
UNIT 28 FEVERS

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28.1 INTRODUCTION

Fever is a common phenomenon in children and adults. Fever is not a disease by itself; rather, it is a symptom which indicates that there is some underlying infection in the body. Depending upon the illness, the fever will be accompanied with other symptoms. You, as a child care worker, must know what a particular fever indicates and what to do in case of the illness.

Objectives

After studying this Unit, you should be able to

- identify the underlying illness from the type of fever and accompanying symptoms
- assess which are the illnesses where you need to refer the child to the doctor
- manage the child's fever
- recognize symptoms of malaria and know how to treat it
- explain to the parents how to recognize and manage fevers
- explain to the parents how AIDS can be prevented

28.2 WHAT FEVER IS

When the temperature of the body rises above the normal of 37°C, this phenomenon is referred to as fever. Fever is only indicative of some disease in the body. It is not a disease in itself. Therefore, how the fever will show itself and what course it will take will depend on the underlying infection. In other words, the manifestation and the course of the fever will vary in different illnesses. Many illnesses

have very specific symptoms that occur with fever. For example, after the fever starts a rash may appear, as in chicken-pox or measles. Or there may be gastro-intestinal disturbances like diarrhoea or vomiting, as in typhoid or cholera.

Fever is a protective phenomenon of the body whereby when there is an infection, the metabolic rate increases, and this helps to fight the infection.

As already described in Unit 21 on 'Caring for the Sick Child', you as a child care worker have to be able to manage simple illnesses in children while being aware of the symptoms of serious illness. You have to distinguish between illnesses that can be treated at home or the centre and at what point in time you have to refer sick children to the doctor.

As you know, we measure the body temperature with a thermometer. The instrument and the method of recording the temperature has been described in Unit 14. To recapitulate, the normal body temperature is 37°C, while a temperature of 37.5°C or above is referred to as fever. When the temperature goes above 39°C, it is called hyperpyrexia and is a serious condition.

In some cases where the child is malnourished, or very sick or very young, the temperature may be below normal, i.e., below 37°C. This is called hypothermia, and also has to be treated.

28.3 WHAT HAPPENS IN FEVER

When the body temperature rises to above 37.5°C, the heart rate increases and breathing becomes rapid. Because of the increase in skin heat, the eyes start burning. The skin becomes hot and dry, and the urine is scanty. Usually, there is constipation. Sometimes due to contraction of muscles, the child starts shivering, which occurs classically in malaria and urinary infections. Some children may have fits at high body temperature. Since these fits occur only during a high fever — when the temperature goes above 39°C, — they are called *febrile fits*.

As the fever progresses, due to the rapid breathing, dehydration sets in. The eyes become sunken, and if the intake of food and liquids is insufficient, the child/person begins to feel tired and weak.

Febrile Fits: These occurs mostly in the 6 months to 5 years age group. These fits have to be differentiated from other fits, which occur at any time (such as fits due to epilepsy) and are not related to rise of temperature. Some children are more prone than others to febrile fits and the tendency runs in families. In children who are prone to febrile fits and are not treated (i.e., the fits not controlled) there may be long-term damage to the brain. All efforts should be made to lower the body temperature. No other treatment is required for febrile fits. These, however, should be differentiated from illnesses like meningitis in which fever and fits may coexist.

28.3.1 Onset and Duration of Fever

Fevers can be classified as '**acute**' or '**chronic**', depending on the onset and duration. If the onset is sudden and the fever rises rapidly, it is called '**acute**'. This is commonly seen in malaria, measles and other acute infections like meningitis etc. Sometimes the fever starts insidiously (i.e., the fever may not be immediately noticeable), is a low grade fever and lasts for a long time. This is called '**chronic**' fever, and is usually seen in infections like tuberculosis, lower respiratory infections or fevers in septic wounds.

If the fever lasts for more than two days, we have to try and ascertain the cause of the fever and treat the underlying infection.

28.3.2 Resolution of Fever

The pattern and the speed with which the fever comes down is called the resolution of the fever. Untreated fevers are self-limiting and resolve in one of two ways. When the temperature comes down gradually (i.e., in steps) it is referred to as "lysis". When the fever drops suddenly to normal or sometimes below normal, it is said to resolve by "crisis". This is seen in typhoid and can be life-threatening.

28.4 RECOGNISING A FEVER

Since fevers are only symptoms of infections or other illnesses, the cause of fever (i.e., the infection or the disease) determines how the fever shows itself (i.e., how it manifests). Since most of the infections that produce fever have been dealt with under the different Units in this and the earlier Block as well as in Unit 14, we shall describe here the major accompanying symptoms with fever and the infections they indicate. For treatment of the particular infections, refer to the earlier Units.

