



# Healthy

Life

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Newsletter

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## Department of Internal Medicine



Arrival of monsoon means relief from scorching heat and time to set out for outings and enjoy the rains. However, it also means rise in water-borne diseases and mosquito spread infections like Malaria and Dengue.

Growing urbanization and poor hygiene measures are largely responsible for increase in number of these infections. These vector-borne infections along with H1N1 Influenza are currently the major health issues faced by our city of Mumbai and have received widespread media coverage.



**Dr Vimal Pahuja**  
Full-time Consultant Physician

# MALARIA

Malaria is an infectious disease caused by a parasite called plasmodium that infects red blood cells and is characterized by cycles of chills, fever and sweating.

Of the four species of malaria, the most serious type is Plasmodium falciparum. It can be life threatening. The other three species of malaria (P. vivax, P. malariae and P. ovale) are generally less serious and are not life

threatening.

### Malaria as a Global Problem:

Malaria is a major health issue in India and also in Asia, Africa, and Central and South America. Approximately 40% of the world population is at risk of contracting malaria. In fact, recently, Mumbai has been declared the malaria capital of India.

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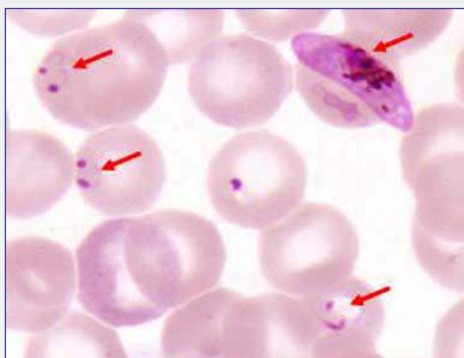


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## Malaria Transmission

The life cycle of the parasite is complicated, and involves two hosts, humans and *Anopheles* mosquitoes. The disease is transmitted to humans when an infected *Anopheles* mosquito bites a person and injects the malaria parasites (sporozoites) into the blood. Sporozoites travel through the bloodstream to the liver, mature, and eventually infect the human red blood cells. While in red blood cells, the parasites again develop until a mosquito takes a blood meal from an infected human and ingests human red blood cells containing the parasites. Then the parasites reach the *Anopheles* mosquito's stomach and eventually invade the mosquito's salivary glands. When an infected *Anopheles* mosquito bites a human, these sporozoites complete and repeat the complex *Plasmodium* life cycle.



Red blood cells infected with *Plasmodium falciparum* malaria parasites (arrows) CDC image

## Signs and Symptoms of Malaria

- Fever, chills, muscle aches, headache, nausea, vomiting, cough, diarrhea
- Cycles of chills, fever and sweating that repeat periodically are typical
- Yellowing (jaundice) of the skin and sclera of the eyes due to destruction of red blood



cells and liver cells

- People with severe *Plasmodium falciparum* malaria can develop fatal complications such as bleeding problems, shock, liver or kidney failure and coma
- The period between the mosquito bite and the onset of the malarial illness is usually one to three weeks
- Certain types of malaria (*Plasmodium vivax* and *ovale*) parasites may take much longer, as long as eight to 10 months, to cause symptoms. These parasites remain inactive in the liver cells during this time. When such fever recurs it is called relapsing malaria.

## How is Malaria Diagnosed?

By examining the blood on a stained smear for the *Plasmodium* parasite under a microscope.

Rapid diagnostic tests based on immunologic principle are now widely used for malarial antigen detection.

## How is Malaria Treated?

Chloroquine Phosphate is the drug of choice

for all malarial parasites.

For Chloroquine resistant strains, Artesunate and Artemeter group of drugs are used. These are available in combinations with drugs like Lumefentrene and Sulfamethoxazole-Trimethoprim.

Severe and complicated form of malaria (*Falciparum* Malaria) is treated with quinine and Artesunate.

## Prophylaxis and Vaccines

Visitors to malaria-infected zones are advised to take drugs to prevent malaria. These drugs are taken about one to two weeks before traveling to a malaria infested area and for four weeks after leaving the area. Drugs like Mefloquine, Chloroquine, and Atovaquone Proguanil are used for prophylaxis.

To prevent the relapse of malaria, Primaquine is used. However, the G6PD test is recommended before taking Primaquine.

