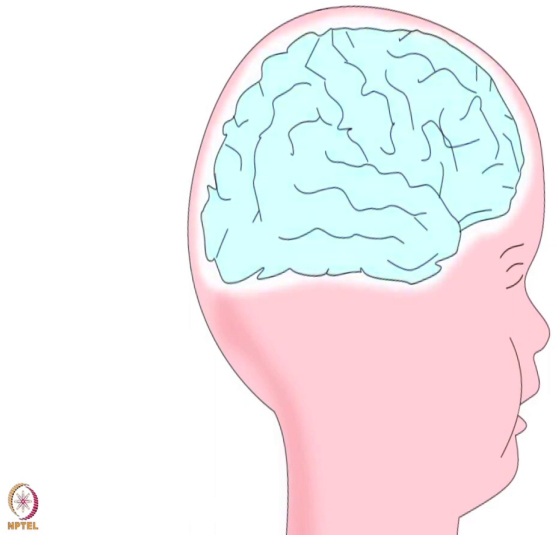

It helps in strengthening a baby's sensory and emotional control. These are critical for both cognitive and socio-emotional development. To get these benefits, breastfeeding must be done using the proper technique. Next, let us discuss brain development in the toddler stage. A child's brain continues to grow and develop at a rapid pace. During toddlerhood, a child's brain develops the ability to do complex tasks.

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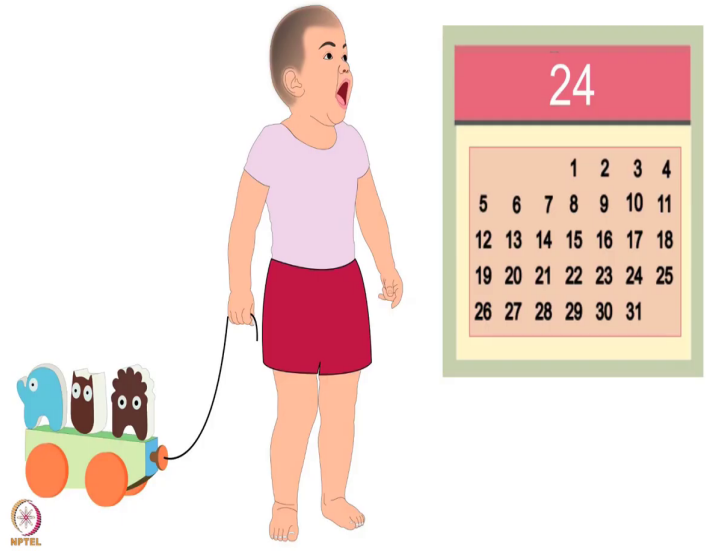
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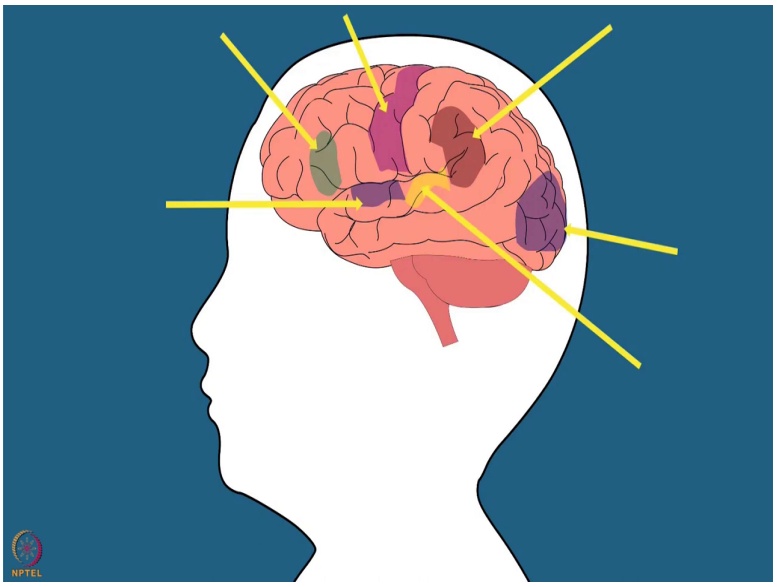


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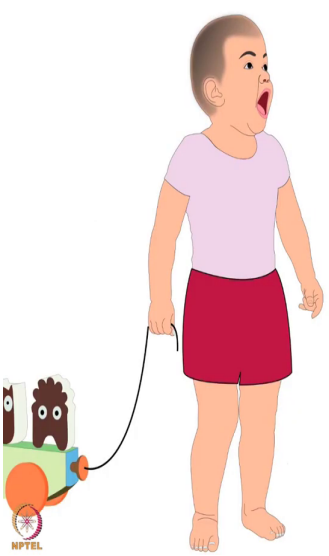


