

*THIRD HANDBOOK ON*  
**HEALTHCARE**  
*MOTHER & CHILD*



Trust for  
Voluntary  
Organizations

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ISBN 969-8628-03-7

First Published in 2002

Printed By

**Manza Printing Corporation**

Plot # 59-G, St # 7, Industrial Area,

I-10/3, Islamabad, Pakistan

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# **TURST FOR VOLUNTARY ORGANIZATIONS**

## **(TVO)**

The Trust for Voluntary Organizations was established in 1990 in pursuance of an agreement between the governments of the US and Pakistan. The purpose was to create an independent indigenous grant making agency for the assistance and support of NGOs engaged in participatory development. The Trust also provides assistance for the capacity building programme for its partner NGOs and the communities that they serve.

So far the Trust has disbursed about Rs. 500 million out of its own funds and the funding provided by the European Commission under a five-year agreement that would conclude in 2003. The grants have been provided in the field of Primary Education, Primary Health (including reproductive health), Poverty Alleviation and Rehabilitation of the Disabled. There are about 368 ongoing projects in these fields at present, that is, during the year 2002.

The Trust operates through its 20 regional offices and a network of CBOs (more than 350) that extends to each sub-district (tehsil) of Pakistan. However, NGOs/CBOs that are not part of this network are also eligible for support by the Trust.

This handbook and the other three companion volumes on healthcare are part of the TVO's programme of dissemination of information.



Out of many books consulted while writing this book, the following were particularly useful: *Family Doctor* published by The British Medical Association; *Women's Health* published by the Royal College of Obstetricians and Gynecologists; *What to Expect When You're Expecting* by Arlene Eisenberg, Heidi E. Murkoff and Sandee E. Hathaway; *Where Women Have No Doctor* published by the Hesperian Foundation; *Pregnancy* by Dr. Monika Datta; *Pregnancy* by Nutan Pandit; and Dr. Spock's *Baby and Child Care*.

Ms. Fauzia Shoaib has done the word processing with patience and competence. Mr. Farooq Khan, Mr. Zaigham Khan and Ms. Saima Haq took time out from their other assignments to do the proof reading and Kashif Imran has done the illustrations.



## INTRODUCTION

This is the third handbook in a series of four handbooks on healthcare, meant to be used by the Community Resource Persons (CRPs)- a corps of volunteers to be mobilized through partner NGOs of the Trust-for health education of their communities.

This book is about the health of the mother and child, especially in the rural areas, where the facilities for healthcare are almost non-existent. The neglect of the mother and child by the state, community, and even the family, results in one of the highest maternal and infant mortality rates in the world. The Maternal Mortality Rate (MMR) in Pakistan is about 5 per thousand births, whereas in the developed countries it is less than one in a thousand. Likewise, the Infant Mortality Rate (IMR) in Pakistan is estimated at about 90 per thousand births, as compared with about 10 per thousand in the developed countries.

In the rural areas not even 15 per cent of the deliveries are conducted by doctors or trained midwives. Rest of the deliveries, about 85 per cent, take place at home, and are assisted by older women, usually the mothers-in-law or other older kinswomen. The ordeal of a woman continues throughout the pregnancy (e.g. not getting any relief from the daily chores), and even after the delivery, especially if the baby is a girl.

It is not often realized that the health of women, especially pregnant women, is not merely a matter of concern for the immediate family, but also for the community and the state, for the simple reason that healthier mothers mean healthier children and, ultimately, a healthier nation. It is not a widely known fact that the state of health during the first two years of life may determine the state of health of a person for the rest of his life. In fact deficiency or imbalance in nutrition during infancy, and even during the foetal stage, can lead to a life-long inadequacy of some kind. For example, recent research shows that omega-3 fatty acids (linseed oil is the richest source) play a crucial role in the development of the brain, in the womb, in infancy, and in childhood. Children, who do not get enough of omega-3 in the early stages of development, beginning from the womb, may have the disadvantage of lower IQ later in life. The deficiency of other nutrients would, likewise, affect other physical and mental functions to an extent and in the manner that is not yet fully understood.

A woman has many roles - wife, mother, and a contributor to the economic and social life - that she cannot play to the full extent of her potential, as compared with men, because:

- the impact of poverty is far greater on women than on men;

- more women than men are under-nourished;
- more women than men are denied access to education and skills;
- more women than men lack access to health information and medical services;
- most of the women have no say in matters relating to their health.

In this state of reprehensible neglect of women by the state, society, and even by the members of the immediate family, the glory of motherhood has been obscured by fear, pain and extended suffering that has become associated with womanhood. Responding cheerfully, then, to the summons to motherhood is an affirmation of the supreme fortitude that only a woman can evoke.

While emergence of a more humane society would remain a long and incremental process rather than a planned event, there are many small steps that organizations like the TVO can take. The programme of health education is one such step. We hope that these handbooks, especially this handbook, would provide useful information to lighten the burden of some women, to some extent, in some communities.

**IQBAL JAFAR**

*Chief Executive Officer*

*Trust for Voluntary Organization*

PART ONE  
**MOTHER**



CHAPTER ONE  
**IN THE BEGINNING**





Giving birth to a child is an important event in the life of a woman that, if it is the first child, confers on her a new and proud status of motherhood. It is also the culmination of a nine-month long process that has its moments of joy and the promise of fulfillment, and is yet fraught with apprehensions and even physical and mental distress. Managing a birth, therefore, needs all the medical, social and emotional support systems that the community and the family can provide. This is not always possible as medical support system may not be accessible and the social and emotional support systems may be inadequate due to lack of knowledge about the physical and emotional needs of an expectant mother. Part I of this book is, therefore, designed to provide basic information and advice about managing the birth of a child.

The first question that should be asked even before pregnancy is whether the would-be mother is in a fit condition to give birth to a healthy baby, and remain healthy herself. The parents must, therefore, give serious thought to the following before deciding to have a child:

- The ideal child-bearing age is between 18 and 35 years. A teenage pregnancy often leads to maternal and infant mortality, or causes some kind of weakness or deficiency (e.g. deficiency of calcium leading to osteoporosis) that may continue for the rest of the life of the teenage mother. Pregnancy after the age of 35 years carries the risk of chromosomal abnormalities in the child, such as Down syndrome (previously known as mongolism) whose chances can be as high as one in every 350 births if the mother's age is 35, or one in 30 births if the mother's age is 45.
  - After the birth of a child, pregnancy should be avoided for at least the next two years. This is the minimum time required for the mother's body to return to a state of total fitness again. It also allows the child to get exclusive attention of the mother for at least two years that is the most crucial period in the growth of a child. Any neglect during this period can lead to a life-long deficiency or even disability.
  - Underweight mothers are likely to give birth to weak babies, and overweight mothers are likely to have difficult childbirth. The body-weight must, therefore, be corrected to ensure normal delivery of a healthy baby. The body-weight has to be corrected even before conception as an effort to correct it during pregnancy is likely to be made with an intention to achieve quick results that can lead to overnourishment in the case of underweight women, and undernourishment in the case of overweight women.
  - Anaemia (deficiency of hemoglobin) is very common in Pakistan. More than 50 percent of women suffer from it. It is indicated by feeling of weakness, irritability, shortness of breath.
-



dizziness and pale complexion. Since oxygen is conveyed to the body cells through hemoglobin, lack of it means less of oxygen both for the mother and the baby. That may not be enough for the mother's health and the baby's normal growth. Since the need for hemoglobin increases during pregnancy due to increase in blood volume, a pregnant woman, already suffering from anaemia, is at great risk.

Since iron is needed for the production of hemoglobin, the deficiency of hemoglobin is usually treated by taking iron supplements. But taking iron supplements to cure anaemia is not always a good option. Apart from the fact that iron supplements may cause constipation in some cases, they also reduce absorption of zinc that can result in miscarriage, growth retardation, and long labour as zinc is needed to help muscles contract well.

Anaemia should, therefore, be treated by increasing the intake of iron-rich foods, such as eggs, amaranth (*chaulai ka saag*), fenugreek (*methi*), dates and *gur*. Spinach is rich in iron, but its iron content is not easily assimilated by the body, and its oxalic acid content can form crystals in the kidneys. Liver is also rich in iron, but should be avoided by pregnant women as it can cause listeriosis, an infection that can result in abortion, stillbirth or premature birth. Since correction of iron deficiency through the natural process of iron-rich food takes longer than through supplements, the treatment of anaemia should begin much before the beginning of pregnancy.

- In case there is any indication of diabetes, heart disease or high blood pressure, corrective steps should be taken before pregnancy, under the advice of a qualified doctor. Ignoring these diseases can have serious consequences both for the mother and the child. Fortunately, incidence of heart disease and high blood pressure is very low in the rural areas.

What has been explained and suggested so far can be described as preparation for motherhood. The next stage is pregnancy itself. Now, how does a woman know that she is pregnant? The most obvious sign of pregnancy is a missed period. In addition, there may be other signs also that begin about a week after the missed period or, in other words, about five weeks after the last monthly period. Those other signs are:

- nausea and vomiting, especially in the morning;
  - feeling of tiredness;
  - altered taste, strong like or dislike for certain foods;
  - tendency to faint and
  - quick emotional reaction and mood swings.
-

None of these signs, not even a missed period, is a sure sign of pregnancy. A missed period, for example, can be caused by fatigue, stress, or even fear of pregnancy. But if a number of these signs occur at the same time, that would be a sure sign of pregnancy.

A normal full term pregnancy is expected to be of nine months or, to be more precise, 280 days. The actual period, however, is hardly ever of exactly 280 days. A normal delivery may take place a week or two earlier or later or, in some cases, as early as in the seventh month of pregnancy. A chart showing the estimated date of delivery, in the case of a normal 280-day pregnancy is given .

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The chart shows delivery dates 280 days after the first day of your last period. Look up the first day of your last period in one of the rows set in blue color. Your estimated date of delivery is given next to it in black. Thus, if the first day of your last period was, say, January 10, your estimated date of delivery would be October 17. This is accurate only for a period cycle of 28-days.