Sometimes a symptom may be the major illness, with the fever being incidental. For example, in bacillary dysentery, the passing of blood and mucus in the stools is the major complaint, while the fever may not be so uncomfortable. On the other hand, in illnesses like malaria, the fever with shivering is the main cause of discomfort.

28.4.1 Fever with Headache

When there is a cold with fever, it could be influenza. This is commonly called 'Flu', and usually lasts only for 4-5 days. Most colds and 'Flu' need not be treated except for keeping the child comfortable by bringing down the temperature with paracetamol tablets.

If there is a cough with expectoration (i.e., secretion of sputum) **along with the fever, it could be a lower respiratory infection.**

Fever with a heavy head on waking up, which gets worse during the day, could be due to "sinusitis" (infection of the sinuses in the bones of the face). This and the above condition have to be treated with antibiotics. Refer to a doctor.

Most diseases involving the gastro-intestinal system are accompanied with headaches along with fever. Typical of typhoid is frontal headache (headache on the forehead) with a fever, diarrhoea or constipation. Management of typhoid has been discussed in Unit 14 and 22 in Block 4 and 7 respectively.

Malaria usually presents with severe shivering and a headache. The same symptoms are seen in urinary infections also. While malaria occurs at regular intervals, and at the same time every time, fever in urinary infection is continuous.

If the child complains of fever along with severe headache with vomiting, it could be a serious illness like meningitis. Refer to the doctor immediately.

28.4.2 Fever with Rash

A rash appearing on the trunk on the second day of fever is chicken-pox.

If there is a red rash on the fourth day of fever, it is measles. Measles is characterised by watery eyes that are sensitive to light.

28.4.3 Fever with Sore Throat

Tonsillitis (enlargement of the tonsils) is one condition where the fever is accompanied with sore throat. Usually there is also difficulty in swallowing.

Another reason for fever with sore throat could be **streptococcal sore throat.** This is serious and could lead to rheumatic arthritis and heart condition. You have read about this condition in Unit 23 of this Course.

Diphtheria is also accompanied with fever and sore throat, with difficulty in swallowing. There is also a white patch on the throat and pharynx. Ask the parents whether the child has been immunized against diphtheria.

All these above-mentioned conditions need to be treated by a doctor. Refer to the Unit on respiratory diseases for details.

28.4.4 Fever with Cough and Cold

This could be indicative of influenza, bronchitis, a pneumonia or tuberculosis. Influenza has been discussed in Sub-section 28.3.1. In bronchitis and pneumonia, the

respiratory rate will be fast and there will be difficulty in breathing. Since bronchitis and pneumonia can affect the breathing of the child, and produce serious effects, the child has to be referred to the doctor immediately.

In tuberculosis, usually the fever is low grade or the temperature may rise only in the evenings, due to the exertion during the day. The fever may be accompanied by night sweats. The cough may produce sputum or secretions that may be blood stained. These symptoms may be associated with loss of weight, loss of appetite and feeling of illhealth. TB has to be treated in the hospital. Details of management of these illnesses can be found in Unit 23.

28.4.5 Fever with Pain in the Limbs

Fever with pain in limbs is usually associated with polio. Polio starts with fever, and on the second or third day the child will have pain or tenderness (i.e., pain on touch) in one or more limbs. As the disease progresses, there is wasting of the muscles and paralysis.

The other rarer cause of pain in the limbs will be when there is infection inside the long bone of the limbs.

If there is redness and swelling of the limb, it could be due to infection of the lymphatic system (usually in Filariasis, caused by the bite of the Culex mosquito).

All these conditions have to be referred to the doctor. The oral polio vaccine will protect the child from polio. You have read about this in Unit 14.

28.4.6 Fever with Diarrhoea and/or Vomiting

Some children who have a tendency for vomiting will start any fever with vomiting. But usually fever with vomiting or diarrhoea indicates a disturbance of the gastrointestinal tract, like typhoid, cholera or dysentery. In typhoid, there could be vomiting, diarrhoea or constipation. The tongue will be coated and the child will look very sick. Any fever that lasts for more than five days should be tested for typhoid.

In cholera, the more distressing symptom is acute watery diarrhoea and vomiting.

In bacillary dysentery, the child will pass blood and mucus in the stools along with having pain in abdomen.

In all these cases, refer the child to the doctor immediately.

