Child Care in the Tropics

G. J. Ebrahim

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CHILD CARE IN THE TROPICS

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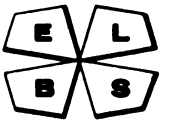
G. J. EBRAHIM



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To Kamila and Niloufer

Introduction

All developing countries carry a heavy burden of childhood illnesses. Many different factors are responsible for it – the level of socio-economic development, scarcity of medical care, traditional methods of child-rearing, and so on. But perhaps the most significant factor is the widespread ignorance about the simple principles of child care. Many of the illnesses seen in children are preventable and this prevention has to begin at home where all illnesses also begin. Hospitals and clinics can only help to cure a disease when it is established in an individual; to eradicate sickness in a nation, the effort should begin at home. When each single homestead can put into practice the various principles of hygiene, the nation's standards of public health will rise since public health is nothing but the sum total of the individual health practices of a people. Similarly when every household can practise the proper methods of child-rearing and care, the overall standard of child health will improve. To a certain extent this is already evident in urban areas where, because of better sanitation and housing, better understanding of the principles of child-rearing, and better services, the rates of child mortality are much lower than those of rural areas.

This book is concerned with child care at home and how enlightened parents can maintain their children in good health so that they can achieve good standards of growth and development.

In addition to parents, the book should also appeal to teachers in higher primary and secondary schools. They are the people concerned with the training of the parents of the future and they should find a variety of material for discussions on health and nutrition in this book. As a matter of fact, the idea of writing this book originated from requests for such material from several teachers and from discussions with headmasters of schools.

Several people have contributed to the effort of writing this book, but the major contribution is from the parents of sick children who have attended my clinics and wards with questions about the health of their children and requesting explanations on a variety of topics. Over the past few years about a hundred such questions were listed and I have endeavoured to cover as many of those as possible. I am certain that the

book does not still provide all the answers that young parents want, and I shall depend upon readers to provide further questions to be answered in subsequent editions of the book.

Child Care in the Tropics is one of a set of four manuals which together comprise the Health Centre Set. Each manual is intended for a specific member of the health team, and Child Care in the Tropics is meant for the lay health worker in the team. I hope that the Health Centre Set will help to raise standards of care and teaching in Mother and Child Health in developing countries.

Chapter 1

Pregnancy

Care of the baby begins at conception. For the first nine months of its life the baby grows and develops in the womb, secluded from external influences, and is not easily accessible to the doctor and nurse for examination or medication. All care has to reach the baby indirectly through the mother; thus, to ensure good nutrition and adequate growth of the foetus the mother's nutrition should be adequate; to ensure freedom from infections for the foetus, the mother should be protected from infections; to provide adequate opportunity for physical growth the mother should not be exposed to situations causing physical or mental fatigue. Because of all these reasons, steps should be taken to arrange for proper antenatal care of the mother as soon as the first signs of pregnancy become evident.

Pregnancy is not a disease, but a state of physiological stress during which time the various body functions of the mother undergo strain. In most cases the outcome is successful; but when the physiological reserves of the body are poor, e.g. in cases of prolonged undernutrition or chronic ill-health, the mother or the foetus or both may suffer under the stress of the several changes occurring in the body during pregnancy. At the time of conception, the embryo is a mass of cells from which it has to develop into a baby weighing 3 kg-3·5 kg at term. The nutrients required to build the various tissues of his body, e.g. muscle, blood volume, the skeleton, etc., have to be derived from the mother. As the baby develops inside the womb it does not become just a mass of muscle and bone, but is continuously acquiring its own physiological functions – in other words, it becomes a complex biological organism capable of carrying out most of the physiological and biochemical functions required for survival at term. Therefore, throughout pregnancy, as the foetus matures the mother not only provides nutrients, but, through her blood circulation, provides the oxygen needed for foetal tissues and removes carbon dioxide from them, removes the waste products from the foetus's tissues through her own waste-disposal system and also produces adequate hormones – chemical messengers – which all tissues need for appropriate function.

One simple consideration of all the complex changes that take place in the mother's body system during pregnancy is enough to understand why antenatal care is essential. As a matter of fact proper and adequate antenatal care is the single most important factor in the health and survival of both the baby and the mother.

How does a Young Mother recognise Pregnancy?

After bearing one or two children the experienced mother has no difficulty in recognising a fresh pregnancy, but for a very young mother the first pregnancy may be quite a confusing experience and it may be some time before pregnancy is recognised by her. The first sign of pregnancy is usually the stopping of the menstrual period. However, in some women the monthly period is irregular or scanty and its cessation may go unnoticed. When a few such periods have been missed pregnancy is the most likely cause. Usually by this time the mother also notices a fullness in the breasts; this is due to the changes occurring in the breasts in preparation for lactation after the baby is born. Morning sickness is a common accompaniment of early stages of pregnancy; on waking up in the morning the pregnant woman feels undue nausea and may vomit. As pregnancy advances, this becomes less and less marked though in some cases extreme degree of nausea may persist throughout the pregnancy. Usually, by the third month of pregnancy, the abdomen begins to enlarge, and the pregnant woman can feel a mass in the lower abdomen. As pregnancy advances foetal movements may be felt, by the mother or by an examiner, on palpating the gravid uterus through the abdominal wall. These movements are described as 'quickening' in the colloquial term. Thus to summarise, the signs of pregnancy are:

(1) Cessation of the monthly period.
(2) Fullness in the breast.
(3) Morning sickness.
(4) Enlargement of abdomen.
(5) Quickening.

At the first sign of pregnancy arrangements should be made to attend the antenatal clinic. It is wrong to wait until pregnancy is advanced before making such arrangements; if there is any abnormality in the mother or in her birth passages, the earlier this is detected the better. The mother who has borne several children may feel over-confident and usually delays attendance at the clinic till late thereby inviting unnecessary complications. Just as labour may be difficult in the first pregnancy, so also hazards to the baby increase

after the fourth pregnancy and such mothers are in equal need of supervision notwithstanding their 'experience'. If a woman with a child under the age of three years is pregnant, it is important for her to discuss it with the doctor or the nurse at the clinic so that she can get advice regarding feeding for the toddler. *Pregnancy in the mother is a danger signal for the toddler.*

Booking for Antenatal Care

Antenatal clinics are run by most hospitals in the cities. Usually these are also organised at dispensaries or health centres in different residential areas so that they become easily accessible to the people. There may be a separate day assigned for registration of new cases; alternatively, if the clinic is crowded there may be a separate 'line of flow' for new cases. All the record cards of the clinic are stored at the maternity hospital so that at the time of labour they are available at the labour ward.

Ideally, attendance at the antenatal clinic should be once a month until the seventh month, then fortnightly, until the ninth month and then weekly until delivery. In rural areas, where people have to travel long distances to reach a clinic or even in cities because of personal circumstances, it may not be possible for the pregnant woman to attend regularly for antenatal care. In such cases, a minimum of five attendances at least should be made a goal; of these at least two should be in the last three months of pregnancy.

At the antenatal clinic, the doctor or the nurse will make a record of several physiological data of the mother and take various measurements to ensure that everything is in order. For example, a note will be made of the *age* of the mother. Experience has shown that the optimum age for childbearing is between 18 and 25 years. In most developing countries early marriages are common and pregnancy may occur before the age of 18. At this age the rate of prematurity and still-births is high. The doctor will also wish to know *details of previous pregnancies*, if any. The risks to both mother and child are relatively high in the first pregnancy; they drop sharply in the second and third, and then slowly rise with increasing parity. The *height* of the mother is measured and recorded in most antenatal clinics; experience has shown that pregnancy runs a high risk in mothers who are less than 5 feet in height. Conversely, all mothers with short stature should place themselves in the hands of a good obstretrician as early in pregnancy as possible.

After a general physical examination which includes checking the blood pressure and an examination of the birth passages, urine, stool and blood tests will be carried out to ensure that the mother is in good

health. In Western countries antenatal care is concentrated on the detection of obstetric abnormalities and complications of pregnancy; in tropical areas, besides these, nutritional advice and treatment of endemic disease also has to be done at the antenatal clinic. Therefore, after the routine examination, health education talks are commonly held at most clinics, which all prospective mothers should make a point not to miss.

With regular antenatal supervision, in most cases there are no problems and a successful outcome of the pregnancy is ensured. However, certain signs which indicate the presence of complications should be remembered and at their first appearance should be reported to the doctor. These are:

(1) Bleeding, even when in such small amounts as to cause only 'spotting'.
(2) Persistent abdominal pain.
(3) Severe and persistent morning sickness.
(4) Chronic headache.
(5) Giddiness or blurred vision.
(6) Swelling of ankles.
(7) Leakage of water from the womb.
(8) Stoppage of foetal movements.

Clothing

All clothing should be loose and the weight should be carried from the shoulders and not by constricting the waist. Most modern women are concerned about the effects of child–bearing on their figures. During pregnancy there is enlargement of the breasts, which will stay enlarged

after delivery so long as breast-feeding continues, after which they return to about the same size as before. During pregnancy the mother's body chemistry undergoes adaptation so that she lays down body stores of fat and other nutrients to provide for the calories required for lactation when the baby is born. Therefore, successful lactation at the end of pregnancy will prevent excessive weight gain.

There are several precautions necessary for the figure-conscious mother:

(1) The mother should wear a well-fitting brassiere to support the breasts during pregnancy. This is to prevent excessive stretching of the skin and elastic tissues under the weight of the enlarging breasts. Towards the end of the pregnancy, a slightly larger size of brassiere may be required. At this time it may be advisable to change to nursing brassieres that can be opened from the front and have removable pads to soak up any milk that may leak.

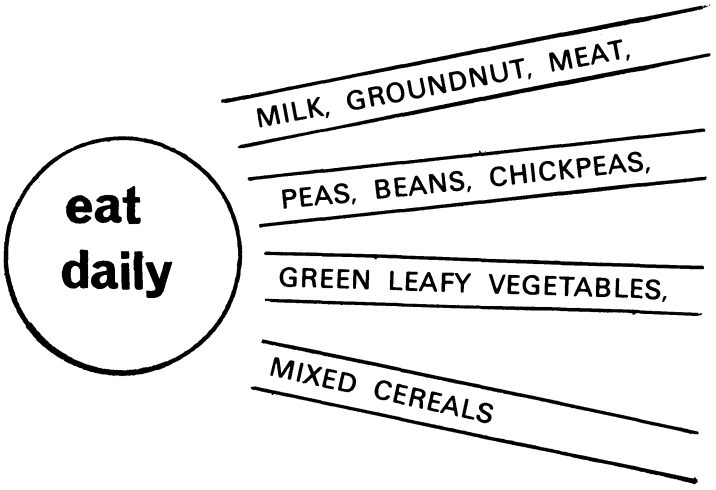
(2) Since there is a physiological tendency to gain weight during pregnancy it is best to avoid starch or sweet foods like bananas or cassava.

Diet during Pregnancy

Much superstition exists regarding the pregnant woman's diet, much of which has no scientific basis. It is not true that a pregnant woman should eat little so as not to have a difficult labour; she may end up with a low birth weight baby who has difficulty in adjusting to extrauterine life in the early newborn period. It is not true that inclusion of eggs in the diet of the pregnant woman will cause sterility in her or produce defects in the baby. It is not true that foods will cause 'hot' or 'cold' effects in the body of the pregnant woman and thereby interfere with the growth of the foetus. It is also not true that the pregnant woman 'should eat enough for two'.

A well balanced adult type of diet providing a mixture of different kinds of nutrients is all that is required. Milk, eggs, cheese, meat and fish are the animal proteins which should be included in ample amounts in at least one of the meals of the day; fresh fruit and vegetables should also form a good proportion of her daily food. It is important not to stick to the staple all the time, but to mix it with a variety of other kinds of foods. This not only gives change to the diet and makes it more palatable but is also nutritionally superior to an unvaried predominantly staple kind of diet.

Beverages like tea and coffee cause no harm if they are taken in moderation. Smoking is known to cause growth retardation of the foetus and alcohol is equally harmful.



Food Groups

Group I — MILK. Powdered milk, cheese.

PULSES. Peas, beans, cowpeas, chick-peas, grams, groundnuts.

MEATS. Egg, fish, mutton, beef.

Group II — GREEN LEAFY VEGETABLES. Cabbage, spinach, lettuce, tomatoes, pumpkin, cauliflower, etc.

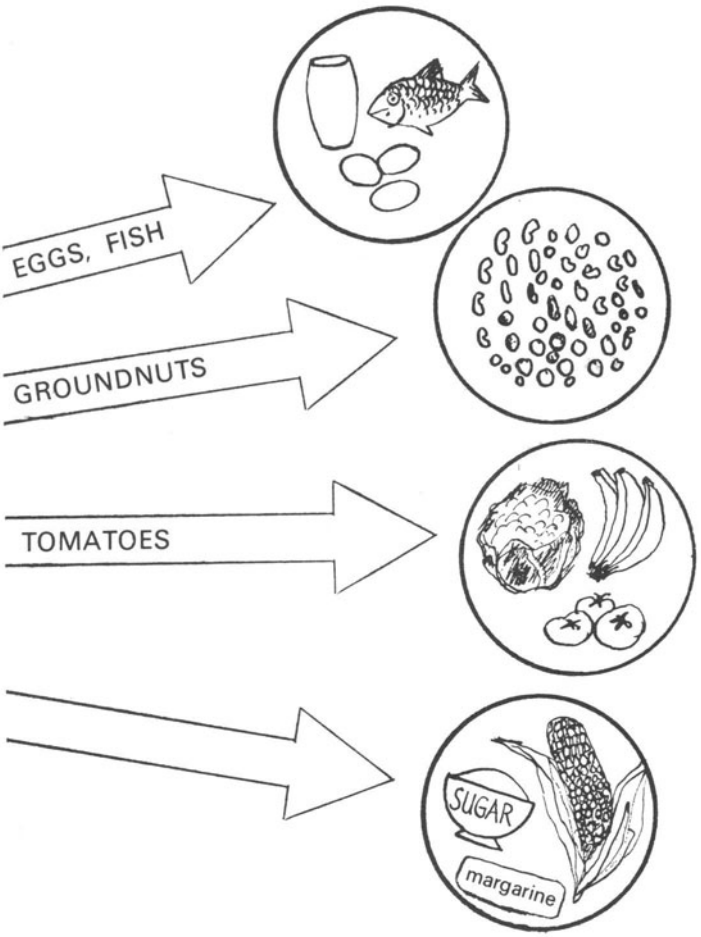
FRUITS. Paw-paw, orange, mango, apple, grapes, etc.

Group III — CEREALS. Maize, rice, wheat, millet, barley.

VEGETABLES. Starchy cooking bananas, cassava, potato, etc.

Group IV — FATS AND OILS. Vegetable oils, butter and other cooking oils.

SUGAR.



The balanced diet for a pregnant woman is a mixed diet composed of a selection of foodstuffs from all the above food groups with large amounts from Groups I and II.

Meats and other forms of animal proteins are by far the best 'tissue-building' foods. If flesh-foods and eggs are not available, a generous amount of pulses like beans, peas, etc., should be included in the daily food. A minimum amount of about 4 oz-6 oz of milk is necessary during pregnancy. The larger the quantity of milk consumed the better. Skimmed milk powder or whole powdered milk may be substituted for fresh milk if it is not easily available.

Leafy vegetables and fresh fruit should be eaten three to four times every week. If there is a scarcity of fresh fruit or leafy vegetables, various forms of pulses may be sprouted by soaking in water overnight and consumed the next day.

All cereals are essentially energy-giving foods; 'tissue-building' and protective foods are present in small amounts only. Weight for weight, cereals provide the same amount of energy, though tissue-building and protective substances vary from one cereal to another. It is advisable that pregnant women should not depend entirely on cereals for their nutritional needs and that they should consume a mixture of cereals rather than rely on one only.

Exercise and Rest

Proper muscular tone will make labour easier and return to normal posture after delivery is facilitated. In most cities antenatal exercises are organised by the Red Cross or other voluntary organisations. They may also be routine in some antenatal clinics.

Walking is a good exercise; it should be made part of the daily routine and gradually diminished as pregnancy advances.

Adequate rest is as important as exercise. During the day's work the expectant mother should take every opportunity to sit down for a few minutes and relax with her feet raised on a support. Also a good night's sleep of at least 8 hours is essential.

Long and strenuous journeys are best avoided in pregnancy. Air travel is becoming more common and there is no harm in travelling by air. Most air companies do not accept women passengers in an advanced stage of pregnancy, for example, after the eighth month.

Physical Health of the Mother

The physical health of the mother has an important bearing on the baby's health. It is a universal truth that mothers from higher socio-economic groups have babies of larger birth weights who usually attain a high standard in physical and intellectual development compared to babies born to mothers from lower socio-economic levels. It has also been found that in communities where the nutrition of the mother is adequate and where endemic diseases have been controlled, the newborns have greater birth weight and vitality for growth and development. In addition to these generalisations, it has recently been noted that various infections in the mother may affect the foetus who will be born with physical abnormalities. The well-known example of such infections is rubella or German measles which is a mild disease for the adult (and so may even go unnoticed) and yet produce devastating effects in the foetus. Certain drugs or chemicals can also produce similar results in the baby. Hence it is advisable for the pregnant woman

not to go visiting the sick especially in the early half of pregnancy and not to medicate herself (including local herbal medicines) except on the advice of a doctor.

MENTAL HEALTH OF THE MOTHER

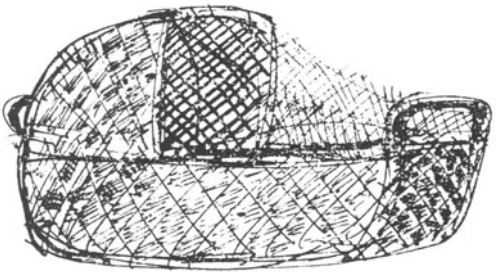
Pregnancy is a state of anxiety for most mothers and is accompanied by sudden changes in mood. Worry about the health of the baby, or anxiety about her ability to love and care for her baby, often is a cause of depression in the mother. Tensions at home may therefore become magnified during this period. The woman feels the need for extra love and attention from the members of the household but chiefly the husband.

The mood of depression is intensified in the first or second week after delivery, and in some cases may be so bad as to produce psychotic symptoms. This is a recognised fact in medical science and has been termed 'post-partum psychosis'. It is the period in which the role of the husband and other members of the household is most important in providing emotional support. Any indifference on their part may increase the mother's feelings of being left on her own to cope with the new arrival.

PREPARING FOR THE BABY

Towards the later stages of pregnancy it is best to begin shopping for the baby's needs, so that the bare essentials are ready at home to care for him on arrival from the hospital or the health centre. These bare essentials are:

(1) *A place to sleep in* — A carry cot, a basinet, or a basket will all serve the purpose. It should have sides to protect the baby from rolling over, and to hold a mosquito net in place to protect the baby from flies and mosquitoes. A foam rubber mattress is ideal. It is best not to have a pillow. About six sheets for the mattress and two rubber or plastic sheets to protect the mattress from soiling are required. If a blanket is



to be used cotton cellular blankets are usually adequate in most tropical areas.

(2) *A place for bathing the baby* – A plastic bathtub or a large enamelware dish is usually adequate. In order to avoid stooping, the bath-tub is placed on a low table and the mother sits on another stool for bathing the baby. Similarly, the baby is changed or dressed on a table or on the top of a chest of drawers which holds his clothes.

(3) *Nappies* – Gauze or towelling material which is absorbent are the common ones. The gauze nappy dries easily but cannot absorb much urine. 'Nappy-liners' made of a non-wettable synthetic fibre are also available which can be inserted between the baby and the nappy. They are of use for going out or at night, and should be avoided for routine use.

A pad of cotton may be useful for wiping the bottom of the baby when soiled with faeces.

Some safety pins to hold the nappy in place and a nappy bucket complete the list. The bucket is filled with water to which may be added some soap powder or an antiseptic powder, e.g. 'napisan'. All used nappies are put into this pail which is emptied for washing every morning.

(4) *Clothing* – Vests and other clothing may be made at home or purchased in the market according to individual preferences.

(5) *Baby-carriage or 'pram'* – It is best not to hurry into purchasing one soon after the arrival of the baby but to wait until the baby is 3–4 months old.

(6) *Baby's feeding equipment* – Breast feeding is by far the best way of feeding the baby. No baby should be started on artificial feeds without consulting a doctor.

Chapter 2

The Baby during Pregnancy and Labour

The biological life of the baby begins with the fertilisation of the ovum, that is, by penetration of the mother's ovum or egg by the sperm. The ovum matures in the ovary of the female after which it is extruded from the surface of the ovary, and travels along the uterine tubes to the uterus. This process occurs once every month and normally happens fourteen days before each menstrual period. After its extrusion from the ovary, the mature ovum is viable for a short period only; fertilisation can occur only if sperms are present in the genital passages of the mother during the three days before or after ovulation.

During the process of fertilisation the sperm penetrates the lining membrane of the ovum and a mixing of the contents of the two parental cells takes place. Fertilisation usually occurs in the uterine tubes during the journey of the ovum towards the cavity of the uterus. Penetration by the sperm sets off the process of rapid cell multiplication in the fertilised egg, so that by the time it reaches the uterus, it is no longer a single cell but has changed into a sphere consisting of a large number of cells. The outer layer of cells in the sphere can penetrate the wall of the uterus and thus the fertilised egg becomes implanted in the uterus. By the third week after fertilisation implantation is firmly achieved.

Further development consists of (1) formation of the organs of the embryo; (2) development of the placenta.