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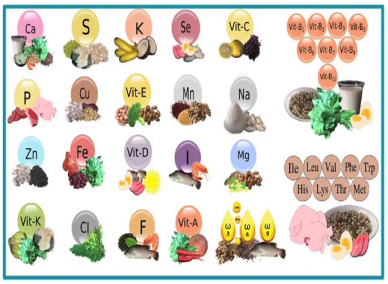
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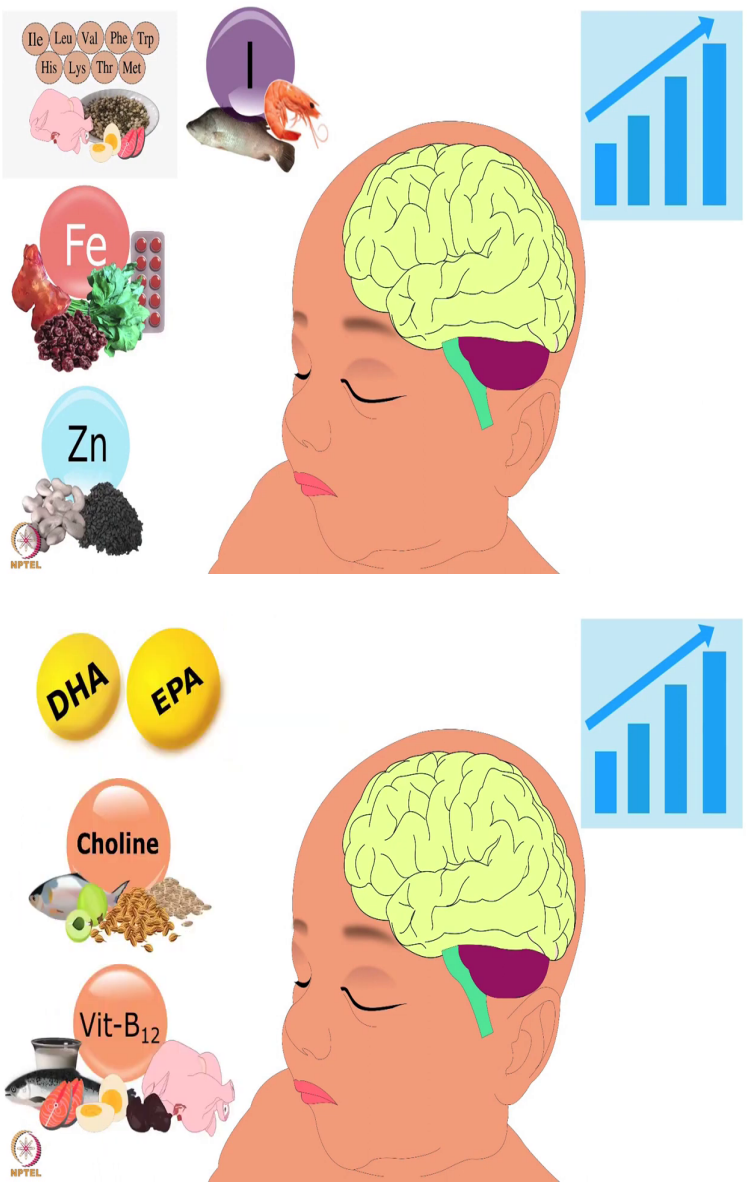

A toddler's brain is busy forming new connections between the brain cells. At this time, such connections are created faster than at any other time in life. This has many benefits. It helps the child to learn new things faster. It also helps the child to adapt to changing environments and circumstances. In the second year of baby's life, parts of the brains language areas develop.

This leads to a sharp increase in a child's language abilities. It also develops language learning capacity, and the ability to learn new skills. Nutrition during this period remains critically important. Protein, iron, zinc and iodine are essential to the toddler's developing brain. Other important nutrients are DHA, EPA, choline, B 12, etc.