28.4.7 Fever with Jaundice

Infective hepatitis is a virus infection that spreads through water. If the child has fever with jaundice, loss of appetite, headache and vomiting, it is likely that the fever is due to the hepatitis virus. We have to differentiate this from other causes of jaundice where there is no fever.

28.4.8 Fever with Swelling on the Sides of the Face

This symptom is usually indicative of the infection mumps. You have read about managing mumps in Unit 14 and 21.

28.4.9 Fever with Enlarged Glands in the Neck

This is a symptom of tuberculosis. Refer the child to the doctor.

28.4.10 Fever with Ear Discharge

Ear discharge with fever is due to infection of the ear. The condition could be otitis media or there could be other reasons for the discharge.

Ear discharge has to be taken seriously as it could lead to deafness. Ear discharge has to be treated with antibiotics. Refer the child to the doctor. You have read about managing ear infections in unit 27 of this Block.

28.4.11 Fever with Stiffness of the Body

If the child is arched backwards (i.e., the back is bent or arched like a bow) and

looks very ill, it is likely that the child is suffering from tetanus. Ask whether the child has been immunized against tetanus, and refer the child immediately to the doctor.

The other serious condition where there will be stiffness, particularly in the neck, is meningitis. Refer to the doctor immediately.

28.4.12 Fever in Skin Infections

Usually skin infections like scabies, infected wounds, large ulcers or boils are localised (i.e., they affect only a specific part of the body but not the entire body). There may be pain and swelling where the lesion is. **But in cases where the skin infection has entered the body through the blood and has spread to the whole body, the child will have fever. This is called septicaemia** and has to be treated with antibiotics. You have read about this condition in Unit 26.

28.4.13 Fever with Fits

As described earlier, the commonest cause of this is febrile fits. In cases of meningitis also, the child will have fits.

28.4.14 Fever with Frequent Passing of Urine or Pain

This occurs when there is urinary infection. The child has to be referred for testing the urine, which may show albumin or pus. In severe infection, there may be blood cells also in the urine. This condition has to be treated by the doctor.

28.4.15 Fever with Dehydration

In cases where the child has been exposed to the hot sun or to very hot conditions, there may be a rise of temperature with or without headache and/or vomiting. The skin will feel hot and dry and there will be intense thirst. **These conditions are called heat stroke or sun stroke.** In these conditions, we have to keep the child cool. Give plenty of liquids (ORS is ideal) and treat the headache with cold compress. Paracetamol may be given. Protect the child from sun.

28.5 TREATMENT OF FEVERS

Whatever be the cause of fever, there are certain basic rules that must be followed in the management of fever. Of course, side by side, the underlying infection must be treated.

- 1) **Intake of Fluids:** Children lose a lot of water and salts when they have fever because of increased sweating as well as rapid breathing. **They must be given plenty of fluids to drink** to make up for this loss. Give the child fluids such as water, light tea, milk or fruit juices. If there is vomiting and the child does not retain the fluids she drinks, then the child has to be referred for intravenous drips. This can be done at the PHC or medical centre.
- 2) **Food:** Children with fever should be given the normal amount of food. The food should be cooked soft and be easily digestible. Even if an infant develops fever, the mother should continue breast feeding the child. Food should be continued even if child has diarrhoea.
- 3) **Maintaining Hygiene:** Children with fever have to be nursed carefully with special attention to their eyes and mouth.

The eyes have to be cleaned with warm sterilised salt water three or four times a day.

The mouth may be dry and the lips crusted. Wash the mouth with salt water, or with glycerine. In older children, the teeth have to be cleaned.

- 4) **Clothes:** The clothes covering the child have to be light and comfortable. A child wrapped up in very warm clothes will have a rise of temperature.

The room has to be well ventilated, but not too draughty.

5) **Medicines:** If the child has a high fever, give paracetamol, and bring the fever down with tepid sponging. If it is a known case of malaria, give chloroquine in the prescribed dose. If there are skin lesions, clean and dress them.

IT IS NOT NECESSARY TO TREAT CHILDREN WHO HAVE FEVER WITH INJECTIONS.

Besides, when describing the various infections in the different Units of Block 7 and 8, we have stated which infections can be managed at home and where you need to take the child to the doctor.

28.5 MANAGEMENT OF MALARIA

Malaria is a specific illness caused by a parasite called 'plasmodium'. It spreads from one person to the other through the mosquito. Different species of the parasite are spread through different species of mosquitoes and cause different symptoms.