Formation of the Organs of the Embryo

This process occurs during the first three months of pregnancy. From a mass of cells the fertilised egg is transformed into the rudiments of the various organ systems which gradually acquire physiological function. These early months of pregnancy are crucial because during this period the cells are susceptible to harmful external influences and any such influence may result in an abnormal development leading to a congenital malformation.

During the second three months of pregnancy the various organs of

the foetus assume physiological function which gradually becomes more efficient. In the last three months, the foetus grows in size and lays down stores of nutrients for future growth. During this time the foetus more than doubles in weight and adds approximately a third to its length. In this stage of rapid growth, heavy demands are created on the mother's nutrition; for example, more than half the total calcium contained in the newborn infant's bones is laid down during this period; also a large store of iron is accumulated for use after birth. Many vitamins are also stored for use in the immediate neonatal period until such time as oral feeding gets established; a large amount of body fat is laid down during this period to safe-guard against exposure to cold in the immediate newborn period.

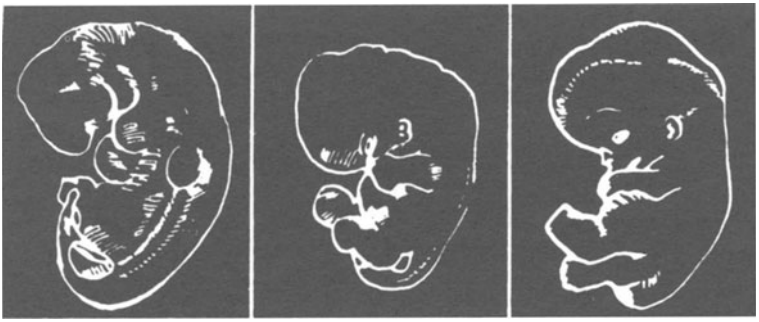
Development of the Placenta

At the site of implantation of the fertilised ovum in the uterus, there is a gradual development of the placenta – an organ with a unique system for intermingling of the mother's blood with that of the foetus. To the placenta, the developing foetus is attached by means of the umbilical cord.

The placenta serves multiple functions. It acts as the organ for the exchange of gases – the blood of the foetus takes up oxygen from that of the mother and gives up carbon dioxide to it. Through the placenta, the foetus gets rid of its nitrogenous waste products and receives nutrients from the mother's blood. Various antibodies which protect from different infections are also received by the foetus and will provide protection from several illnesses in the first few months of life. Finally, the placenta also acts as a source of hormones required for the maintenance of pregnancy. At the time of birth, the placenta separates from its site of implantation in the uterus and is expelled as the 'afterbirth'.

The Process of Birth

Normally pregnancy lasts for forty weeks, at the end of which labour begins. The first sign of the onset of labour is the occurrence of regular contractions of the uterus. As these contractions become stronger they are felt as 'labour pains'. There may also be a slight blood-stained discharge called 'show'. This indicates that the plug of mucus which closed the opening of the neck of the womb all through pregnancy has now come off as the neck has widened to make a passage for the birth of the baby. Onset of labour pains and appearance of 'show' together constitute the first stage of labour.



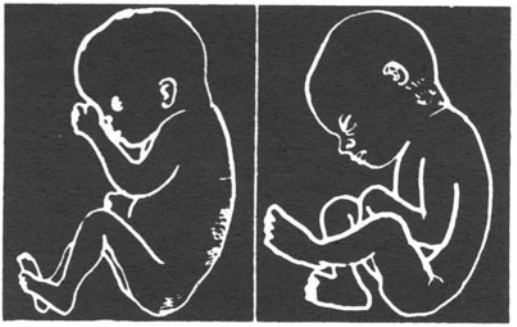
How may labour pains be recognised? During pregnancy abdominal pain is a frequent complaint, and labour pains may often be thought of as ordinary abdominal 'cramps'. The pregnant woman can recognise labour pains by the regularity with which they come – at about twenty-minute intervals in the beginning and later at five-minute intervals or less. The pain begins in the back and then travels round to the front of the abdomen; during the pain the womb can be felt to harden.

In the first pregnancy the first stage of labour may last up to about twelve hours and so there is ample time to reach the maternity hospital or health centre. With later pregnancies this period is short, and so at the onset of labour pains immediate steps should be taken to reach the place of delivery or to get in touch with the midwife if delivery is to be conducted at home.

At the beginning of the second stage of labour there is leakage of fluid due to the bursting of a bag of water that surrounds the baby. The contractions of the uterus become stronger and regular, and the mouth of the womb has opened to make a passage for the baby. The mother may assist by 'pushing' – i.e. tightening the abdominal muscles – and bearing down. She should do this only during a labour pain and not in between. The mother should not 'push' in the first stage because the mouth of the womb is not yet open.

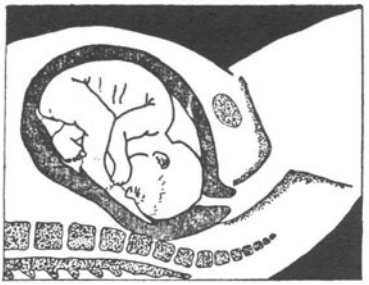
Soon after being born, the baby cries, that is it expands its lungs with air and begins regular breathing. At this time the baby is still attached to the placenta inside the uterus by means of the umbilical cord, which is subsequently cut and tied securely. There is a brief respite in labour pains after the baby is born, during which time the placenta is separating from its attachment in the womb. Labour pains resume as the placenta is forced out by the womb.

The third stage of labour begins at the birth of the baby and ends with the expulsion of the placenta, 15-20 minutes later.



The developing foetus

Child birth



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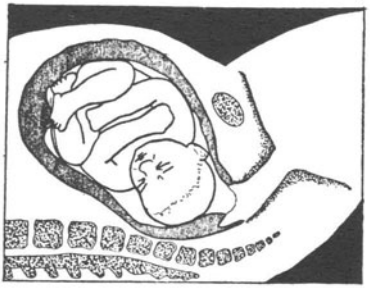

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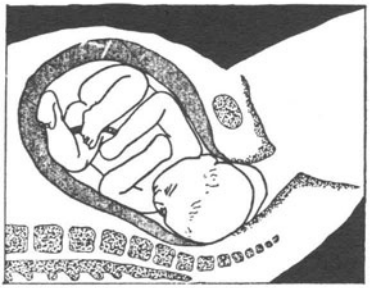

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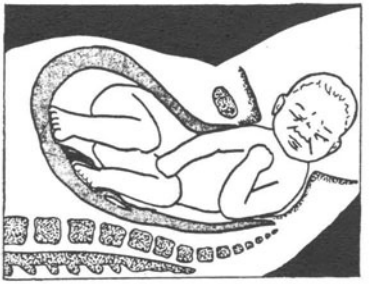

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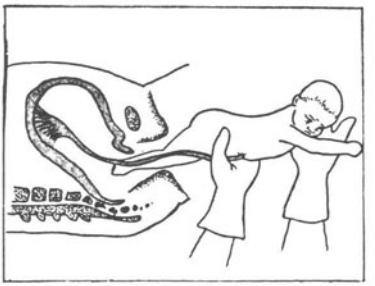

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Hazards of Birth

The process of birth is a journey beset with many hazards. It is the time during which the baby will change its mode of existence from a parasitic one in which it is dependent on the mother for all its biological needs, to an independent one, setting into action its own different physiological systems. During this time it will also be subjected to various stresses and pressures during its passage through the birth canal. Many factors can interfere with adaptation to extrauterine life – e.g. congenital malformations in the baby, complications of pregnancy affecting intrauterine growth and development of the baby, abnormal deliveries, low birth weight of the baby, etc.

During the process of birth, the head of the baby is subjected to a compressing force to enable its passage through the birth canal. It may undergo a change in size and shape and the process is called 'moulding'. If excessive, moulding may result in damage to the brain or to its covering membranes. If moulding is not excessive, the head will resume the normal shape and size in a few days. After the head the shoulders of the baby present the widest diameter to the birth passages, and so fractures of bones around the shoulder joint occasionally occur. These hazards are further increased if the baby is lying in an abnormal position in the uterus, or if there has been an instrumental delivery (e.g. delivery by forceps or by the caesarean operation).

Most babies are born with a tendency for bleeding and sometimes may bleed spontaneously usually in the gastro-intestinal tract, presenting blood in the stools or in vomitus. Occasionally bleeding may occur from the umbilical stump. All such bleeding in the baby should be treated promptly in the hospital.

The baby's resistance to infection is poor and any infection can become serious in a short time.

Finally, at birth the baby may fail to expand his lungs and thereby fail to initiate a number of physiological processes which are necessary for an independent existence outside the uterus.

It is one of the wonders of nature that so many babies get born normally and are unaffected by the hazards that beset their journey to the outside world. In a healthy mother who has had good medical supervision during pregnancy and was delivered by qualified health personnel, a successful outcome to the pregnancy is almost certain. Hospital statistics show that complications are more common if antenatal care was not sought, if local medicines were taken with a view to influencing labour, in cases of multiple pregnancies and in mothers who have had previous obstetric difficulties.

Chapter 3

The Newborn Baby

The immediate newborn period is one of adjustment to an independent form of life. Most of these adjustments are accomplished in the first week or so, though for technical purposes the first month of life is described as the neonatal period. Many newborns fail to make these adjustments successfully either because of defects in development or because of complications in pregnancy and labour, and the first week of life contributes a large proportion to childhood mortality. All factors being equal, the size of the child at birth is one of the most important yardsticks for measuring vitality. Thus, babies of low birth weight have a poor chance of survival compared to those who were born with the average birth weight.

The weight of the healthy newborn varies from one community to another. In mothers who come from the higher socio-economic strata, who had adequate antenatal care during pregnancy, whose diets are good and who do not suffer from chronic ill-health, the newborn tends to weigh more than in the case of mothers who come from the lower socio-economic level and who live on a poor diet. In Western countries the average weight of the baby at birth is 3·5 kg. In most developing nations, the average birth weight is much less than this, except in the very few who enjoy a good standard of living. Thus, whereas in the latter group the weight of the baby at birth is comparable to his Western counterpart, in the common people the average birth weight is 3 kg. Even though small, these babies are capable of normal growth and development. Experience has shown that when the weight of the baby at birth is less than 2 kg he may have difficulty with adjusting to independent life outside the womb. Such babies need expert care and attention in the hospital. In the first few days after birth most babies lose weight. This is due to loss of water from the skin, in urine and through the lungs. The weight loss may be as much as 10 to 15 per cent of the birth weight. By the fourth day of life weight loss is minimal and the baby may begin to gain in weight so that between the seventh to the tenth day the birth weight is usually regained.After this period, the healthy newborn will gain in weight at the rate of 20 grammes to 25 grammes per day.

Physical Characteristics

THE HEAD

The head may undergo a variable degree of moulding due to the pressures and stresses of delivery. Sometimes there may be soft swellings on the head. These are accumulations of fluid or blood. In both cases they will be absorbed; the former is absorbed in twenty-four to forty-eight hours, whereas the latter may persist for several weeks.

The skull of the newborn is not a closed box like that of the adult but consists of several separate bones with fibrous membranes in between. These are called 'sutures' and at several places they separate to produce soft areas called 'fontanelles' at the end of the bones. Thus in the centre of the head a soft area may be felt and on placing the finger on it carefully pulsations may be felt. Various kinds of superstitions are attached to the 'fontanelles'; actually, all the fibrous membranes separating the skull bones exist to allow for growth of the head. The growth of the brain is maximal in the first two years of life during which time the head also grows in circumference. By the age of eighteen months the fontanelles close, and growth of the skull slows down.

The hair on the scalp may fall off during the first few weeks; the resulting baldness may cause unnecessary anxiety, but new hair soon grows.

EYES

At birth the eyes may have a lighter colour which changes later.

The newborn is able to differentiate between light and darkness. The muscles controlling the movements of the eyeball have yet to develop co-ordination and the baby may appear to have a squint. Again this may cause parental anxiety; in most cases the eyeballs come into alignment by the age of six months or so.

MOUTH

'Tongue-tie' is a cause of worry in all mothers; like everything else in the baby's body, the membrane connecting the tip of the tongue to the base of the mouth (the frenulum) is also small and may give the appearance of a tongue-tie. The condition is extremely rare and hardly ever diagnosed in clinical practice. In all cases of doubt it is best to consult a doctor for reassurance.

TRUNK

After a feed the abdomen may appear to be distended, but should give no alarm. The stump of the umbilical cord begins to dry within

twenty-four hours and will separate after five to ten days. It should be allowed to fall off spontaneously and not be pulled off otherwise bleeding may occur.

THE SKIN

At birth the skin is covered with a cheesy substance called vernix. It is nature's vanishing cream and serves a protective function. No attempts should be made to rub it off from the skin.

In some babies the skin is lighter for lack of colouring material, which gradually appears over a period of weeks.

Behaviour Patterns

ACTIVITY AND SLEEP

In the first few weeks of life there are long periods of sleep, up to 3 hours, alternating with periods of wakefulness partly occupied by feeding. During the period of wakefulness gross body movements occur. These are alternate flexion and extension movements occurring on the two sides. These movements are more pronounced when the baby is lying on his back than when he is being carried.

FEEDING

The average baby takes 3 to 4 ounces of milk at every feed and will require to be fed 6 to 8 times per day depending upon the amounts taken. The act of feeding may start a bowel movement by reflex action. Also, the baby swallows air during feeding and periodically the feed should be interrupted to 'break wind'. Failure to do so will cause distress due to distension and will interfere with feeding.

In all babies, the stomach contents may be spat up after feeds. Usually it is in small quantities but, when excessive, it may become necessary to hold the baby in the erect position for long periods after each feed.

Home Care for the Newborn

The young mother who has just come home with her newborn from the hospital is usually worried about her ability to cope with the baby. It is customary in many hospitals to show the mothers the rudiments of home care for the baby and yet in most cases the few lessons or demonstrations are not enough.

If the following points are remembered the care of the baby at home should not prove at all difficult.

(1) The baby's chief needs are:
  (a) Protection from infection.
  (b) Nutrition.
  (c) Adequate warmth.
  (d) Security and comfort.

(2) Most babies like a routine. They like a routine for bath, for feeds, and for play, so that they can anticipate. Of course, the routine has to be flexible so that the baby should not suffer discomfort; for example, if the baby is hungry half an hour before the routine time for the feed, the feed should be offered. On the other hand, if he is asleep at feeding time he should not be disturbed until it is well past the feeding time.

(3) Most babies differ in their responses. Each individual baby sets his own pattern. When the doctor or the elders speak of 'normal babies' they mean the 'average babies'; they are describing the median between the top of the scale and the bottom of the scale in their various experiences. It may give an idea of what to expect, but it is not necessary that every baby should behave in that particular way. Every baby has his own individual pattern. Some are active, some lethargic and like to sleep for most of the time. Some babies are fretful and difficult to comfort whereas others are 'good' and will tolerate a good deal of discomfort.

PROTECTION FROM INFECTION

All babies have poor resistance to the common infecting organisms, and so any infection, however trivial, can become widespread and endanger life in a short time. The common points of entry for infection into the baby's body are:

(1) Through the umbilical stump.
(2) From the skin.
(3) Through the respiratory passages.
(4) Through the feeds.

THE UMBILICAL STUMP

At the hospital, the cord stump is usually treated with some antibacterial compound after being cut and tied. The antibacterial substance may be a spray, a powder or a dye. At home, it is best to leave the cord stump open without any dressing. After the bath and in the evening the stump should be cleaned with cotton wool dipped in surgical spirit (methylated spirit). 'Cord powder' or any other form of

dusting powder is usually not necessary; similarly, all forms of 'cord dressing' should be avoided.

In the tropics, the commonest infection arising at the cord stump is tetanus. The tetanus spores grow on the dead tissue in the remnants of the umbilical cord and produce a poison (the tetanus toxin) which is absorbed into the body of the baby and causes fits. Tetanus of the newborn is a serious disease with a heavy mortality. It is not seen in babies born in a hospital and is almost always restricted to babies born by the traditional methods at home. Tetanus is acquired from contact with dust and soil on cuts and bruises and so the most likely reason for neonatal tetanus is application of traditional pastes and herbal potions, or from dust and other dirt falling on the raw surface of the cord stump.

Besides tetanus, the cord stump can also get infected with pus-producing bacteria; from here infection can then spread into the body. All this can be prevented by the routine use of surgical spirit on the cord stump and by general cleanliness. Immunisation of the mother with tetanus toxoid during pregnancy is also an important protective measure.

CARE OF THE SKIN

The skin gets dirty by contact with urine or faeces, by sweat, or by food that may have been vomited or brought up by the baby. A daily bath routine is liked by most babies, though in cold weather the number of baths per week may have to be reduced. On the other hand, in hot weather a sponge bath in the late afternoon may be required in addition to the daily bath.

Mid-morning is the time preferred by most mothers for bathing. It may be changed to evening or to any other time of the day depending upon the home circumstances or mothers' preferences.

Before starting the bath, all clothing should be arranged on the changing table or a bed – the napkin with pins handy, the dress, oil for hair, and talcum powder if required. The bath is given in a plastic tub, or enamelware dish or even the sink if it has been properly cleaned. If it is the former the mother may prefer to have the tub or dish placed on a stool with another stool or chair before it for her to sit on, so that she does not tire herself with bending. The water should not be too cold or too hot, and before placing the baby in the bath the temperature of the water is checked on one's own skin. The soap, the towel and all other equipment required should be arranged and handy before the bath is started. The baby should be lowered into the bath gradually allowing him to get used to the feel of water on his skin. During the bath, the mother supports baby's head with her left hand and leaves the right one free for soaping and washing. After the first few weeks most babies

enjoy their bath immensely, kicking their legs and splashing water. Any bland soap may be used for the baby, and it should then be kept separate for his use only. Similarly, the baby should have his own separate towel. Various kinds of baby soaps are available commercially, and recently soaps containing chlorhexidine (anti-bacterial chemical agent) have been on the market.

After the bath, the baby is wiped dry, the cord stump is dried and treated with surgical spirit and, if preferred, a little powder may be sprinkled on the body. It is important to remember that powder is not essential at all; if used it should be in small amounts only, otherwise it tends to cake along the baby's body creases, and this may then cause small abrasions in his skin. Baby powder containing chlorhexidine is also available commercially. Avoid putting powder on the cord stump.

Besides the daily bath, most babies will need washing in the napkin area, at least once a day, usually in the evening before being settled for the night.

After dressing, the baby is offered his mid-morning feed and in most cases he will sleep for the rest of the morning.

PROTECTION FROM INFECTIONS OF THE RESPIRATORY PASSAGES

In the first few months of life, the baby should not be taken out visiting; at home, contact with visitors should be minimal. If a member of the family or a servant shows signs of a cold or catarrh he should not handle the baby or his things until completely recovered.

As a rule children in the house should be taught not to handle the baby, and especially that babies are to be fondled and kissed on their feet and never on their hands or faces.

Personal cleanliness of the mother is necessary to avoid infections in the baby. Care in washing one's hands before handling the baby, cleanliness of clothing and baby's clothes is important.

PROTECTION FROM INFECTIONS OF THE GASTRO–INTESTINAL TRACT

In breast-fed babies this is less of a problem. If any other form of feeding is being considered it should be remembered that utmost care is necessary in preparing and handling all foods meant for the baby. Gastro-intestinal infections produce violent upsets in the body's physiology in the case of all babies, and all severe gastro-intestinal infections in the baby are fatal, unless treated under expert supervision in hospitals.

THE DAILY ROUTINE

Most babies prefer a regular routine; this is because they have a tendency to form regular habits for feeding and if there is a regularity in the daily routine they are able to anticipate events. Also once a regular routine is established the mother can arrange her own work at home in a proper order and find some time to relax and enjoy her baby.

Feeding – At each feed, the baby will take 3 to 4 ounces of milk depending upon his size. Normally, the amount of milk required by the baby is $2\frac{1}{2}$ ounces per pound of body weight (or 150 cc per kilo). Thus the average baby will require six to eight feeds per day; in other words the small baby whose food intake per feed is small will require to be fed every three hours and the larger one whose feeds are larger will require a feed every four hours.

Demand feeding – Demand feeding is the rule in most rural societies. The baby is carried on the back and when he cries the mother offers the breast. It is important to remember that every time the baby cries it does not mean that he is hungry. Babies cry because of discomfort – for example, a wet nappy, or colic, or because they have been startled by a loud noise or sudden movement or because they wish to be cuddled. In such cases, offering the breast may act only as a pacifier and the baby settles down for a while.

Feeding according to schedule – Most babies start their day early in the morning, when they wake up very hungry. Therefore, the first feed of the day is usually around 6.00 a.m. Hence the best schedule to follow is 6 a.m., 10 a.m., 2 p.m., 6 p.m., 10 p.m. and 2 a.m.

In all kinds of schedule feeding it is important not to have rigid rules; if the baby is hungry half an hour earlier and is crying for a feed it should not be withheld. On the other hand, if the feed is due and the baby is still asleep he may be allowed to continue sleeping for half an

hour or one hour extra. In the past rigid adherence to schedules was practised even by qualified paediatricians and the occasional elder in the house will admonish the mother and say 'Do not spoil him; let him cry for a while or else he will grow up to be greedy'. All this is wrong. Even grown-ups do not always feel hungry at meal times, and sometimes we are hungry much before the meal time. So also with babies. There is no point in either creating frustration in the baby by withholding the feed when he is hungry, or causing tension by forcing a feed on a sleepy baby. Hence, though some form of regular schedule is advisable, it should be made flexible with a bit of commonsense as the occasion demands.