<b>Jan</b>	<b>Oct</b>	<b>Feb</b>	<b>Nov</b>	<b>Mar</b>	<b>Dec</b>	<b>Apr</b>	<b>Jan</b>	<b>May</b>	<b>Feb</b>	<b>Jun</b>	<b>Mar</b>
1	8	1	8	1	6	1	6	1	5	1	8
2	9	2	9	2	7	2	7	2	6	2	9
3	10	3	10	3	8	3	8	3	7	3	10
4	11	4	11	4	9	4	9	4	8	4	11
5	12	5	12	5	10	5	10	5	9	5	12
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31	7			31	5			31	7		
<b>Jan</b>	<b>Nov</b>	<b>Feb</b>	<b>Dec</b>	<b>Mar</b>	<b>Jan</b>	<b>Apr</b>	<b>Feb</b>	<b>May</b>	<b>Mar</b>	<b>Jun</b>	<b>Apr</b>

Jul	Apr	Aug	May	Sep	Jun	Oct	Jul	Nov	Aug	Dec	Sep
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4	10	4	11	4	11	4	11	4	11	4	10
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29	5	29	5	29	6	29	5	29	5	29	5
30	6	30	6	30	7	30	6	30	6	30	6
31	7	31	7			31	7			31	7
Jul	May	Aug	Jun	Sep	Jul	Oct	Aug	Nov	Sep	Dec	Oct

PART ONE  
**MOTHER**



CHAPTER TWO  
**THE NINE MONTHS**

## THE NINE MONTHS

Since pregnancy results in substantial increase in the hormones, and causes other changes in the mother's body to adjust to the needs of her own body, and to nourish the baby before and after the birth, there can be some physical discomforts and emotional tension for the duration of pregnancy. Not all of those discomforts and tensions are experienced by every woman, but all would-be mothers should be prepared to deal with those changes, and accept them as natural and usual mental and physical variations related to pregnancy. The following sections of this chapter deal with the changes, developments, and problems in respect of both the mother and the child during each of the nine months of pregnancy. It needs to be mentioned, however, that the symptoms do not follow a strict monthly schedule. They may appear sooner or later, or not at all.

### THE FIRST MONTH

There are many symptoms that appear from the beginning and may last throughout the duration of pregnancy. These symptoms may not appear at the same time and may not be experienced by all women. However, many of the symptoms, listed here are experienced by most of the women.

#### **Nausea or sickness, especially in the morning**

Nausea and vomiting usually happens when the stomach is either very empty or very full. The best way to reduce this sickness is to eat little but often, that is, eating a given quantity of food for a day through five or six meals rather than two or three. In case of too much of vomiting, increase the intake of fluids between the meals, but not with the meals. Sucking a lime also helps. Usually this sickness settles by the end of the third month.

#### **Food aversions and cravings**

The abnormal cravings are of two kinds: craving for peculiar substances like coal, clay or ashes; or craving or aversion regarding any normal food. The craving for peculiar substances, called pica, is a sign of nutritional deficiency of some mineral, particularly iron or calcium, and can be corrected by a balanced diet. The craving or distaste for any normal food could indicate what the body needs or does not need. One should, therefore, follow the signals given by the body, and avoid things to which there is aversion, and eat things that the body craves for. These cravings and aversions are quite natural and fade away by the fourth month.

#### **Fatigue**

It will be most unusual if a pregnant woman were not to feel tired, as her body is working harder even when she is resting than a non-pregnant woman involved in intense physical work. It is the time when

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the mother's body is creating the baby's life-support system, the placenta, whose completion takes about three months. In addition, the mother's body is also in the process of adjusting to many other physical and emotional demands of pregnancy. It is only when the placenta is complete and the body has adjusted to other changes that the mother may have more energy. This happens during the fourth month.

As the only way to tackle the problem of fatigue, and for other reasons also, it must be ensured that nutrition is adequate, especially in respect of proteins, carbohydrates and iron. This can be achieved only through an adequate and balanced diet. To ensure this an average daily food intake should include these:

<i>Milk</i>	<i>2 glasses</i>
<i>Eggs</i>	<i>2</i>
<i>Curd</i>	<i>1 cup</i>
<i>Wheat/Rice</i>	<i>6 chapattis or 2 plates of rice</i>
<i>Pulses</i>	<i>2 plates</i>

To these daily requirements of nutrition may be added some vegetables (raw or lightly cooked, but not fried), fruits, and a plate of germinated wheat boiled in milk. For details about germinated wheat see page 30 of the First Handbook. Those who can afford may have meat, chicken or fish in place of pulses, three or four times in a week. Moreover, it should be kept in mind that better nutrition does not mean more of everything. In fact there are foods whose intake needs to be kept to the minimum. These are:

- i) Sugar, salt and spices, whose intake should be reduced and kept to a bare minimum;
- ii) Butter and ghee, whose intake should not be increased. Contrary to traditional belief, butter and ghee do not make delivery easier by lubricating the body. However, in the case of women who are underweight and continue to do hard work during pregnancy, some increase in the intake of butter or *ghee* would provide the needed energy without causing any harm. However neither butter nor *ghee* should be heated to the smoking point.

### **Fainting and Dizziness**

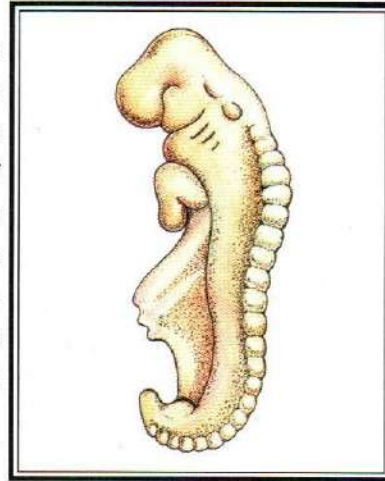
Since blood pressure falls during pregnancy enough of oxygen does not reach the brain. This can cause fainting or dizziness during the first three months when the blood pressure is lower than the normal. However, this is not harmful to the mother or the child, except if the mother falls down and injures herself. The precaution that one should take to avoid injury is not move too suddenly from a lying or sitting position. In case dizziness occurs too often, it can be corrected by deep breathing (inhale and exhale deeply and slowly) that increases the supply of oxygen.

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Finally, the baby. At the end of the first month, the baby is no more than a tiny embryo, smaller than a grain of rice. The embryo (as the baby will be called for the first 12 weeks) consists of a cluster of cells that form the structures which would grow into a human body. Each cell of the embryo contains 46 chromosomes, 23 of which are from the mother, and 23 from the father. Each of these chromosomes consists of a chain of smaller units called genes. Each of these genes controls some specific aspect of the baby's development ranging from the colour of the hair to the level of intelligence.

Out of these 46 chromosomes, two chromosomes (one from the mother and one from the father) determine the sex of the baby. The mother always produces only one kind of chromosome, that is, a female chromosome (x), while the father produces two kinds of chromosomes, one of which is female (x), and the other male (y). If the combination of the chromosomes contributed by the two parents is x+x, the baby will be a girl; but if the combination is x+y, the baby will be a boy. Thus, the sex of the baby is determined by the chromosome contributed by the father. *The mother, contrary to the common belief, has no role in the determination of the sex of the baby.*



## THE SECOND MONTH

Some or all of the symptoms experienced during the first month may continue during the second month. It means that the symptoms such as nausea, fatigue, aversion or craving for certain foods, constipation, dizziness and mood swings may continue until they subside or are cured. However, as pointed out earlier, these signs and symptoms are not experienced by every woman during pregnancy, and most of them can be easily cured or alleviated.

Since the period of pregnancy is a period of rapidly changing physiology of the mother and the baby, some new symptoms may appear every month. Some of the new symptoms that may appear during the second month, if not the first, are as follows:

### Constipation

One of the hormonal changes that are caused by pregnancy is secretion of a muscle-relaxant *hormone* that relaxes, among others, the muscles of the digestive system. This causes constipation which, if not treated, can lead to piles. In order to correct and avoid constipation it is advisable to increase the

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intake of water, and take a tablespoon full of linseed (*ulsee*) oil before breakfast and dinner. In case the taste of linseed oil worsens the feeling of nausea, it can be mixed with curd, to make it less unpalatable. Eating more vegetables, preferably raw, and fruits also helps the digestive process.

### **Flatulence**

This is another consequence of sluggish digestive process, mentioned earlier as a cause of constipation. It is not harmful but can cause great discomfort. One way to control this condition is to avoid foods that cause flatulence, such as cabbages, beans, and pulses, except *moong* that does not cause flatulence.

### **Indigestion and heartburn**

This is also caused by the secretion of muscle-relaxant hormone that relaxes the muscles everywhere, including the muscles at the opening and the top of the stomach. This allows some of the contents of the stomach, including its acidic juices, to rise up into the esophagus. These acids irritate the esophageal lining that causes a burning sensation near the heart, but has nothing to do with the heart. It is possible to alleviate this condition by methods suggested for the treatment of morning sickness. Also, pressure on the stomach should be avoided: clothing should not be tight around the waist and the stomach; and one should not bend over at the waist, but at the knees.

In addition to these symptoms that cause only discomfort but no harm, there are other symptoms that have to be taken more seriously, and need immediate attention of a qualified doctor. These are:

- Severe abdominal pain, on one or both sides that does not subside.
- Heavy vaginal bleeding.
- Coughing up of blood.
- A steady discharge of fluid from vagina.
- A sudden increase in thirst accompanied by scanty urination or no urination for a whole day.
- Swelling and puffiness of hands, face and eyes.
- Painful or burning urination.

These are symptoms of some serious malfunction that may occur at any time during pregnancy. The other serious matter relates to the possibility of miscarriage that usually occurs during the first three months. The possible signs of miscarriage, where immediate medical attention is required, are as follows:

- Bleeding, cramps or pain in the centre of the lower abdomen.
  - Severe pain that continues unabated for more than a day.
-



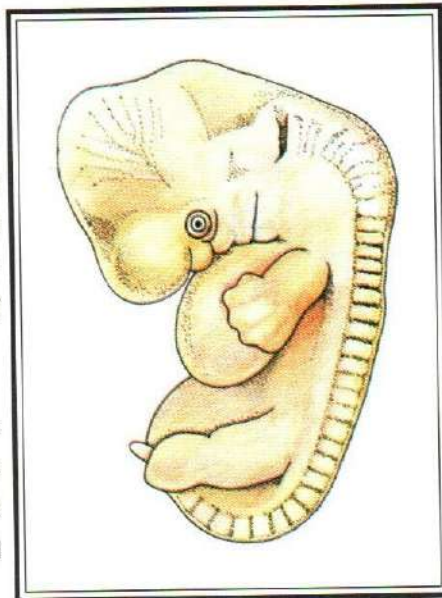
- Heavy bleeding as during menstrual period, or light staining that continues for more than three days.