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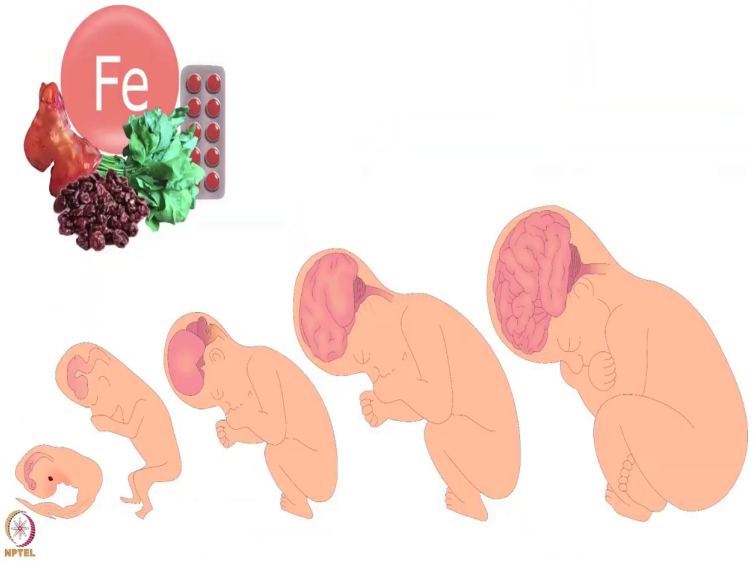
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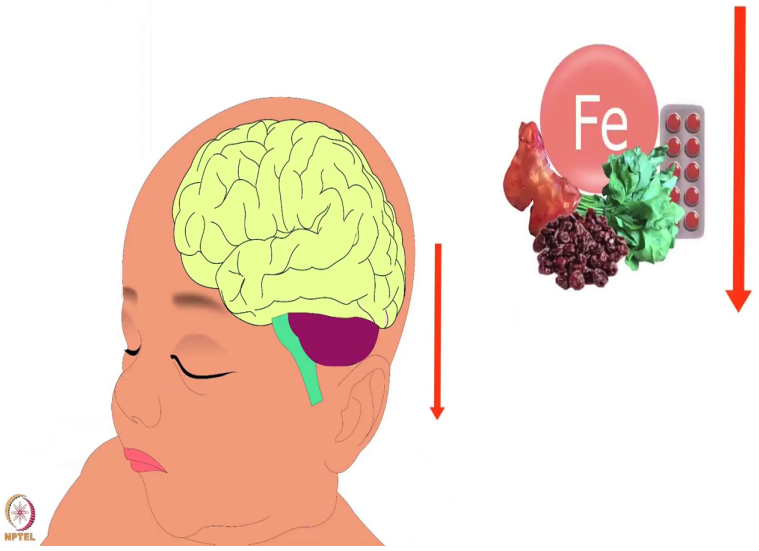
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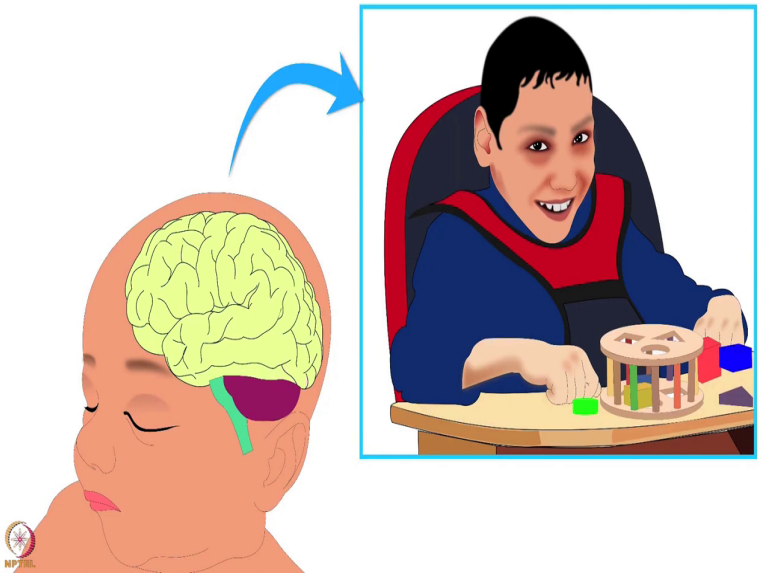