By the time the baby is four or five weeks old, he may begin to give up the 2.00 a.m. feed. Sometimes he does this abruptly by just not waking up in the night, but in most babies it is in stages. The baby may wake up at 3.00 a.m. one night and this is counted as the 2.00 a.m. feed. A few days later he prolongs the interval and may wake up at 4.00 a.m. This should still be counted as the 2.00 a.m. feed and he may or may not delay the 6.00 a.m feed. And then he may wake up at 5.00 a.m. This is then counted as the 6.00 a.m. feed. The baby has obviously missed the 2.00 a.m. feed and wants the 6.00 a.m. feed. In most cases, the baby will make up for the feed he has given up by drinking more

during the day time, especially the early morning feed and the evening feed. But this can also be taken as a convenient opportunity for adding solids (see next chapter).

PLAY SCHEDULE

After the morning feed and a change of nappy, the baby is put in a pram or carrycot in a quiet well-ventilated room or in the garden. To protect him from mosquitoes, flies, and other insects a mosquito net is essential.

Similarly, in the late afternoon or evening the baby could be left to play or be taken out for a walk. On returning from the walk, the mother may wish to spend some time playing with him before giving the evening feed and settling him for the night.

CHANGING THE NAPPY

The first stool passed by the baby is a thick dark-coloured sticky paste called meconium. The next one, passed over the next twenty-four hours is called the transitional stool, which is different in colour and consistency from the first. Thereafter, the normal stool is passed. The baby who is breast-fed has two to four bowel movements per day consisting of golden-brown pasty stools. The baby who is on an artificial formula passes about two stools per day which are yellow and semi-solid.

When changing the baby's napkin the bottom should be washed with water, or wiped clean with cotton wool dipped in olive oil. A baby should not be left for any length of time with a soiled napkin, since this may give rise to a painful rash on the napkin area known as nappy rash. A regular change of the nappy also helps to create in the baby a liking for cleanliness.

FEELING OF SECURITY AND COMFORT

The needs of the baby go further than food, play and sleep; he wishes to feel loved and be cuddled. Babies who have been brought up in institutions away from the tender loving care of the mother fail to grow and develop in the same way as those who were brought up in their homes by their parents. The mother's love and presence also helps in recovery during illnesses. On the other hand, a mother may transfer her own anxieties to the baby; for example, the mother without self-confidence may find that the baby is fretful and does not settle easily.

Sickness in the Early Days of Life

The body reserves of the newborn are small and so he cannot deal with disease as effectively and efficiently as the older child or adult. He can become ill suddenly and this illness, however trivial to begin with, can become serious in a very short time. Furthermore, expression of illness in the newborn is limited; there are few signs and symptoms and all that the mother may notice is a slight deviation from the normal behaviour. Hence, all such changes in the behaviour of the baby should be watched for carefully and at the slightest doubt a doctor should be consulted. Such deviations from normal have been termed 'danger signals' of the newborn period. It is useful to remember that a particular signal may not mean anything at all in one instance, and in another it may be the sign of serious disease. Take vomiting, for example. Most babies have a tendency to regurgitate feeds which is quite normal and yet, at times, vomiting may also be due to serious illness. The danger signals are mentioned here so that the parents know when to look for medical help.

Danger Signals of the Newborn Period

FAILURE TO SUCK

Some babies are lethargic and do not wish to suck at all, or will suck for a short time and give up. The low birth weight baby may not be able to suck because of lack of strength and vitality. Similarly, a baby who was born after difficult delivery may not be able to suck for a few days.

If the baby was born in hospital, he will not have been discharged unless the doctor or nurses were satisfied that successful breast-feeding has been established, that is, the baby is able to suck and swallow and the mother is secreting milk.

Failure to suck should be considered a danger signal when the baby was *initially sucking vigorously and is unable to do so now.*

The commonest cause is *thrush*; this is a fungus that grows in the mouth of the baby and is seen in the form of curd-like white patches. It makes the mouth very sore and so the baby cannot tolerate the nipple in the mouth.

Babies with upper respiratory infections and blocked noses have difficulty in feeding due to obstruction to breathing during sucking.

Inability to suck may be the first sign of serious disease like tetanus or heart defect with failure. In the former, the baby is not capable of making the co-ordinated movements of the muscles of the mouth and

the jaw which is required for sucking, and in the latter the baby is not capable of the effort required for sucking.

Thus, if the baby is persistently refusing to suck and has no thrush or cold, he ought to be seen by a doctor to rule out any underlying disease.

VOMITING

After a feed most babies bring up mouthfuls of partially digested milk. Sometimes they may bring up more and may even vomit. Vomiting is a fairly common symptom in the first few days of life. This is due to mucus and the amniotic fluid that the baby may have swallowed during labour. Both these substances cause irritation of the stomach which results in vomiting.

Rarely, vomiting may be due to head injury caused by difficult or prolonged labour. As recovery from head injury occurs, vomiting may gradually subside; only occasionally does it need treatment.

Severe and persistent vomiting, which can cause loss of fluid from the body tissues is usually due to blockage of the food passage due to a defect in development. There are various forms of such obstructions and all need surgery. Hence, in all such cases of vomiting the baby should be seen by the doctor.

JAUNDICE

A large number of newborns show a yellow tinge in the first week of life which gradually disappears over a few days. This is known as physiological jaundice. It should not give rise to undue anxiety. In babies of low birth weight physiological jaundice may persist for a long time.

Any jaundice appearing in the first twenty-four hours after birth or noticed for the first time in the second week of life usually means serious trouble and should be treated in a hospital.

BLEEDING

Bleeding may occur from the umbilical stump or may be present in the stool. The total amount of blood in the body of a newborn is small (about 150–200 cc) and so bleeding from the baby, even though it appears little by the standards of the adult, should be reported to a doctor.

Female babies may occasionally bleed from the vagina during the first week of life. This is due to the effect of maternal hormones and will stop spontaneously in a day or two.

FEVER

Fever in the newborn period is usually indicative of infection. The resistance of the baby to infection is poor and any infective process tends to spread unless checked promptly with antibiotics. Hence, all febrile illnesses in the baby should be reported to a doctor and never treated with home medicines.

In addition to the above danger signals, others like twitching and convulsions or colour changes or absence of bowel movements would usually be noted at the hospital and treated. If they appear for the first time after the baby has been taken home, they should be reported to the hospital or a doctor at once, since these are best treated under expert care in a hospital.

Chapter 4

Feeding the Baby

All through pregnancy, there is a gradual increase in the size of the breast tissue. Most of it is caused by the growth of milk-secreting cells in the breast under the effect of various chemical substances, called hormones, which circulate in the mother's blood in increasing amounts. Simultaneously, the mother's body lays down energy stores which will provide the energy required for milk secretion.

The flow of milk does not begin until after the second day of delivery. The period may vary from two to four days, being earlier in mothers who have borne children before. The first secretion of the breast is a yellowish fluid called 'colostrum'. It is *not* bad milk. On the contrary, it is high in protein content which is so essential for building body tissue and for growth in the baby. No doctor has ever come across a mother who secretes 'bad' milk, and therefore it is foolish to consult a traditional doctor about the quality of one's milk. He will invariably advise the mother to stop feeding on one of the breasts, and thereby indirectly prepare the ground for malnutrition.

Milk secretion, once established, is maintained by several factors of which the most important is complete and regular emptying of the breasts by the baby. Hence, it is important to put the baby to the breast regularly as soon after birth as possible. As a matter of fact, when the baby wakes up from sleep after the delivery and the mother has also had some rest the baby should be put to the breast. The act of suckling on the breast not only causes milk secretion by emptying the breast but also facilitates flow of milk by means of a reflex action called the 'let down' reflex. That is why when the mother is feeding the baby on one breast, milk flows from the other breast as well, because the 'let down' reflex acts on both breasts.

The other factors necessary for maintaining the flow of milk are adequate nutrition in the mother and intake of sufficient fluids. Most mothers worry about their ability to breast-feed their babies successfully. Undue anxiety can cause the milk to dry up. In this connection it is interesting to note that the rural mother only rarely has difficulty with lactation; it is a problem usually of the sophisticated mother who is tensed up about her ability to cope with lactation.

How often should the breast be offered to the baby? This will depend upon whether one is going to feed the baby 'on demand' or whether some form of schedule is to be adopted. Perhaps in the first day or two, when the milk flow is not fully established, it may be better to offer the breast on demand. Repeated suction and emptying of the breast may facilitate the secretion of milk. After this a flexible schedule can be gradually established.

How long should a feed last? If the baby sucks vigorously, then in a healthy mother with good hard sucking from the baby and with the 'let down' reflex in the mother, the breast is emptied in about 10 to 15 minutes. After this time interval, the other breast may be offered. At a subsequent feed, the second breast is offered first so that it can be completely emptied if it was not so before, and so on. Thus, an average feed should last for about 20 to 30 minutes during which both the breasts have been offered.

How can one know whether the baby gets enough? If hunger has been satisfied, the baby will be relaxed after the feed and fall off to sleep. If not satisfied, the baby will be restless and constantly make searching movements with his mouth.

Satisfactory weight gain, about 6 ounces per week, is another sign of adequate milk supply. Babies who do not get enough milk may be constipated and pass one hard motion daily instead of the usual three to four soft bowel movements of the baby who gets enough breast milk.

FEEDING DIFFICULTIES

A normal full-term baby is born with all the reflex mechanism required for feeding. An important reflex is the rooting reflex, by means of which when the cheek near the corner of the mouth is touched by the nipple, the baby turns his head towards the nipple and roots with its mouth around it for the purpose of sucking. Most mothers do not appreciate this and try to hold the baby's head whilst offering the breast. Babies do not like their heads being held or restrained, and rebel against this. This may become a frustrating experience for the mother; hence during breast-feeding the baby should be held in a comfortable position and the side of his mouth is brought to touch the nipple. He will turn his head round and fix his mouth round the nipple for suckling.

Other reflexes required for intake of milk are those of sucking and swallowing which are present in all babies except the very premature ones.

The baby does not suck at the nipple like one would suck at a straw, but actually 'milks' it by rhythmically pressing it against the roof of his mouth with his tongue. During this rhythmic movement of 'milking' the nipple and swallowing the milk, some air is also swallowed. In the stomach the swallowed air floats as a bubble over the milk and should be allowed to be 'burped up' to avoid discomfort. Hence half way through a feed and also at the end of it, the baby is held over one's shoulder and the back rubbed lightly. In a few minutes the air bubble will find a way up and come out with a 'burp'. The procedure is referred to as 'burping the baby'. The baby may show signs of discomfort until he has burped and may continue to spit up small quantities of milk until burped.

Feeding difficulties may be due to causes in the mother. As milk secretion begins and the breasts become engorged with milk some amount of discomfort and even pain may be experienced by the mother. Emptying of the breasts by regular sucking will soon relieve the pain but in some cases, if the baby is not sucking enough, manual expression or application of a breast pump may become necessary to empty the breasts. Similarly, most mothers feel abdominal cramps during feeding in the early days of delivery. This is because of contraction of the uterus which gradually becomes smaller and returns to normal size, under the stimulus of breast-feeding.

Very eager forceful sucking by the baby may cause a small abrasion on the nipple – called a 'fissure' – which is painful and interferes with feeding. When there is a fissure on the nipple, it is advisable to stop offering that breast and to express the milk and feed the baby with a spoon until such time as complete healing takes place. If suckling is continued on such a breast infection may occur which travels rapidly

into the breast tissue and causes an abscess. Minor deformities of the breast, like retracted nipples, may also interfere with proper feeding.

FEEDING TWINS

The smaller of the two is fed first and should be offered one side for 10 to 15 minutes and then the other side; the larger twin is fed next beginning with the second breast for 10 to 15 minutes and then transferring to the other side for an equal period.

With twins it should be remembered that as growth progresses demand will soon outstrip the secretion of milk in the breasts, and so supplementary feeds should be introduced as early as possible.

Posture during feeding – The baby should feel secure in the mother's arms and should be comfortable. He should be held cuddled on one arm when the feed is being offered, leaving the other arm free to pat or caress him or to adjust his clothing. Feeding is an intense experience for the baby, who will be seen to go red or even sweat; any disturbance or discomfort during a feed is strongly resented. Hence it is best to select a quiet part of the house for the baby's feeds so as to avoid interruptions and noise from other children or family members.

DIET OF THE MOTHER DURING LACTATION

The nutritional needs of the mother who is breast-feeding are a little higher than during pregnancy. If the mother's nutrition had been adequate during pregnancy she would have accumulated body stores to get started on breast-feeding. If her nutrition during pregnancy was not adequate she has obviously drawn on her own body to supply the needs of the foetus. If her diet continues to be poor after the baby's birth, she will continue to draw on her own body to supply the nutrients required in the breast milk – e.g. calcium from her bones, iron from her body stores and so on. Moreover, as demands for nutrients on the mother's body increase during pregnancy her own activity diminishes as pregnancy advances, whereas during breast-feeding the demands for breast milk continuously increase and the mother's activity also increases several-fold what with doing the house work and looking after the baby. Hence during lactation her nutrition needs even more care than during pregnancy.

Commonsense will show that the nursing mother should include in her diet all the elements of food that the baby is drawing from her milk. The baby receives a large amount of calcium in the breast milk for building his bones which grow rapidly as he increases in size. Other body-building foods and vitamins are also lost in her milk. To replenish these the mother should be on a well-balanced diet containing meat,

eggs, fish and green vegetables in addition to the staple. She should drink milk or curds in quantity as much if not more than what she is secreting as breast milk. It is not true that milk is a 'bad' food for a woman or that if she eats eggs during lactation her baby will turn into a thief or become bald. Such foods will also not produce 'hot' or 'cold' effect on the baby.

Artificial Feeding

Bottle-feeding is growing common all over the tropics. In most instances this is because of a blind desire to follow what the so-called sophisticated people in society do. It is important to remember that in spite of the claims of the manufacturers of artificial milk formulae this form of feeding is only a poor substitute for breast-feeding. Breast milk has a composition ideal for the human organism, and in the first six months of life when the quantity secreted is adequate for the demands of growth, most babies in the tropics grow as well as their counterparts in the Western world. Furthermore, babies who are breast-fed tend to have fewer abdominal upsets than those on artificial formulae. Breast milk is secreted at body warmth, is clean and so needs no processing before offering to the baby. It has also the advantage of convenience, being available whenever required.

Besides being the natural food of the baby, breast milk contains several substances which act together to protect the baby against infections, especially those of the gut. The incidence of diarrhoeal disease, for example, is much lower in breast-fed babies as compared with those who are artificially fed. Breast milk also contains a large number of white cells, mainly macrophages and lymphocytes, which also help to protect the baby against bacterial and viral infections.

Active lactation in the mother suppresses ovulation and the subsequent pregnancy is delayed. In rural communities where breast-feeding is common, the average birth interval tends to be between 18 and 24 months. On the other hand, if the baby is stillborn or if there is neonatal death so that breast-feeding does not occur, the subsequent pregnancy tends to be much earlier. Several studies have shown that the family spacing effect of breast-feeding is maximum during the first nine months of lactation, after which it decreases rapidly and has almost disappeared by twenty-seven months after the delivery.

The greatest dangers of artificial feeding are infection and over-dilution. Most tropical households are not capable of maintaining the hygienic standards required for the preparation of clean milk formulae, and whenever artificial feeding is attempted gastro-intestinal

infections occur. Some of these episodes of diarrhoea are severe enough to endanger life, especially in rural areas where medical care is not easily available. The second danger, over-dilution, is equally common. The expense of the tin of powdered milk is beyond the purse of most parents; under the economic stress, the temptation to use less than the stipulated amount of milk powder per feed is just too great, with the result that the baby suffers from chronic under-feeding.

It is best never to embark upon artificial feeding without consulting a doctor or the nurse at the clinic.

Supplementing the Baby's Feeds

When does one start adding other items of food to the baby's diet of milk? Medical opinion has varied over this question. In the past it was the practice to supplement the baby's diet of milk in the latter half of the first year; one has often heard old people say that until the baby gets his teeth there is no need to give any additional foods except milk. The present practice is to supplement milk feeds with a variety of foods both commercial and home made, as early as possible. Pre-cooked cereals and sieved foods packed in sterile cans or jars are available in the market, so that the baby can enjoy a varied diet very early in life. There is of course no particular advantage in this except that the baby can get used to a variety of tastes before he can develop his own likes and dislikes.

Most babies in the tropics grow well on breast milk alone for the first four to six months of life. After this age the secretion of milk cannot keep pace with the demands of growth. Hence, it is best to begin introducing additional foods in small quantities from the age of three months so that the baby will be taking them in a fair amount by the time he is six months old. Most mothers begin with a porridge made from a staple like rice or maize flour cooked in water or milk, with sugar. It is best to start with a thin porridge which is almost the same consistency as milk so that the baby does not baulk at the first mouthful, and to introduce it in small amounts. Once the baby is used to the taste the porridge can be thickened gradually over a period of weeks. The nutritive value of the porridge can be improved by adding fresh cows' milk or by cooking it in milk.

Egg is another food which is commonly used for supplementing the baby's diet. It is an ideal food, requiring no complicated preparation, easily digestible and contains all the nutrients required by the baby at this age. One of the nutrients required by the growing body is iron to make blood; as the body grows the blood volume also increases. Milk contains virtually no iron and for the first few months the baby has to

depend upon his own stores of iron laid down during foetal life. Egg-yolk is a rich source of iron as well as of protein and hence a valuable item to add to the baby's diet. The yolk of a soft-boiled egg is offered in a small amount first, either alone or mixed with milk or porridge, and as the baby gets used to the taste, the quantity is increased.

Every item of food is a novelty to the baby and his tendency is to spit it out. One should not get discouraged at this and after a few days it should be tried again and so on until the baby gets used to its taste. In the process, one should make sure that a battle of wills does not develop. The second principle to remember is that all early supplements to the baby's diet should be of a liquid consistency so that the baby does not get upset on finding little lumps in his food.

Fruit can be introduced at any time in the baby's diet, and most babies like it. Fresh orange juice or a commercial preparation like Ribena can be offered from as early as the first month of life. Later, as the baby gets used to taking porridge from the spoon, ripe bananas mashed in milk or mashed paw-paw can be offered. All other kinds of fruits, e.g. apples, plums, etc., need to be cooked (pureed) before mashing and offering to the baby.

The supplementary feeds are usually offered before a milk feed except in the case of the very hungry baby who gets irritable if hunger is not satisfied immediately. In order to avoid frustration for such a baby, milk is offered first and the supplementary feed can be given in between, for example, before changing over from one breast to another. In due course, the baby learns that hunger is satisfied from what he gets by the spoon and begins to accept the supplement as his regular food. In most babies any food placed on the front of the tongue is spat out because they have yet to learn feeding from the spoon. The mother should expect much spluttering and spitting in the early stages of spoon feeding.

By the time baby is about six months old, the average intake should be as follows:

6.00 a.m. – milk feed plus porridge or egg, or cereal.
10.00 a.m. – fruit juice; milk feed if required.
12 noon – milk feed; mashed fruit.
4.00 p.m. – milk feed.
6.00 p.m. – milk feed plus porridge or cereal or commercial baby food.

By the age of six months, when teething begins, the baby likes to bite on toast or biscuit which should be offered in the mid-morning or mid-afternoon. As he grows older and more teeth come he is able to chew well and a large amount of his intake can be given by the spoon.

Finely chopped fish, liver or minced meat may be introduced in his diet. At this stage, the baby can sit at the table with the rest of the family and eat. He can handle a small spoon well from about the age of one year, so that he can be given a small quantity of food in a plate of his own. Very little of this will of course reach his mouth and most of it will be strewn around but it is a good beginning at learning to feed himself.

Eating Habits

It is important that the baby should sit with the rest of the family to eat as soon after six months as possible. In this way, he begins to realise that eating is a pleasurable experience in which all the family members participate. Simple matters of hygiene, like washing the hands before eating, are also learned in this way.

The baby's food should be served to him separately from that of the rest of the family, so that the mother knows how much is eaten every time, and also the kind of food that he is eating.

After the age of one year, breast milk is still the most important kind of protein, and ideally should be continued until the age of eighteen months to two years, but now the child should be gradually brought to the adult type of diet. This process is known as weaning, which means getting accustomed to the full adult diet, *not* stopping of breast milk. If the food at home consists predominantly of a staple it is important to see that the child gets a good mixed diet with plenty of body-building protein foods like fish, meat, egg, etc. His daily intake of food should include:

(1) *Body-building protein foods for growth*
(a) Frequent breast feeds.
(b) Large helpings of peas, beans or groundnuts which are cooked and mashed into a sauce.
(c) As often as possible, animal protein foods like cows' milk which has been boiled and cooled, fish, eggs, meat or liver.

(2) *Protective foods*
Like fresh fruits, fruit juices or green leafy vegetables chopped up very fine.

(3) *Foods that give him energy* to play and grow, particularly the staple foods like rice, maize or sorghum.

At this stage, it is important to bear in mind that though the child eats the same food as the grown-ups in the family, his daily requirement is much more compared to his body size whereas his stomach capacity

is small. Thus he needs several small feeds in the day. In most homes the best meal of the day is the evening meal; for the growing child at least three meals a day are required containing a mixture of the various nutrients described above, in addition to milk.

Nutritional Disturbances

One of the most prevalent problems affecting infants and young children in the tropics is malnutrition. Hospital and clinic records show that not only is malnutrition a common problem for which medical help is sought, but it is also a factor complicating many other childhood diseases, making them more severe and treatment more difficult. The malnourished child tends to catch illnesses more easily and recovery from any infection is very slow in him.

