



**STUDENTS
CHALLENGE**

**MALARIA FACT SHEET
DETAILED**

SCIENCE

The Life Cycle of the Parasite (Infection & Transmission)

Malaria is a blood disease which can be transmitted to people of all ages.

It is caused by parasites of the species **Plasmodium** that are spread from person to person through the bites of infected mosquitoes.

The common first symptoms - fever, headache, chills, and vomiting - appear 10 to 15 days after a person is infected.

If not treated promptly with effective medicines, malaria can cause severe illness that is often fatal.

There are four types of human malaria -

- Plasmodium falciparum
- P.vivax
- P.malariae
- P.ovale.

P.falciparum and P.vivax are the most common. P.falciparum is by far the most deadly type of malaria infection.

Malaria transmission differs in intensity and regularity depending on local factors such as rainfall patterns, proximity of mosquito breeding sites and mosquito species.

Some regions have a fairly constant number of cases throughout the year - these are malaria endemic - whereas in other areas there are malaria seasons, usually coinciding with the rainy season.

Large and devastating epidemics can occur in areas where people have had little contact with the malaria parasite, and therefore have little or no immunity. These epidemics can be triggered by weather conditions and further aggravated by complex emergencies or natural disasters.

The Malaria infection Cycle

Mosquitoes breed in water.

Different species, including those that can transmit malaria, have different choices of breeding site.

For example some anopheline mosquitoes prefer small puddles whilst others prefer flowing streams.

They bite an infected person sucking up the malarial parasite and then, when they bite someone else, the parasite is transferred and, if the victim has acquired no immunity over the years, he or she will develop malaria.

Most kinds of mosquitoes that can transmit malaria bite mainly between dusk and dawn.

HEALTH

Young children take time to build up resistance to malaria.

If they get malaria when very young their bodies are often not strong enough to beat it and they may die.

However, if a child survives and is bitten repeatedly by infected mosquitoes they gradually build up some resistance to the malaria parasite.

The older, stronger child has a much better chance of fighting the disease and not dying.

Types of Malaria Bed Nets

Long-Lasting Insecticidal Nets

A Long Lasting Insecticidal Net is a mosquito net impregnated with insecticide.

The insecticide is cleverly bound within the fibres that make up the netting and is 'slow released' over a 4-5 year period.

Insecticide treated nets therefore provide two levels of protection. First as a mechanical barrier against the bites of malaria-carrying mosquitoes and second as a means of killing mosquitoes on contact with the insecticide.

Insecticide coated nets kill mosquitoes that land on them, drawn to the nets by the odour of the person sleeping beneath it. This 'knock down' or killing of the mosquito is the single greatest thing that protects the person sleeping under the net. Nets can develop small holes over time and on nets not treated with insecticide mosquitoes can find their way through and bite. With insecticide treated nets, even with a few holes, they still remain 90 to 95%+ effective, as when the mosquito lands on the net it is knocked down and killed.

2 people can sleep under one bed net which can last up to four to five years.

Insecticide Treated Nets (ITNs)

These are simple mosquito nets that have been treated with an insecticide. These nets require 're-dipping' to restore the insecticide element every 6-12 months. Re-dipping involves soaking the nets in a bucket of insecticide solution and then hanging them up to dry.

These nets are effective but are not as favoured as LLINs due to the re-dipping required, which is a messy operation, and which often does not get done.

Simple mosquito nets

These are nets without any insecticide treatment.

SOCIAL STUDIES

Socio-Economic costs of malaria

Malaria affects individuals, families, communities and economies - keeping children from school, adults from the workplace and costing the continent of Africa an estimated \$12 billion a year in lost productivity.

Malaria causes an average loss of 1.3% annual economic growth in countries with intense transmission.

When compounded over the years, this loss has led to substantial differences in GDP between countries with and without malaria.

Malaria traps families and communities in a downward spiral of poverty, disproportionately affecting marginalized populations and poor people who cannot afford treatment or who have limited access to health care.

Malaria's direct costs include a combination of personal and public expenditures on both prevention and treatment of disease.

In some countries with a very heavy malaria burden, the disease may account for as much as 40% of public health expenditure, 30-50% of inpatient admissions and up to 60% of outpatient visits.

Malaria has lifelong effects through increased poverty, impaired learning and decreases attendance in schools and the workplace.

Global and Regional Risk

Approximately, 40% of the world's population, mostly those living in the world's poorest countries, are at risk of malaria.

Every year, more than 500 million people become severely ill with malaria.

Most cases and deaths are in sub-Saharan Africa. However, Asia, Latin America, the Middle East and parts of Europe are also affected.

Travellers from malaria-free regions going to areas where there is malaria transmission are highly vulnerable - they have little or no immunity and are often exposed to delayed or wrong malaria diagnosis when returning to their home country.