



# health

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WORLD MALARIA DAY

## Counting malaria out

STAR HEALTH DESK

Despite new drugs and strategies for combating malaria, the infectious illness remains one of the world's most dangerous and deadly diseases. Approximately half of the world's population is at risk of malaria, particularly those living in lower-income countries. It infects more than 500 million people per year and kills more than 1 million. WHO also estimates that a child dies from malaria every 30 seconds.

Today, the world will observe World Malaria Day, a day of unified commemoration of the global effort to provide effective control of malaria around the world. This year's day marks a critical moment in time. The international malaria community has merely two years to meet the ambitious 2010 targets of delivering effective and affordable protection and treatment to all people at risk of malaria, as called for by the UN Secretary-General, Ban Ki-Moon. The theme of this year's World Malaria Day is "Counting malaria out". The Roll Back Malaria Partnership — which includes WHO — is kicking off a campaign to engage partners in a comprehensive effort to count and quantify the progress and impact of the fight against malaria.

Out of 64 districts, 13 bordering districts in the east and northeast in Ban-

gladesh are seriously affected by malaria. A total of 14.7 million populations are at high-risk of malaria in the country, although there is sporadic incidence of malaria in other parts of the country. *Plasmodium falciparum* is the predominant infection (61-71%). The emergence and spread of antimalarial drug resistance and the resulting increase in treatment failures and case fatality rates due to *falciparum* malaria have seriously aggravated the malaria problem in Bangladesh.

Malaria is caused by a parasite called *Plasmodium*, which is transmitted via the bites of infected mosquitoes. In the human body, the parasites multiply in the liver, and then infect red blood cells.

Symptoms of malaria include fever, headache, and vomiting, and usually appear between 10 and 15 days after the mosquito bite. If not treated, malaria can quickly become life-threatening by disrupting the blood supply to vital organs. In many parts of the world, the parasites have developed resistance to a number of malaria medicines.

Travellers from malaria-free regions, with little or no immunity, who go to areas with high disease rates are very vulnerable. Non-immune pregnant women are at high risk of malaria. The illness can result in



high rates of miscarriage and cause over 10% of maternal deaths (soaring to a 50% death rate in cases of severe disease) annually. Semi-immune pregnant women risk severe anaemia and impaired fetal growth even if they show no signs of acute disease. An estimated 200 000 of their infants die annually as a result of malaria infection during pregnancy. HIV-infected pregnant women are also at increased risk.

Early treatment of malaria will shorten its duration, prevent complications and avoid a majority of deaths. Because of its considerable drag on health in low-

income countries, malaria disease management is an essential part of global health development. Treatment aims to cure patients of the disease rather than to diminish the number of parasites carried by an infected person.

The best available treatment, particularly for *P. falciparum* malaria, is a combination of drugs known as artemisinin-based combination therapies (ACTs). However, the growing potential for parasite resistance to these medicines is undermining malaria control efforts (see below). There are no effective alternatives to

artemisinins for the treatment of malaria either on the market or nearing the end of the drug development process.

**WHO recommends**

- prompt treatment for all episodes of disease (within 24 hours of the onset of symptoms if possible);
- use of insecticide-treated nets for night-time prevention of mosquito bites;
- for pregnant women in highly endemic areas, preventive doses of sulfadoxine-pyrimethamine (IPT/SP) to periodically clear the placenta of parasites;
- indoor residual spraying to kill mosquitoes that rest

on the walls and roofs of houses.

Key interventions to control malaria include: prompt and effective treatment with artemisinin-based combination therapies; use of insecticidal nets by people at risk; and indoor residual spraying with insecticide to control the vector mosquitoes.

The last global anti-malaria campaign, in the 1950s, failed. It was hoped that the insecticide DDT would eradicate mosquitoes, which transmit the disease. Sadly, the programme collapsed as a result of insecticide resistance and concerns about DDT's use. By the 1980s it was seen as distasteful even to discuss eradicating malaria.

Things certainly have changed. We have drugs. Even vaccines are emerging.

Along with targeted insecticide spraying and the use of bed nets, we have the tools to beat malaria. We also have the cash. Gates and the world's richest governments are pumping billions into combating the disease. Public-private partnerships such as the Medicines for Malaria Venture and Malaria Vaccine Initiative are also pushing new interventions.

We may not reach the 2015 goal, but we will eventually "count malaria out", as the World Malaria Day campaign entreats, if we sustain the present momentum.

more strange revelation— majority of them are female.