Besides the full-blown cases of malnutrition that one sees in hospitals, a moderate form of malnutrition is much more common. Health surveys of rural communities in many different countries in the tropics have revealed that about half the children suffer from poor nutrition. It is therefore necessary to take a close look at the causes underlying this common problem of malnutrition in early childhood.

Most babies in the tropics grow well for the first four to six months of life; breast milk is adequate for the needs of growth up to this age, after which the baby's needs for nutrients outstrip the quantity of milk secretion. Most mothers supplement the baby's feeds at this age and so it is not a lack of supplementary foods that causes malnutrition but a lack of knowledge concerning the right kinds of foods to be used as supplementary diet for the baby. For religious reasons and because of tribal taboos, eggs, meat and other body building foods of animal origin are not given to the child. However, the baby can do equally well on similar body-building foods of plant origin like peas, beans, chick-peas, grams, etc., which can be cooked and mashed into a sauce for the baby.

Various child rearing practices can cause physical harm. For example, the practice of sending a child away to the grandparents in order to make him give up breast-feeding. A very good source of nutrition is abruptly stopped; to this is added the psychological trauma of separation from the mother. The inadequacies in the child's diet are multiplied by the loss of appetite due to change in surroundings and separation from mother, and the child takes a downhill path to malnutrition.

In most cases, the reason for such an abrupt separation with the child is the discovery by the mother that she is pregnant again. For this reason it has been said earlier on that pregnancy in the mother is a

danger signal for the toddler. The pregnant mother cannot keep on breast-feeding the toddler for any length of time, but there is certainly no truth in the belief that jealousies are established between the child and his unborn sibling. When a mother finds herself pregnant, the child's diet should be altered gradually in such a way that he takes more and more of a mixed diet and is less and less dependent on breast milk. At the same time fresh boiled cows' milk should be gradually substituted for breast milk.

Infections and illnesses have a close correlation with nutrition. Hence, during sicknesses it is important to see that the child's nutrition is maintained and on recovery an adequate diet should be given so that he can regain all lost ground. Most tropical mothers believe that only 'light food' should be given during an illness, and so the sick child gets only tea or watery porridge. Sometimes, purgation is super-added to get rid of the disease in the stomach. All such beliefs and practices are harmful. In case of any illness in the child medical advice should be sought concerning his diet. One of the most dreadful illnesses in early childhood is measles; besides the different complications that may result from an attack of measles, onset of malnutrition is by far the commonest occurrence. In most cases this is due to parental ignorance regarding special nutritional needs of the baby in sickness, and to superstitions concerning foods being 'hot' or 'cold' and their incompatibility in various illnesses.

Nutrition is such an important part of child-rearing, especially in the tropics, that all parents should make it a point to know the rudiments of it, and in cases of doubt, medical advice should always be sought and old superstitions ignored.

Chapter 5

Growth and Development

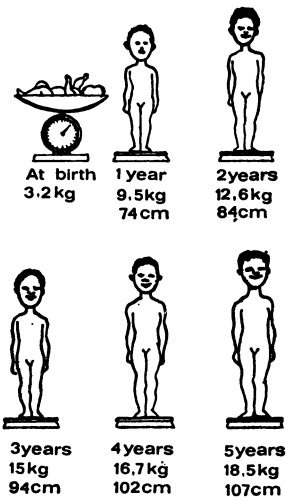
All through childhood the important biological process of growth takes place. At the same time, new skills are learned and old ones perfected. Both these are extremely sensitive processes and any setback to the child – physical, psychological or environmental – can slow them down. On the other hand, with proper care and nutrition there is no reason why the optimum in growth and development cannot be achieved. This is already noticeable in children of the higher socio-economic class in the tropical countries who reach standards comparable to those of children from the affluent societies.

By growth is meant an increase in the size of different organs of the body. Such an increase in size may be due to an increase in the size of each individual cell or unit forming that organ, or an increase in the total number of cells, or both. In other words, all through childhood there is a continuous formation of new body tissues, and the food that the baby eats is not only utilised for providing heat and energy and for wear and tear, but a sizeable proportion is also channelled into forming new tissues in the body.

The speed at which growth occurs varies at different age periods. In the first year of life growth is fairly rapid, so that the baby doubles his birth weight by the age of six months and trebles his birth weight by the age of one year. After this, growth slows down so that by the end of the second year the baby is four times his birth weight. For the remainder of childhood growth continues in small yearly increments until puberty is reached, when again rapid growth occurs at the end of which adult body proportions are achieved.

Different body systems grow at a different pace. Thus the brain and the nervous system grow maximally in the first two years of life after which very little growth occurs. This rapid growth of the nervous system is matched by the attainment of a variety of skills like walking, social adaptation and speech, early in childhood. Any serious disturbance of growth may affect the developing nervous system and cause a delay in the development of these skills.

Growth can be measured in several ways, but is traditionally assessed by measuring the height and weight of the child and comparing these



with the average for the age. Hence it is important that the baby's weight should be recorded at regular intervals to make sure that his growth is normal. Most children's clinics are organised to do this so that the growth of a large number of children can be supervised by the clinic nurse or the doctor. The clinic record card consists of the weight curve which is the optimal growth curve derived after weighing healthy children of different age groups. The baby's weight is marked on the record card and at successive visits it is compared with the average weight curve. At the first indication of the baby's growth falling below normal, the nurse or doctor can take appropriate measures to correct the defect. This may be related to the child's nutrition (which is the commonest cause of deficient growth in the tropics) or to a recent sickness or some other problem.

Even though there is an 'average' growth curve, all babies do not grow at the same pace. Some will be small with petite features and some will be big and heavy; these body characteristics are maintained all through childhood so that the former grow into small adults and the latter will end up tall and of a heavy build. These individual variations are usually genetic in origin and can be better appreciated by taking into account the body-build of the parents. Thus, where growth is concerned, 'normal' is a wide range and so long as the baby's weight stays within the range of normal for his age there should be no anxiety.

Besides increase of weight and height, the term 'growth' also includes various physiological processes which occur at predictable periods like, for example, eruption of teeth or growth of bones. The baby is born with a full complement of milk teeth and if an X-ray is

taken of the head at birth, the jaws will show the presence of the milk teeth. At different periods different teeth erupt through the gums and the process is known as 'dentition' or teething. Unless the disturbance of growth is very severe, dentition is not affected by illnesses or nutritional deficiencies. Similarly, at predictable age periods different bones of the body develop centres of bone formation which become visible on X-rays. In a true assessment of growth, bone X-rays are taken to see if there is a delay in the development of these centres. Failure of growth due to nutritional deficiencies does not affect the development of these centres, whereas in cases of growth failure due to defect in hormones there is usually a delay in their development.

Watching the Baby Grow

Observing the baby grow and develop into an individual of different skills and a definite personality is one of the most fascinating experiences. Secure in the love of his parents, the child explores the world around him, makes social contacts and begins to understand his environment. Often this may create trying moments for the parents who are anxious to know whether he is developing properly or not. Again, like growth, development also has a wide range of normal depending upon inheritance, environment, and several other factors.

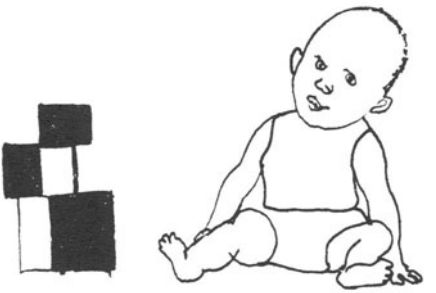
For the first three months the baby would appear to be completely wrapped up in himself. He is busy getting adjusted to a new form of existence, setting into action his various physiological systems, deriving

nutrition for growth and getting accustomed to the new physical environment into which he has come. He is tuned completely to his sense of physical well-being and any discomfort in the form of hunger, wind or a wet nappy evokes the response of crying which is the only form of vocalising or protest that he is capable of. The first three months are trying for many parents; occasionally, after the second month the mother may find that the baby responds with a fleeting smile when she talks to him. It is a sign of socialisation and shows that after all the baby is a social being capable of responding to love and care with friendliness.

At the end of the three months, the baby emerges from a pattern of reflex behaviour into a definite 'personality'. His inborn friendliness is evident in the early smile, playfulness and interest in his surroundings. He is also developing control over the muscles of the body beginning from head downwards. Thus, at the age of three months the baby can hold his head up and also move it around in response to sound or light. Later by about the age of six months he develops enough control over the back muscles to be able to sit up by himself and between the ages of eight to ten months he is able to stand.

Sitting Up and Crawling

At the age of eight or ten months, when the baby is able to sit up, and later crawl, there is a sudden widening of his environment which provides him with an important learning experience. Before this time, his physical environment was limited to his cot or pram, the sides of which also limited his line of vision; all his needs were brought to him including his toys. When the baby is able to sit up he can look around in the room and watch all the family activity going on; his vision is sufficiently developed by now for him to be able to notice a toy or a ball from across the room. When he learns to crawl he can move towards toys and other articles that attract him and learn by such exploration.



Standing and Walking

Soon after learning to sit and crawl the baby develops further muscle control and is able to stand and then, after a few months, to walk. Both these functions are first carried out with support but later independently. The baby soon realises that walking is a much quicker way of getting about and begins to prefer it to crawling. Perfection of these two functions further widens the baby's physical environment.

When the baby first learns to walk, the gait is clumsy and wide-based. At this stage, many parents wonder whether there are abnormalities of joints or muscles causing the peculiar gait; with experience, the baby gains proper control over his legs and the gait becomes steady. Similarly, the feet tend to be flat in the early stages because the arches have not yet developed. As walking is perfected development of the arches of the feet occurs and the flat feet disappear.

High-Chairs and Baby Walkers

High chairs are specially designed chairs for the baby and mainly used during feeding. If the baby eats with the family, a high chair is useful because then the baby can watch activities at the table and also learn to feed himself with a spoon from his own plate. If the baby is to eat by himself a high chair does not serve much purpose. If used, it should have a broad base to prevent tipping over and should have an arrangement for strapping the baby in.

Baby walkers are chairs with rollers or wheels. When the baby sits in the chair his feet can touch the ground; he can then move himself around by pushing with his feet against the floor. Whether baby walkers can teach the baby to walk early is doubtful; perhaps by enabling the baby to be easily mobile around the room they may increase his exploring activities but then danger from accidents is also more likely.

SHOES

Shoes are not necessary until the baby has started walking. If the weather is too cold the baby's feet can be protected by woollen socks.

The first pair of shoes bought for the baby should be made of soft material and with a thin sole so that the shoe can bend easily in any direction and also is not too heavy. The baby's feet grow rapidly like the rest of his body and so one should always check that the shoes have not grown too tight which would cramp the baby's toes. Tight shoes can cause pain and also may lead to deformities of the toes or the feet. As a rough estimate, the shoes are a good fit if one can press half a thumb nail between the baby's toes as felt with the shoes on and the front end of the shoe.

Development of Language Function

The ability to communicate with others, that is development of language function, is a strong urge in all babies which is evident from very early life. The baby of two to three months will be making cooing sounds to himself and this may develop into babbling, squealing and grunting sounds that the baby makes about the age of six or seven months. The baby is trying to practise making sounds similar to those which he hears around him until he has perfected them. Thus, proper and sound hearing is an important aspect of the development of language. Unless the baby hears speech he cannot develop language function.

Some babies learn to speak earlier than others. The baby's own personality, stimulation at home and attitudes of the family members are all important factors which determine whether the baby will speak early or late. Some babies are outgoing and friendly, and wish to express themselves early in life, whereas others are quiet and wish to observe the world around them before exploring it with words. Stimulation from the parents counts for a great deal. If the mother is relaxed, self-confident and happy she will talk to the baby whilst she is attending to him or doing the house work; on the other hand, if she is tense and not sure of herself, she will be quiet and thus the baby does not receive any stimulation. If the members of the family are authoritarian, maintaining a strict discipline, the baby may feel uneasy and may not wish to speak. Like the grown-ups, babies also need a cheerful friendly atmosphere and stimulation to make conversation. All things being equal, early development of language function is considered by some experts as a sign of good intelligence. The converse is not true; many babies have talked late and yet are intelligent.

It is about the age of 8 months that the first meaningful words are spoken. At about this age the baby can make the sound 'ma' or 'ba' and

combines them together to say 'mama' or 'baba'. Very soon after he associates them with his parents and understands that 'mama' means the mother and 'baba' the father. He also now understands a few words such as his own name or the command 'no'. By the time the baby is one year old he will have a vocabulary of two or three words besides 'mama' and 'baba'. He will also understand simple commands like 'give to me'.

During his second year the baby becomes increasingly good at repeating the words he hears. He has developed by now a vocabulary of about 25 words which he uses regularly and also can understand the meaning of many more. As growth proceeds there is a proportionate increase in the baby's vocabulary; reading and writing ability develops about the age of four and soon after this the child is ready for formal training and education in school.

Chapter 6

Emotional Development and some Disturbances of Behaviour

As the child grows and his central nervous system matures, he acquires various skills as discussed in the previous chapter. The ability with which he uses these skills leads to an interaction with his environment. Out of this interaction the child's mind develops and can take over the control of inherited and subconscious patterns of behaviour. Thus, from early childhood, environment affects emotional and psychological development; on the other hand, the child learns from early experiences how he can adapt and alter his environment – an ability which is the distinctive feature of the human race.

At birth, the child enters two forms of environments – the physical one and the social-cultural one. The physical environment is easy to understand – the dwelling, the physical surroundings of the house and its neighbourhood, the geography, his toys, the furniture or other gadgets in the house, etc. All these items help him to understand the kind of physical world he has come into. His physical skills as they develop with growth and maturity will be moulded in response to interactions with this physical environment. The social-cultural environment is not so easy to understand. The attitudes of the family towards bringing up children, cultural beliefs and taboos, religious practices, the topics of conversation in the family members – all these provide the basis of the social environment which moulds the child's understanding of people and their behaviour.

The child learns from experience. When an experience is repeated it is remembered and then under the same circumstances the child can anticipate a sequence of events. Thus, the newborn baby learns from experience that when he is held in a certain position it is time for feeding; most babies can anticipate feeding by the time they are four to six weeks old. This capacity for memory and anticipation has its beginnings in the early weeks of life and because of his experiences in early life the child's reaction to similar situations later on can be influenced. Thus, happy experiences in the first months and years of life are important because they are concerned with the very foundations of psychological development.

When the hungry baby is fed and hunger has been satisfied, a sense of well-being and comfort is generated and a pleasurable experience is recorded. On the other hand, if a feed is not immediately available it causes tensions which may build up into frustration and anger, and the baby bawls. In a sense, life consists of a series of tension and relief of tension patterns of this nature. The inborn drives of the baby find their expression from these patterns. If the parents dote on the child too much, or if he is a first baby and every need is anticipated and supplied to him even before he asks for it, the baby may never learn to suppress his drives and eventually becomes 'spoiled'. It is also possible that his aggressive drives may never get a chance to be expressed and he may end up as a 'sissy'. On the other hand, if the baby's needs are constantly being ignored, his frustrations may mount sufficiently to find expression in abnormal behaviour and he becomes a delinquent.

The normal state of the infant is a dynamic one in which tensions are constantly being built up and relieved. Throughout the first year of life the tensions are mainly due to internal body processes – hunger, passage of faeces and urine, etc. But as the child grows older and development proceeds he comes into conflict with his environment. When he can crawl or walk he may get hold of a precious or a fragile object and is reprimanded by the mother's 'no, no'. Similarly, he finds that he is being put on a 'potty' and trained to perform on it instead of in his clothes or anywhere else in the house; he may find that he is being put to bed when he wishes to play. Even though he may object to these various kinds of training, his need to continue receiving his parents' love and approval makes him accept the judgement and disciplinary actions. In other words, all through the time that the child is passing through the difficult period of conflict with his physical and social environment, it is his parents' love which sustains him and helps him to mould his inner drives into patterns which are acceptable. A feeling of rejection in the child, either due to excessive harshness or neglect, can cause serious psychological disturbance.

Principles of Development

Just like physical growth, emotional and psychological growth also follows patterns which are recognisable. Some of these principles can be stated as follows:

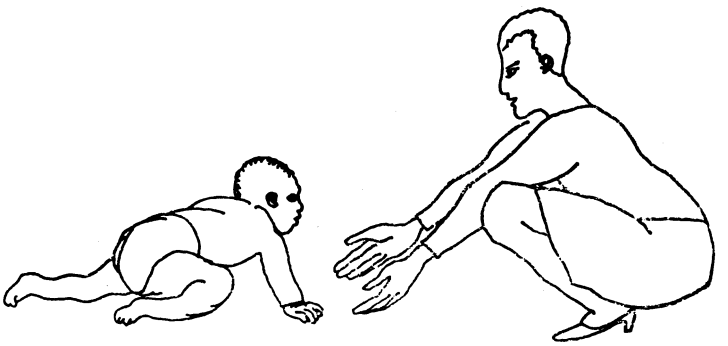
(1) Psychological development progresses hand in hand with biological growth and maturation. Thus a young healthy mother with a normal and uneventful pregnancy may have a normal delivery with a healthy baby whose growth and development is normal. Her next normal pregnancy may be followed by a difficult delivery producing a child

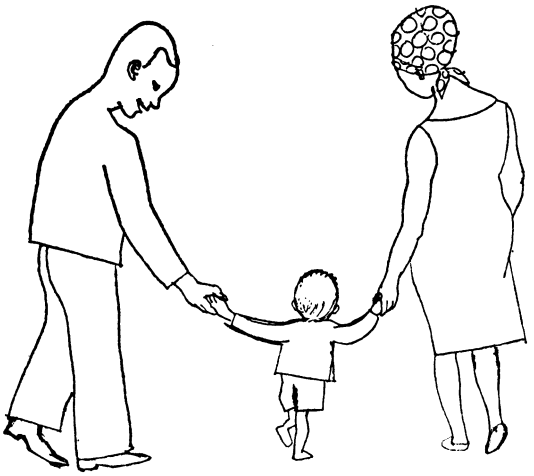
with brain damage. Here, even though the child's inherited traits from the parents have not changed, and the physical and social environment has remained the same, psychological growth will be interfered with due to brain damage.

As a child grows older, his understanding of the environment changes. For example, until the age of six months the child has no concept of self and has no identity; he does not 'think' of himself as separate from the mother. The experiences in these first months are being recorded at a subconscious level and, if they are happy, they will help to create a well-integrated personality. After this age, he begins to understand himself as being a separate identity from the mother; the former unity of the two personalities of the baby and mother is now replaced by a strong bond of love between them. After the age of one year the child begins to understand his name and later identifies himself as a boy or a girl. He still has a tendency to think of his physical environment as being alive, and thinks of plants, trees, flowers, toys or birds as having the same qualities as people. After the age of three years, a sense of reality develops even though some form of fantasy thinking may still persist.

As biological growth occurs and the child's understanding of himself and his environment develops, it is necessary that he should form a sense of mastery over the various challenges and conflicts presented to him by his own growth. Thus, mastery over walking, running, climbing, etc. helps the child's confidence in himself.

(2) In the normal course of growth and development, the child learns to postpone or moderate his needs and pleasures in order to be able to function as a responsible member of society. In the early stages of life the child's behaviour was chiefly on the pleasure-pain principle. If he was hungry and he was fed this engendered a sense of pleasure. If he was wet and he was changed it gave him a sense of well-being. But as he





grows older he learns that he must withhold urine, even though it causes discomfort, until the potty is fetched. If he is hungry he must wait until his hands have been washed before he can eat. He may not accompany father or mother every time they go out, and so on.

(3) Child development is characterised by progression and regression. When the child is in the process of mastering something new he may suddenly revert to previous behaviour. Thus, a child who was easy to put to sleep by himself may suddenly begin to cry at being put to bed. The child who previously enjoyed his bath may refuse to enter it.

Psychological Growth

The parents can assist in the psychological development of the child in several ways. By far the most important is the provision of a happy and stable family life without any tensions, and patient handling of the child in all his various conflicts. The following principles are useful to remember:

(1) The basic needs of the child should receive proper attention. These may be physiological (e.g. hunger, sleep, thirst, etc.) or emotional, like the feeling of being loved. When these basic needs are met the child gets a feeling of well-being, security and self-esteem.

(2) Various social demands which are made on the child do cause a feeling of tension and frustration. These should be presented gradually and be in keeping with the individual child's rate of biological growth. Thus, even though the child may eat at the table there is no point in

insisting on table manners until the child has learned to handle spoon and cup after which he can be gradually taught.
(3) Whenever new demands are being made on the child they should not be simultaneous but one after another. Potty training should not be insisted upon when the child is still mastering the art of walking. The parents should see that the child learns to master the various demands made on him so that he can gain self-confidence and learn to manage on his own.
(4) In any conflict the bond of love between parent and child should not be allowed to be strained. Any resentment or hostility should be temporary and should be patched up as soon as possible.

Behavioural Disturbances

BED–WETTING

This is one of the most frequent behavioural disturbances of childhood. A child who has been toilet-trained suddenly begins to wet his bed at night. He may be dry during the day and would use the toilet or ask for the potty whenever he wishes to pass urine. In some cases, if the child has a nap in the daytime he may wet his bed.

Clearly, bed-wetting is an evidence of regression towards infantile behaviour. In many cases, this is started by the arrival of a new baby. It is likely that the older child was not mentally prepared by the parents to anticipate the new arrival. When he suddenly finds that his mother disappears for a few days and then returns with a little one on whom she lavishes all her care and attention, he is confused and jealous. The father may also have very little time for the older child. The child's frustration and emotional upset finds an outlet in returning to infantile behaviour.