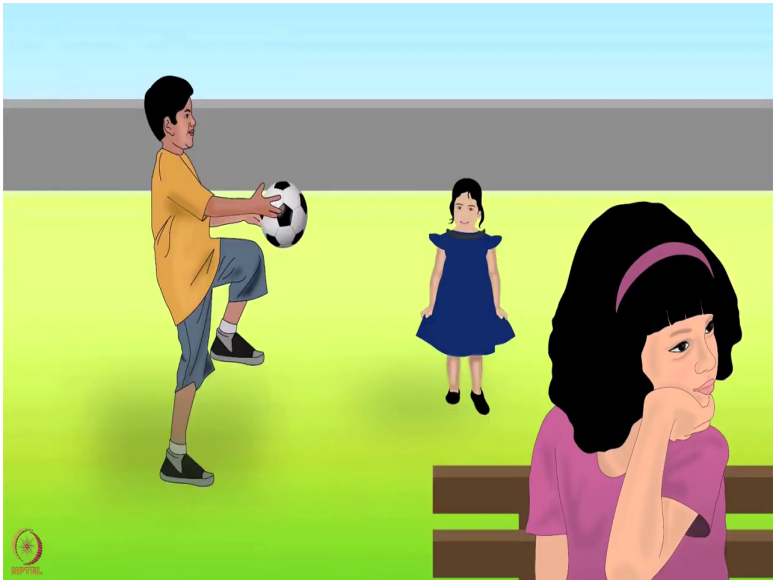

Iron plays a significant role in brain development throughout the first 1000 days. Damage caused due to iron deficiency in these 1000 days can be irreversible. It leads to impaired learning and socio-emotional behavior. This includes less social interaction and alertness, increased irritability, increased cautiousness, less interest in indoor and outdoor games.

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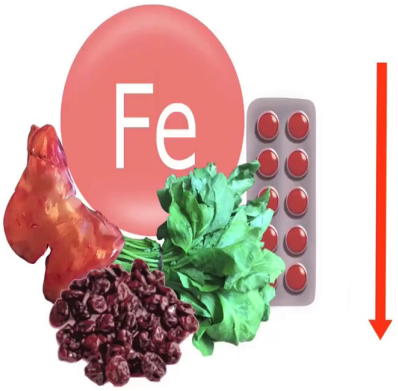
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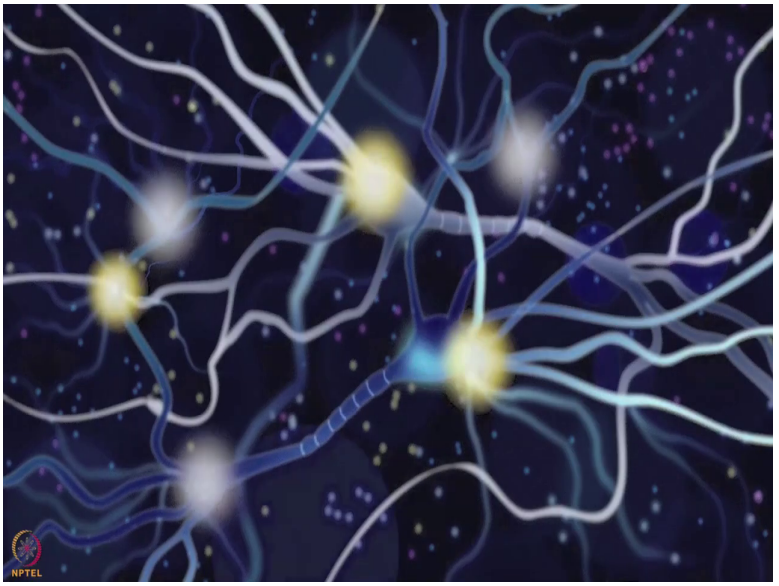