There are many causes of miscarriage, though most of them are avoidable with little care. The more common causes are at follows:

- Lifting a very heavy object.
- Running or jumping with speed.
- Stepping on uneven ground in such a way that the two feet are at different levels.
- Being anaemic.
- Chromosomal abnormality in the foetus, more common in women above 35 years of age.
- Rubella (German Measles)
- Any trauma or shock, such as sudden explosion of sound.

And now let us see the progress made by the embryo during this month. By the end of the second month, the embryo is  $1\frac{1}{4}$  inches long, from head to buttocks, and weighs about 8 grams. It has arms and legs, with the beginnings of fingers and toes, and a heart that beats. Its head is almost as big as the rest of the body. Bones gradually begin to replace cartilage in those areas where bones will develop. However, this is a slow process that continues even after the birth, and upto the age of about 20, when a person stops growing.

During this period changes and developments take place literally on day to day basis, and the embryo becomes recognizably human, and is distinguishable as male or female, at least microscopically. It resides in the amniotic sac which is filled by the amniotic fluid. The functions of the sac and the fluid are:



- to provide a controlled environment for the body to move around;
  - to prevent injury to baby by acting as shock absorber;
  - to equalize pressure;
  - to maintain constant temperatures;
  - to prevent pressure on the umbilical cord; and
  - to act as a sort of container for the urine passed by the baby.
-



At the time of delivery, the amniotic fluid assists in dilating the cervix.

## THE THIRD MONTH

During this month, again, some of the early symptoms may continue, and some new symptoms may appear. The new symptoms may be:

### Varicose Veins

During pregnancy the muscle-relaxant hormone, as noted earlier, relaxes the muscles everywhere. In consequence muscular walls of the veins also relax, and that to accommodate the increase in the blood volume. This mostly occurs in the legs, and can be corrected, or at least controlled, by some exercise that is otherwise also beneficial. Walking is a good exercise for the legs, especially calves. While sitting make sure that the legs are not crossed, and feet are raised a little, so that there is no pressure on the thighs. Increasing intake of garlic is good for improving circulation, and also for its many other benefits.

### Frequent Urination

This is very common and usually lasts throughout the pregnancy. The reason is increase in the volume of body fluids and greater efficiency of the kidneys that helps to clean up the body of the waste that living bodies continuously produce. The other reason is the pressure on the bladder due to the growing uterus. This is, therefore, not a disease but something quite normal, and would stay till the child is delivered. There are two ways to reduce the annoying frequency: lean forward while urinating to empty the bladder completely, and reduce the intake of fluids in the evening so that sleep is not disturbed frequently. But intake of fluids should not be reduced during the rest of the day, as the total intake of fluids should be more than the normal during pregnancy.

### Breast Changes

Breasts become swollen, tender and, the area around the nipple becomes darker in colour. The tenderness passes by the fourth or the fifth month, but the size continues to grow throughout the pregnancy. These changes are a preparation for the mother to feed the baby, but are less visible in subsequent pregnancies, probably for the reason that necessary changes have already occurred during the first pregnancy.

If the breasts get swollen in early pregnancy and diminish later, it can be matter of some concern, requiring the attention of a doctor.

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## Increase in Appetite

This is quite natural as the mother has to provide nourishment to the embryo as well. However, one should control the urge to overeat, and must eat in smaller portions four or five times rather than two or three big meals.

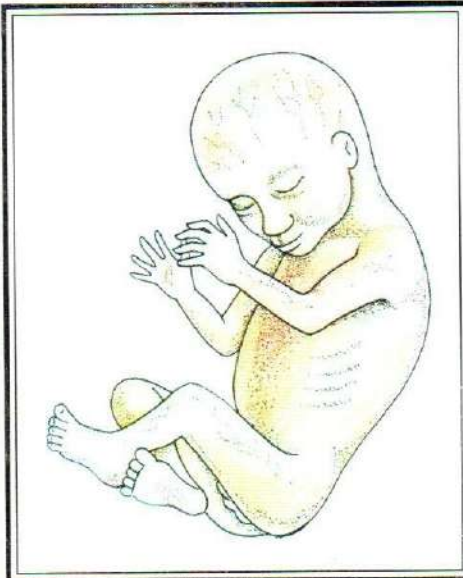
## Headaches

Hormonal changes, fatigue, tension, hunger, emotional stress, separately or in continuation, may cause headache at any time or throughout the pregnancy. Since headaches may be due to many different reasons, it is advisable to take simple precautions to avoid at least some of the common causes of headache. Some of the ways to prevent headaches are as follows:

- i) It is obvious that sufficient rest is necessary to prevent fatigue that can cause, among other things, headache. What is not obvious is that *too much of sleep can also give headache*. One should, therefore, avoid both too much of work and too much of rest.
- ii) Since headache can also be caused by low blood sugar, one should avoid hunger. As suggested earlier, it is advisable to have four or five meals a day rather than two or three, so that the stomach is never too empty or too full.
- iii) Good ventilation is good for the health of everybody, regardless of age or sex. An overheated, smoke-filled room or one with stale and musty air is not only likely to cause headache but many other ailments.
- iv) Reading or sewing under dim light can cause headache, even under normal conditions.

It must, therefore, be avoided by pregnant women with particular care as they may have other problems to deal with.

Next, the baby. By the end of the third month the embryo becomes a fully formed foetus. It is about 3 inches long, and weighs about 28 grams. All the internal organs begin functioning, and the heart can pump blood around the body. Nose, eyes and mouth have appeared, and male and female characteristics are recognizable. The baby is now fully formed, and from now on it will simply grow and





mature for the next six months.

Another significant development during this month is the full development of the placenta which is a disc shaped organ, about eight inches in diameter and one inch thick, rooted to the wall of the womb. It acts as the lungs, liver, kidneys and digestive tract for the foetus. Its five main functions are: nutrition, respiration, excretion, protection and hormone production. It absorbs oxygen, nutrients and antibodies from the mother's blood, and removes the waste product from the foetal circulation through the umbilical cord.

The umbilical cord has two arteries and a vein. The arteries carry the blood and nutrients from the placenta to the foetus, and the vein carries the wastes from the foetus to the placenta.

## THE FOURTH MONTH

Some of the early symptoms continue during the fourth month, but there is some relief also. There is decrease in urinary frequency, nausea and vomiting, and also in the tenderness of the breasts that otherwise continue to enlarge. The other symptoms (fatigue, constipation, indigestion, flatulence, headache, dizziness, varicose veins) may continue unless treated or controlled. Some new symptoms likely to appear in the fourth month are as follows:

### Bleeding Gums

Increase in oestrogen during pregnancy makes the gums spongy, more likely to bleed and catch infection. Infection is indicated by formation of plaque that, in fact, is a layer of bacteria that grows on gums and teeth.

The best protection against damage to the teeth and gums is to clean the teeth after every meal by rinsing the mouth with hot water, with some salt, preferably sea-salt, dissolved in it. Brushing the teeth with a twig of *kikar* or *neem* tree, once a day, would do a lot of good, during and after pregnancy.

### Vaginal Discharge

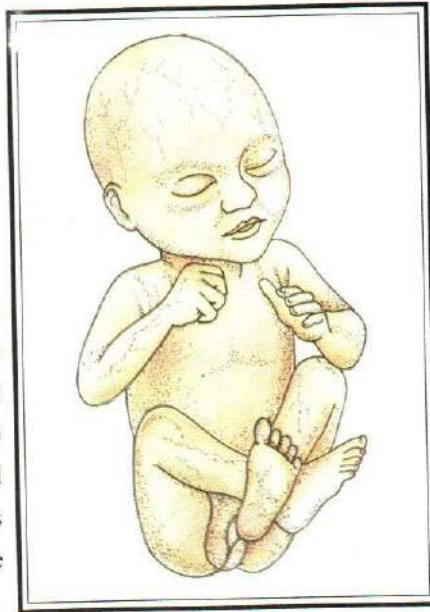
A thin, milky, mild smelling discharge (leukorrhoea) is normal during pregnancy when the glands at the opening of the womb increase their secretion. These secretions act as a cleansing agent and also make the tissues of the vagina softer and more elastic to facilitate delivery.

If the discharge changes from white to yellow or green or smells unpleasant, it is an indication of a

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minor infection called thrush or candida. It is quite harmless, but can be very irritating. A number of steps can be taken to reduce the possibility of its occurrence:

- i) Reduce intake of sweet, starchy and refined food.
- ii) Eat more yogurt and fresh vegetables.
- iii) Drink 8-10 glasses of water that is otherwise also good for the health.
- iv) Drink herbal tea by brewing small pieces of fresh ginger or mint.



Time now to look at what the baby is doing. The foetus, as it will now be called, starts developing the body, the limbs, not the head, so that the baby begins to assume proportions more and more like those of a newborn. The baby's head position continues to become more upright as its neck and back muscles develop and more and more of its skeleton turns from cartilage to bone. Pads develop on the fingertips and toes, giving the baby its own unique fingerprints. It is about 5 inches long, and weighs about 110 grams.

During this month, the baby's movements become more pronounced and the mother becomes aware of them for the first time. A foetal water cycle now comes into operation in which the baby begins to swallow and excrete the amniotic fluid. In this process of water cycle the mother's body absorbs the amniotic fluid excreted by the baby and produces fresh fluid continuously.

## THE FIFTH MONTH

This is now the middle of pregnancy where, by now, many of the symptoms associated with it have become familiar. Some of the old symptoms may continue or fade away, while some new symptoms may be experienced for the first time. The new symptoms that may be experienced during this month, if not earlier, can be:

### Leg Cramps

Muscular pain in the legs, especially in the calves, can be a painful nuisance. Its exact cause is not known, but calcium deficiency is assumed to be a more common cause. This deficiency can be corrected by increasing the intake of such calcium-rich foods as milk, yogurt, almonds, amaranth, fenugreek, and



mint. The last three also happen to be the richest source of iron among vegetable foods.

### **Abdominal Pain**

This pain is usually caused by the stretching of muscles and ligaments supporting the uterus. It is felt more acutely when getting up or coughing. It may pass quickly or last for several hours. But so long as the pain is not accompanied by fever, chills, bleeding, increased vaginal discharge, there is no cause for concern.

