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## Be prepared – overseas travel

### Protect yourself

**B**efore travelling abroad, become informed on health risks for your planned destinations and activities while there. Seek your GP/family physician's advice, at least eight weeks before departure, on immunizations. Be prepared for common minor illnesses—eg, tummy upsets—as well as more major risks such as sexually transmitted disease or an accident. Your travel insurer will tell you what to do in the event of an emergency.

#### Personal hygiene

Personal hygiene protocols—washing hands after the toilet or before eating, showering regularly and brushing teeth—are essential for avoiding illnesses. Camping, mountain walking, or travelling in remote areas? All require strict personal hygiene discipline.

#### First aid kit

First aid items vary according to where you are travelling and what you intend to do. A basic kit includes:

- Some simple dressings;
- Antiseptic cream or solution;
- DEET-containing insect repellent;
- Antihistamine insect bite or itch relieving cream;
- Sunscreen, factor 15 or higher;
- Water sterilisation tablets;
- Basic implements — scissors, needle & tweezers;
- Disposable gloves;
- Steristrips for minor lacerations;
- Headache tablets such as *Paracetamol*, antiemetic & antidiarrhoeal tablets.

#### Medications & overseas travel

Many travellers overseas have medical regimens that must be maintained during their travels.

If you have a long-term (chronic) problem, then check your fitness for travel. Check with your GP/family physician well before your scheduled departure. Your GP will advise you of any specific precautions you should take. As a general rule, carry your medication in your cabin bag (rather than in a suitcase which could get lost or misplaced). Retain your medication in its original packaging when prescribed. Carry a letter from your doctor outlining your medical problems and therapeutic regimen:

- *Contraceptive pill* — Try not to miss a dose if you're changing time zones. Antibiotics and some anti-malarial tablets (eg, *Doxycycline*) can interfere with the pill's effectiveness; condoms are advisable as an extra precaution.
- *Asthma* — Have spare sprays, especially *Ventolin*. Keep a copy of your *Asthma Action Plan* with you.
- *Epilepsy* — Consider having a check up prior to travel; your doctor may suggest a blood test to assess your anti-convulsant level. Adhere to your medication regimen. Avoid excess alcohol and sleep deprivation while travelling as these can contribute to having a fit.
- *Diabetes* — Take your usual medication. If you are on *Insulin*, then make sure that you have adequate supply. Make sure also that you have with you *glucose* or *Glucagon* injection to counter hypoglycaemia. Take spare batteries for your glucometer. Measure your blood sugar more frequently, especially during periods such as on long flights when your pattern of food intake is changing.
- *Angina* — Take your usual medication such as *Arginine*.
- *Migraine* — Have on hand some *aspirin* or a strong analgesic such as *Panadeine*; try to eat regularly and avoid excess alcohol and dehydration.



## Protect yourself

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There are a variety of commercial kits. Some specifically equipped for particular activities and circumstances, for example, remote bushwalking. Consult your chemist or travel clinic.

### Make sure drinking water is safe

Local water, in many places, is only safe to drink when boiled.

Bottled or canned water or drinks are OK to drink. You can also drink tea or coffee made from water that has been boiled for at least 5–10 minutes. When you are in the bush, creek or river water can be made safe to drink by boiling for 10 minutes.

Avoid eating salads that may have been washed in contaminated water. Avoid ice in drinks. Fruit is safe to eat if you can remove possibly contaminated skin by peeling.

Do not wash your mouth or brush your teeth with water that is not safe to drink.

### Be careful with certain foods

It is always better to eat freshly cooked, hot food.

Don't eat uncooked or under-cooked meat, especially chicken and seafood. Cold and reheated food can also be risky and should be avoided.

Be wary of eating highly spiced or fatty food if you are feeling unwell.