Punishment and scolding should be avoided. It is also harmful to 'shame the child out of it'. All these can cause a permanent psychological trauma on the child's mind. One should try and understand the basis of his strange behaviour. The child does not do it consciously and is as much surprised as the parents at this new symptom, especially when he himself is undergoing a mental turmoil.

Patience and encouragement to the child are most helpful. He should feel wanted and loved and parents should find time to spend with him. A few precautions may help to decrease the frequency of the episodes. The consumption of fluids should be minimal at the evening meal and after 6 p.m. no fluids should be allowed. Just before the parents go to bed, the child should be woken up and taken to the toilet. The child is shown that every day that passes 'dry' is marked on a calendar and a reward given to him if he is dry for three or four days consecutively,

and this number is then gradually increased as improvement occurs. This would arouse the child's enthusiasm and it becomes a joint 'project' with the parents. He gains in self-confidence and learns to overcome his troublesome symptom. If symptoms persist in spite of all efforts a doctor should be consulted to exclude physical disease.

SIBLING RIVALRY AND SIBLING JEALOUSY

Children always compete for parental love and affection. One child may be placid and self-contained and may make few demands; another may be very demanding and make the parents run round him all the time. The former may feel neglected and think the parents love him less.

Arrival of a new baby may spark off sibling jealousy. The mother is too busy feeding and bathing the baby. Whenever the older child gets near the baby he is pushed away for fear of harming the baby or carrying infections to him. The older child feels unloved and rejected and his emotional disturbance may find an outlet in several behavioural disturbances, including a hatred for the new arrival.

It is always advisable to prepare the older child mentally about the new arrival. Towards the end of pregnancy the parents should talk about the baby which 'mummy is going to bring'. If any purchases are being made for the baby the child should be taken along so that he can see the parents buying a mattress, or a cot or a bath tub for the baby. At the same time the older child may also be bought a small present or a toy to show that there is no discrimination. When the baby arrives, the older child may be allowed to 'help' in different ways like helping to soap the baby during the bath, or rocking his pram to put him to sleep. The parents should find time to spend with the older child so as to supply his own emotional needs. Most children love babies and it should not be difficult with a little guidance, to make the older child take on the role of a parent caring for the baby and loving him.

TEMPER TANTRUMS

Aggression as an emotional trait develops early. If the feed of a baby is interrupted, he gets annoyed and bawls. If a toy is taken away from the toddler he stamps his feet or sits down and gives vent to his feelings; if it is another child snatching the toy, the toddler will attack him.

In some children the emotion of anger is strong. If he wants anything or if he is being asked to carry out a task which he does not want to do, he may show this by crying, stamping his feet or rolling on the ground. The kind parent easily yields in the face of such a performance. This gives the child a powerful instrument – any time that he is crossed he cries loudly, flops down to the floor kicking his legs or rolling about. Sometimes during the emotional outburst the

breath is held so long that the child goes blue in the face and occasionally he may even have a fit. This is known as a 'breath holding attack'.

In such cases, the parents should guard against temper tantrums becoming a regular habit. If the child is throwing a tantrum he should be ignored. He soon learns that he cannot use it as a weapon. At the same time the parents should take care to avoid situations in which there is violent disagreement between the child and the parent.

REFUSAL TO GO TO BED

Difficulty with sleep begins about the age of one year. The baby who could be put to bed easily after the evening feed, now refuses to sleep and may even make a scene. Evening time is very exciting for the child; all the family is at home and there is interesting household activity. The father, other members of the family or older children may play with him and naturally he does not wish to leave all this excitement and go to bed. Hence, bedtime should be made as quiet as possible. All rowdy play should stop well ahead of bedtime.

The child may refuse to go to bed because he is afraid of being left alone. In such a case, after putting him to bed one of the parents may stay on in the bedroom until he is fully asleep. The child will try to keep himself awake by talking and singing and will make all attempts to draw the adult into conversation or play. The adult should avoid being drawn into this and allow the child to talk himself to sleep.

The child may be afraid of the dark and so refuse to go to bed. A light may be left on outside the bedroom or a dim night light may be kept on in the child's bedroom. Some children settle easily if they take a cuddly toy to bed. The toy acts as a companion and they do not feel so lonely.

NIGHT TERRORS

About the age of three, the child may wake up in the middle of his sleep terrified because of a dream. Night terrors and nightmares may be fairly frequent in some children. About this age, children have vivid imaginations and engage in fantasy play during most of their waking hours. The father who is pretending to be a dog is a real 'doggy' in the child's mind. All such play should not be carried too far in the evening before bedtime.

When a child wakes up with a nightmare, he should be asked to describe what frightened him. Talking about the terrifying object takes the fear away and he begins to see it in a different light. Even though it is very tempting to take the child into one's bed and provide the comfort and security of the parents' company this should be avoided because it may become a habit. After making the child talk about his bad dream and soothing him, he may be offered a drink and taken to his own bed again. Again the parent may stay on in the same bedroom until the child is fully asleep so that he should not feel lonely.

Bereavement

Sooner or later most children learn about death. In developing countries disease is common and families tend to be large because of the extended family system. And so virtually every child has some

contact with death. If it is not in the family, then it may be one of the animals or pets kept by the family. Dying and death give rise to anxiety in the child's mind. He may not be able to understand what is meant by the term, and thoughts about the supernatural may give rise to fear or anxiety. In all such cases, parents, family members and teachers should try and help children to cope with death and dying.

The immediate emotional effect on the child varies at different ages but the most important thing to do is to provide a straightforward explanation and to allow the child to discuss his feelings. Withholding an honest explanation only increases anxiety and emotional tension. Very young children may understand little except that death means a separation and can react with deep and profound grief. The child under the age of five may appear a bit confused or may even ignore the episode of death and yet his need for reassurance from the parents is equally great. Older children may become especially good and conscientious in the hope of restoring the dead, or become apathetic, withdrawn and cry a great deal. In all these situations emotional support is necessary.

Long-term effects of death in a family vary. If the parents know about some of these, they can be prevented. Bereavement in the family in early childhood does not, by itself, give rise to long-term emotional disorder except through the effect on family life. Personality disturbances occurring in later life are known to be associated with the death of a parent in the third or fourth year of life. In this respect, the death of the mother is always more traumatic than that of the father. Death of a sibling can have long-lasting effect because the child's own grief is complicated by changes in parental attitudes. For example, if the mother is preoccupied with her own grief, the young child may take it as rejection of himself. Older children can understand the situation better but may feel guilty about their own needs and the demands they make on the grieving family.

The reactions of the parents in these periods of stress are important. A serious illness in one child can arouse frustration and anger in the parents which focuses on the other children who, in turn, may react by becoming 'difficult'. In many communities, it is common to see that a baby born after the death of a child is considered a 'replacement' instead of an individual in his own right and the upbringing of such a baby may suffer.

Conclusion

Just as the child grows physically, he also grows emotionally and psychologically. The physical growth depends upon various biological processes in the body whereas psychological growth is dependent upon

the interaction between the child and his environment. The love and care of the parents provide the sense of being wanted and the sense of security on which various learning experiences of childhood are built. Any deviant behaviour in the child may be traced to the growth of new emotions and faculties in him as in the case of night terrors, or it may be due to various tensions as in the case of bed-wetting. A proper understanding of the child and the various stresses he is passing through will enable the parents to handle judiciously any behavioural disturbance which appears. Adequate explanation of various tension-causing phenomena in the daily life of the child may help his understanding of life and enable him to master conflicts that arise. Adequate physical, mental and emotional growth in childhood will lay the foundation of a creative adult life.

Chapter 7

Training and Discipline— Channelling the Baby's Development

As the baby grows, the wise parents create opportunities for him to make use of his skills so that he can get more adept, as well as derive a sense of accomplishment. Usually this is in the form of educational toys and physical play. With growth the baby's understanding of his social and physical environment increases. In order to enable the child to adjust socially, the parents should encourage formation of good habits, proper table manners, correct speech and politeness, as well as teaching him to avoid actions which are socially unacceptable. Some of these acts may be expressions of emotional traits which develop as emotional growth occurs, e.g. aggressiveness, anger or selfishness. Within limits, all these emotional traits are desirable qualities, being part of self-protection in later life; they become social liabilities only when in excess. It will be after years of upbringing in a stable home with well-adjusted parents that the child begins to understand how to control these emotional traits and to put them to a constructive use.

In all matters of training the question of discipline and reward comes up. Should one be strict with the child from his very early life or should one give in to all his demands and be a totally indulgent parent? Both extremes are bad for the upbringing of the baby. It is best to lay down rules and be firm about their observance. If the parents are lax on one day and strict on another, the child is confused and will not really understand discipline. Such rules will be concerning times of eating, dressing, cleanliness, bedtime, etc., and the objective is to make the child cultivate regular habits about personal life. After the age of five years similar rules will have to be formed regarding obedience, truthfulness, etc., in order to train the child into the process of character building. All such rules should first be explained to the child and the parents should make sure that he has understood them before they are enforced.

Breaches of rules may call for correction. This may vary from a patient explanation to scolding or punishment. Punishment does not always have to be corporal. It may be in the form of loss of a privilege, deprivation of a treat or an imposition. If any punishment has to be given, the parents should ensure that – (1) it is not unduly harsh so

that the child does not get a sense of injustice; (2) it should be proportionate to the offence committed; (3) the same offence should call for the same punishment and this should not vary according to the mood of the parents, and (4) all punishment should be a corrective for the child and not an outlet for the parents to work out their anger or frustration. The last rule is really important and the best advice one can give to young parents is to pause for a while before giving the punishment, to consider whether it will act as a true corrective or cause physical or mental harm to the child.

Just as bad behaviour or a breach of rules calls for punishment, so also good behaviour needs rewarding. Again this can be in the form of praise, a treat or a gift. Each time it should be made clear to the child why he is being rewarded and which action is being appreciated.

Training

EATING HABITS

Training in the formation of proper eating habits can begin from the age of about six months when the baby can sit up with support. He can then be fed sitting in a high chair or in an ordinary chair with cushions under him so that his head is well above the level of the table and he can watch the rest of the family eating. About this age he is able to handle a small spoon and bring it to his mouth as if to feed himself. He is given a small plate with food in it so that he can begin to learn feeding himself. By watching the rest of the family eat, the baby learns that eating is a pleasurable experience in which the whole family partakes.

Regularity of meal times should always be observed, and the habit of eating sweets in between should be discouraged. Of course one has to bear in mind that the baby or growing child needs to eat more often than three times a day and so wholesome snacks should be provided mid-morning and in the afternoon. If the child refuses to eat at one of the regular meals, because of playfulness or just naughtiness, one should avoid the temptation of offering him a biscuit or other titbit in between. If he learns that not eating worries the parents and makes them lavish attention on him, he will be tempted to do it again. The best approach is to ignore that he has refused to eat, and offer nothing until next meal time.

Food fads should be guarded against. Any new item of food introduced to the child may be spat out or rejected outright. In such cases force should not be used and too much cajoling persuasion should be avoided. After a few days' withdrawal the same food is introduced again and so on until it becomes well-accepted. Casual remarks about

various foods or about their preparation made at the table by other members of the family may be overheard by the child and may be the underlying cause of a food fad.

An important habit concerning eating is that of washing one's hands before coming to the table. Similarly, for the older child the habit of washing hands after going to the toilet should be properly emphasised.

PERSONAL CLEANLINESS

From the early days of infancy, the daily routine of bath and washing, changing the nappy as soon as it is soiled, etc., inculcate in the baby a sense of personal cleanliness. If the mother herself does not value cleanliness and does not emphasise it, the baby may never grow up to appreciate cleanliness. There are various aspects of personal cleanliness, e.g. clean clothes, maintaining clean hands and feet, avoiding play in the dust or dirt, washing of hands before meals and after going to the toilet, etc. All these need to be emphasised individually by the parents who should establish a proper daily routine in which all these aspects of personal cleanliness are attended to. Personal habits of the other members of the family are important because the child learns by observing their actions. If the family members do not find anything wrong in spitting about, the child will learn the same habit from their example.

TOILET TRAINING

In the small baby of about three to four months, sometimes the mother can anticipate a bowel movement or passing of urine either from the baby's facial expression or a grunt or a sound that the baby makes. With a bit of practice, the mother can 'catch' the bowel movement or urine in a potty. This is not true toilet training.

There are certain times when a bowel movement regularly occurs, e.g. on waking up in the morning or after a meal. If the baby is put on a potty these can be caught.

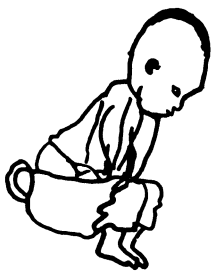
It is in the early part of the second year that the baby learns to associate a bowel movement with the pot. He also learns that his mother is pleased if he does not soil the nappy and performs in the pot instead. The baby is now well on the way to proper toilet training and will learn with adequate encouragement from the mother. At this age the baby has a keen desire to please the parents, and welcomes any act that arouses the pleasure or approval of the mother. Hence with praise or by signs of approval the baby can be trained in the use of the pot.

About this age certain emotional developments occur in the baby which may interfere with toilet training. The baby develops a tendency to possessiveness; usually this is towards his toys or clothes or one of the parents, like for example, 'my chair' or 'my mummy' but in some cases this tendency of possessiveness may be expressed for a bowel movement as well. He thinks it is 'his' and that he has made it. Often he will take the mother or nanny to show them a bowel movement that he has made. Such a sense of possessiveness may become acute and the baby may refuse to use the potty and will make all efforts to withhold defaecation. Gentle persuasion which does not escalate into an open conflict, and a lot of patience may be required to overcome this tendency.

Whilst the baby is still learning to walk, potty training is difficult. Walking requires the complex mechanism of muscle control for balancing and for movement, and all the learning ability of the baby is directed towards it. A new act which is equally complex, such as bowel training, cannot be learnt until walking has been properly mastered. Most babies have learnt to walk by the age of eighteen months; if bowel training is not achieved soon after this age, only then need the parents start to worry that something may be wrong.

REST AND SLEEP

Sleep is as essential as nutrition for growth and development; the worn-out tissues of the body are repaired during the period of rest, growth occurs and the tired mind acquires a new charge of energy. It is



therefore necessary to see that the baby forms regular habits regarding sleep.

Soon after birth, most babies sleep from one feed to another. Of course, babies vary in their habits – some are placid and sleep a lot and some are active and do not seem to require much sleep. By the time the baby is three months old, he will have a full night's sleep and take two naps during the day. At the age of one year, his sleep requirement has decreased and he is ready to give up one of his naps. Here it is best to manoeuvre him into giving up the mid-morning nap. After this time the morning is usually spent in play and the baby has a nap soon after lunch. Such a habit will be useful for the time when the baby starts nursery school.

Sometimes parents find it difficult to decide as to when the baby should sleep in a separate bedroom. When the baby has learned to sit without support and can sit up from a lying-down position he is usually capable of protecting himself from inhaling vomitus or regurgitated material. He should then be considered ready to be in a bedroom by himself.

Many babies wake up from sleep in the middle of the night and refuse to go to sleep again in their own beds. They are afraid of loneliness and wish for the company of the parents. Even though it is very easy to take the baby into one's bed so that everyone can get some sleep, this is not a good habit to form. In such cases, after soothing him, the baby should be led to his own bed firmly but without scolding. One of the parents may sit by the baby's cot for a short time to give him company, if necessary.

Putting the baby to bed for the after-lunch nap is usually easy; he is tired after the whole morning's activity and is ready for some rest. Going to bed at night may become a problem. Arrival of the father from work and of the older children in the family from school will be exciting for the baby. There may also be some play or romping about, and the baby does not wish to miss all the fun and excitement and go to bed. Hence all active play should cease before bedtime and a few routine activities may be gone through to prepare the baby for bed, e.g. putting him on the potty, changing his clothes, tucking the dolly or teddy bear in bed, etc. During this routine, other members of the family gradually withdraw; the child is then given his evening feed of milk and put to bed. Some children like to take a toy or two to bed. This gives them a feeling of security and should be allowed. Like all other rules, those for bedtime should be worked out and explained to the child and then enforced.

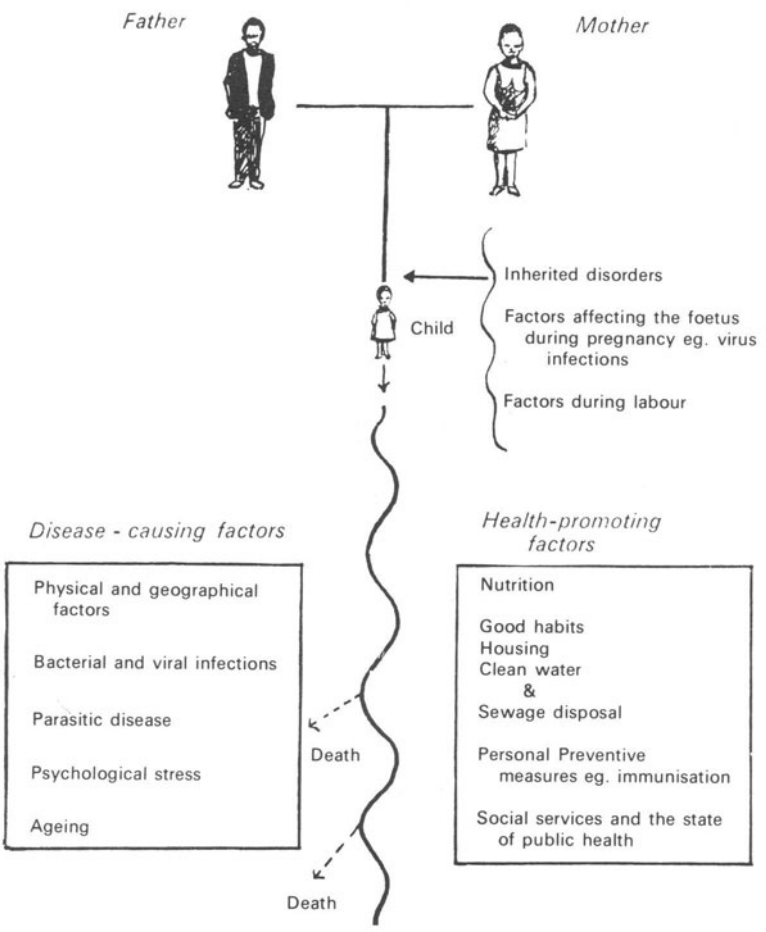
Chapter 8

Health and Disease

In most tropical countries there is a high rate of childhood mortality. In some regions it is so high that almost half the children born do not reach adulthood. Of course these figures apply more to rural areas than to cities and towns where an adequate health service is available. Such high mortality figures indicate a large-scale prevalence of illness in the young population, and some children recover and survive whereas others succumb. Since all sickness, however trivial, has a deleterious effect on growth and development, it is likely that recurrent or chronic disease in childhood may leave its mark on the growing child and cause ill-health in adult life. Thus a healthy childhood is essential to lay the foundations of health in adult life, and to achieve the optimum in growth and development.

Health and disease are due to interaction of several factors as shown in the diagram on page 64. The child inherits various traits and characteristics from the parents. This is called 'constitution'. One often hears people say that asthma is in the constitution of a particular child, meaning that the tendency for asthma has been inherited by the child. In tropical Africa, sickle-cell anaemia is a common condition due to an inherited defect in formation of cells. Exact data on the extent of this defect is not available, but parents in whose family the disease runs will be well advised to consult a hospital or a doctor to detect it in their blood. If one of the parents has completely normal blood cells, none of the children will suffer from the disease; if both parents are carriers of the trait, their children stand a one in four chance of suffering from the disease.

Various forms of congenital physical defects occur in children. It has been estimated that of such defects, 10 per cent are inherited, about 10 per cent are due to defective formation of the ovum or the sperm and the vast majority, namely 80 per cent, are due to extraneous factors and therefore potentially preventable. What exactly these extraneous factors are is still a subject of medical research, but from the available data it has become established that maternal illnesses in early pregnancy can cause damage to the foetus. This is especially so in the case of German measles; it may also occur in other virus infections. Exposure



of the pregnant mother to X-rays or drugs can also lead to malformations in the baby. When the scientific basis of the causation of malformations is generally appreciated, various superstitions will disappear. People will then realise that malformations are not caused by an animal crossing the path of the pregnant woman, or due to witchcraft, or because of an unhappy ancestral spirit, but are due to definite scientific factors. Equally important is the fact that a child with a congenital physical defect can be helped by modern medicine and even though the treatment may have to be prolonged in some cases, he can eventually overcome his handicap provided treatment was started very early in life. In many rural societies a malformed child is

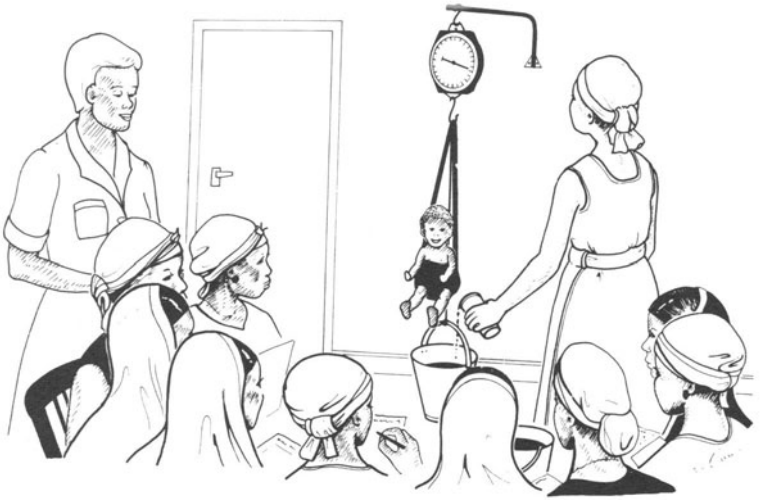
still considered to be a curse on the family and the tribe, and allowed to die of neglect lest he should bring misfortune on the tribe. Such attitudes should eventually change as people realise the capabilities of modern medicine.