### **Skin Colour Changes**

Hormonal changes during pregnancy cause many changes, and one of them is appearance of uneven patches of pigmentation on the body, especially the face. Nipples darken most of all, a dark line runs down from the navel, and patches of discolouration appear on the forehead, nose and cheeks. These patches disappear after delivery, but would stay during pregnancy despite bleaching which is not advisable anyway.

Hyper pigmentation may occur in high friction areas such as between the thighs, but this too will fade after delivery. There is some evidence that excessive pigmentation may occur due to the deficiency of folic acid, which can be corrected through intake of food rich in folic acid, such as green leafy vegetables, whole grain and eggs.

In addition to the symptoms, that keep changing, there is the development of the foetus itself that, by the end of the fifth month, may weigh as much as one pound. This new and increasing burden on the muscles and skeletal system calls for correct posture to prevent back pain, nerve entrapment and muscle weakness. For each bodily position and movement there is a correct posture, such as:

### **Standing**

The correct posture is to stand with feet apart and with equal weight on each foot. The weight should also be evenly distributed towards the heels and the toes. In other words one shouldn't put more pressure on one foot or on the heels or on the toes. Also, the back should be kept straight.

### **Sitting**

One should sit in a manner that the whole length of the thigh is supported by the seat and the whole of the back remains in contact with some support. In order to support the lower back one can put a rolled up towel or sheet of cloth that should fit the curvature of the back. Too big a roll would increase the curve, and too small a roll would provide no support. A correct support would prevent not only back pain, but neck pain as well.

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Sitting with legs crossed is a bad posture. It strains the back and the pelvis, and impedes circulation.

### Sleeping

When sleeping on the back, the natural curves in the body should be supported. The pillow should be under the head and the neck, but not under the shoulders. If the bed is too hard to mould to the natural contours of the body, then a pillow under the thighs will be needed so that the lower back is strengthened and rests on the bed. This position is possible up to about 30 weeks of pregnancy. See figure 1.

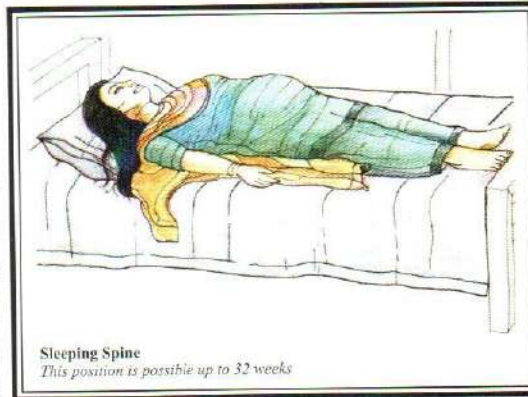


Figure 1

After about 30 weeks the baby is big enough to restrict the flow of blood back to the heart and, hence, less oxygenated blood supply to the baby and the organs of the mother. It can also cause dizziness and nausea. In such a case the natural reaction of the mother is to turn on her side or sit up.

Apart from sleeping on the back, there are two other sleeping postures that are more convenient, especially from the fifth month and onwards:

- lying on the side with one pillow under the head and one or two under the upper knee. See figure 2.
- lying on a wedge of pillows which prevents breathing problem and heartburn. See figure 3.

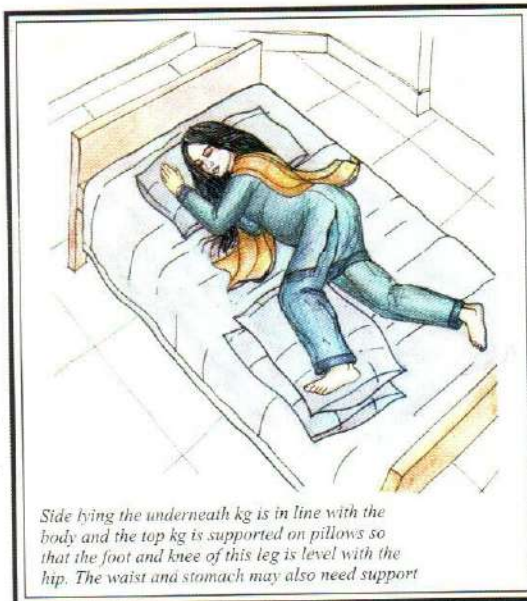


Figure 2

### Sitting to Standing

In order to stand up, one should move the body to the edge of the bed or the chair, place both hands on the bed or the arms of the chair, and push up

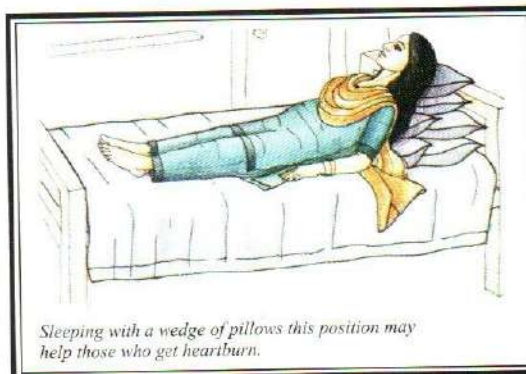


Figure 3



straight upwards, without trying to lean forward. Reverse the movement to sit down.

### Moving in the Bed

While turning over in the bed one should roll over the whole body like a log, without twisting in the middle, so that shoulders, hips and legs move at the same time.

### Lifting

The best way to lift is to bend the knees while keeping the back straight with the right foot forward and firmly on the ground, and the other foot a step or two behind and heel raised. See figure 4.

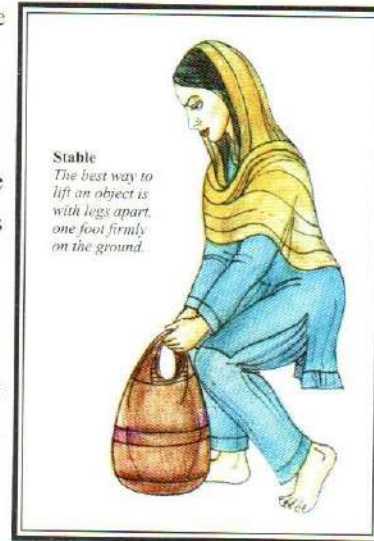


Figure 4

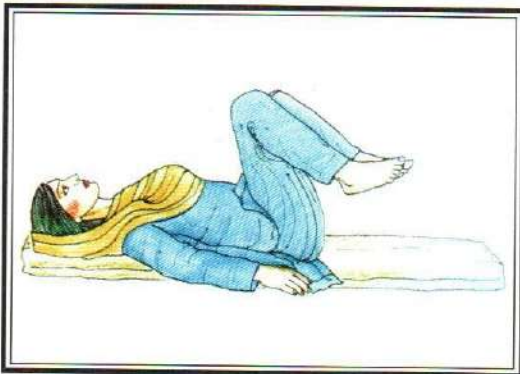


Figure 5

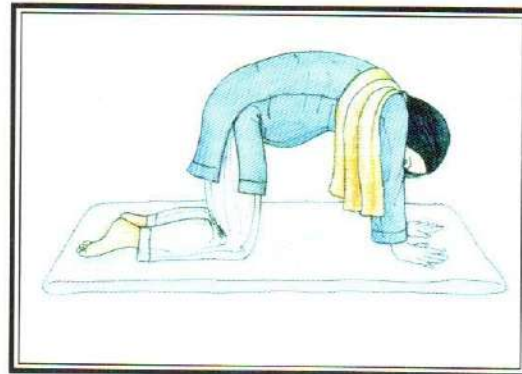


Figure 6

Some exercises for pregnant mothers are helpful in avoiding some pains and aches, and for better health. The fifth month is just the right time to initiate a daily routine of some simple exercises:

- Lie on your back, knees bent, and arms flat and resting on your sides. Bring one knee towards the chest and hold for few seconds. Then bring the other knee up. Hold both knees up for few seconds, and then lower the legs. See figure 5.

The next exercise is useful throughout pregnancy. It relieves the pressure on the enlarged uterus on the spine. What you have to do is to get down on your hands and knees, raise your lower back into a hump while letting your head drop. Hold for few seconds and then slowly flatten your back. But keep the back straight, do not let it sag. See figure 6.

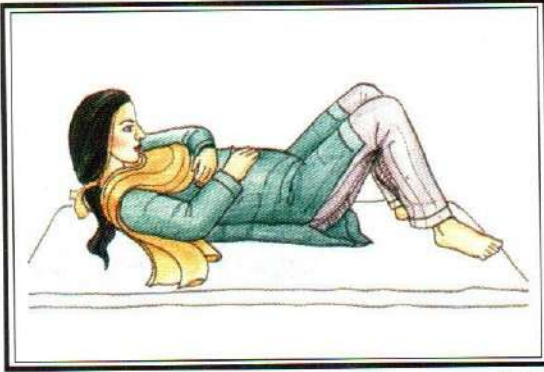


Figure 7



Figure 8

- Lie flat on the floor with knees bent. Place your hands on your abdomen, raise your head and elbows and bend them forward. Hold for a few seconds, and then relax. See figure 7.
- Lie flat on your back with knees bent. Lift your hips gradually till your shoulder blades are off the floor, hold for few seconds and then relax. See figure 8.

Now, let us look at the baby. It is now 10 to 12 inches long, weighs little less than half a kilo, heartbeat is audible with stethoscope, hair and eyelashes have been formed. It sucks thumb, hiccups, and can grip with its hands. The eyelids are still fused, but blinking movements begin. The bones of the ear, including those of the middle ear, which make sound conduction possible, begin to ossify and harden.



## THE SIXTH MONTH

During this month, as in previous months, some of the old symptoms may continue, while some new ones may appear. Some of the new symptoms could be:

### Foetal Movement

The embryo begins to move by the end of the seventh week, but these movements are not felt by the mother until after the 18<sup>th</sup> week, or usually after the 20<sup>th</sup> week. But variations are very common: an underweight and slender woman may feel the movement as early as the 15<sup>th</sup> week, and an overweight woman may not become aware of it until as late as the 22<sup>nd</sup> week.



Foetal activity is usually brief and erratic upto the 28<sup>th</sup> week and does, at times, become a cause of concern. But so long as there is strong foetal heartbeat there is no cause of concern. The foetal activity is expected to become more systematic, and the period of rest and activity of the foetus more well-defined, after the 28<sup>th</sup> week. Often the activity of foetus is related to the activity or inactivity of the mother. Like babies the foetuses are also lulled by rocking. Thus, if the mother has been working all day the baby is likely to remain quiet, but as soon as the mother lies down, the baby becomes more active.