The best way to look after bones is to have sufficient calcium before their mid-to-late 20s and subsequently consume a well balanced diet with lot of weight-bearing activity like walking and running and exercises which will strengthen bones. But don't forget about the high calories of full cream milk, yogurt and cheese as well. So don't drink or eat in excess.

In case of breast milk the picture is a bit different but more distinct. Although cows milk is ideal for calves, but it was not designed by nature for neonates and infants. A lot of articles have pinpointed that allergies to dairy products begin in a newborns' small intestine as a result of bottle feeding (either cow's milk or formula). Bottle fed babies suffer more pneumonia, middle-ear infections, respiratory infections, bacterial meningitis, neo-natal septicemia, thrush, and viral illnesses, including polio and herpes simplex.

It is not wise of human being to think that he or she can replace breast milk with milks of his own formulation. Certain trace elements, amino acids and essential fatty acids are present in human breast milk that are not available in the same form elsewhere. Biochemistry is not yet sufficiently advanced to be able to identify every single substance in maternal breast milk. There are more than 200 known substances in it. All doctors throughout the world feel that breast milk must be the finest food for a baby.

## Milky way ...

Sorry, I am not going to talk about the galaxy's Milky Way. In fact, I am going to write about a white coloured 'food of life'. And that is milk—the essence of our concept of cleanliness.

Milk and other dairy products could be the perfect drink and food of life. Both children and adult need diary for different reasons. Although for the children, full cream milk is all right but low fat milk is advisable for most adults. We have been listening since childhood that dairy products are one of the four basic food groups we all need for proper nutrition. In fact, it is more than that.

The following nutrients found in milk are amazing like Vit A, Vit B12, Calcium, Carbohydrate, Phosphorus, Magnesium, Potassium, Protein, Riboflavin, and Zinc. Sufficient amount of dairy food, either milk, yogurt or Dahi, not only helps build healthy bones in children, also needed for vision, production of erythrocyte (a cell that contains hemoglobin and can carry oxygen to the body) and can also help prevent many diseases in both ages.

Milk is the major source of calcium in our diet. Even more important is the fact that the calcium in milk is more easily absorbed by the body than any other food source. This is the foundation on which strong bones and teeth are built. Even though most parents cannot imagine of raising their children without milk but it is very sad these days that many young Bangladeshis especially teenagers neither drink milk nor eat enough calcium in their diets. And in an even

## Fever facts: Types and treatment

Do you have fever with a sore throat, a dry cough, tiredness, mild headaches or muscle aches?

**Answer:** You may have viral fever which accompanies cold or flu like syndrome. Get plenty of rest and drink lots of fluids. Sponge your body with water. Over-the-counter medicines may help relieve your symptoms. Antibiotic is not effective for viral fever. So try to avoid it. Consult with doctor if your symptoms become severe.

**Do you have aches, chills, nausea, vomiting, abdominal cramps or watery diarrhoea?**

**Answer:** You may have bronchitis or a more serious infection of lung called pneumonia. Get plenty of rest, drink lots of fluids and take an over-the-counter cough



hours to let your stomach settle. Ease back into eating gradually and start with bland foods. Take small, frequent sips of water or clear liquids to avoid dehydration. Visit a doctor if you have bloody diarrhoea, if you have been vomiting for more than 2 days or if you are vomiting blood.

**Have you been outside in extremely hot weather, and are you hot but not sweating, possibly feeling faint or having some confusion?**

**Answer:** You may have heat stroke. Call someone to take you to the emergency room of a nearby hospital right away. Get out of the sun and go somewhere shady or air-conditioned.

**Do you have high fever with severe headache, retro-orbital (behind the eye) pain, severe joint and muscle pain and rash in the skin?**

**Answer:** You may have

medicine. Bronchitis usually clears on its own in a few days. If your symptoms persist, if you have a high fever or are coughing up blood, see your doctor.

**Have you lost weight unintentionally and do you have a fever that comes and goes, night sweats or swollen lymph nodes?**

**Answer:** You may have a serious infection Tuberculosis. Consult a physician right away. Do you have a fever between 101° and 103° or constantly over 103°F?

**Answer:** Consult your doctor right away for a prescription.

**It is not a substitute for medical advice. Always consult a doctor with questions about your individual condition(s) and/or circumstances.**

Source: American Academy of Family Physicians



## Malaria prophylaxis for travellers

DR MD RAJIB HOSSAIN

Travellers planning to visit malaria endemic zones must always, consult with their doctors to make sure that they take a prophylaxis (measure taken for the prevention of a disease or condition) drug which they can tolerate and one which is appropriate for their destination to be protected from malaria.

