

# I Malaria



Malaria is a common, and often deadly, disease, but it can be prevented and cured. It is important for people with symptoms to get prompt treatment from a health facility. With proper treatment, malaria can be cured, but waiting to get treatment can lead to death. This chapter will focus on preventing, recognising and treating malaria.

# 1. Malaria



## Session objectives

By the end of this session, participants will be able to:

- Explain how malaria is transmitted.
- Recognize symptoms of malaria.
- Explain why pregnant women and children are particularly at risk.
- List ways to prevent malaria.



## Session guide

1. **Ask:** Who has had malaria? Who has known someone who has had malaria?
2. **Ask:** What is malaria? Allow participants to discuss.
3. **Ask:** What is a parasite? Allow participants to discuss. [Answer: A parasite is an organism that lives on or in another organism.] **Explain** that malaria is an infection caused by a parasite that is carried from person to person by a certain type of female mosquito. Malaria can make people very sick or die. Malaria is usually found in places with warmer temperatures. Malaria parasites, which develop and live inside the mosquito, need warm temperatures to grow before they are old enough to be transmitted to humans. Although malaria can cause illness and death, it can be prevented and treated.
4. **Ask:** What are the symptoms of malaria? [Answers: high fever, shaking chills, and flu-like symptom, joint aches, and headaches.]
5. **Ask:** How can you know for sure that you have malaria? Allow participants to discuss.
6. **Explain** that the only way to know if someone has malaria is for a health worker to examine a blood sample. It is a simple test that only needs a finger prick of blood that a health worker looks at under a microscope. Fever can be a symptom of many other illnesses and infections. It is important to be examined in a facility to know for sure if it is malaria so it can be treated properly. Some medicines can no longer be used to treat malaria because the parasites have become used to them, which is why it is important to go to a health facility rather than treating yourself with medicines.
7. **Ask:** How do people get malaria? Allow participants to discuss.
8. **Explain** that people get malaria when one kind of a female mosquito that has the malaria parasites bites them and malaria parasites enter the person's blood. Once in a person's blood, the parasites travel to the liver and enter liver cells to grow and multiply. During this time, the infected person has no symptoms. After some time (one week to several months), the parasites leave the liver cells and enter red blood cells. Once in the cells, the parasites continue to grow and multiply. After the parasites are finished growing, the infected red blood cells break open, freeing the parasites to attack and enter other red blood cells. Parasites are released when the red cells burst and they cause the fever, chills, and other malaria symptoms.

Since the malaria parasite is found in red blood cells, malaria can also be transmitted through blood transfusion, organ transplant, or the shared use of needles or syringes contaminated with blood. Malaria may also be transmitted from a mother to her foetus before or during delivery.



Malaria is not transmitted from person to person like a cold (homa). You cannot get malaria from touching malaria-infected people. Anyone can get malaria. People who have many bites from mosquitoes infected with the malaria parasite are most at risk of becoming ill or dying.

9. **Ask:** When and where do people usually get malaria? [Answer: Indoors between the hours of 10:00 p.m. and 6:00 a.m.]
10. **Ask:** How can malaria be prevented? Participants should mention the following:
  - Sleep under insecticide treated bed nets and re-treat them regularly .(If a family has a pregnant woman or young children, it is very important that they use the nets before anyone else. They are most at risk.)
  - Do not wash insecticide treated nets until it is time for the next treatment.
  - Removing empty containers (like tins) where mosquitoes can breed.
  - Draining nearby pools of water.
  - Screening doors and windows against mosquitoes if possible.
  - Spray insecticides on your home's walls to kill mosquitoes that come inside.
  - Wear insect repellent and long-sleeved clothing when you are outside at night.
11. **Ask:** Who here sleeps under a bed net? **Ask** participants who do sleep under a bed net: Why do you sleep under a bed net? Does everyone in your family sleep under one? Is it a treated bed net? **Ask** participants who do not sleep under a net: Why don't you sleep under a bed net?
12. **Ask:** How do insecticide-treated bed nets benefit the community? [Answer: They kill mosquitoes which means there are less mosquitoes to infect people.]
13. **Ask:** Why is malaria so dangerous for pregnant women and young children? [Answer: Young children and pregnant women are very vulnerable to malaria because their bodies have little or no immunity to malaria, so they are more likely to become very ill if infected and possibly die.]
14. **Ask:** What advice would you give to a pregnant woman about malaria? [Answer: go for antenatal care and get medicine to prevent malaria, sleep under an insecticide-treated bed net.]
15. **Ask:** Why is it important to go for treatment quickly if someone has malaria? [Answer: Infection with malaria, if not promptly treated, may cause kidney failure, seizures, mental confusion, coma, and death. Mild malaria should always be treated quickly because it can quickly develop into severe illness and death. It is important for people with malaria to take all the medication they are given.