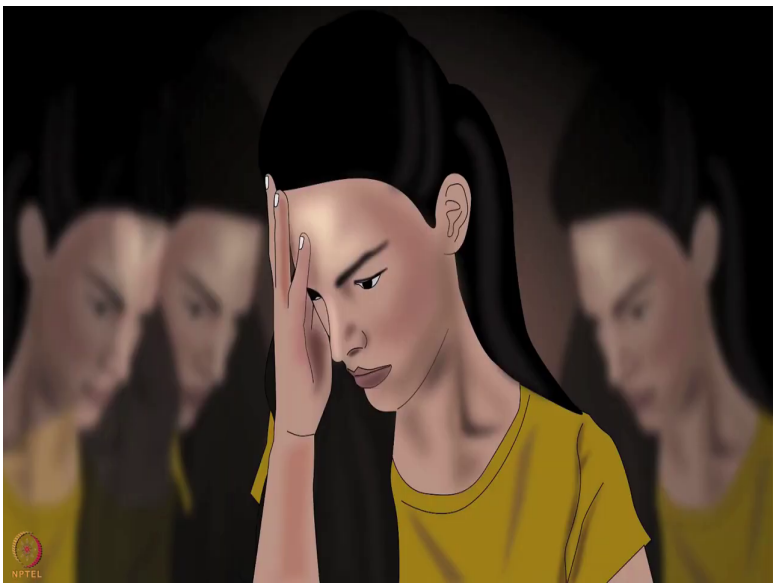

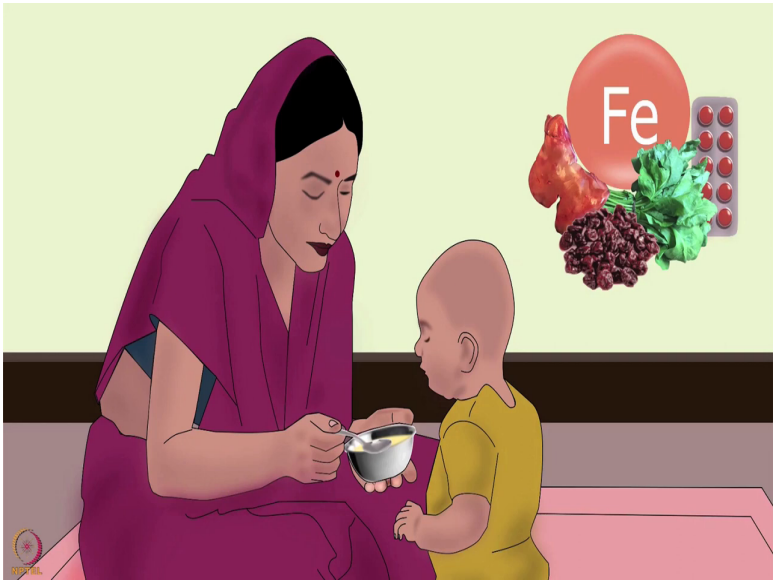
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This can reduce the amount of attention and interaction given by caregivers. This further contributes to the poor development of the child. Iron deficiency also appears to affect the chemical substances in the brain. It is associated with higher levels of anxiety and depression later in life. It impacts consequent job potential. Toddlers need to be fed iron rich foods otherwise they are unlikely to consume enough iron. Hence, after 6 months of age, complementary feeding is necessary.

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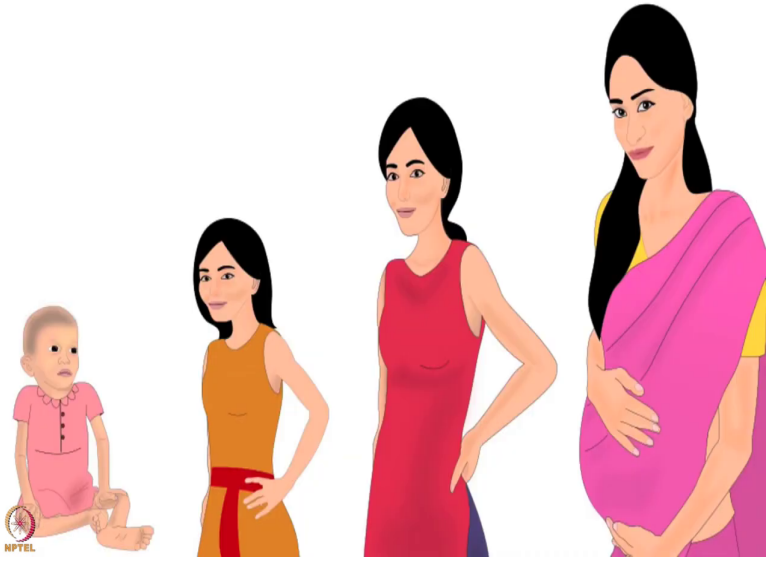