Current first-line strategies for chemoprophylaxis were designed to prevent death due to severe *falciparum* malaria. These drugs also have the benefit of largely preventing primary attacks due to non-*falciparum* species, although not the later relapses that can occur with *P. vivax* and *P. ovale*. Currently available drugs are Chloroquine, Proguanil, Mefloquine, Doxycycline, Malarone.

The choice of a drug for a person travelling to areas where there is chloroquine-resistant malaria depends on traveller-related factors including the duration of the trip, the person's age and medical history, whether the person is pregnant, and whether there has been previous drug intolerance, as well as economic considerations.

Information relevant to the choice of agent, including contraindications and side effects. Atovaquone-Proguanil is the best-tolerated drug overall, but cost considerations significantly increase with the length of the trip. Clear instructions on adherence to prescribed drugs should be given.

Contrary to a common perception, antimalarial agents such as chloroquine, mefloquine, and doxycycline do not prevent initial malaria infection in humans; rather, they act later on parasites that infect erythrocytes once they have been released from the initial maturation phase in the liver. Therefore, these drugs must be continued for 4 weeks after the last exposure to infective mosquitoes in order to eradicate any parasites that may still be released from the liver in the next month. However, Atovaquone-Proguanil not only acts on these blood-stage parasites but also interferes with the development of actively replicating parasites in the liver; therefore, it can be discontinued 1 week after exposure ends.

Antimalarial chemoprophylaxis with atovaquone-proguanil and doxycycline should begin 1 to 2 days before travel to areas where malaria is endemic, and chemo-prophylaxis with

chloroquine should begin one week before travel. Treatment with mefloquine should begin at least 2 weeks and preferably 3 weeks before travel, mostly to allow for the assessment of possible adverse effects that might warrant discontinuation and prescription of an alternative drug.

Unexplained acute anxiety, depression, restlessness, and confusion are indications for discontinuation and a switch to an alternative agent. The first day in an area where malaria is endemic may not correspond to the arrival date in the country where there is a risk of malaria.

Safety and freedom from side effects are of paramount importance in chemoprophylaxis and should override complete efficacy; no regimen even approaches 100% prevention against infection with *Plasmodium falciparum*.

Advocates of widespread use of mefloquine have produced figures purporting to support a rarity of side effects (in particular neuropsychiatric ones), which are seemingly far less common when this agent is used in chemoprophylaxis than when it is used in chemotherapy. A great deal of clinical experience indicates, however, that these reports seriously underestimate the prevalence of side

effects in travellers: Many travellers refuse to take mefloquine in the light of their experience of its neuropsychiatric side effects.

The regimen of chloroquine plus proguanil has a low incidence of side effects and for much of sub-Saharan Africa is probably only marginally inferior in efficacy to mefloquine. Furthermore, widespread use of mefloquine for chemoprophylaxis raises the likelihood of the emergence of *P. falciparum* resistant to quinine (considerable cross resistance exists between mefloquine and quinine); this is a genuine but under-stated problem.

It is better recommend that chloroquine plus proguanil for all countries of Africa in which infection with *P. falciparum* is a potential hazard. In addition, travellers should be advised to take standby treatment (usually quinine) for use in the event of a febrile illness that cannot be adequately assessed or treated at a reputable medical centre. Mefloquine should be reserved for chemotherapy of infection with *P. falciparum* that is resistant to quinine.

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The treatment guideline in this article should not be followed without any prior consultation with a registered physician.

## Stay slim to save the planet!

REUTERS, London

Overweight people eat more than thin people and are more likely to travel by car, making excess body weight doubly bad for the environment, according to a study from the London School of Hygiene & Tropical Medicine.

"When it comes to food consumption, moving about in a heavy body is like driving around in a gas guzzler," and food production is a major source of greenhouse gases, researchers Phil Edwards and Ian Roberts wrote in their study, published in the International Journal of Epidemiology.

The European Union estimates each EU citizen accounts for 11 tonnes of greenhouse gas emissions a year.

While Wyeth's Prevnar vaccine, which protects against the seven most common strains of *Streptococcus pneumoniae*, Wyeth donated

"We need to be doing a lot more to reverse the global trend toward fatness, and recognise it as a key factor in the battle to reduce (carbon) emissions and slow climate change," the British scientists said.

They estimated that each fat person is responsible for about one tonne of carbon dioxide emissions a year more on average than each thin person, adding up to an extra one billion tonnes of CO<sub>2</sub> a year in a population of one billion overweight people.

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