### **Nasal Congestion or Nosebleed**

This is a common complaint during pregnancy, caused by release of certain hormones, that soften up the mucous membrane of the nose as they soften up certain other parts in preparation for childbirth. This problem usually lasts till delivery, and should be managed without medication unless there is excessive bleeding. There are a few simple methods to manage this problem:

- Never blow your nose too vigorously. Instead, close one nostril with the thumb and gently blow the mucous out of the other nostril. Repeat this with the other nostril. Continue to clean up the nostrils alternately till you can breath smoothly;
- In case of nosebleed sit and slightly lean forward, rather than lying down or leaning backward. While sitting and leaning forward, press your nostrils with your thumb and forefinger, hold for few minutes, and release. Repeat if the bleeding continues. This should control bleeding with one or two repetitions.

### **Itchy Abdomen**

During pregnancy the skin across the abdomen, gets stretched progressively with the advancing pregnancy. This creates rough and dry surface which causes itching. This can be corrected with a light massage with oil. Scratching, especially with nails, should be avoided.

### **Swelling of Ankles and Feet**

This is caused by accumulation of fluids, caused by normal and necessary increase in body fluids during pregnancy. It is common in warm weather, and after standing or sitting for many hours. Usually it disappears after rest or sleep.

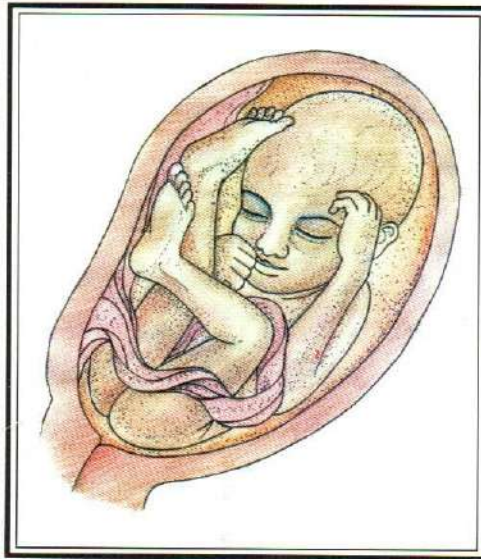
In order to help the system to flush out waste from the body one should drink 8 to 10 glasses of water everyday. Contrary to what a common sense view may suggest, intake of greater amount of liquids helps avoiding excess water retention. One should not, however, drink more than a glass of water, or any

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other liquid, at a time. Excessive salt intake should be avoided, as it can increase fluid retention.

Time now to say hello to the baby. During this month, the foetus is red, wrinkled and lean. The colour is due to the developing capillary system of the skin, and wrinkles and leanness are due to lack of fat under the skin. The foetus is now about 14 inches long and weighs about two-thirds of a kilo. The most important feature of the development upto the end of the sixth month is that for the first time the foetus has a chance of surviving outside the womb.

By the sixth month the nostrils and eyelids, which were fused, open, and the baby begins to make breathing movements. All this indicates that hearing and visual systems are now significantly developed.



## THE SEVENTH MONTH

This is now an advanced stage of pregnancy, where the mother feels increasingly apprehensive about labour, delivery, and the baby's health. There is increased day dreaming and fantasizing about the baby, and also increased boredom and weariness with pregnancy. All this leads to continued absentmindedness which is a state of mind that the other members of the family, especially the husband and the mother-in-law, have to accept with patience and understanding.

Another reason for some apprehensions during this period of pregnancy is the fact that most of the premature births take place during this month. Premature labour is possible even in the case of perfectly healthy woman and normal pregnancy for reasons that are yet unknown; or it can happen because of weak cervix or structural abnormality of the womb. In such cases premature birth is not preventable without a competent and regular medical care. However, premature birth can be avoided without expensive medical care by some simple corrective measure in cases of:

### Inadequate Weight Gain

A normal weight gain during pregnancy is one of the indications of normal pregnancy. While



there may be little or no weight gain during the first three months, the increase during the first 20 weeks should be about 4 kg, and in the last 20 weeks about 8 kg, i.e. a total of about 12 kg by the last week. In the case of underweight mothers, the weight gain should be more than 12 kg.

### **Inadequate Nutrition**

It can cause not only premature birth but also many other complications.

### **Standing or too much of exertion**

Women who do house work and also other jobs, require a period of rest after a period of work. Whenever the body indicates need of the rest, the expectant mother must take some rest.

### **Infections**

There are many infections such as the infection of the vagina, urinary tract and amniotic fluid, and diseases such as rubella and venereal diseases, where body's immune system initiates processes that can cause premature labour, and premature rupture of the foetal membrane.

### **Maternal Illness**

Some chronic illnesses e.g. high blood pressure, malfunction of heart, liver or kidney, and diabetes, can cause premature delivery.

### **Age of Mother**

Age, under 17 or over 35, can be a cause of premature birth. As recommended in chapter I, the ideal child-bearing age is between 18 and 35 years. An early or late pregnancy can cause many serious complications in addition to premature delivery.

During this month some symptoms may appear for the first time, and some old symptoms may become more troublesome:

### **Backache**

Some backache, especially of the lower back is quite common during the last three months of pregnancy due to strain on the musculo-skeletal system and sleeping awkwardly. The following steps should take care of normal backache:

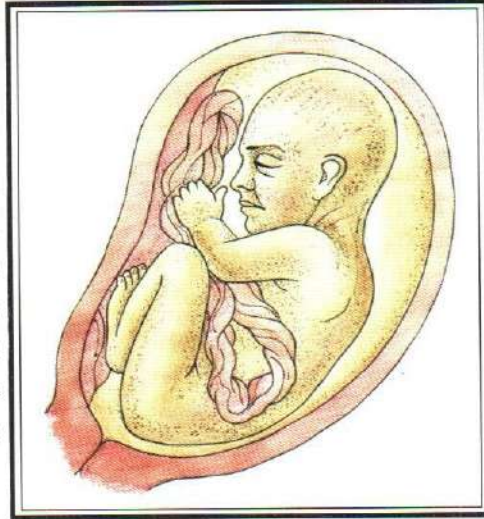
- Keep the weight gain within the limits described above. Any excess weight would add to the pressure on the back
  - Maintain correct posture described in the section on the fifth month.
-

- Do the exercises described in the section on the fifth month.

### Fatigue

This is due to the fact that a pregnant woman is carrying more weight than she normally does; sleeping comfortably could be a problem; and the mind is not at peace due to worries and concerns about the baby. In some cases fatigue is due to anaemia which occurs often during the last three months. Fatigue for this and other reasons can be prevented and cured by following the recommendations made in chapter 1 about fatigue.

And now the baby who is now at an advanced stage of growth, and can survive if born during this month. The eyes are now completely formed and can perceive light. The baby can now see, hear, smell and taste, and is responsive to touch. Subcutaneous fat forms and fills the wrinkles. The brain grows in size, surface area, and in the number of cells, and assumes a shape that is characteristically human.



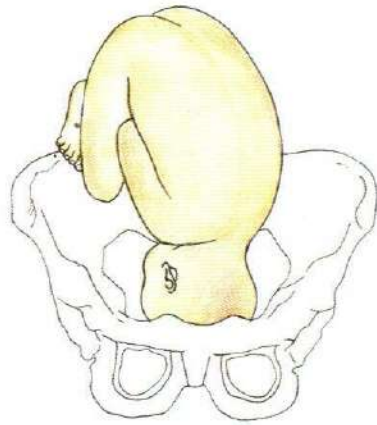
The embryo is now 14 to 17 inches long, and weighs little less than 1<sup>1/2</sup> kilo.

### The Eighth Month

No new symptoms except one, are likely to be experienced during this month. The old symptoms may continue, aggravate or disappear, depending upon the health of the mother, and the way each symptom has been treated. The one new symptom that may be experienced during this month is called Braxton Hicks Contractions. This is actually a sort of rehearsal of the labour pains. These contractions are usually painless tightening of the womb, beginning at the top and gradually spreading downward before relaxing. These contractions usually last for about half a minute, but may last a little longer. To relieve the discomfort one may lie down, if one is walking or working, or walk about if one is in a state of rest. A change of position usually stops the contractions.

The most important thing to be monitored during this month and the next is the position of the baby. Upto the 32<sup>nd</sup> week the baby keeps changing position, but it assumes a stable position during the period between the 32<sup>nd</sup> and 36<sup>th</sup> weeks. Most babies settle into a head-down position between the 32<sup>nd</sup> and

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**Vertex Position**



**Transverse Position**



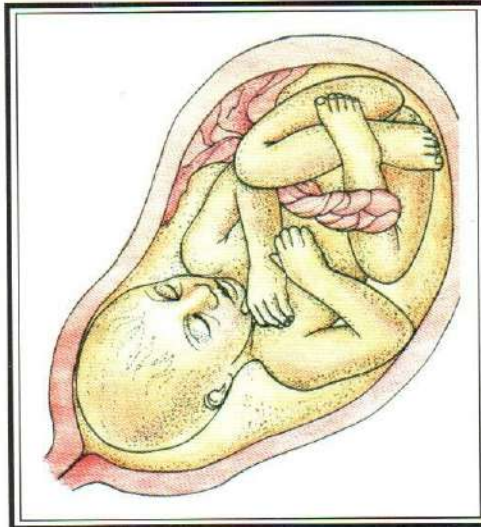
**Breech Position**

*Figure 9*



36<sup>th</sup> week, but some may keep changing their position till the last few days. By probing the abdomen one can make out the position of baby. Since the baby's bottom is soft and larger and the head smaller and harder, it is easy to find which side is up and which down.

By the end of the eighth month the baby is about 18 inches long and weighs 2 and a quarter kilo. It has periods of sleep and wakefulness, and responds to sounds. All systems are well developed, except the lungs which may still be immature. Bones of head are soft and flexible, and the development of the brain is considerable.