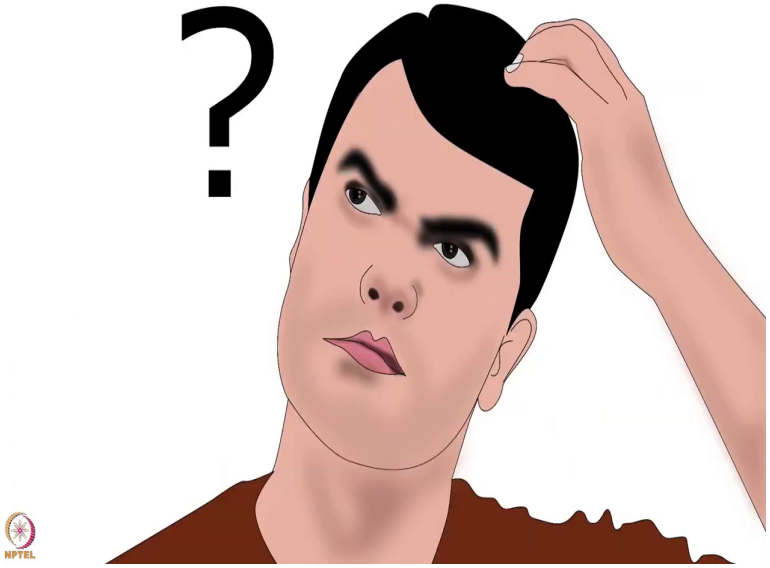

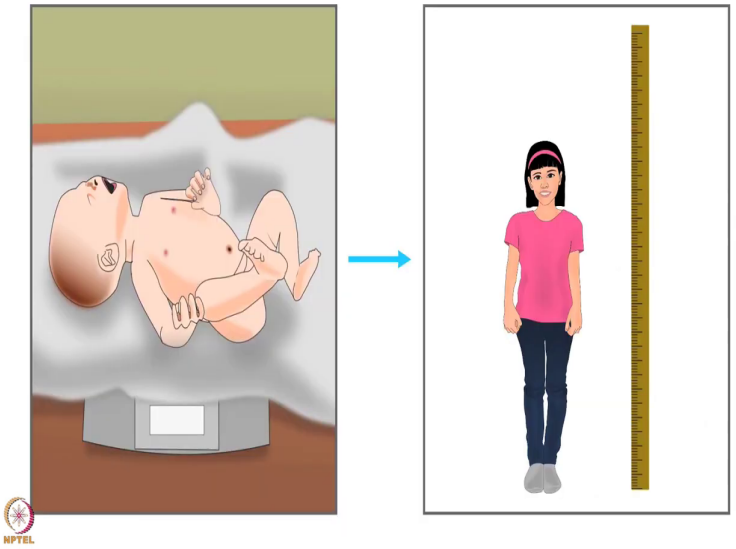

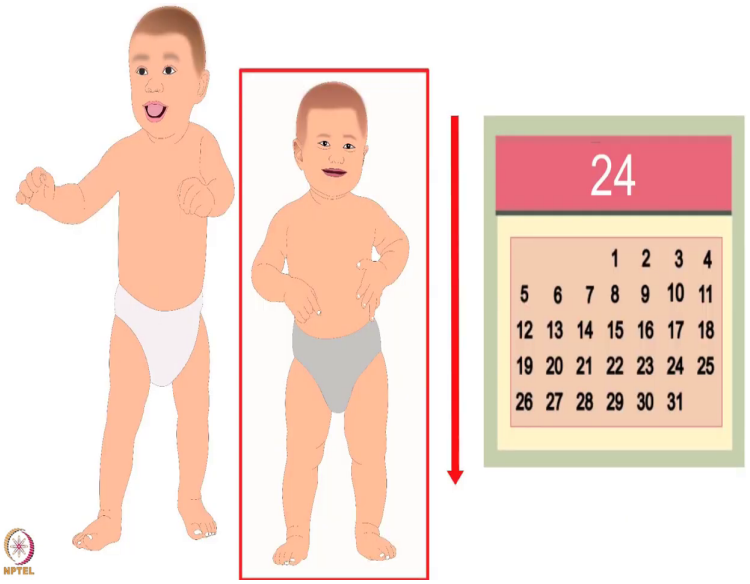
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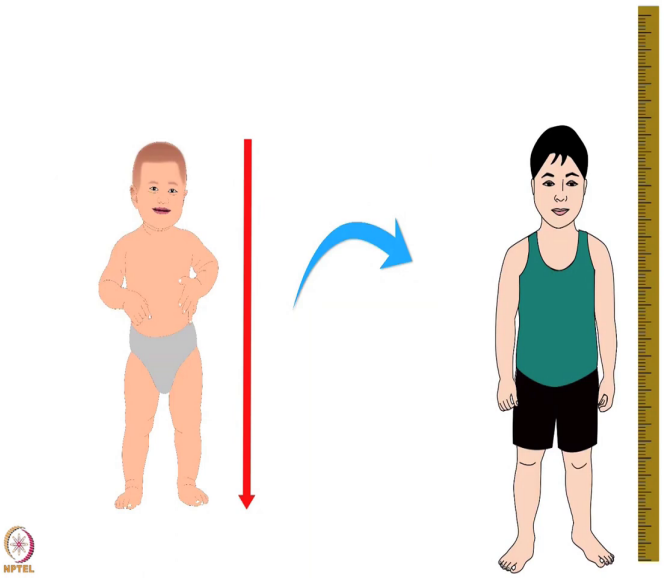