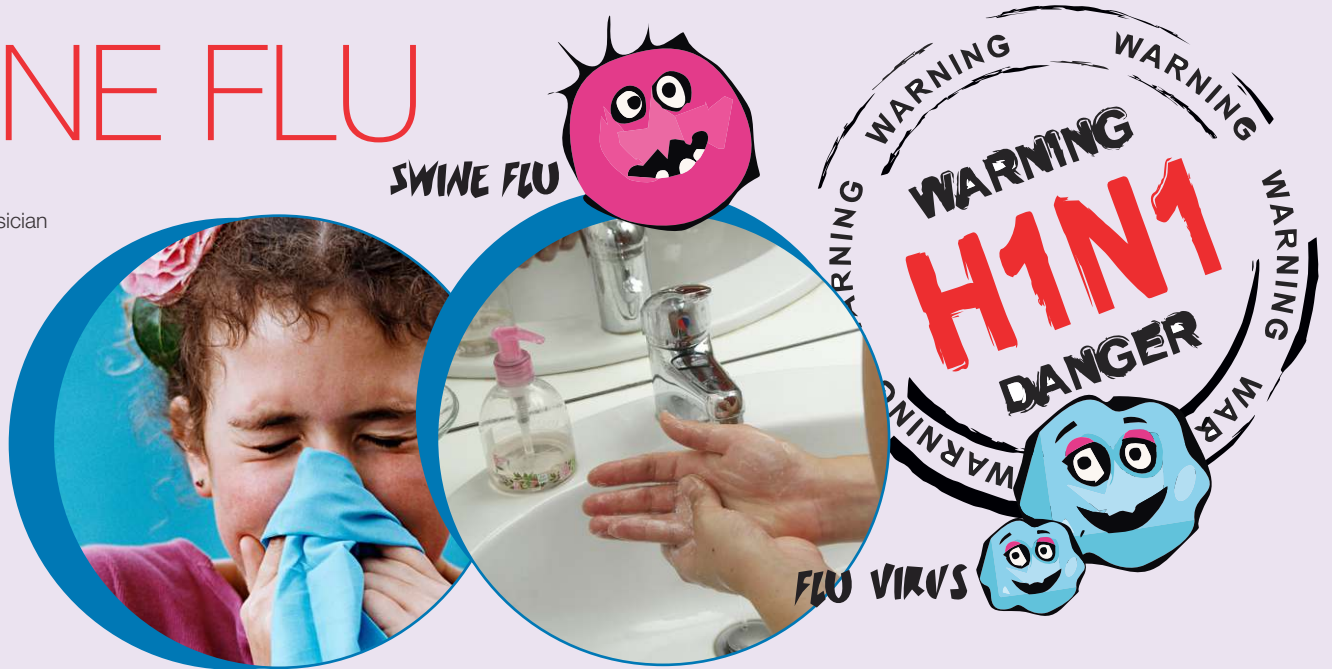
Currently, there is no vaccine available for malaria.

## What Other Precautions should I take to Avoid Malaria?

- If possible, avoid exposure to mosquitoes during dawn and dusk (the hours of greatest mosquito activity).
- Wear appropriate clothing (long-sleeved shirts and long pants) especially when you are outdoors.
- Apply insect repellent to the exposed skin. The CDC recommended insect repellent should contain up to 50% DEET (N, N-diethyl-m-toluamide), which is the most effective mosquito repellent for adults and children over 2 months of age.
- Spray mosquito repellents on clothing to prevent mosquitoes from biting through thin clothing.
- Use a permethrin-coated (or similar repellent) mosquito net over bed.
- Have screen covered windows and doors.
- Spray Permethrin or a similar insecticide in the bedroom before going to bed.

# SWINE FLU

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Full-time Consultant Physician



Swine flu is a disease of respiratory system caused by novel H1N1 virus, which has emerged because of various permutations and combinations of genetic material of human influenza virus and swine influenza virus.

## History and Epidemiology

There have been cases of swine influenza virus infecting the humans in the past but in March 2009, many cases were reported from Mexico, who were infected with H1N1. It spread worldwide and WHO declared it as a 'pandemic' in June 2009.

Swine Flu cases this year are already on rise. At Dr L H Hiranandani hospital, we have treated 49 cases including complications such as ARDS (Adult Respiratory Distress Syndrome) in 2009.

## Signs and Symptoms

Manifestations of H1N1 influenza (swine flu) are similar to those of seasonal influenza. Patients present with symptoms of acute respiratory illness, including at least 2 of the following:

- Fever
- Cough
- Sore throat
- Body aches
- Headache

- Chills and fatigue
- Diarrhea and vomiting

The duration of illness is typically 4-6 days. The infectious period for a confirmed case is defined as 1 day prior to the onset of symptoms to 7 days after onset.

Some patients develop severe respiratory symptoms and need respiratory support (such as a ventilator to breathe). Patients can get pneumonia (secondary bacterial infection) if the viral infection persists, and some can develop seizures. Death often occurs from secondary bacterial infection of the lungs and the patient needs to be given appropriate antibiotics.

In children, signs of severe disease include apnea, tachypnea, dyspnea, cyanosis, dehydration, altered mental status and extreme irritability.

## Swine Flu Spread

Swine flu principally spreads through coughing and sneezing without protection as well as touching nose or mouth with infected hands.