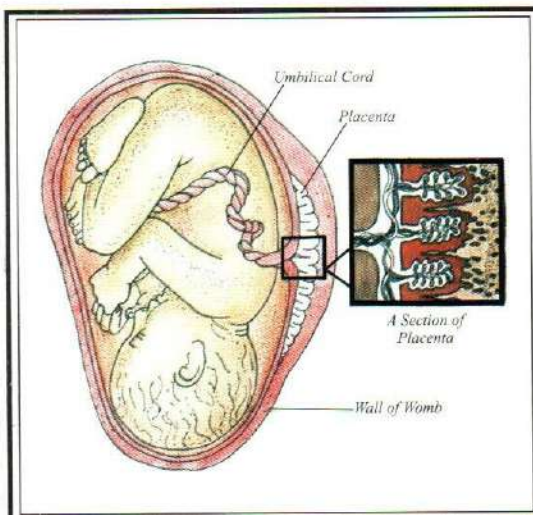


## THE NINTH MONTH

We are now in the final month during which most of the births take place. The descriptions and recommendations given here would, however, apply to premature births as well. Symptoms that may be experienced during this month have all been discussed in previous sections. No new symptoms is likely to appear for the first time during this month. The only new signs or symptoms that the expecting mothers would experience relate to labour that may commence at any time during this month.

By the time of delivery the baby is about 20 inches long and weighs more than 3 kilos. It is less active, less wrinkled, and fully mature. During the course of this month the baby will continue gaining immunities from the mother.

Other things being normal, the most important thing to know about the baby is position (see figure 9) because any position that is not normal (i.e. head down) can cause some complications. In case of transverse position or breech position the delivery cannot be entrusted to *dais* (traditional birth attendants) as they are neither equipped nor fully





trained to deal with such cases. These cases must be referred to hospitals and the delivery must take place under the care of a qualified doctor.

The first indication of approaching labour is 'dropping' which occurs when the foetus descends into the pelvic cavity. As a result: the upward pressure of the womb on the diaphragm is relieved, and breathing becomes easier; with the stomach less crowded, eating becomes more comfortable; there is more pressure on the bladder, hence frequent urination; and there is feeling of pain when the head of the baby presses the pelvic floor. But this is not always a sign of beginning of labour within next few days, as dropping may happen as early as four weeks before delivery.

Onset of labour is indicated by other signs as well such as:

- A thick vaginal discharge tinted with pink or brown dried blood. This is an indication that the womb has been unplugged, and the process of birth has begun.
- Muscular contractions of the womb may happen after regular intervals. It is a sure sign of real labour if the period of interval goes on reducing from half an hour or so to as short a period as two or three minutes.

It needs to be explained, however, that labour is of three kinds: prelabour, false labour, and real labour. It is useful to be able to distinguish between these three.

### **Pre-labour**

This can precede real labour by a month or only by few hours, and includes many different physical changes, such as:

- lightening or dropping when the foetus descends into the pelvic cavity;
- increase in the pressure in the pelvis;
- loss of weight of as much as 2 or 3 pounds;
- increase in vaginal discharge;
- tinted vaginal discharge;
- intensification of Braxton Hick Contractions.

### **False Labour**

It should be assumed that real labour has not begun if:

- contractions are not regular and do not increase in frequency;
-



- pain is in the lower abdomen rather than the lower back; or
- contractions subside if the mother walks about or changes position;

### **Real Labour**

In a situation that can be rather confusing, one can assume onset of real labour if:

- the contractions intensify, and do not ease up with change in position;
- pain begins in the lower back and spreads to the lower abdomen, and may radiate to the legs;
- contractions become progressively more frequent and regular; and
- the vaginal discharge is blood-streaked.

It is all set now for the big event the birth of the child.

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PART TWO  
CHILD



CHAPTER THREE  
BIRTH OF THE CHILD



Childbirth is divided into three stages: the first stage begins with strong and regular contractions and ends with the full dilation of the cervix; the second stage is delivery of the baby; and the third stage is the delivery of the placenta. These three stages are described in some detail in the following sections.

### **The First Stage**

The beginning of the first stage of labour is preceded by the rupture of the membrane i.e. rupture of the amniotic sac (described at page 10). The rupture usually takes place 12 to 24 hours before the first contractions, and is indicated by wet spots on the bed sheets and leakage of straw-coloured amniotic fluid that smells rather sweetish. This continues till delivery as the amniotic fluid replaces itself every three hours. In case the mother stands up or sits down the leak may stop as the baby's head may act like a cork to stop the leak. In case contractions do not start within 24 hours, labour may be induced with oxytocin, as the chances of infection are much greater after the rupture of the protective cover of the amniotic sac.

The first stage begins with the beginning of contractions and lasts for about 12 hours at the first delivery and for about 6 hours at subsequent deliveries. It is the longest phase of labour. Once labour has begun, contractions progressively increase in intensity and repetition. This stage ends with the dilation of the cervix by about 10 centimeters.

There are no hard and fast rules about the bodily position once labour begins, but it is best to be upright than lying down on the back. The upright posture has the following advantages:

- the baby will descend through the birth canal sooner under its own weight;
- the upright posture also relieves the pressure of the womb and the baby on the heart and, thus, helps in unhindered flow of blood to the mother and the baby;
- duration of labour is shorter and less painful.

One can assume an upright position by sitting, walk about or by kneeling, and for each of these positions there can be many variations:

### **Sitting**

You can assume this posture by sitting on a bed, a stool or a chair. While sitting on the bed one should turn to a side and sit with the legs hanging down and the feet resting on the floor or a footstool, Thighs should be spread apart and back supported by pillows to lean back on. Lean forward when contraction comes, and sink back into the pillows when it is gone. Similarly, while sitting on a low stool, thighs should be spread apart, and the back supported by a wall or stable piece of furniture.

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## Walking

Walking is the best position for labour, though not at a brisk pace, but in a relaxed and leisurely manner. When contraction is felt while walking, you may stop walking and stand with feet apart and weight evenly distributed. Resume walking when contraction is over.

## Transition

This is a phase between the first and second stage of labour where the uterine activity changes from dilating the cervix to pushing the baby out. Quite often the transition is not noticeable as the sequence of events may be too fast. The only significance of the period of transition is that during this period there is often an urge to push the baby out before the cervix is fully dilated. This must be resisted, and the mother should make no effort to push the baby out unless advised by the doctor or the midwife.

## The Second Stage

This stage consists in pushing the baby out through the birth canal and out of the body of the mother. This can be accomplished within about 10 minutes to half an hour, but can take longer. With the full dilation of cervix the mother has to add her own effort, to the uterine contraction, to push the baby out. At this stage the folds in the vagina unfold to accommodate baby's head which moves down towards the opening. The baby's head is normally delivered face down. In some cases the birth will have to be assisted through other means (forceps, vacuum extraction, caesarean) if the mother is too tired, the baby is too big, or the baby is in transverse or breach position (see figure 10). In case there are no abnormalities, a normal delivery can be achieved by the mother herself with less pain and effort through some simple measures:

- Get into a pushing position that most comfortable for you. Usually a semi-sitting or semi-squatting position is the best;
- Keep your efforts controlled so that your push and the contractions happen together;
- Don't break the rhythm to control anything else (wind, urine) that may also get pushed out. Such things are quite natural and are experienced by everyone. Don't feel embarrassed, don't bother. No one else present in the room will even notice it.
- Breathe gently and deeply in and out when not pushing, to increase the supply of oxygen which is good for you and the foetus.

The baby's head slides out first, soon the rest of the body follows, but remains connected with the mother's body through the umbilical cord which is pulsating and full of blood, and continues to supply the baby with blood from the placenta. It takes about five minutes for the baby's own blood circulation to establish itself and at that point the blood vessels of the cord carrying blood to the baby seal off, and the

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cord stops pulsating. Some obstetricians, therefore, suggest that the umbilical cord should not be cut immediately, but only after it has stopped pulsating. But if the delivery has been induced through drugs, the cord may be cut immediately to ensure that the baby does not become over-transfused with blood because of strong contractions triggered by the drugs.

The release from the womb provides enough stimulation for the baby to start breathing which is followed by the cry of the newborn. This heralds the birth of the baby and completion of the second stage of labour.

### **The Third Stage**

The labour does not end after the birth of the baby as the placenta is still inside. It may take five minutes to half an hour after the birth of the baby for the placenta to be expelled. The delivery of placenta is not unpleasant or painful. Milder contractions that continue after the birth of the baby detach the placenta from the wall of the womb and deliver it through the birth canal. Sometimes the process is speeded up by massaging the abdomen and gently pulling the umbilical cord. Delivery of the placenta is the final act in the nine-month long drama of pregnancy, labour, and birth. For most women the immediate emotional reaction is a sense of relief or even exhilaration, greater closeness to their husbands, and an immediate bond with the newborn. In fact the bond with the newborn is greater after separation than during the nine-month long period of union.

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PART TWO  
CHILD



CHAPTER FOUR  
HOW THE BABY GROWS





It is not often realized that birth is a painful process for the baby as well. In the months before labour begins, the baby is safe in the protective environment of the amniotic sac where it is neither hungry nor thirsty, neither exposed to the vagaries of weather nor to the ravages of bugs, flies, mosquitoes or of infections. Suddenly this loving and caring environment become hostile: the womb begins to shrink, and the baby finds itself pushed, pulled and squeezed through the birth canal for many hours in the process of being expelled from what was its home for nine months. Once through with this struggle, the baby experiences blinding light, gets its lifeline (the umbilical cord) cut, and has to begin the struggle for existence, increasingly on its own. Even after delivery, the first few minutes can be rather disconcerting for the baby when it is probed, examined, handled, mishandled, manipulated, held upside down, and even slapped if not crying already.

All this leaves the baby in a messy state. It is wet and covered with a greasy substance, vernix, that provides water-proof protection within the amniotic fluid. It may look blue before it turns pink, and its head may have an odd shape because of stressful passage through the birth canal. None of it is, however, a cause for concern. The baby is normal if it cries loudly; its heartbeat is more than 100 per minute; its arms and legs move; it coughs or sneezes on insertion of soft rubber tube in its nostrils; and cries if the soles of the feet are gently stroked.