Signs and Symptoms

The following symptoms indicate malaria:

- 1) **Fever:** The fever is usually high and is accompanied by headache and shivering. The fever occurs at the same time and at regular intervals. This is because the life cycle of the parasites, injected into the blood by the mosquito when it bites us, takes a particular time.
- 2) The parasites destroy the blood cells as they are growing. This is when **shivering** occurs. Because the cells are destroyed, there is **anaemia** and even mild jaundice in malaria. The spleen tries to clean up the destroyed cells and gets enlarged.
- 3) **Loss of appetite** is commonly seen in malaria. This is because the parasite produces toxins which make the child very ill. Often there is diarrhoea also.
- 4) In one type of malaria, the brain is affected and the child has **hyperpyrexia, vomiting and fits**. This may lead to death or to permanent brain damage.

CHILDREN BETWEEN THE AGES OF THREE MONTHS AND FIVE YEARS ARE MOST VULNERABLE TO MALARIA.

Treatment

Daily care of the sick child is necessary. Treat all the symptoms such as fever, dehydration, vomiting etc. Give anti-malarial tablets as prescribed.

Prevention

There is no preventive vaccine for malaria. We have to prevent infection by getting rid of the mosquitoes that spread the infection. In areas where it is widespread, protect the children with a weekly dose of anti-malarial drug.

The environment has to be kept clean and free from stagnant fresh water where the mosquito breeds.

Check Your Progress Exercise 1

Answer the following questions in the space below.

- 1) Match column A to column B

COLUMN A

- a) Fever with pain in the limbs
- b) Fever with headache and shivering

COLUMN B

- i) cholera
- ii) diphtheria

COLUMN A

COLUMN B

- | | |
|---|------------------|
| c) Low grade fever with cough | iii) bronchitis |
| d) Fever with acute watery diarrhoea with flakes of mucos | iv) polio |
| e) Fever with stiffness, particularly in the neck | v) malaria |
| f) Fever with cough and cold and at increased respiratory rate | vi) tuberculosis |
| g) Fever with sore throat, difficulty in swallowing and a white membrane covering the throat and the pharynx. | vii) meningitis |

2) Fill in the Blanks

- a) is the drug of choice in treating malaria.
- b) Increased sweating during fever makes the child lose a lot of and
- c) Food intake during fevers should be
- d) When the onset of fever is sudden, the fever is classified as
- e) Fever with sore throat could be due to, and

3) What are the symptoms of malaria?

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28.7 SUMMING UP

In this Unit, you have read how to recognize different types of fevers and the underlying symptom they indicate.

When the body temperature rises above the normal of 37°C, the phenomenon is called fever. Fever is not a disease but it is a symptom of some underlying infection. Depending upon the infection, the course and the manifestation of fever varies.

In some cases, when the temperature rises above 39°C, the child/person has fits. These fits are called febrile fits and must be controlled as they can lead to brain damage.

The fever may be 'acute' or 'chronic'. It may come down to normal gradually or suddenly.

Different symptoms along with fever indicate different illnesses. Fever with headache could be due to influenza, sinusitis, typhoid or malaria. In the latter there is shivering as well.

Fever with rash is indicative of chicken pox or measles.

Fever with sore throat could be tonsillitis, streptococcal sore throat or diphtheria.

Fever with cough and cold could be due to influenza, pneumonia, bronchitis or tuberculosis.

Polio starts with fever and pain in the limbs.

Fever with diarrhoea and/or vomiting could be due to cholera, dysentery or typhoid.

Fever with stiffness in the body is due to tetanus or meningitis.

Fever with swelling on the side of the face is due to mumps.

Fever with skin infection occurs if there is septicaemia.

In urinary tract infections, there is fever with pain in passing urine.

If the child has had a sun stroke there is fever with dehydration.

While treating the underlying infection which is the cause of fever, the fever itself must be managed. Intake of fluids and food should be adequate. Clothes should be comfortable and light, and appropriate medicines should be given.

Children between three months and five years of age are most vulnerable to malaria. Chloroquine is the best drug to treat malaria.

28.8 ANSWERS TO CHECK YOUR PROGRESS EXERCISE

Check Your Progress Exercise 1

- 1)
 - a) iv)
 - b) v)
 - c) vi)
 - d) i)
 - e) vii)
 - f) iii)
 - g) ii)
- 2)
 - a) Chloroquine
 - b) Water and salts
 - c) Normal
 - d) Acute
 - e) Tonsillitis, diphtheria or streptococcal sore throat
- 3) High fever with shivering and headache. The fever occurs at the same time at regular intervals. There may be mild jaundice, loss of appetite. The doctor will also recognize an enlarged spleen and anaemia. In one type of malaria, the brain is affected and the child has hyperpyrexia, vomiting and fits.