At birth the child enters a physical and social environment which has an effect on his health. In the figure above, factors on the right contribute to good health and those on the left cause disease. The progress of the individual through life is determined by the pull exerted by these various factors; when the pull is more to the right he is in good health; when more to the left he falls ill and in some cases may even die.

Most babies in the tropics do well for the first six months of life. The supply of breast milk is adequate to meet the demands of growth and the baby is protected from a variety of illnesses by antibodies derived from the mother. As time passes the level of the antibodies in the baby's blood falls and with that his immunity declines, so that by the age of four to six months the effect of maternal antibodies is negligible. If measures are not taken to protect the baby from illnesses or to produce his own immunity by means of inoculations and other similar measures, the baby will be suddenly exposed to a variety of diseases. This is exactly what happens in most rural areas of the tropics. Malarial infection becomes increasingly frequent from the age of three to four months reaching a peak in the latter half of the first year of life; whooping cough and measles are usually seen in the second year of life, and anaemia which is widespread in the child population of the tropics occurs from the age of six months up to school years. In between the baby may get several attacks of diarrhoea and intestinal infection, especially when he is being taken off the breast and given foods cooked in water which is not clean. Thus the baby whose nutrition has begun to decline at the age of six months, and who is being exposed to a series of illnesses as the immunity derived from the mother declines, easily succumbs to the combination of disease and malnutrition. This explains the very high sickness rate and mortality in the young population of the tropics which, in some cases, may be as high as forty times that of countries with good standards of health.

Health in the Pre-school Years

So much is being written and talked about infant mortality and disease that the health problems of the pre-school child have receded into the background. And yet it is in this age group that most of the public health problems of childhood lie, that is, malnutrition, the common infectious diseases of childhood, the waterborne diseases, and anaemia.



Teaching in the under-fives clinic

The health needs of the pregnant mother and the infant are well looked after by special health services, like the antenatal clinic and the infant welfare clinic. No such special services exist for the pre-school child, and though an attempt is being made to expand the effectiveness of the infant welfare work by catering for the pre-school child as well, as for example the under-5 clinic or young child clinic, the effect is undermined by the fact that many mothers may have a new baby to look after or are pregnant, and have no time for the toddler. In some cases, custom and tradition may dictate that at this age the young child should be sent away to the grandparents. Thus without parental care and protection, and probably in acute misery because of parental deprivation, in the absence of well organised health and social services, the pre-school child is exposed to the crushing effects of under-nutrition, disease and an unhygienic physical environment. Together they take a heavy toll of life. It is necessary that parents should recognise the special health and nutritional needs of the toddler and ensure that these are met. These early formative years of life are important for social, emotional and intellectual development of the child which may be interfered with by chronic ill-health.

Hospital and clinic records show that the majority of admissions to hospital of young children are for malaria, respiratory infections, malnutrition and diarrhoea. They are also the major causes of death, and together are responsible for half the deaths occurring in an average

children's ward anywhere in the tropics. The other common causes of serious sickness in childhood are measles, whooping cough and other similar common infectious diseases of childhood; anaemia, hookworm and other worm infestations; tuberculosis and accidents. It does not require much imagination to see that all these are preventable diseases; also that they are not necessarily confined to the tropics. As a matter of fact the reduction of childhood mortality in the more affluent societies of the West is largely due to the control of these same illnesses coupled with better child care in the homes and development of child health services.

Prevention of Disease

COMMON INFECTIOUS DISEASES OF CHILDHOOD

Since the early days of Jenner's observation that people who have suffered from cow-pox are protected from small-pox, there have been major developments in the science of immunisation, and vaccines against several diseases have become universally available. Vaccination aims at introducing into the body either the weakened or killed forms of bacteria or viruses, or their modified toxins, so that the human body is challenged to produce an immunity against the disease without having to suffer from the disease. With all vaccines, immunity tends to decrease with time and so boosters are necessary. Most clinics and dispensaries now carry out immunisations as part of their daily routine; in addition the health authorities also mount immunisation campaigns from time to time depending upon the prevalence of any infectious disease in the area. Thus, immunisation is a useful protection for the child which should not be denied to him because of superstition or religious beliefs. Different health authorities follow different schedules of immunisation depending upon what diseases are prevalent in which age groups in that particular area; the schedule given below has been found useful in most areas of the tropics and is especially suggested for tropical Africa and Asia.

Age	*Vaccine*
Pregnancy	tetanus toxoid to the mother
Birth	B.C.G.
One month	smallpox
	triple antigen (D.P.T.)
	oral polio
Second month	triple antigen (D.P.T.)
	oral polio

Age	*Vaccine*
Third month	Triple antigen (D.P.T.)
	oral polio
	smallpox (if there was not a successful 'take' at the first attempt)
After nine months	measles
One and a half years	triple antigen } boosters
	oral polio }
Entry to school	smallpox
	B.C.G.
	oral polio
	triple antigen

PARASITIC DISEASES

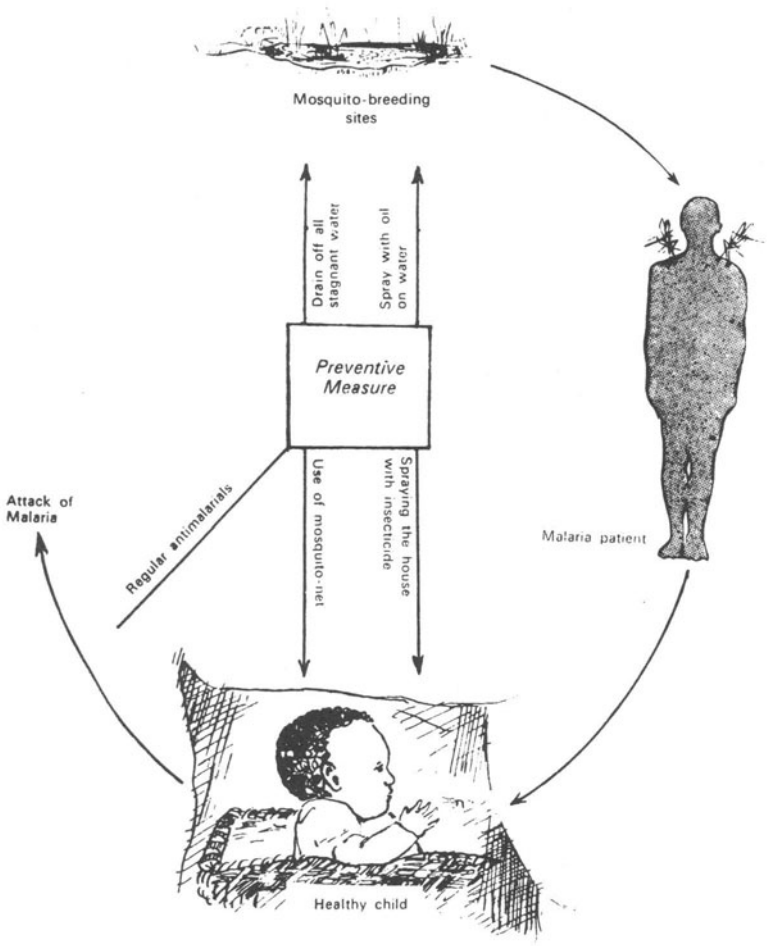
(1) *Malaria* – Malaria is widespread all over the tropics and a major cause of chronic ill-health in children. Improvement in statistics of infant mortality from those few areas where malaria has been eradicated show that possibly malaria is responsible for half the infant mortality in the tropics. Besides the well-known febrile episodes, malaria has been suspected of causing several other illnesses as well. The widespread anaemia seen in the younger age groups in most tropical regions is in all likelihood due to malaria; a chronic disease of the kidneys is known to be a complication of malaria, and chronic and recurrent malaria has also been associated with growth failure.

Most parents wish to know what medicines to give to their children in order to protect them from malaria. Clearly, there is no sense in giving an antimalarial drug to the child if no steps are being taken to protect him from mosquito bites. No parents should embark on a regime of malaria prophylaxis if they cannot free their homes of mosquitoes and protect their children from their bites. If the neighbourhood or the compound of the house is a site for breeding mosquitoes this should be attended to first – by clearing the bush around the house or removing the empty tins or other rubbish from the compounds, by making sure that stagnant water does not collect in the vicinity of the house and by spraying, if possible. In the home, the members of the household can be protected by mosquito-proofing the doors and windows, by regular spraying and by sleeping under a mosquito net. Only when these elementary precautions have been taken is the use of antimalarial drugs justified.

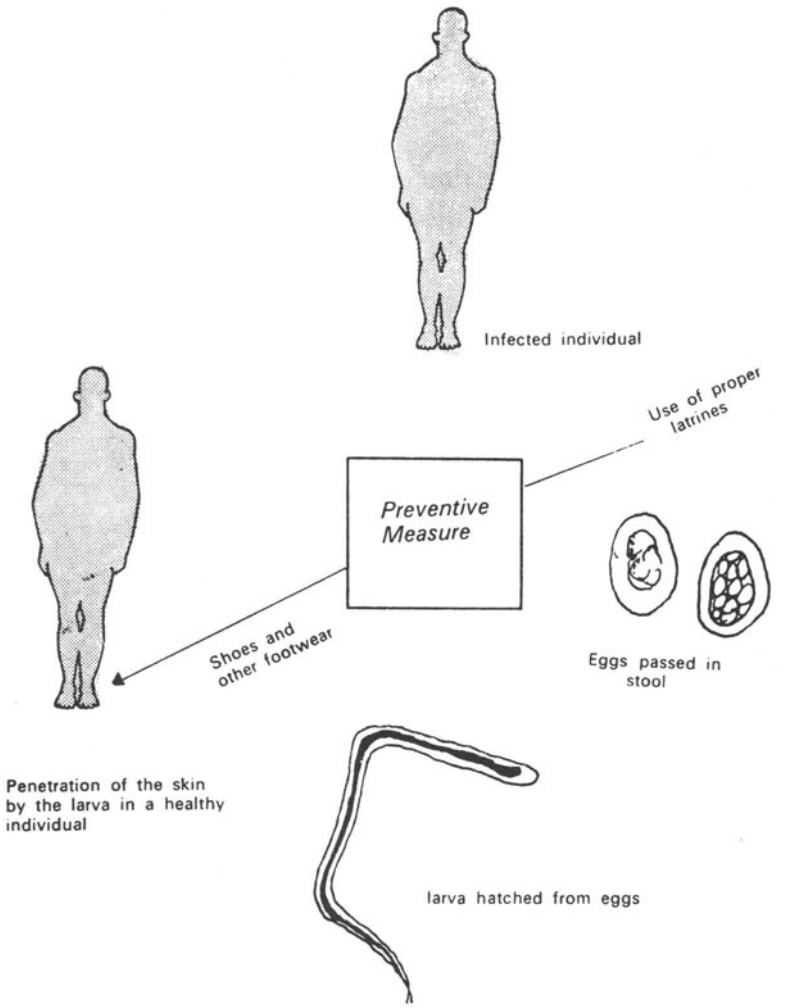
There are two drugs commonly used in the prevention of malaria – Paludrine and Nivaquin. Daraprim has been used extensively in some places but the malaria parasite easily becomes resistant to it and so should not be used without consulting a doctor or the local health

authority. If Paludrine is used, it should be taken daily, the dose varying from half to a whole tablet depending upon the age of the child. Nivaquin can be taken at weekly intervals and in most instances this will be sufficient, though ideally it should be taken twice weekly.

(2) *Hookworm and other intestinal worms* – The eggs of all intestinal worms are passed in the faeces of infected persons, hence heavy transmission from one person to another can occur in those areas where there are no proper systems of sewage disposal and where defaecation occurs in the open instead of in latrines.



Malaria Cycle



After being passed in the faeces, hookworm eggs mature into larvae which can penetrate the skin, enter the circulation and thence reach the intestines. Thus hookworm infection is likely if the ground area of the house is contaminated with faecal dirt, and if children walk around barefoot. From a very early age, the habit of using footwear should be

formed and children should not be allowed to play barefoot outside the house.

Roundworm infection is due to the ingestion of the eggs of the worm. It is, therefore, most likely in those areas where the water supply is contaminated and drinking water is obtained from shallow wells, unprotected streams or ground water. It is a good precaution to boil all drinking water not only for the children but also for the whole family, in order to destroy any contamination that may have occurred.

In both hookworm and roundworm infections worms may be passed in the stools; the former is minute and may not be visible on a naked-eye examination of the stool whereas the latter is easily noticed. Hookworm infection is much more dangerous and gives rise to anaemia; on the other hand with roundworms there may be no symptoms except when infection is very heavy.

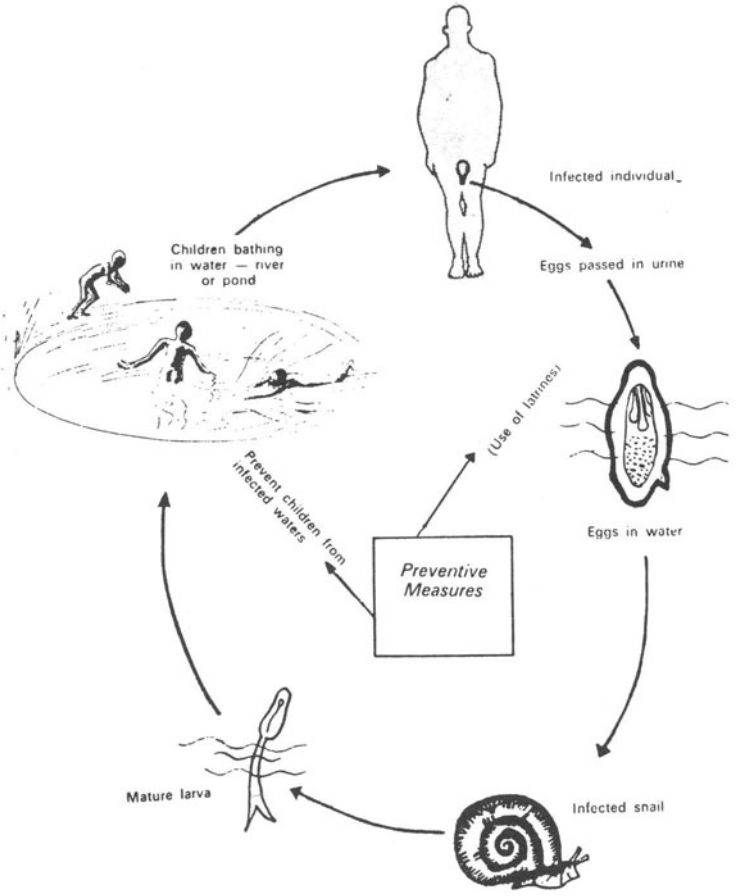
(3) *Schistosomiasis* – Schistosomal infection is widespread in tropical Africa. The gravid female migrates to the urinary bladder and discharges eggs into the host's urine. On reaching water, these eggs pass through several stages of maturation many of which are in the body of an intermediate host – the fresh water snail. When fully mature the larva can enter the human body by penetrating the skin, and after travelling through the body the gravid female finally reaches the urinary bladder to lay eggs.

In infested areas, large numbers of school children are affected – the common symptom being passage of blood in the urine. With chronic infection, permanent damage may occur in the urinary system.

Since the infection is acquired by bathing in infected water, it is best to keep children away from bathing in ponds and streams in infected areas. The treatment of an established infection is difficult because of the toxicity of most of the drugs in use, and in a majority of cases permanent cure is difficult to achieve.

PROTECTION FROM WATER-BORNE DISEASES

Infected water supply can be the cause of many serious diseases chiefly of the gastro-intestinal tract, e.g. diarrhoea, dysentery, typhoid and cholera, or affect other systems, like hepatitis and poliomyelitis. The chief source of pollution of water is usually sewage from washing and bathing in streams or lack of proper latrines. Water obtained from the municipal water supply is clean since it is kept under surveillance; but if the source of water is a private one, e.g. a well in the compound or a stream passing nearby, adequate measures should be taken to see that it is protected from pollution. If there is at all any suspicion, all drinking water should be boiled before storage. Home filters are not always efficient and in some cases may even become a source of pollution.



Thus it would appear that the large majority of childhood infections are preventable. Such prevention is not only commonsense but also essential to achieve the optimum growth and development in the individual child. In this respect, protection from disease is as important as good nutrition. The probable effects on body organs by illnesses in early life demand a healthy childhood to lay the foundations of good health in adult life.

Accidents

Accidents, burns and poisoning are major health hazards in childhood. Contrary to popular opinion, the home is not necessarily a haven of safety and this is especially so in families with few material and economic resources. Cramped and overcrowded housing, lack of facilities for rest and recreation, physical fatigue, undue mental tension and worries are some of the obvious factors responsible for the high incidence of accidents in such families.

Burns and *scalds* are extremely common in developing countries and the children's wards in the hospitals are full of them. They can have devastating effects and can disrupt a child's entire life. A superficial burn can heal in a few weeks but a serious burn affecting a large area of the body or deeper tissues may mean a long period in hospital with recurrent skin-grafting operations for many years afterwards. All this can precipitate emotional difficulties in the child as well as disruption of schooling. Simple precautions and some forethought can help prevent many of these tragedies. For example, in most rural homes cooking is done on the ground using a charcoal burner or firewood, with young children playing about. It is very easy for a child to fall into

Cooking at ground level—a common cause of burns

the fireplace or upset a pot and get burnt. Cooking on a raised surface helps to avoid such accidents.

With increasing use of pesticides in agriculture, availability of paraffin as fuel in most homes, and widespread use of drugs for human and veterinary use, the risks of accidental poisoning in children are very high. In any chemicals or drugs are kept at home or in the out-house, sufficient precautions should be taken to store them away from the reach of children and to label them clearly. Every opportunity should be taken to emphasise their danger to the children in the family. If the parents are not casual in their attitudes to these substances the children will also learn, from their example, to take all drugs and chemicals seriously.

Chapter 9

Sickness in Children

A sick child can cause considerable strain on the family. There will of course be the natural anxiety and worry, but in addition there may also be other physical strains, e.g. cooking special foods to tempt the child's appetite, additional washing and cooking if the child happens to vomit or has diarrhoea, lack of sleep at night, etc. The social life may be curtailed, or if the mother goes to work she is upset that she cannot stay at home and nurse the sick child. The other children at home feel neglected and demand more attention. It is important to understand all these various strains one is being subjected to during an illness at home in order to be able to cope with them If the family is under the care of the family physician he would recognise these strains and provide guidance and emotional support for the family in addition to treating the child's illness.

Most illnesses in children are acute. The immature tissues of the baby and the small child cannot put up resistance to disease or infections as strongly as those of the adult, and so children can take ill very easily; the younger the child the more acute is the onset and the more rapid the progress of any illness. Thus, at the onset of symptoms, steps should be taken to get treatment started immediately. On the other hand, the power of recovery in children is very good. In practice, one often sees small children who are alarmingly ill at one moment and well on the way to recovery within a few hours after treatment is started.

Because of the acute onset of illness and the possibility of rapid progress, *delay may be dangerous*, especially in babies and infants. An illness which may look mild to begin with can flare up into something very serious if there has been a delay in starting treatment. Respiratory infections in small children can progress to cause serious respiratory embarrassment in a few hours; in sickle-cell anaemia a crisis may cause severe blood loss overnight, and in bacterial infections the sepsis may spread through the blood or reach the central nervous system and cause meningitis if not checked in time. Hence, in cases of any illness in infants and children the simple rule to remember is that no symptom or change in behaviour, however trivial, should ever be neglected.

Recognition of Illness in the Child

Babies and infants cannot speak; also young children who may be able to speak cannot describe their symptoms well. Then how does one recognise the onset of illness in a child? The common illnesses of childhood cause one or more of the following symptoms. By observing their onset and progress one can judge the beginning of an illness and also how severe it is.

(1) *Change in behaviour* – This is the common accompaniment of most illnesses in children. A child who is normally playful and happy suddenly becomes irritable, does not wish to play by himself but clings to the mother, wants to be carried all the time and cries easily, is usually going in for some sickness. There may be loss of interest in toys or food and also difficulty in sleeping.

(2) *A runny nose* is commonly the first symptom of most virus infections of the respiratory system.

(3) *Coughs* and sore throats are further accompaniments of all infections of the upper respiratory system. In early childhood, about half the episodes of illness are due to infections of the respiratory system.

(4) *Hoarseness* – If any of the above symptoms are accompanied by hoarseness of the voice it indicates that infection and swelling of the larynx (voice box) is taking place. It is the narrowest part of the respiratory system and is situated at the entrance of the windpipe. Infection in this region with its accompanying swelling of the tissues may cause a further narrowing at the entrance of the windpipe and cause respiratory obstruction. This will be an emergency; hence all respiratory infections associated with hoarseness or breathing difficulty should be treated promptly at a hospital.