Various aspects and stages of baby's development will be dealt with later, but we can have a quick glance at the baby's expected development during next three years to have some idea of how the future would unfold for the baby:

	<u>Physical development</u>	<u>Intellectual development</u>	<u>Social &amp; emotional development</u>
<u>First month</u>	<ul style="list-style-type: none"> <li>• weight 6 to 7<sup>1/2</sup> pounds</li> <li>• holds tightly anything placed in its palm</li> <li>• head needs to be supported</li> <li>• hands are clenched</li> </ul>	<ul style="list-style-type: none"> <li>• instinctive capability to seek food and to suck</li> <li>• cries to express pain</li> <li>• can distinguish the smell of mother's milk from other smells</li> </ul>	<ul style="list-style-type: none"> <li>• responds to mother's voice</li> </ul>
<u>By the end of</u>	<ul style="list-style-type: none"> <li>• legs begin to straighten</li> </ul>	<ul style="list-style-type: none"> <li>• develops eating and sleeping pattern</li> </ul>	<ul style="list-style-type: none"> <li>• recognizes the mother</li> </ul>
<u>three months</u>	<ul style="list-style-type: none"> <li>• can lift the head, and turn</li> </ul>		<ul style="list-style-type: none"> <li>• shows facial expressions</li> </ul>



- towards voices
- vision range upto 40 cm
- shows interest in contrasting objects
- tries to respond to conversation

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**By the end of**

**six months**

- can sit with support
- plays with objects
- reacts to sound
- rolls over and tries to rise on forearms
- reaches out for bright objects
- tries to speak
- laughs and returns a smile
- imitates sounds and actions

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**By the end of**

**nine months**

- first teeth (lower and upper incisor. ) begin to appear (see figure 10)
- tries to chew
- can drink from a cup with help
- true eye colour is established
- sits alone without support and can crawl
- uses fingers and thumb to pick up objects
- transfers objects from one hand to the other
- can change position from sitting to lying and lying to sitting
- cries differently for different reasons
- learns the elements of smell, taste, touch, sight and hearing
- explore objects by touching and mouthing
- tries to talk
- responds to his own name
- expresses displeasure or satisfaction
- watches and observes surroundings
- recognizes familiar faces, and sounds
- laughs, smiles, babbles in response
- likes to be tickled and touched
- shows anxiety on separation from parents

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**By the end of**

**12 months**

- drinks from a cup on his own
  - crawls well and assumes a standing position with support
  - can walk with support
  - can assist in dressing
  - enjoys music and responds by making motions
  - shows interest in pictures
  - likes to open door and windows
  - pays attention to conversation
  - expresses anxiety in the presence of strangers
  - feels distressed if some one cries
  - offers things to others but
-

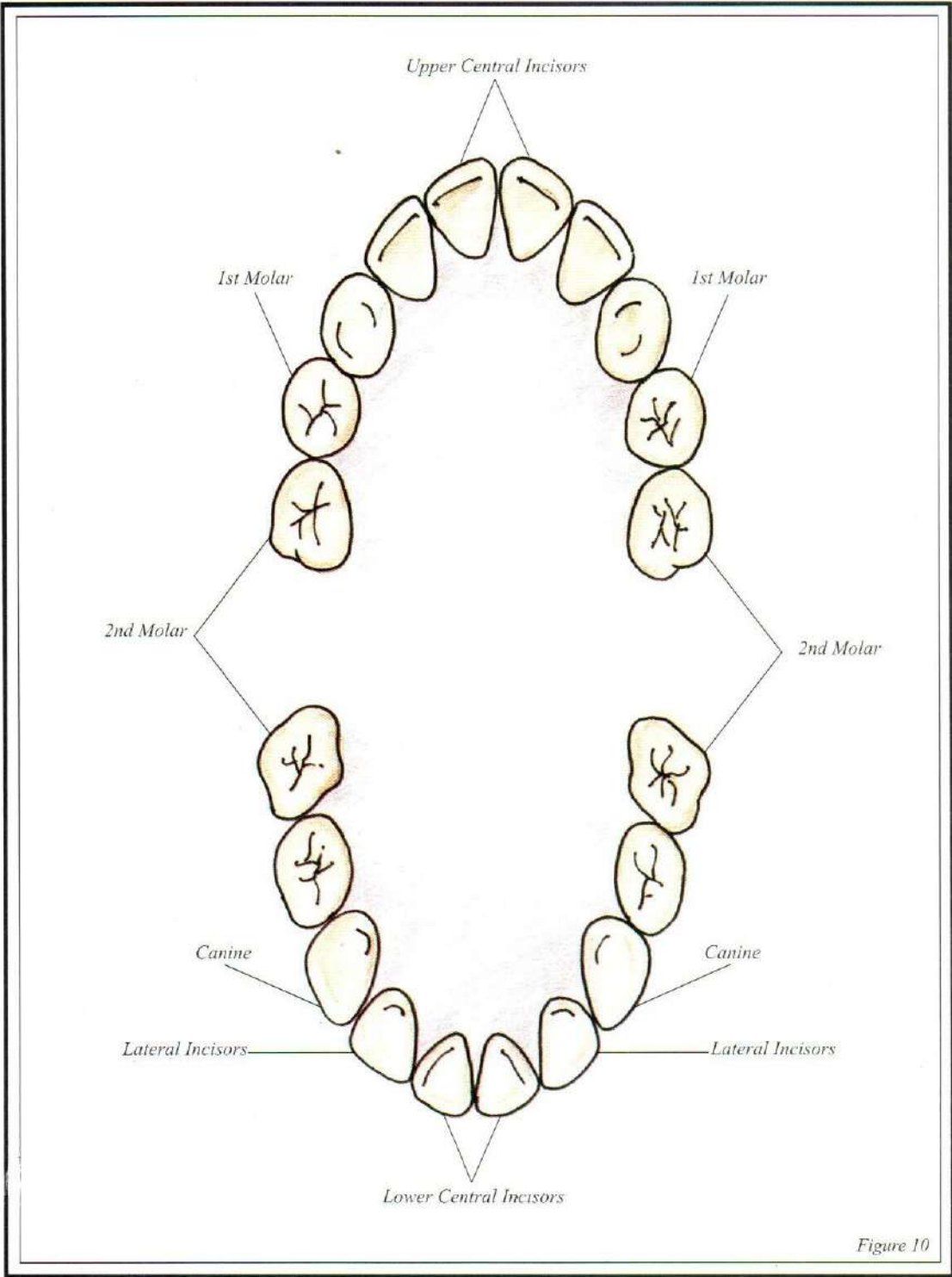


Figure 10



- lateral incisors appear (see figure 10)
- throws things
- expects them to be returned
- likes to place objects inside one another
- pushes away things he does not like

**By the end of**

**18 months**

- can stand alone
- can walk without help
- can jump with both feet
- can take off clothes
- can feed himself with spoon, though not without spilling
- shows preference for either the right or the left hand, usually for the right
- first molar teeth appear (see figure 10)
- has a vocabulary of 15 to 20 words
- claps and waves
- identifies objects in books
- asks for things by pointing or using a word or what sounds like a word
- understands and follows simple instructions
- takes things apart
- recognizes the sensation of a full bladder or bowel
- expresses anger, and can say 'no' in words or action
- likes to give things to others
- enjoys being held and cared
- plays alone with toys

**By the end of**

**two years**

- walks well
- can run
- can climb up and down the stairs
- can put on and take off shoes
- can feed himself with spoon without spilling
- washes hands
- can bend over and pick up things without falling
- can take steps backward
- vocabulary exceeds 50 words
- can utter sentences of two or three words
- can make a choice between two objects
- listens to songs and tries to sing
- very possessive and not keen to share
- shy in presence of strangers
- refers to himself by name
- tries to do everything himself
- enjoys exploring, and gets frustrated on not being able to do every thing
- can get physically aggressive
- returns affection
- shows feeling of jealousy

- canine and second molar teeth appear (see figure 10)
- cannot sit still for more than a few minutes

The period between 18 to 24 months can be called a period of defiance and exploration. Some parents find it very annoying phase in the child's development, little realizing that this is the most crucial phase in the intellectual development of the child, as 'defiance' and 'exploration' are the foundations of human personality as distinguished from the instinctive behavior of animals, or mechanical behavior of a robot. When the child defies he is thinking for himself; when he explores, he is increasing his stock of knowledge. This should be encouraged rather than discouraged.

- 
- By the end of three years**
- sleeps without wetting the bed
  - can kick a ball
  - can stand and hop on one foot
  - can jump over a low barrier
  - can dress with some help
  - entire set of primary teeth appear
  - has a vocabulary of about 250 words
  - can talk in sentences of 5 or 6 words
  - listens to stories and rhymes
  - can sing a simple tune
  - understands 'now' 'soon' and 'later'
  - asks questions
  - recognizes common everyday sounds
  - can identify two or three colours
  - can count upto three
  - aware of physical difference
  - seeks attention and approval of adults
  - follows simple directions
  - can help with simple tasks
  - learns to share or take lessons
  - enjoys hearing about himself

This is the age at which children idealize their parents and are easy to lead for they want to be like their parents. It is important to keep in mind that children would model themselves after their parent's behaviour as perceived by them, not as taught to them in words. For them deeds of the parents, not words, are the building blocks of their personality.

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This is how the baby is expected to grow during the next three years. However, babies do not develop at a uniform pace. There are individual differences, some of which are inherent, others influenced by the environment and the care and attention given by the parents. After this brief preview of the child's growth and development in the coming months, we shall deal with different aspects of care and development of the child in the following chapters.

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PART TWO  
CHILD



CHAPTER FIVE  
FEEDING THE BABY



The best food for the baby is the mother's milk, and the first feed should be given within two hours of the delivery. Apart from the more well-known advantages of mother's milk that would be discussed presently, there is special importance of breastfeeding during the first week when the mother produces a thick, yellowish fluid, in place of milk, called colostrums. It may escape in the form of little drops from the breast of the mother even a month or two before the delivery, and may remain mixed with the milk for about 10 days after the delivery. But for the first three or four days the breastfeed will consist of colostrum only.

Colostrum is rich in protein, especially those essential for the development of brain, and is also rich in immunity enhancing substances and anti-infection agents that provide protection against a wide range of bacteria and viruses. Being rich in protein, it gives much satisfaction to the baby, enabling it to sleep for long periods during the first week of its life. This also provides the mother more time to rest. Colostrum also has a laxative effect that helps the baby to pass its first stool which is black and sticky. This is normal.

Breastfeeding is easy as babies are born with an instinct to suck that not only makes feeding easy but also stimulates the milk ducts. In the beginning the mother may produce more milk than the baby can drink, resulting in the breasts becoming larger, hard and overfull. This will pass in about two days if the mother continues feeding the baby who needs to suck as often as every two hours, even through the night.

Correct method of breastfeeding is simple, and it is easy to know if the baby is being fed correctly. If the feeding hurts it means the baby has not latched on correctly, and probably the baby's gums are pressing on the nipple. The correct place for the baby's gums to press on is the areola, the dark area behind the nipple. At that position there will be no pain and flow of milk will be greater. Another simple precaution is not to start feeding always from the same side, but alternately, that is, starting once from the right side and next from the left. The reason is that the baby is not likely to empty the second breast before going to sleep, which would leave the second side with some milk. Thus, if the feeding is begun always, say, from the right side, the left will always remain full, and would sag if this continues for a number of months.