## How is Swine Flu (H1N1) Diagnosed?

Swine flu is diagnosed clinically by the patient's history of association with people known to have the disease and their symptoms listed above. The symptoms are difficult to differentiate from normal influenza virus.

Only throat swab or nasopharyngeal swab examination can differentiate H1N1 from normal influenza. This test is carried out in some selected laboratories.

## What Treatment is available for Swine Flu (H1N1)?

Two antiviral agents have been reported to help prevent or reduce the effects of swine flu viz., Zanamivir (Relenza) and Oseltamivir (Tamiflu). These drugs should not be used indiscriminately, because viral resistance to them can and has occurred. In addition, they are not recommended if the flu symptoms already have been present for 48 hours or more, although hospitalized patients may still be treated past the 48-hour guideline.

## Can Novel H1N1 Swine Flu be Prevented with a Vaccine?

The best treatment for influenza infections in humans is prevention by vaccination.

The first vaccine released in early October 2009 was a nasal spray vaccine. It is approved for use in healthy individuals ages 2 through 49. This vaccine consists of a live attenuated H1N1 virus and should not be used in anyone who is pregnant or having low immunity.

The injectable vaccine is made from killed H1N1 and is approved for use in ages 6 months to the elderly including pregnant females.

Talk to your doctor about novel H1N1 vaccination.

A serious side effect (allergic reaction such as swelling of the airway) to vaccines can occur in people who are allergic to eggs; these people should not be given flu vaccines. Individuals with active infections or diseases of the nervous system are also not recommended to

get flu vaccines.

**The following categories of people are recommended to get vaccinated:**

- Pregnant women
- People who live with or provide care for children younger than 6 months of age
- Healthcare and emergency medical

services personnel.

- People between 6 months and 24 years of age.
- People in the age group of 25 through 64 who have chronic health disorders such as asthma, diabetes, or a weakened immune system.

### Dos and Don'ts

1. Wash your hands as the virus can be transmitted by touching infected material.
2. Use an alcohol-based hand sanitizer if soap and water are not readily available.
3. Use sanitizers on objects that many people may touch e. g. doorknobs, computer keyboards, handrails, phones).
4. Do not touch your mouth, eyes, nose, unless you first do items 1 or 2 above.
5. Avoid crowded places and people who are coughing and sneezing (most virus-containing droplets do not travel more than 4 feet so experts suggest 6 feet is a good distance to stay).
6. Avoid touching anything within about 6 feet of an uncovered cough/sneeze.
7. Studies show that individuals who wear surgical or N95 particle masks may prevent inhalation of some H1N1 virus, but the masks may prevent only about 50% of airborne exposures and offer no protection against surface droplets.
8. Drink lots of fluids and be well hydrated. Eat healthy food with lots of vegetables and fruits. Exercise daily. This will increase your immunity to fight the infection.

## Prevention is better than cure

### Precautions to take for Malaria

#### Top 10 Mosquito breeding sites

1. Bird baths
2. Old tyres
3. Unused containers such as barrels
4. Flower pot saucers
5. Swimming pool covers
6. Wading pools
7. Clogged gutters / eavestroughs
8. Clogged drainage ditches
9. Small containers such as cans or bottle tops
10. Unused children's toys or vehicles

#### Also Remember

1. Do not allow stagnant water to collect in your house or vicinity. Pour phenyl or kerosene over it to avoid breeding of mosquitoes.
2. Drain out water from plant pots to avoid mosquito breeding.
3. Wash your hands before eating or touching your children after coming home. Office goers should use alcohol rubs to clean hands after travelling in trains or buses.
4. Use boiled water to drink.
5. Avoid outside food & always eat fresh food.



### Things to do to prevent Swine Flu

#### 1 CLEAN



Wash your hands often. Scrub your hands for at least 20 seconds with soap and water or use an alcohol-based hand cleaner.

#### 2 COVER



Cover your cough. Use a tissue to cover your mouth and nose when you cough or sneeze.

Don't have a tissue? Your sleeve will do.

#### 3 CONTAIN



Contain germs by steering clear of others who are sick.

If you do get sick, stay at home until you're well again, so you don't spread more germs.

# DENGUE FEVER



Dr Shalini Suralkar  
Full-time Consultant Physician

Dengue is prevalent throughout the tropics and subtropics. According to the World Health Organization, there are an estimated 50 million cases of dengue fever with 500,000 cases of dengue hemorrhagic fever requiring hospitalization each year. Nearly 40% of the world's population lives in an area endemic with dengue.

## What is Dengue Fever?

Dengue fever is a disease caused by a family of viruses that are transmitted by mosquitoes.

- It is an acute illness of sudden onset that usually follows a benign course with headache, fever, exhaustion, severe joint and muscle pain, swollen glands (lymphadenopathy), and rash.
- The dengue triad of fever, rash, and headache (and other pains) is particularly characteristic of dengue.
- Dengue strikes people with low levels of immunity. It is possible to get dengue fever multiple times. However, an attack of dengue produces immunity for a lifetime to that particular serotype to which the patient was exposed.