(5) *Fever* – The majority of infections in children cause a rise of body temperature. Babies and small infants are an exception; they can have a serious infection and may not develop any fever. In the tropics, the commonest cause of fever is malaria except, of course, in those areas where mosquitoes are absent – e.g. hilly areas or places with an active malaria eradication programme. Respiratory infections and the common infectious diseases of childhood like measles and chickenpox are other frequent causes of fever. Gastro-intestinal infections may cause rise of body temperature; as a matter of fact if the fever is very high in a child with diarrhoea it indicates a severe infection or toxicity and immediate medical care is required.

(6) *Appetite* – Loss of appetite is present in all sicknesses of children and may even be the first sign of the child not being well. The common picture of illness is one of the child who is irritable for a few days and goes off his food before developing other specific symptoms. Conversely, when the appetite returns, it is usually indicative of the beginning of recovery from the illness.

(7) *Vomiting* – Most childhood illnesses cause vomiting, especially upper respiratory infections. In many cases the onset of an illness is with vomiting followed by fever a few hours later.

(8) *Diarrhoea* – The majority of gastro-intestinal infections begin with loose stools for a day or so before the establishment of a watery diarrhoea. Loose stools may occur also during febrile episodes; similarly, oral antibiotics given for the treatment of any illnesses may cause loose stools. If diarrhoea is the first symptom of a disease, it is advisable to keep a specimen of the stool for the doctor to see. One of the soiled nappies or the potty may be kept inside a polythene bag until required by the doctor.

(9) *Convulsions* – These can be very alarming. Just as an adult shivers before the rise of fever, in the child convulsions may occur. In the case of measles and similar other exanthematous fevers and also in malaria, convulsions are frequent. In some cases, convulsions may indicate a disease in the central nervous system and may be the first indication of the onset of a serious illness.

(10) *Rashes* – Rashes are present in many of the common viral infections of childhood like measles or chickenpox. The day of onset of the rash varies with different illnesses, but usually a day or two may pass with fever before the appearance of a rash.

(11) *Pain* – Headache, sore throat, abdominal pain, body aches may all precede the onset of an illness and may be one of the causes of irritability mentioned earlier on.

GOING TO THE DOCTOR

When any of the above symptoms are seen in the child the anxious parents may wish to know when to go to the clinic or the doctor. Some of the above symptoms may be mild and may clear up spontaneously and one does not want to create an unnecessary fuss. On the other hand, if something serious is developing the earlier it is recognised and treated the better. As a general rule, *one should ask for medical aid if any of the following symptoms are present*:

(1) Very high fever in the region of 101°F-102°F (38.5°C) or above.
(2) Convulsions. During a convulsion the child may aspirate food or fluids into the lungs or may suffer brain damage because of lack of oxygen supply to the brain. Hence, whatever the cause of the convulsions, they should be controlled promptly and preventive therapy should be started to avoid further convulsions whilst the cause is being investigated.
(3) Hoarseness of voice with breathing difficulty. As explained above, if the swelling increases, the entrance to the windpipe may become blocked and an emergency would arise. Such cases are best kept in hospital under expert supervision.
(4) Undue drowsiness.
(5) Bleeding which does not stop easily with an ordinary pressure bandage.
(6) Any diarrhoea, especially if the child is passing scanty urine, or in the case of an infant if more than six hours have passed without the passage of urine.
(7) Accidents like burns, poisoning, bee stings, falls with unconsciousness lasting more than half an hour, and choking on peanuts, beans, marbles, etc.

If the child looks very ill, the inclination of the parents will be to rush to the clinic or to the doctor. It is always advisable to pause for a moment and consider the following:

(1) *Can anything be done to relieve the symptoms?* If the child has a high fever, he may be given junior aspirin or other similar medicines which reduce fever. He may also be given a tepid sponge bath. Water at body temperature (37°C) is taken in a basin to the bedside; two towels, one small face towel and another large bath towel, are taken and the sponge bath proceeds as follows.

The small towel is soaked in the water, and all extra water is squeezed out. It is then wrapped round one of the extremities of the child and held there for five to ten seconds after which it is taken off and returned to the pot of water. The wet extremity is patted dry with the bath towel. The same procedure is now repeated with the next extremity and so on. Similar sponging can also be done on the trunk and the back, though initially some children may be frightened of the procedure being done on the trunk. Tepid sponging may be carried out for about fifteen to twenty minutes and will help to reduce the fever by one degree or more.

If a child is convulsing he may bite his tongue or hurt his limbs. A handkerchief may be wound round the handle of a spoon, then inserted into the mouth, separating the two rows of teeth. He should then be carried to the hospital well restrained.

In cases of excessive bleeding the cut area may be covered with a clean handkerchief, or a dressing like clean cotton wool if available, and gentle pressure applied over it to staunch the bleeding. Depending upon the type of bleeding a tourniquet may be required to stop the flow of blood.

(2) *Can the doctor or clinic be given prior warning?* In most cases it is always useful to phone the doctor or the clinic to say that the sick child is on the way. If an accurate description is given, the clinic staff or the doctor can make adequate preparations to deal with the emergency; for example, apparatus for washing out the stomach in case of poisoning or instruments to deal with a respiratory emergency can be kept ready.

In most dispensaries and clinics there is always a long queue of patients. One should anticipate this and take along certain requirements like a change of nappies or a drink for the baby. Also one should always try to explain to the child where he is being taken, what kind of examination the doctor will carry out and the treatment that will be given to make him well.

Admission to the Hospital

If after the examination, the doctor decides to admit the child to the hospital, again an adequate explanation should be given to the child. Most hospitals admit the mother together with the child. This is a sound policy and should be insisted upon so that the strange and impersonal atmosphere of the hospital will not add fright to the pain and discomfort of the illness which the child is already suffering. His favourite toys should also be taken along as well as books to amuse him. These familiar articles of everyday play will act as emotional props in the frightening and new atmosphere of the hospital.

Nursing the Sick Child at Home

Not all illnesses need to be treated in a hospital. In the majority of cases, treatment is prescribed and the child is to be looked after at home. The following factors need to be considered when a sick child is being nursed at home.

(1) It is important to try to keep other children away from the sick child especially if he is suffering from something infectious like measles, respiratory infection, or chickenpox. It is a wrong policy to say that it is better to have the disease and be done with it. If more than one child becomes sick the resources of the household will become strained and

the parents may not be able to nurse them adequately. Moreover, such rapid progress is being made in the development of vaccines that adequate protection may become available for the other children in the not too distant future, and therefore it is not necessary for them to have the disease. An example of this is measles; the vaccine is now freely available and there is no reason for any child to suffer from the disease.

(2) Where should the sick child be nursed? Preferably in his bedroom especially if he is to be kept away from the other children. But children get bored easily and he may feel lonely when the mother is engaged in housework. If he is not too ill, he may be moved into the living-room or allowed to sit in the kitchen while the mother is doing housework especially when the rest of the family are away.

(3) In nursing the child, care should be taken that all the instructions of the doctor are properly carried out. A record should be kept of all the details of the child's symptoms which the doctor may wish to know – e.g. a record of his temperature if he has fever, his food and fluid intake in the day, bowel movements if any, etc.

(4) Careful attention should be given to medications. It is important to remember that the sick child should be given only those medicines which the doctor has prescribed; if a friend or a neighbour mentions medicines which effected a 'wonderful cure' on his child and suggests their use, they should be refused. Similarly, if one is not sure about a pill or a mixture or if there is a doubt about the dose, one should avoid medication rather than run the risk of poisoning.

In cases of mixtures, the bottle should be well shaken before use. The correct dose should be measured out and after giving it to the child one should wait with the child for several minutes to make sure that it has been retained and that there are no reactions. The bottle should then be corked, and kept in a cool place away from direct sunlight. All

medicines should be kept away from the reach of children. After the sickness is over, or if the medicine has been changed, the left-overs should be thrown away. Most pills and mixtures deteriorate on keeping and may become toxic.

(5) In all illnesses rest in bed is necessary for recovery and should be insisted upon. The toddler is the most difficult to handle when sick, and may have to be carried about. In the case of the older child, toys, books and various forms of amusement have to be thought of to keep him occupied in bed.

(6) In most illnesses appetite is lost, yet every effort should be made to maintain the child's nutrition by offering frequent small feeds of easily digestible and nutritious foods. Fresh fruit, eggs, milk and cheese are easy to eat and digest and should be offered in various forms.

(7) Clothing should be loose and of a kind which can be removed easily for examination by the doctor or for changing when soiled.

When recovery from an illness occurs, a few days should be allowed for *convalescence* or full recovery. Even though all medication may have been stopped, the full regimen of bed rest and nutritious diet should be continued. Exposure or physical strain is not advisable in the weak state of the body following a severe illness. In some cases, especially after virus infections of the respiratory tract or measles, exposure may cause secondary bacterial infections and create complications.

Most illnesses in children are acute and short-lived and full recovery is the rule. In some cases, however, the illness may be chronic and no permanent cure may be possible – e.g. chronic diseases of the kidney and sickle–cell anaemia – or the illness may be such that prolonged therapy is required, e.g. tuberculosis. Such illnesses cause an emotional strain on the family as well as on the child. However, with adequate explanation and encouragement most children are able to stand up to their illnesses. In all such cases, it is important to remember that regular medical checks are very necessary for the management of the disease and a point should be made not to miss out on any of the scheduled visits to the hospital or clinic. If for any reason a visit has to be missed, the doctor should be informed and a supply of medicines obtained from him. All chronic illnesses require regular diets as well as regular medications. This part of management is as important as the medicine itself; hence whenever a diet has been prescribed, e.g. salt–free diet or high-protein diet, every attempt should be made to adhere to it.

Children normally make excellent patients. Their power of recovery is good unless there has been delay in instituting treatment or if the infection has been overwhelming. Hence it is essential that at the first

sign of illness adequate steps should be taken to see that the child gets the benefit of competent medical care. The use of home medicines will waste valuable time and when the child finally reaches a hospital or clinic he may have become too ill to respond. Reliance on such therapeutic measures should be avoided.

Chapter 10

The Early Years

The early years of life are crucial in the development of the child. The brain grows rapidly during this period of life, and as a matter of fact, most of the growth of the brain occurs before the child is eighteen months old. Together with the growth of the brain comes the development of new skills. In general, as much development takes place in the first four years of life as in the following thirteen years. About 50 per cent of all intellectual growth takes place between conception and the fourth year, and a further 30 per cent between the ages of four and eight years. From these observations it is easy to appreciate the importance of the early years of life. The right type of experience provided at this time has been shown to have a vital influence on later progress. On the other hand, factors which interfere with the child's development at this early stage have cumulative effects so that, as the child grows, he tends to lag more and more behind those who did not suffer such disadvantages.

What can parents do to help a child achieve the optimum in his development? First of all, they should ensure that he gets the right kind of nourishment in adequate amounts. It is a general rule that whenever there is lack of food such that growth is affected, then those tissues which are growing most rapidly suffer the most, and the brain is the most rapidly growing part of the body in the early years. A common reason for lack of nutrition at this age is bottle-feeding, when for economic reasons feeds that are too diluted are habitually offered to the child. Most babies who are breast-fed do not suffer this disadvantage, especially if breast milk has been supplemented with porridge and other foods after the age of six months. Another reason for disturbance of growth is repeated illness, especially diarrhoeal disease – again more common in bottle-fed babies than in those on breast milk. Thus, adequate nourishment in a clean environment and protection from infection are primary needs for adequate development, especially in the early years.

Secondly, new and varied experiences are necessary for learning. They are as important for mental growth as food is for the body. Each new experience teaches the child a new skill, and the obvious pleasure

of the parent in his performance strengthens the child's desire to achieve more. He would be tempted to explore further and to seek even more experiences. Furthermore, as this process gets repeated over and over again, the child also develops the skills of learning. On the other hand, if the child's exploratory activity is disapproved of because it makes the house untidy or because the parents are unable to spare the time or to find space for play, it is likely that he will develop an indifferent attitude to learning.

Many of the early learning experiences come through play, which is as important to the child as work is to adults. *Physical play* enables the child to acquire control over his body movements. It also helps him to develop a sense of balance and orientation in space. Children engage in all kinds of play with objects, words, sounds and ideas, and basically in the same way – partly to practise new skills, partly to acquire learning experiences and partly for the joy of it. They also enjoy role-playing and games of make-believe. By *role-playing*, the child is practising his identity as an adult, a parent, a teacher or a worker. By putting himself in their shoes, he is learning how to handle various situations and to cope with people. To observe the child engaged in this kind of play activity often gives insight into how he perceives the adult world around him. The games of *make-believe* allow the child to use his fantasy in order to work out different feelings. For example, he may invent a game in which a frightening creature lives in a far corner of the house – and in fantasy he finds an outlet for his own emotions of fear. The next day he may make-believe that he is doing the cooking or washing with Mummy helping him – he is in fact attempting to find relief from a world where he is small and powerless into another where he is in command.

Play is as important to the child as work is to the adults

There is also *creative play.* All children love to engage in it because it provides a means of self-expression and of remoulding their world as new experiences come in. Children use words as well as objects for creative play. Pounding clay or plasticine to give it a new shape, building a brick structure, playing a musical instrument, using crayons or paints – all become vehicles of self-expression and help to relieve inner tensions and conflicts. These activities grow in complexity, for example from scribbling to drawing or writing a poem; they enable the child, at each stage, to express his feelings about the world around him.

To summarise, play is important for the development of the child for several reasons:

(1) It meets the need for new experiences.
(2) It helps to relieve inner conflicts and emotions.
(3) It helps the child's understanding of the world around him.

Since play is so important for the intellectual and psychological growth of the child, parents should give it careful thought and be prepared to give up time for engaging in play activity with their children. Choosing toys and play materials appropriate to the child's age and level of maturity is not at all difficult. Parents who regularly play with their children often find that selection of toys comes naturally. Generally speaking, all play material can be classified into three main groups: (1) 'raw' play material like clay, plasticine or crayons; (2) 'constructional' toys like building bricks, 'lego' and other similar toys, and (3) 'finished' toys like dolls, clockwork toys or trains. The individual child may prefer one to the other, at different times, and one should aim at achieving a balance between these various groups. Similarly, depending upon the interests and temperament of the child, one should achieve a balance between free play and guided activity.

In addition to engaging in play by themselves or with an adult, children also need to play with each other. They form an understanding of the rights of others as well as their own, and of team work, and learn to get along with others by being involved in group activities. Play groups and day care centres perform useful functions from this point of view, and normally admit children after the age of three years.

The Needs of Children

Play and stimulation, however important, are not enough by themselves. They give best results in a family environment in which all the needs of children are adequately met. Some of the physical needs like good nutrition and protection from infection are obvious, and have been discussed earlier. The emotional needs like love and security,

recognition and praise, and responsibility are often not given enough emphasis. A sense of love and security within a stable family life provides the child with a healthy personality which can respond to affection and enable him to become, in time, a loving and caring parent. Similarly, the child who lives with praise and recognition develops incentive and drive and grows up to be self-confident. Responsibility is learnt slowly over a period of time and does not just grow with age. Parents should provide opportunities by assigning tasks for children to carry out on their own.

When the basic needs of children are not met, various symptoms appear. These have been rightly called 'danger signals' because they signify deficiencies in the child's environment. A deficiency in the diet interferes with growth and unhygienic living causes illness. Similarly, symptoms appear when the emotional needs of children are not met. They can take many different forms but can be broadly divided into two categories – fight or flight. The child may show undue hostility anger and destructiveness; he is unable to form stable relationships with people if he feels unloved. On the other hand, the child may withdraw into himself and become non-communicative if he feels rejected. Early recognition of such danger signals is necessary for the parents to take remedial measures so that the basic needs of the child are satisfied.

Love and development of security

Chapter 11

The School Years

The school years contribute the most formative period in the child's life as far as his future career is concerned. On entry to school, he enters the society's system for formal training and education, from which he will emerge as a contributing member. Most parents feel that once the child enters school, they can relax in their endeavour to train him. Probably by this time there may be a new addition to the family and their hands may be too full. This would be wrong. No school can take the place of the home and the parents. By guidance and advice and by creating an atmosphere at home which is conducive to learning, the parents can contribute a great deal to the education of the child.

Just as the foundations for psychological and emotional growth are laid down in the early toddler years, so also the foundations for character-building and learning processes are laid down during the early school years. In the school, the child becomes a member of a class, a small community of his equals, with whom he will spend a major part of his waking hours each day. He learns how to get on with others. Qualities like leadership and self-discipline grow at this time. The child learns to submerge his own wishes in the interests of the group. These are all important qualities and very necessary for his future happiness. It is a common experience that success in life depends as much on how one can get on with people and influence them as upon intellectual endowment. Qualities like loyalty, truthfulness and dependability develop under the challenge of group activity with guidance from the teacher and the parents. At the same time the child also learns how to maintain his own identity in the group. He learns to compete and to channel his aggressive drives.

Another adult now begins to play an important role in the training of the child. The teacher takes the place of the parents as the authority, the guide and the counsel during school hours. It is natural that the child should develop affection and loyalty for the teacher who becomes the parent figure especially in early school years. He observes and copies the teacher and wants to win his approval.

Day Care Centres

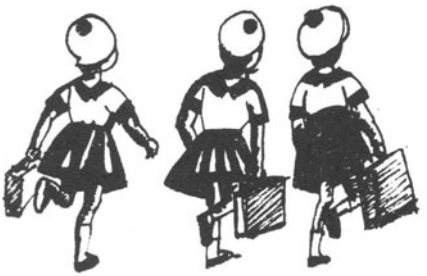
Under this heading are included nursery schools, day nurseries, creches, kindergartens, etc., all of which perform a more or less similar function. In industrial countries, when mothers joined the labour force and began to go out to work, institutions were needed for the care of their children. Rapid industrialisation is taking place in most developing countries of the tropics. In addition, there are national programmes in adult education and other nation-building activities in which females take active part. Hence, even in developing countries, there is a growing demand for institutions to take care of the pre-school child.

Most day care centres admit children after the age of three. Separation from mothers at an earlier age may cause emotional trauma, and unless pressing reasons exist, younger children are not taken. Also the children are expected to be fully toilet-trained, which, in the average child, is accomplished by the age of three. It is customary to take in children only for a few hours in the day; this is to ensure that separation from the mother will occur for a short time only. If a child has to be kept for the whole day the parent should attend for the lunch break so as to ensure that parental deprivation is intermittent and not for the full day.

No formal education is given in day care centres. Instead, the emphasis is on group play, cleanliness and healthy habits. A good day care centre can help to train the child in communal living, but it can never become a substitute for home care and maternal love. Hence parents should take care to spend more time with the young child who spends the morning at a day care centre.

Primary and Secondary Schools

The age requirement for entry to the primary school varies from five to seven years in different countries, and so the problem of adaptation to



school life in the case of an individual child will depend upon his age and maturity.

The child needs to be mentally prepared for entry to school. He should be told what to expect there, the daily routine, the games and other extracurricular activities, and if possible he should be taken to see the school premises, the playing fields, the library, etc., before joining. For the first few days he may be allowed to attend for a few hours only or else the mother may stay on with him for some time. If he forms a dislike for the school at the beginning it may develop into a school–phobia later on.

The parents should take the precaution to see that the child has been trained to look after himself in simple matters like dressing or tying the shoe laces. Before starting school, the parents should make an inquiry from the school regarding books, uniform, the drink or snack he is supposed to take along with him and other similar matters.

For the first few weeks at school the child feels lost and dejected. Until now his mother has been his constant companion. Whenever any conflict arose in his daily life, he turned to her for comfort and reassurance. Even though he may have developed a fair amount of independence, he will still miss his mother's guidance. In new surroundings with unfamiliar adults and children he feels thrust into a different world; he has to share his toys and other things with the rest of the class. Through all these new challenges he is helped along by the teacher who now plays an increasingly important role in the child's life. Hence parents should maintain regular contacts with the teachers in order to know how the child is adjusting to the new situation and also to give them information on the child's reactions.

It is necessary to make sure that the school life and the home life of the child do not exist in two separate compartments. The risks of such a thing are most likely in developing countries where school teachers may be expatriates with different religious and cultural attitudes from those of the parents. There may be little contact and exchange of views between the parents and the teachers. At school the child is exposed to modern scientific ideas and the cause-and-effect theory of events; at home ancient customs and traditions may still be of paramount importance and superstition or magic is used to explain events. Such a dual existence causes a conflict in the child's mind and has been responsible for several episodes of mass hysteria seen in school children. To avoid this, parents and teachers should have close association with each other. Parent-teacher associations should be encouraged for every school and parents should make sure that they attend all meetings and participate in all activities. After all, they have a stake in their children's education and physical well-being and should not sit back and leave these matters to others.

Health Problems in School Children

Health surveys in school children have shown the prevalence of several health problems. Even though there may be little clinical malnutrition in children of school-age, lack of optimal growth is widespread, and very few children of the developing countries achieve the growth standards of their counterparts in western countries. Anaemia is also a common condition in school children. Parasitic diseases like malaria and intestinal worms are fairly frequent and in some areas large numbers may suffer from schistosomiasis. Even though these may not be considered serious health hazards they do interfere with a child's performance at school by sapping his energies.

Many schools have a school-lunch programme either as a part of a national school health project or organised by local authorities with assistance from voluntary agencies. Such programmes have been found to be especially useful in rural areas where, because of long distances to be covered on foot, children have to leave home in the early morning usually after an inadequate breakfast. In such cases, parents should make sure that a good breakfast is provided and that the child leaves home with a mid-morning snack. If the school has a feeding programme, parents should encourage their children to participate actively. Such a programme helps to train the child in the rudiments of nutrition and dietetics. School children are keen observers and if care has been taken in the preparation of menus, they can learn the nutritive value of various common foods. Many schools also maintain vegetable gardens, where school children help with the cultivation of different vegetables and fruits. All this extracurricular activity trains the child in methods of communal living and working together as a team.