## Main messages

- Malaria is easy to treat in all age groups.
- It is important to take all drugs prescribed by a health care provider to be cured.
- Malaria can be prevented by taking action at the home.
- Pregnant women and children are most at risk of getting malaria and should sleep under insecticide treated nets.
- Pregnant women should go for antenatal visits and take two doses of SP.



## Activity: Malaria role plays

Ask for volunteers to role play the following scenes in front of the group.

- Father has bought one insecticide treated bed net for the family, but he insists on using it. His wife is pregnant and he has a young daughter. His brother tries to convince him to share the net with his pregnant wife and child or to buy another net.
- A mother and her neighbour are talking. The neighbour notices the child seems to have a fever, be very tired, and have trouble breathing. The mother also mentions that the child has not been eating well. The neighbour talks with the mother about taking her child for treatment and why it is important not to wait.
- Two friends are talking. One friend complains of having a fever and joint pain. He says that he has gone to the traditional healer for herbs but is still feeling sick. The other friend gives suggestions for what to do.

After each role play, ask participants the following questions:

- Do you agree with what the characters decided to do?
- Would you have done anything differently?
- Is what happened similar to what would happen in real life?
- How will the decisions the actors made influence their lives?

After all role plays have been performed, summarize the role plays and ask participants to talk about how it relates to issues in our own community.





## Background notes

Malaria is an infection caused by a parasite and carried from person to person by a certain type of mosquito. Malaria can make people very sick or die. People with malaria are usually sick with high fevers, shaking chills, and flu-like illness. Although malaria can cause illness and death, it can be prevented.

Malaria is usually found in areas with warmer temperatures, which is where mosquitoes usually live. Malaria parasites, which develop and live inside the mosquito, need warm temperatures to grow before they are old enough to be transmitted to humans.

### ***Malaria transmission***

Malaria is transmitted when a female anopheles mosquito carrying malaria parasites bites a person and passes on the parasite. When a mosquito bites, it takes a small amount of blood from the person that can have tiny malaria parasites. The parasite grows in the mosquito's stomach for a week or more, then travels to the mosquito's salivary glands. The next time the mosquito bites someone, these parasites mix with the mosquito's saliva and are injected into the bite. Mosquitoes that transmit malaria mostly bite people indoors between 10.00 p.m. and 6.00 a.m.

Once in a person's blood, the parasites travel to the liver and enter liver cells to grow and multiply. During this time, the infected person has no symptoms. After some time (one week to several months), the parasites leave the liver cells and enter red blood cells. Once in the cells, the parasites continue to grow and multiply. After the parasites mature, the infected red blood cells break open, freeing the parasites to attack and enter other red blood cells. Parasites are released when the red cells burst and they cause the fever, chills, and other malaria symptoms. When a mosquito bites an infected person, it ingests malaria parasites and the cycle of transmission continues.

The malaria parasite is found in red blood cells and can be transmitted through blood transfusions, organ transplants, or the shared use of needles or syringes contaminated with blood. Malaria may also be transmitted from a mother to her foetus before or during delivery.

Malaria is not transmitted from person to person like a cold. You cannot get malaria from touching malaria-infected people. Anyone can get malaria. People who have many bites from mosquitoes infected with the malaria parasite are most at risk of becoming ill or dying. Young children and pregnant women are also very vulnerable to malaria because their bodies have little or no immunity to malaria, so they are more likely to become very ill if infected and possibly die.

### ***Preventing malaria***

The following things can help you and your family prevent malaria:

- Sleep under insecticide treated bed nets and re-treat them at regularly. If a family has a pregnant woman or young children, it is very important that these people use the nets before anyone else. They are most at risk.
- Do not wash insecticide treated nets until it is time for the next treatment.
- Reduce the number of mosquitoes in and around your home by:
  - Removing empty containers (like tins) where mosquitoes can breed.
  - Draining nearby pools of water.
  - Screening doors and windows against mosquitoes if possible.
- Spray insecticides on your home's walls to kill mosquitoes that come inside.
- Wear insect repellent and long-sleeved clothing when you are outside at night.

The table below compares insecticide treated nets with untreated nets.

Insecticide Treated Nets	Untreated Nets
<ul style="list-style-type: none"><li>• Provide a high level of protection from mosquitoes.</li><li>• Kill mosquitoes that touch the net.</li><li>• Reduce the number of mosquitoes in the house, inside and outside the net.</li><li>• Also kill lice, ticks, and pests such as bedbugs and cockroaches.</li><li>• Are safe for people to use.</li></ul>	<ul style="list-style-type: none"><li>• Provide some protection from mosquitoes.</li><li>• Let mosquitoes in to bite:<ul style="list-style-type: none"><li>• When a person enters or leaves.</li><li>• If there is a hole or tear in the net.</li><li>• If the net is badly hung.</li><li>• When skin touches the net.</li></ul></li><li>• Do not kill or repel mosquitoes.</li></ul>

In addition to nets that have to be treated with insecticide, there are now new long-lasting insecticide-treated nets that can repel and kill mosquitoes for up to 3 years or for about 20 washes. These nets do not have to be retreated during this time. The long-lasting insecticide-treated net for sale in Kenya is called PermaNet.