## How is Dengue Contracted?

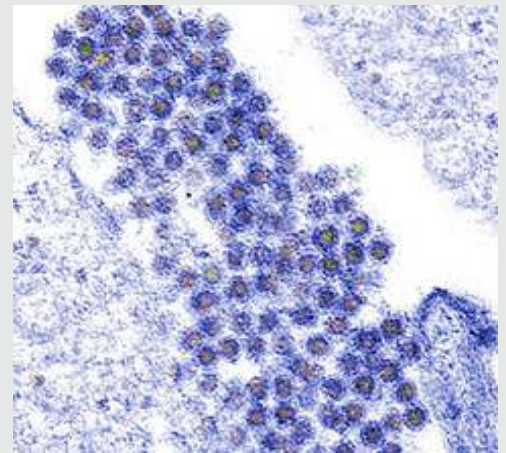
The virus is contracted from the bite of *Aedes aegypti* mosquito that has previously bitten an

infected person. The mosquito flourishes during rainy seasons but can breed in water-filled flower pots, plastic bags, and cans year-round. The mosquito bites during the day.

## What are the Signs and Symptoms of Dengue?

After being bitten by a mosquito carrying the virus, the incubation period ranges from three to 15 (usually five to eight) days before the signs and symptoms of dengue appear. Dengue starts with chills, headache, pain upon moving the eyes, and low backache. Painful aching in the legs and joints occurs during the first hours of illness. The temperature rises quickly as high as 104° F (40° C), with relative low heart rate (Bradycardia) and low blood pressure (Hypotension). The eyes become reddened. A flushing or pale pink rash comes over the face and then disappears. The glands (lymph nodes) in the neck and groin are often swollen.

Fever and other signs of dengue last for two to four days, followed by rapid drop in temperature (Defervescence) with profuse sweating. This precedes a period with normal temperature and a sense of well-being that lasts about a day. A second rapid rise in temperature follows. A characteristic rash appears along with the fever and spreads from the extremities to cover the entire body except



Dengue Virus

the face.

## How is Dengue Diagnosed?

The Dengue infection can be diagnosed by various serological tests such as Dengue NS1 and Dengue IgM / IgG. In addition, the monitoring of the platelet count is important to detect the decreasing platelet trend.

## How is Dengue Fever Treated?

Because dengue is caused by a virus, there is no specific medicine or antibiotic to treat it. For typical dengue, the treatment is purely concerned with relief of the symptoms. Medicines should be taken only as advised by your doctor.

### What is Dengue Hemorrhagic Fever?

Dengue Hemorrhagic Fever (DHF) is a specific syndrome that tends to affect children under 10 years of age. It causes abdominal pain, hemorrhage (bleeding), and circulatory collapse (shock).

DHF starts abruptly with high continuous fever and headache. There are respiratory and intestinal symptoms with sore throat, cough, nausea, vomiting, and abdominal pain.

In DHF, there is bleeding with easy bruising, blood spots in the skin (petechiae), spitting up blood (hematemesis), blood in the stool (melena), bleeding gums, and nosebleeds (epistaxis). Pneumonia is common, and inflammation of the heart (myocarditis) may be present. The mortality, or death rate, with DHF is significant. It ranges from 6%-30%.

### What is the Prevention?

The transmission of the virus to mosquitoes must be interrupted to prevent the illness. To

this end, patients are kept under mosquito netting until the second bout of fever is over and they are no longer contagious.

The prevention of dengue requires control or eradication of the mosquitoes carrying the virus that causes dengue. The other preventive measures are the same as for malaria.

There is currently no vaccine available for dengue fever. There is a vaccine undergoing clinical trials, but it is too early to tell if it will be safe or effective.



## Endorphins

### The Alphabets

Teacher: Tell me a sentence that starts with an "I".

Student: I is the...

Teacher: Stop! Never put 'is' after an "I".

Always put 'am' after an "I".

Student: OK. I am the ninth letter of the alphabets.

### The Mosquitoes

Santa was getting bitten by mosquitoes the whole night. He got irritated... drank poison & said, ab kaato saalon, sab maroge!

### Three Male Mosquitoes

Ram: Sham, you know today I killed 5 mosquitoes. 3 were male and 2 were female.

Sham: How did you know that?

Ram: Simple! 3 were sitting on my shaving cream, and 2 were sitting on my wife's lip stick.

### Longevity

Q: Why do women live longer than men?

A: Shopping never causes heart attacks, but paying the bill does!

		2				6		
	5		7		9	4		
9				1				
	9		1	2				6
	7						8	
4				9	8		1	
				3				4
		8	4		2		3	
		9				5		

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