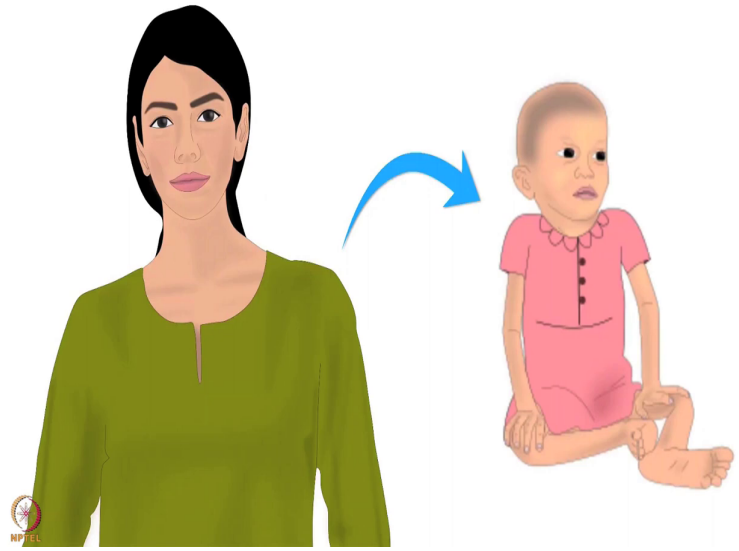

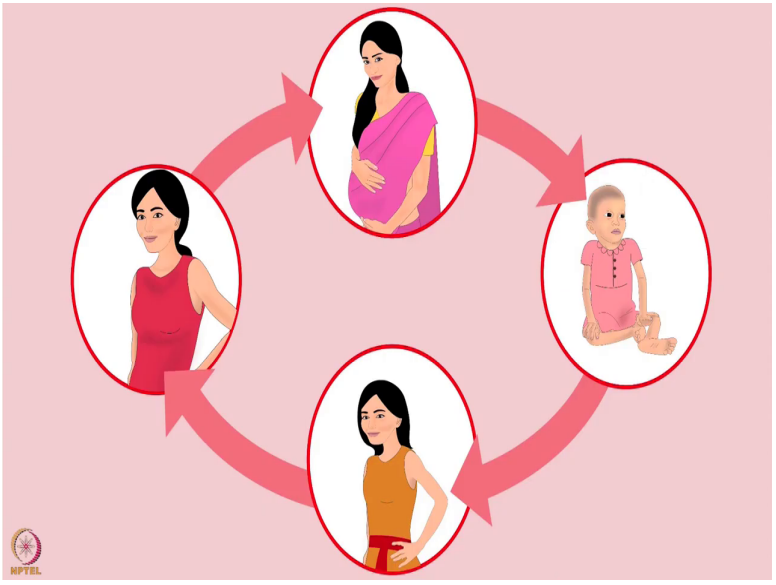

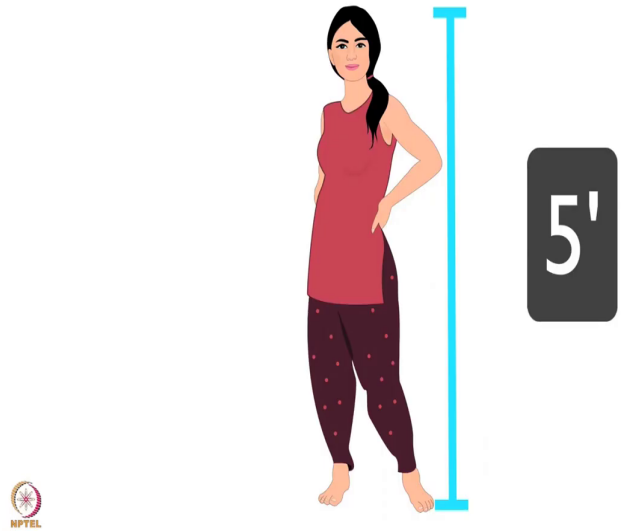
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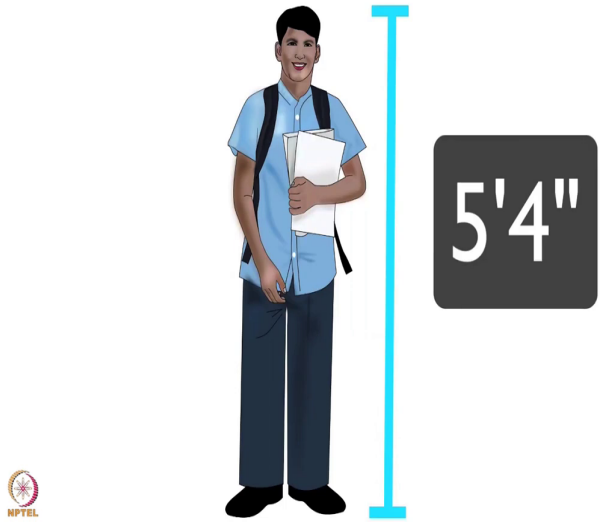
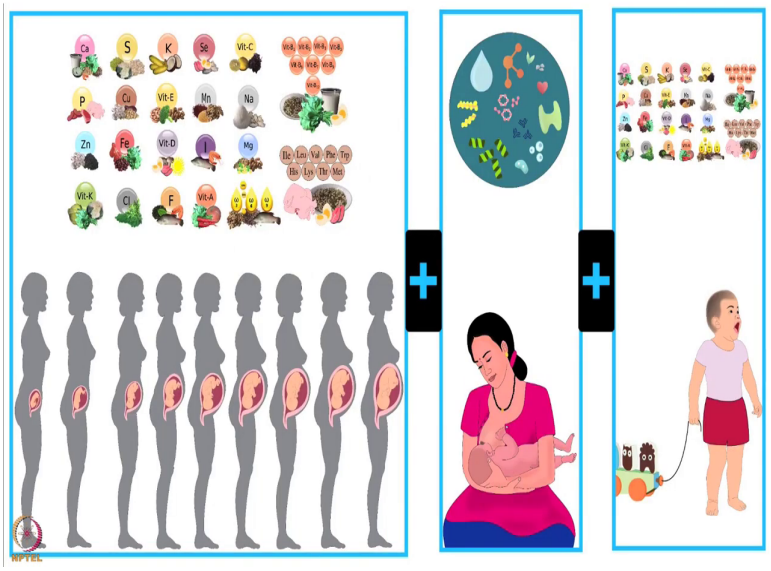
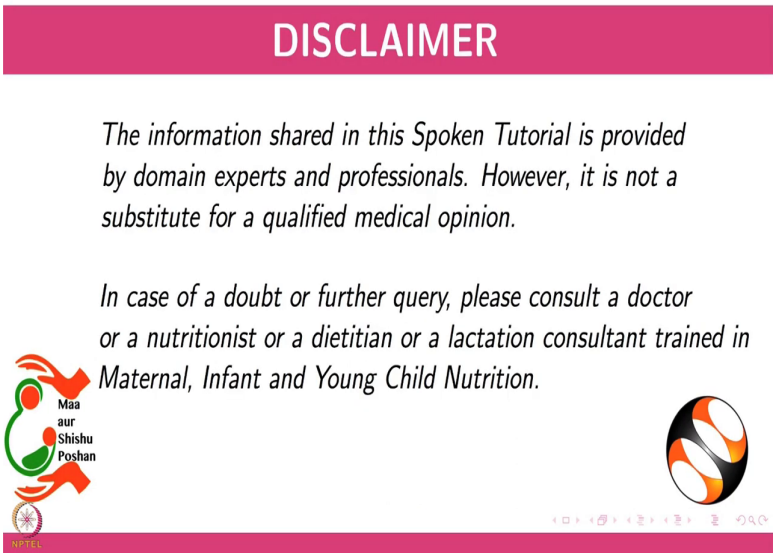




Spoken Tutorial Project, IIT Bombay

This tutorial is funded by Toddler Food Partners (TFP),
a US based volunteer-run non-profit organization.
TFP has partnered with several local organizations in India
to end childhood malnutrition.

Domain Review:
Dr. Rupal Dalal, MD (Paediatrics), IBCLC



Damage caused by malnutrition in the first 1000 days is permanent. It causes loss of IQ. Chronic malnutrition during this critical period leads to stunting. Loss of height or stunting in the first two years of life cannot be reversed. It affects a child's future generations too. Malnourished women give birth to malnourished sons and daughters. Later on, these malnourished daughters grow up to become malnourished mothers. Therefore, they create a continuous cycle of malnourishment.

It takes 2 to 3 generations to combat stunting in future generations. This is why the average height of a 19-year-old woman in India is only 5 feet. The average height of a 19-year-old man in India is only 5 feet 4 inches. All this can be prevented by improving nutrition during first 1000 days. This brings us to the end of this tutorial. Thank you for joining.