When whole communities use insecticide treated nets there are fewer mosquitoes carrying malaria parasites. The advantages for the community are that there is less severe malaria and fewer children die, fewer children become sick from malaria, and young children are healthier and grow better.

Treating nets with insecticide is simple and quick, but it is important to do it correctly:

- Only use recommended insecticides and re-treat nets at the right time.
- Mix insecticide in the right amount of water for the net.
- Dip and dry the net so that the whole net is treated.
- Always read the instructions on the pack of insecticide and follow them carefully.

Mosquitoes breed wherever there is still water; in ponds, swamps, puddles, pits, drains and in the moisture on long grass and bushes. They also breed along the edges of streams and in water containers, tanks and rice fields. The number of mosquitoes can be reduced by:

- Filling in or draining places where water collects.
- Covering water containers or tanks.
- Clearing bushes around houses.

Malaria affects the entire community. Everyone can work together to reduce the places where mosquitoes breed and to organize regular treatment of mosquito nets with insecticide. Communities should ask all health workers and political leaders in their regions to help them prevent and control malaria.

### **Signs and symptoms of malaria**

Malaria can vary from mild to serious disease. Most people with malaria have:

- Fever (hot body) or a history of fever lasting a few days.
- Headache.
- Body and joint pains.
- Feeling cold and sometimes shivering.
- Loss of appetite.

Sometimes they will have abdominal pains, diarrhoea, nausea and vomiting.

Malaria may cause anaemia and jaundice (yellow coloring of the skin and eyes) because of the loss of red blood cells. Infection with malaria, if not promptly treated, may cause kidney failure, seizures, mental confusion, coma, and death.



For most people, symptoms begin 10 days to 4 weeks after infection, although a person may feel ill as early as 7 days or as late as 1 year after. If you think you, or someone you are caring for, has malaria, go to a health facility immediately.

### ***Treating malaria***

Malaria can be treated. If the right medicines are used, people who have malaria can be cured. However, the disease can continue if it is left untreated or if it is treated with the wrong medicine. Some medicines are no longer effective because the parasite is resistant to them, which is why it is important to go to a health facility rather than treating yourself with medicines.

Malaria should be treated as soon as possible, before it becomes life threatening. People who have any of the above symptoms should go to a health centre as soon as possible. Mild malaria should always be treated quickly because it can quickly develop into severe illness and death. It is important for people with malaria to take all the medication they are given.

To be sure someone is treated properly, it is important that caregivers recognize early symptoms and danger signs. For children, danger signs include:

- Looking unwell.
- Not eating or drinking.
- Being tired.
- Losing consciousness.
- Having fits (convulsions).
- Vomiting.
- Having a high fever.
- Breathing fast or having difficulty breathing.

It is important that caregivers get care immediately from a health care provider if a child is experiencing any of the above symptoms.

### ***Malaria during pregnancy***

Pregnant women are at special risk from malaria infection. Malaria infection during pregnancy can have dangerous effects on both the mother and foetus, including anaemia (thin blood) in the mother, miscarriage, premature delivery, and delivery of low birth-weight infants (less than 2500 g). Babies who are born underweight are more likely to be sick or die during their first year. Malaria during pregnancy is particularly dangerous for women with their first pregnancies and for women who are HIV-positive.

### ***Prevention and control of malaria during pregnancy***

Pregnant mothers should go for four (4) antenatal visits. During antenatal visits, pregnant women will be given two doses of SP to prevent malaria. These drugs are not harmful to the mother or the baby. Often a pregnant woman can have malaria but shows no signs of having malaria. For example, she may not have a fever or any other symptoms. This is very dangerous because she can still pass malaria onto the foetus. To protect the mother and the foetus from possible malaria, the Ministry of Health recommends that all pregnant women receive two treatment doses of SP when they attend the antenatal clinic during the pregnancy, whether they appear to have malaria or not.

**It is especially important for pregnant women and children to sleep under insecticide treated bed nets.**



## Gender and malaria

Gender awareness plays a role in the event of any type of illness. Men, women, boys, and girls of a family should have equal access to health services, as well as the ability to seek out those services. One sex should not be favoured over another. Pregnant women and children under five years of age are very vulnerable to malaria- it can be dangerous to their health and can cause them to die. A protective measure like a bed net is often used by the male in the household so that he can go to work without sickness. However, these resources need to be shared and used to protect the pregnant women and children who face more danger if they get malaria. It is also important for pregnant women to receive medicine that would help prevent malaria during pregnancy, but this requires resources that are often controlled by the husband. A husband's understanding, involvement, and support in health care decisions and prevention measures is very important.

## References

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