At school, the child comes into close physical contact with many other children and the spread of communicable diseases is an ever-present health hazard. Before entry to school, the parents should make sure that the child has been fully immunised against the common infectious diseases of childhood especially tuberculosis, and the immunisation record should be checked annually and maintained up to date. Whenever the child shows any signs of illness he should be kept away from school and the illness should be reported to the teacher.

The school years provide a unique opportunity for health and nutrition education. If these subjects are not being covered in the school already, the parents should make sure that their children receive adequate instruction in them at home. All developing societies carry a heavy burden of disease and disability, and it is through proper training of the younger generation that new horizons of community health can be reached.

Performance at School

Most parents are anxious, and justifiably so, about their children's performance at school. The intellectual endowment of an individual cannot be bettered, but within the same quota of intelligence the individual's performance can be improved by training. A good teacher will inculcate in the children under his care the qualities of application and the proper methods of learning, so that the children can form the right approach from a young age and can carry on self-education.

The child's performance in school can be affected by various physical causes. For example, learning is difficult with borderline nutrition, and an underfed child may not be able to maintain high standards in his school work. Defective vision or hearing may also interfere with learning because the child may not be able to follow what is being taught. Emotional disturbances may take away the incentive to study. Unhappiness at home, resentment towards the teacher or rejection by class-mates may become the cause of poor school performance or delinquent behaviour. Hence, if a child who has been doing well at school suddenly shows a marked deterioration in his work, all these various causes should be looked into. An interview with the teacher may be most helpful in trying to elicit the cause.

Chapter 12

The Troubled Teens

When the growing school child reaches teenage he enters a stormy period in his life. He observes changes occurring in his body, and strange emotions and thoughts of a kind that he had never experienced before now surge in his mind. There is an expansion of the capacity for rational thought which makes him aware of inconsistencies in the adult world which he had assumed to be faultless. The expectations of the family members change. He is continually reminded that he is now an adult and is expected to behave responsibly, and yet in many ways he is still immature. His counsel is rarely sought in important family matters, and yet he is expected not to question decisions taken by the elders in the family. There are also pressures at school. The end of schooling is now in sight. He must decide on a career and apply his efforts in that direction in the face of fierce competition. The thoughts of 'Who am I?', 'What am I?' and 'What will become of me?' plague his mind.

All traditional societies have developed ways and means of conferring adulthood and to that effect carry out initiation ceremonies for adolescent boys and girls. During such ceremonies the initiate is given sex education, and the duties and rights as parents and as members of the adult society are described to him. The ceremony may last several days and the rituals involve a procedure, often painful, on the sex organ (e.g. circumcision) which is intended to test the youth's ability to withstand pain as a sign of having achieved adult maturity. Such initiation ceremonies form part of the annual cycle of festivities and usually end with public celebrations in which the entire community participates, so that there is now public acknowledgement of the achievement of adulthood by the individuals concerned. This clear understanding of one's status in family and society makes for a better identity of one's role and helps to remove the inner conflicts which occur in many urban youths.

The most important physiological process during adolescence is the onset of puberty, in which the body undergoes rapid growth and development and the individual acquires the physique of a mature man or woman as well as the capacity to reproduce. Studies in Western countries show that girls enter puberty at about the age of ten to twelve

years, and boys at about the age of twelve to fourteen years. The process may then extend through almost the entire second decade. The first sign of puberty is an increase in growth. Changes in height can be abrupt. A child who is growing 2-3 cm a year will suddenly grow 5-6 cm a year for a couple of years, and then shoot up by 9-11 cm in one year – the year of maximum growth. After this the rate of growth decreases gradually. The onset of puberty is earlier in girls. So also is the increase in height. The average girl at the age of ten or eleven years will be taller than boys of the same age and, in her appearance, will be like 'a young lady' compared to the boy who still maintains the 'school-boy' look.

Different organs of the body grow at different periods. We have already observed that the brain grows maximally in the first year or so of life. In the same way, the sex glands grow maximally at puberty. During this period, chemical messengers reach the sex glands to stimulate their growth and function. The sex glands, in turn, secrete chemicals which bring about the growth of secondary sexual characters. Thus, in girls, there is enlargement of breasts and in boys there is growth of sex organs. In both, pubic hair appears, followed later by axillary hair. In boys, the voice 'breaks' at this time and the facial hair also begins to show.

In girls, the growth and activity of the sex glands is demonstrated by the onset of the 'menarche' or the first menstrual period. Because of the taboo on discussions about sexual matters in most families, a girl may not be prepared for this event and is terrified by the appearance of blood. Hence at the onset of the growth spurt, parents can help by explaining the details of the expected changes in the body during puberty. Such explanations should be repeated as often as possible in order that the details are fully understood. In the absence of such discussions at home, the child may look for explanations elsewhere and may form altogether erroneous concepts about sex and bodily functions.

In boys, as the sex glands grow and become active, their secretions begin to form and from time to time they are ejaculated during sleep. These events are called 'wet dreams' since they usually occur in sleep and are associated with dreams which have an erotic or sexual theme. Such incidents may worry the young boy, and, because they leave marks on the bed or on his clothing, he may carry a sense of guilt or shame. Early explanation about the physiological basis of these events helps to overcome such guilt.

Problems Related to Pubescence

The physical changes occurring in the body during pubescence also bring about changes in self-image and identity. The girls become

increasingly figure-conscious and the boys wish to appear manly or athletic. To accept these changes without fear or shame is important for the development of a healthy attitude towards sex. Uninformed adults fail to teach the young about sex, and feelings of fear or guilt can distort sexual expression in the adolescent.

Early or delayed maturation is one of the most important causes of anxiety in this period. The late maturing boy finds himself among children who are taller, heavier, stronger and more obviously developed than he is. He finds it difficult to compete in sport and may even be bullied or ridiculed. The late maturing girl is torn with anxiety when she sees her friends and classmates develop feminine contours while she remains flat and is ignored by young men. Reassurance and patient explanation of the physiological basis of maturity may help the child to understand his difficulty.

Several medical problems may be encountered during this period. In some teenage girls, menstruation is associated with lower abdominal cramps. The severity of the pain is variable but for some it can be severe enough to be disabling. In practically all such cases, the girl is healthy and has no disease of the reproductive organs. The parents should encourage normal activity; only when the cramps are very painful and cannot be controlled with ordinary analgesics is medical help required.

Changes in body physiology also involve the skin. The secretions of the sebaceous glands of the skin become thick as well as increase in amount under the influence of the sex hormones. The thick sebum may clog the duct of the glands and secretions accumulate behind the block causing a swelling, or a 'pimple'. Pimples can occur anywhere in the body but are usually more worrisome on the face. Superadded infection can lead to pus formation and when the process finally simmers down a mark or a scar is left behind. In susceptible individuals the process is accentuated and gives rise to what is called 'acne'. Naturally the disfigurement of the face is very upsetting. The best preventive measure for acne is to keep the skin as clean as possible and to help open up the blocked ducts so that the secretions of the gland can drain. The affected individual should wash the face with soap and water several times daily, and should avoid using make-up or other facial applications as long as the acne lasts. When superadded infection causes scars early medical advice should be sought.

The newly acquired sexuality of the teenager looks for ways and means of expressing itself. The home environment and the social mores of the community help to channel it along acceptable paths. In many countries now the youth is exposed to commercial advertisements, films and television programmes in which sex and permissiveness are emphasised. The pitfalls of the permissive culture are seen in the rising rates of illegitimate pregnancies and venereal disease in the very young.

Venereal disease has now reached alarming proportions in many countries and is proving difficult to eradicate since the most important source of infection is the asymptomatic female carrier. Recent research shows that up to 80 per cent of affected women may be asymptomatic, and are therefore not detected. Sex education of the young to prevent such unnecessary trauma is essential both in the home and in schools. Parents and teachers need to take a leading role in creating opportunities for such education and for open discussions which can help to resolve doubts and answer questions. Such an approach is more fruitful than indulging in embarrassed lectures on 'birds and bees' or sermons on the value of chastity.

Mental and Social Development

At adolescence, the growing individual develops the capacity for rational thought and is now able to examine a problem systematically and to consider all possible solutions. This improves his awareness of the world about him so that he becomes increasingly interested in the events and happenings around him. He applies the process of rational thought to himself and continually examines his objectives in life and plans for the future.

This capacity for rational thinking makes the adolescent aware of inconsistencies in his world which he did not notice at an earlier age. He observes his elders and teachers with a critical eye and is upset by their double-standards, their excuses and little lies or their selfish behaviour. He may even be outraged by religious or political leaders who profess morality and honesty and yet whose behaviour may be totally contradictory. Such an awareness, together with the ability to examine his own self, greatly increases his inner conflicts for which he reaches for a solution. He wants to replace conflicts with social values which he can accept. But the family may find such values too high and inflexible. In many cases he ends up by rejecting everything and lives by a personal moral code. In the literature, this period is usually referred to as the 'adolescent rebellion'.

The conflict between his new personal code and the established value system of the family or the community gives rise to anxiety. Furthermore, as the youth acquires new thoughts and feelings he finds that some of them are also contradictory to his personal code of behaviour. Such a realisation may further aggravate his anxiety. In addition he now finds many responsibilities assigned to him at home or at school, and this acts as another source of stress. If he is handled with thoughtfulness and understanding he learns to overcome such anxiety

and develops emotional maturity. He learns to be able to tolerate stress, to cope with conflict, anxiety and fear, and grows into a mature adult.

The adolescent has an increased desire for acceptance by his peer group and does not wish to do anything that will mark him as different. Parental pressures to do otherwise can give rise to real unhappiness. The desire to conform, to blend with the scene, and to be accepted by his peers can get him into trouble at times. Gangs of youth with a particular hair style, modes of dress to identify with a group, etc. are all part of the adolescent culture today. To be socially acceptable or to be considered grown up he may experiment with drink or smoking. Some youths find themselves on a slippery path from which there is no return. Teenage drunkenness and smoking in school children are the nightmares of the social worker in many countries. The same applies to experimenting with drugs. For many youths marijuana or other narcotics are a symbol of identification as part of a new generation refusing to accept old taboos. But there are also the 'hard core' in whom desperation, because of unhappy family background, and inability to cope with stress have led them to find a solution in 'trips' with drugs.

Channelling the Drives of Youth

In a happy and stable family background, the adolescent is able to communicate many of his inner conflicts and find the understanding

and love which will enable him to acquire emotional maturity. The youth who cannot express inner anxieties at home is in serious trouble. On the part of the parents, an understanding of the physical and mental changes occurring in their children at different stages of growth will enable them to give the necessary guidance and help. But loving care, guidance and advice are not enough by themselves. The energies of youth demand outlets. Active participation in sports, national youth programmes and youth clubs helps to provide the outlets for physical energies and to satisfy the social needs. In addition, wide reading of literature and participation in cultural activities will enable the adolescent to acquire an understanding of some of the important issues of the time and find answers to questions that disturb his mind. The most important contribution parents can make is to accept the adolescent as a friend and an equal and to include him as such in all family decisions. If the home environment is made emotionally rewarding and intellectually stimulating the adolescent will stay off the streets and that, by itself, is a great achievement.

Chapter 13

The 'At Risk' Children

Disease usually tends to occur in certain groups of people. These are people who lack the resources for caring for themselves and their families, or if they have the resources, lack the knowledge of utilising them wisely. It may appear strange, but they are also the people who make the least use of available health and social services even though they need them the most. Naturally there is a high incidence of disease and dysfunction in this group and it has become necessary to direct a large number of health and social programmes towards them.

In all communities and in every social group, the family is the basic social unit. Children are born within the family and are nurtured by the grown-up members of this unit. It is there that they receive their nourishment, their upbringing, and protection from adverse environmental influences. Factors that weaken the family unit will affect its vulnerable members the most. These are the elderly, the pregnant women and the children. Many such factors have now been identified and are termed 'at risk' factors. To appreciate what is meant by the term let us take a few examples. Consider the family of an alcoholic. One or more members of the family may be squandering available resources on drink so that very little is left for the necessities of life. Also, because of drink the mental functions of the decision-maker may be so befuddled that rational decisions are not taken and the family drifts from one crisis to another. Social deprivation is another example. In some societies members of certain social groups or immigrants are discriminated against and are forced into accepting unpleasant occupations, overcrowded living and squalor. Even with the best will in the world they cannot provide for the upbringing of their children, who then grow up with educational and emotional handicaps and, in turn, are subjected to the same discriminatory forces. Thus, the 'cycle of deprivation' is perpetuated from one generation to another. People who are brought up in families where there was perpetual crisis, discord or lack of tenderness grow up to become inadequate parents. They are unable to give to their children what they themselves never received and the children suffer as a result.

The 'at risk' factors which put children and families at risk of disease

or dysfunction fall into two main groups – biological and social. Consider a very young mother who gives birth to a baby with a low birth weight. The baby is 'at risk' because of being small and the contributing factor was a biological one – a very young mother. If this mother were to belong to a low socio-economic group there will be a social 'at risk' factor as well. In general, adverse biological and social characteristics tend to reinforce one another. Their effect becomes cumulative; it is not that the damage is produced once and for all, but these adverse factors cause retardation in each year's development so that as the child grows he lags further and further behind. Recent research has shown that unfavourable environment continues to exert its adverse effects on the growing child up to the age of eleven years if not longer.

Adverse factors can be present in families of all social classes. If parents know about them they will be able to identify them in their own homes and take early action to counteract their effects. Some of these factors can be remedied; others, especially social factors are difficult to alter. In the latter case, the family can mobilise the resources to mitigate their effects.

In the following paragraphs some of the 'at risk' factors are discussed. They have been identified as a result of several years of

research and the remedial actions suggested are the ones that practical experience has shown to be beneficial.

Biological 'at risk' Factors

THE BABY WITH A LOW BIRTH WEIGHT

Low birth weight indicates that either the pregnancy was not carried to term and birth occurred prematurely, or, in a full-term pregnancy, the baby's nutrition and growth in the mother's womb was deficient. In either case the baby runs a higher than average risk of death in the immediate new-born period as well as the first year of life. The incidence of physical and mental handicaps tends to be higher in such babies and so they need careful nursing and looking after. All the factors causing low birth weight have not yet been identified but the two most important causes are inadequate nutrition in pregnancy and lack of antenatal care. Many low birth weights can be avoided by paying attention to these basic causes.

ABSENCE OF BREAST-FEEDING

The important role of breast milk in the growth and development of the baby has been already emphasised. Many experts state that the baby who has no access to breast milk in the rural areas of a developing country will have virtually no chance of survival. There is much truth in this statement. The best-known stimulus for the production and flow of the breast milk is the regular suckling and emptying of the breast by the baby, and a common mistake made by many mothers is to want to 'experiment' with bottle-feeding. After a day or two of 'experimenting' with the bottle, the mother finds that her own milk has dried up and the baby is forever tied to the bottle.

Working mothers often feel that once they go back to work they must stop breast-feeding. This is not true. Breast-feeding is not an all-or-none phenomenon and with a little organisation such mothers are able to feed their babies successfully. For example, she could give a feed in the morning before going to work, in the evening on returning from work, and once or twice in the night. The immunologic protection received by the baby from these three or four feeds is immeasurable; no artificial milk has yet been produced to compare with breast milk as regards its immune properties.

BABIES BORN AFTER SHORT BIRTH INTERVALS

Pregnancy and lactation make demands on the mother's physiology and body reserves of nutrients. She needs to recover fully from the effects of child-birth before she begins another pregnancy. Medical research has

shown that babies born after short birth intervals have a higher mortality rate. Many traditional societies carry this wisdom to such an extent that they do not allow cohabitation for a long time after the birth of a child. These ancient customs are now declining and need to be reinforced with medical teaching about contraception. A minimum of eighteen to twenty-four months should pass before commencing another pregnancy.

THE CHILD WHO HAS STOPPED GAINING WEIGHT

The slowing of the growth rate of the child in the early years is an indication of some serious disturbance; early steps should be taken to identify such a disturbance and to correct it. In all children's clinics the health staff are especially trained to detect any slowing of growth and will immediately take steps to identify the reason.

POOR REPRODUCTIVE HISTORY OF THE MOTHER OR A HISTORY OF MALNUTRITION IN A SIBLING

Such a history indicates a deficient background and close medical supervision is necessary. Spacing of pregnancies is essential in such cases to allow time for the mother to recover from the stresses of child-birth and for her to give undivided care and attention to each child until he reaches the age of four years. If a previous child was lost because of a nutritional disorder, it is necessary for the parents to learn about child care and feeding. Many hospitals and health centres now have nutritional rehabilitation centres attached to them for such a purpose. Parents who have undergone a course of instruction in them are helping to propagate the knowledge in their neighbourhood and community.

REPEATED ILLNESS IN THE CHILD

Each illness in the child, however trivial, slows down growth and the body loses nutrients. If the child's nutrition is good he soon makes good these losses. Medical science calls it 'catch-up growth'. If nutrition is inadequate or if food is witheld because of the belief that it may cause 'hot' (or 'cold') effects in the body, the child does not catch up and his growth suffers. In such a case, repeated illness can cause permanent damage.

Repeated illness also indicates a defective environment. Charms and amulets are no protection. Instead, parents should carefully work out with their medical adviser the ways and means of improving the child's resistance to illness.

HISTORY OF A CHRONIC ILLNESS IN THE FAMILY

All the children in such a family are in need of special care for several reasons. If it is an infective illness, like tuberculosis or leprosy, they are

at risk of infection. If the illness happens to be in the bread-winner or in one of the wage-earners, the family income is reduced and the welfare of the whole family is at risk. The ill person requires care and attention, and the family dynamics may be so affected that the parents have less time to devote to the children.

Social 'at risk' Factors

The various biological factors discussed above are easy to understand and identify. The ill effects are immediate and so the cause-effect relationship is well defined. The adverse social factors now to be discussed also cause disease but their main effect is in the field of development, education and mental as well as emotional health. It is only in recent years when large numbers of children have been continuously observed from birth to adulthood that the influence of these factors has come to light.

There are five groups of children who are 'at risk' because of adverse social influences. These are:

(1) Children in large families especially with low incomes.
(2) Children with some physical or mental handicap.
(3) Children in one-parent families.
(4) Those who have to live away from home.
(5) Children of deprived minority groups.

CHILDREN IN LARGE FAMILIES WITH LOW INCOMES

In such families, available resources have to be stretched and there are many shortcomings. Family welfare as a whole suffers. Cramped living conditions, with lack of privacy and space for play or a quiet area for schoolwork, lead to irritability and friction. In such families, there are multiple disadvantages which work in combination and have a cumulative effect. There is usually a state of perpetual crisis. The parents may be so preoccupied with their own anxieties that they fail to provide adequate emotional support or even physical care for their children.

CHILDREN WITH HANDICAPS

The needs of handicapped children are the same as those of normal children but more urgent because of the presence of disability. Such children are slow or even unable to acquire learning experiences. Thus, with a physical disability there is lack of experience of movement and space or distance. The deaf child has difficulty with language development and the child with defective vision has learning problems. The parents feel inadequate and often carry a sense of guilt.

All children with handicaps require special training which must continue into adult life. The more severe or complex the disability the more urgent is the need for such training. Hence, it is necessary for parents to make use of available training facilities as early as possible and to continue with them regularly. The basic principles of training the child with a handicap should be learnt by the parents so that the training can continue at home. The child usually adopts the same attitude to the disability as his parents do. Their anxieties get transferred to him. If parents are ashamed of the disability the child becomes sensitive. If the parents are objective about the problem and take a positive attitude the child will also learn to make appropriate adjustments to his handicap.

ONE-PARENT FAMILIES

Marital breakdown is a major crisis for the family. It imposes a financial handicap on top of everything else, and the family welfare is affected. Children from broken marriages usually show disturbed behaviour. They are unable to understand the reason for the breakdown of marriage and this is much more so with very young children or when feelings are bitter between the parents.

Similar adverse circumstances befall families who have been abandoned by one or both parents. There is a high incidence of delinquent behaviour in children of such families. They have been deprived of opportunities to form close human relationships. Parental care is inadequate and there is a high incidence of nutritional disorders and other illnesses in such children.

CHILDREN LIVING AWAY FROM THEIR FAMILIES

Children who have been deprived of family life and who have lived in institutions for prolonged periods have inadequate social and emotional development. However good their care may be, it is not enough for true growth. There is no single person in their lives with whom they can share their most intimate memories.

Children with a chronic disease requiring prolonged hospitalisation also suffer from some of the above disadvantages. On returning home from a prolonged stay in hospital they often find that family life has adjusted itself to their absence and that they have grown apart.

CHILDREN FROM MINORITY GROUPS

Immigrants, traditional 'serfs', certain castes, and new arrivals in the city in search of work form various minority groups. The social disadvantage of belonging to such groups manifests itself in many forms of discrimination. Such families are at a disadvantage for opportunities

in education, employment and housing. They are forced to accept unpleasant occupations with long hours and have to be content with low standards of living. Social isolation leads to lack of inclination to make use of available services. It is the experience of many hospitals that the incidence of illness, especially of nutritional disorders, runs high in such minority groups.

When a family is 'at risk' on social grounds, prevention of illness or dysfunction requires social action and this is dependent upon the social policy prevailing at the time. However, in all cases the best preventive measure is the one adopted by the family at home. A knowledge of the effects of some of the factors mentioned above will enable the family to recognise some of these 'at risk' situations and take steps to avoid them. Alternatively, the family can mobilise resources well in advance for adequate care and upbringing of their children.

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