Suckling mothers need to take care of their breasts, for their own sake and for the sake of the baby, by keeping their hands and nipples clean. This is necessary to prevent dirt and germs from getting into the baby's mouth. The hands should be washed with soap as often as they get soiled, and the breasts at least once a day, but the breasts should not be washed with soap as the nipples produce a protective substance that would be removed by soap.

Breast feeding has a number of advantages that are now being recognized the world over:

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- Mother's milk contains elements of nutrition in correct proportion.
- It is produced at just the right temperature
- It contains antibodies that provide protection from certain infections.
- Since there are no foreign elements in the mother's milk, there would be no illness from allergy.
- Since mother's milk goes directly into the baby's mouth, there is no risk of any kind of contamination.
- Breastfeeding helps the mother to return to her normal shape and weight as it helps dissolve the extra fat and also hastens the shrinking of the womb to its normal size.
- There is some evidence that the mothers who breastfeed are less likely to suffer from hip fractures in later life, and less likely to develop cancer of the ovaries or the breast.
- Breastfeeding acts as a form of contraceptive while the mother is breastfeeding the baby full-time with no other feed. In mothers who breastfeed exclusively, the hormone prolactin, released during nursing, inhibits the return of menses and, thus, prevents conception.

There is some difference of opinion on how long breastfeeding should continue, but there is some degree of consensus that babies should be only breastfed (no other food) for the first six months, and that breastfeeding should be continued for the next 18 months along with other foods. It is also important to note that, contrary to the traditional view, the Holy Quran does not provide for a shorter period (18 months) for girls, and a longer period (24 months) for boys. Under the Quranic injunctions (Surah 2:233) the period of breastfeeding is two years both for boys and girls.

The period of the two years would naturally be reduced if the mother's milk dries up earlier. In normal circumstances, though, continued breastfeeding results in continued production of milk. But even while breastfeeding continues and the baby is not weaned away, solid food should be introduced after six months.

The very first initiation in solid food should be avoided when the baby is teething or not feeling well. In that condition the baby would not like to eat something with unfamiliar taste, smell and texture. Choose a time when the baby is happy and well, and do not be discouraged if he spits it out, because he is learning to do something new. It is a good enough beginning to feed the baby with one spoonful of solid food, and continue with the breastfeed. It will be good idea to mix the solid food with a little breast milk in the beginning to introduce the smell and taste that the baby is familiar with. Beginning can be made with soft-boiled egg, soft fruits like banana, papaya and mango, and such steamed and mashed vegetables as potato, pumpkin or carrots. Boiled rice and pulses (*khichri*) with a little yogurt is good combination. By the

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time the baby is about one year old, his upper, lower and lateral incisors and molar teeth have appeared, and he can chew most of the solid food. At this point the baby can be fed all varieties of breads, grains, pulses, and also minced meat, fish and chicken.

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PART TWO  
**CHILD**



CHAPTER SIX  
**CARE OF THE BABY**



## CARE OF THE BABY

Babies start crying the moment they are born. In fact it is a sign of a healthy and normal baby. Subsequently, there is always a reason why a baby cries, and crying is its way of communicating with the mother. Physical causes are not the only ones that may disturb the baby. Surprisingly, there can be emotional causes too when, for example, the mother is irritable or handles the baby roughly. The baby can sense all this, and may start crying. But usually there is some physical irritant or pain that makes a baby cry. Some of the more common cause are:

### Hunger

Mothers learn to recognize the cries caused by hunger. Once fed, the baby will quieten down.

### Discomfort

Quite often a baby will stop crying the moment it is picked up. If some discomfort that the baby is feeling, or merely a desire to be cuddled.

### Soiled Garments

Soiled garments, can become cold and cause discomfort. Soiled nappy or any other garment or sheet should be changed immediately.

### Pain

The baby may have colic, ear infection that is quite common in early months, teething or some other cause of pain. If it is colic, the baby would draw up its knees towards the abdomen; if it is earache, the baby may rub its ears. If the pain is due to some other illness it will be indicated by other symptoms, such as: raised temperature; breathing difficulties; loose motions; vomiting. In all such cases where pain appears to be due to some illness, medication is the only way to remove the cause of pain.

In addition to these common and minor ailments and discomforts, the baby has to be protected from more serious diseases. The babies, especially the breastfed babies, have natural immunity that protects them. But this immunity does not provide protection from all diseases. So the next line of defense is immunity through vaccination for DPT (diphtheria, pertussis i.e. whooping cough, and tetanus), BCG (Tuberculosis), OPV (Polio), and Hepatitis B. The vaccinations should be administered in accordance with the officially prescribed schedule, given below:

<u>Age</u>	<u>Vaccination</u>
2-4 Weeks	BCG + Polio Drops + Hepatitis B vaccine

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6 Weeks	DPT+OPV + Hepatitis B vaccine (2 <sup>nd</sup> dose)
10 Weeks	DPT (2 <sup>nd</sup> dose)+OPV
14 Weeks	DPT (3 <sup>rd</sup> dose)+OPV
5th Month	Hepatitis B vaccine (3 <sup>rd</sup> dose)
9th Months	Measles

Although vaccination is generally safe and an approved practice all over the world, the following consideration should be kept in mind:

- Some vaccinations may not be safe for children who have suffered from convulsions.
- Vaccination should be postponed while the child is suffering from fever or diarrhoea.
- Vaccination should be postponed while the child is being given antibiotics
- In case of premature birth, the vaccination schedule should be revised with the help of a doctor.
- Doctor's advice should be taken if there is a family history of adverse effects of vaccination.

The next most important precautions, after providing immunity to the child through breastfeeding and vaccination, is prevention of accidents. Possibility of accidents should not be taken lightly as accidents are a common cause of death and injury in children. There is no way to eliminate all possibilities of accidents, but the home can be made safer for the child. Some simple precautions:

- Keep all medicines, insecticides, pesticides and laundry chemicals out of the reach of the child.
- Keep all those things that can be swallowed, edible or otherwise, out of the reach of the child.
- Keep all such things that have sharp edges (pen, knife, blades, scissors, needles, broken glass etc) out of the reach of the child.
- Put a safety socket cover on all electrical power points within the reach of the child.
- Don't let the child in the kitchen or bathroom alone.
- Keep the child away from canals, ponds, wells, and even large vessels filled with water or any other liquids.

Finally, there are a few things that relate to baby's healthy growth that should be taken care of, in addition to precautions against disease and accidents. Some of the problems of infancy that the parents may face quite often are:

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### **Slow growth**

Children do not grow at a uniform rate, nor should they be expected to attain any particular height or weight at any time of their growth. Phases of slow growth, not due to any defect or illness, are also common. Loss of appetite, failure to digest food properly or illness (especially typhoid, malaria, or intestinal infection) can interrupt growth, and are a cause for concern. In all such cases the cause is obvious, and should be treated through proper medical care.

In some cases the cause may not be apparent, but there could be definite signs of slow growth, such as growth of less than 2 cm in two successive six months periods. Such cases need detailed medical check-up.

### **Excessive weight gain**

There is growing awareness now that the problem of obesity often starts in childhood when the eating habits are established. Being overweight causes not only problems of health, but also emotional and social problems when the child gets older. Excessive weight should, therefore, be treated as problem that needs to be corrected. In rare cases overweight can be due to some hormonal imbalance, but in most cases it is preventable and curable:

- if there is a family habit of overeating, it should be corrected;
- always be guided by the child's appetite, and never force the child to eat more;
- avoid using food as reward or punishment as it disturbs the felt need for food.

### **Sleeping problem**

The sleeping pattern of the babies in most of the cases is quite similar: upto about 6 months, the baby sleeps most of the time, waking for feed after about every three hours; by the time the baby is 6 months old, it may sleep for most of the night or wake briefly once for feed. At one year and later, the child sleeps without waking throughout the night and needs one or two naps during the day. Any major deviation from this normal pattern can cause problem both for the parents and the child.

The most common causes of lack of sleep are: hunger, colic, earache, teething, or lack of protection from hot or cold weather, and should be treated accordingly.

### **Excessive crying**

If the baby is suffering from an illness, the cause of crying is known. There are, however, reasons other than illness that may cause excessive crying, such as:

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- **Hunger**, which is the most common cause of crying in young babies. Child-care experts recommend that the babies should be fed as often as they want, even if only a short time has lapsed since the last feed.
- **Thirst**, is another common cause of crying, especially if the baby is bottle-fed or if the weather is hot. If milk doesn't satisfy the baby give it cooled boiled water. Unsweetened fruit juice, can also be given, but avoid sweetened fruit juices as they can cause diarrhoea and tooth decay.
- **Wind**, trapped in the gut after feed can be a possible cause of discomfort. This is due to the fact that babies often swallow air during the feeds, and excess wind in the guts causes regurgitation of feeds. It is a good idea, therefore, to burp the baby bring up the wind after each feed.

### Behaviour problems

The period between 18 months and 3 years is a time when children start becoming conscious of their separate personality. It is often expressed through aggressiveness, withdrawal from social contact, stealing for the thrill of it or to gain attention, and disobedience and rudeness. This creates a very delicate situation for parents as too much of enforced discipline can kill the initiative and independent thinking in the child, and ignoring misbehaviour would mean encouraging it. To ensure a balanced emotional growth of the child, the following could be good rules to enforce or encourage good behaviour:

- A punishment should immediately follow the offence so that the child can make the connection between the offence and punishment.
  - Make sure that the child understands that punishment does not mean that you have ceased to love your child.
  - Punishment should be appropriate to the seriousness of the offending behavior. For the child your anger could be enough of punishment.
  - Never threaten with a punishment you do not intend to carry out. Children do get used to empty threats.
  - Physical punishment should always be mild (a smack or two) as a harsh physical punishment would cause resentment that can produce an opposite effect.
  - Try to find out the cause of behaviour problem. It could be lack of attention, illness, hunger, thirst, or rude behaviour of parents or other adults in the family or, what is often overlooked, rude behaviour of other family members towards each other.
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*THIRD HANDBOOK ON HEALTHCARE*

**MOTHER & CHILD**



Trust for  
Voluntary  
Organizations