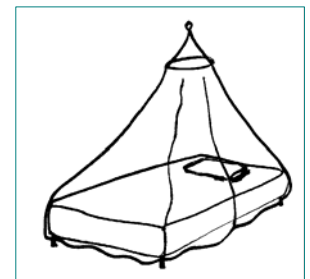
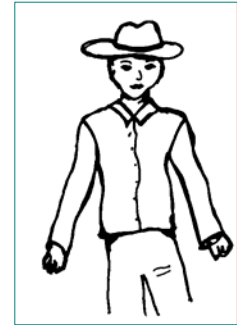
### Swimming & bathing

Avoid swimming in stagnant water, freshwater streams, marshes or rice paddies. Even large freshwater lakes (eg, Lake Malawi in Africa) can be hazardous to your health.

## Mosquito & insect bites

The main measures to protect against disease transmission from mosquito and insect bites are:

- Avoid going outdoors at dusk & dawn when mosquitos are more active.
- Cover up when you do go out; wear long sleeves & pants.
- Wear light coloured clothing (dark attracts the mosquito).
- Avoid perfumes, perfumed soaps & perfumed deodorants (these also attract the mosquito).
- Use mosquito repellents containing 15–20 per cent *DEET* for protection against insects because of *annoyance*, or 35–50 per cent DEET if you are *trying to protect against malaria carrying mosquitoes*. However, avoid using high concentrations of DEET on young children.
- Use mosquito sprays or coils in your room.
- Impregnate your clothing with mosquito repellent such as *Permethrin* (a synthetic derivative of the naturally occurring insecticide, pyrethrin; trade name *Lyclear*); 100 per cent DEET can also be used but will damage synthetic fibres.
- Use repellent impregnated (*Permethrin*) mosquito nets over your bed & over children's cots or strollers.
- Keep insect screens & doors closed, especially at night.



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Swimming and bathing can expose you to many types of vector-borne diseases transmitted by mosquitoes, water snails and other like vectors (a vector is an animal that transmits parasitic micro-organisms, and the diseases they cause, either from one person to another or from an infected animal to a human).

Of course, in some places, there are other swimming hazards in the form of undercurrents, tides and dangerous animals such as crocodiles.

### STDs & Aids

Sexually transmitted diseases (STDs)—for example, gonorrhoea, syphilis, hepatitis B and HIV—are common in most countries of the world and, in many countries, much more so among sex workers.

*Always engage in safe sex practices. Unsafe sex carries a risk of sexually transmitted diseases such as hepatitis B and HIV. Condoms are important. Discuss vaccination against hepatitis B with your doctor if you have not already been immunized.*

If in the course of your travels you think you have been exposed to an infection, then get a doctor to check you straight away.

If you use injecting drugs, never share needles.

Always check that proper infection control procedures are in place before tattooing or body piercing procedures.



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## Deep vein thrombosis

**D** *deep vein thrombosis*—DVT—describes blood clot formations in the deep veins usually in the muscles of the leg or pelvic region.

Untreated, part of the clot may dislodge and travel to another part of the body. It can lodge in an artery and obstruct the flow of blood (this is called an *embolism*).

Emboli are the major risk from DVT.

Blockage of a small artery may be symptom free or create only minor symptoms. However, a major blockage in the lungs, over a few minutes, cause severe symptoms of breathing limitation — shortness of breath, severe chest patient, palpitations and .feeling faint. There is a risk of death.

### Symptoms

Excluding symptoms from any resulting emboli, DVT can cause:

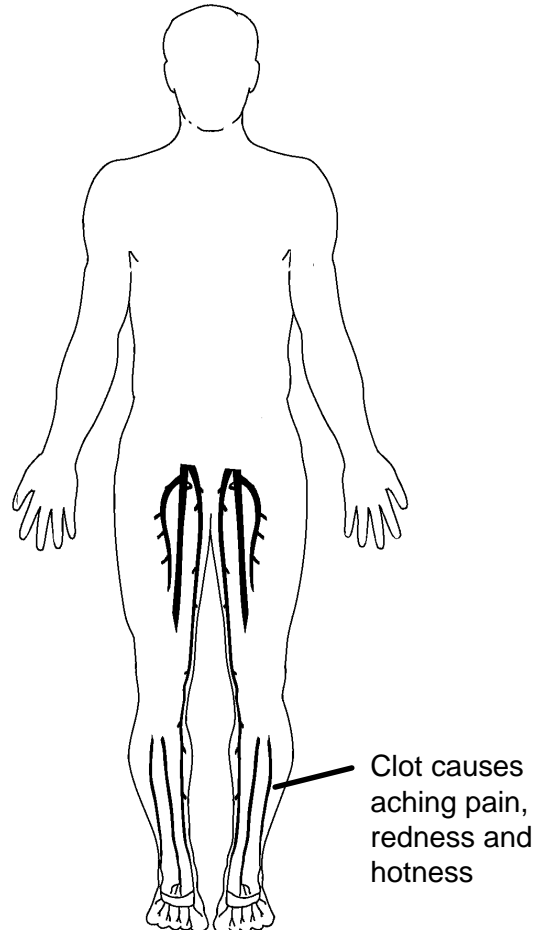
- An aching pain in the vein where it occurs;
- Signs of redness & hotness over the clotted veins;
- Enlargement of the affected veins.

### Cause

The influences that give rise to DVT are those that slow blood flow.

Blood vessel and heart robustness is one influence. DVT, for this reason, is more common in older people whose durability is declining. Other influences predisposing to DVT include medical conditions such as diabetes, pregnancy, taking the contraceptive pill (certain kind), trauma or surgery.

**Deep vein thrombosis — formation of a blood clots in the deep veins of the legs or pelvis.**



## Deep vein thrombosis

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Prolonged immobility of the limbs such as during a long journey (or bed-ridden through surgery or illness) slows the flow of blood and increases DVT risk. Slower flow of blood during long journeys is our particular interest in this Edu-cate® info sheet.

### Tests

DVT is diagnosed with an ultrasound picture (high frequency sound wave ‘Doppler’ image) of the flow of blood through the veins. Other imaging tests may also be used.

### Treatment

DVT is treated by ‘thinning’ the blood with medicines that reduce the clotting in the blood.

Treatment usually starts, for the first 5–10 days, with a drug called *Heparin*. This can now be given by way of *Fragmin* or *Clexane* injections once or twice a day. *Warfarin* tablets, which also ‘thin’ the blood, are usually commenced after 1–2 days.

Special support stockings (TEDs) that help support circulation in the leg muscles are also often used.

While you are on these blood thinning medicines you must avoid taking any aspirin or other medicine which may interfere with *Heparin* or *Warfarin*.

Medication side effects are uncommon but include bruising and bleeding from the nose or bowel. A blood test (INR) will be used to monitor that *Warfarin* is working as intended and to fine tune dosage.

### Prevention

During long journeys, take a short walk every hour.



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## Jet lag

**J**et lag describes feelings of tiredness, sleepiness and not being well that you can experience after flying across multiple time zones.

### Symptoms

*Sleep disturbance* means you can experience night-time insomnia when you arrive at your destination during the night, or daytime sleepiness if it is daytime. *Lack of energy* can incorporate a range of symptoms such as fatigue, difficulty concentrating, moodiness or depression, and gastrointestinal (tummy) upsets.

### Cause

Body clock disturbances—also known as circadian (night and day) rhythm—are responsible for the jet lag sensation.

Your body clock changes as you travel across time zones. Jet lag occurs if you have to wind your body clock back or forwards as daytime becomes either shorter or longer respectively.

Other contributing influences to jet lag include not consuming enough fluids but too much alcohol or caffeine, being fatigued or sick while flying, or crossing a number of time zones. Jet lag is often more acute after flying east compared to flying west.

### Avoiding jet lag

There are a number of things you can do before, during and after your flight to lessen jet lag.

#### *Before:*

- have plenty of sleep or rest;
- have a good meal & something to drink (not alcohol);
- plan your arrival for when you might sleep again.

**Main symptoms of jet lag —  
sleep disturbance & lack of energy**



## Jet lag

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### *During:*

- drink plenty of fluids other than alcohol;
- contain your intake of caffeine;
- avoid heavy or very spicy meals;
- relax by reading books or listening to music;
- get some physical activity especially for your legs.

### *After:*

- adapt your behaviour to the local time — sleep if it is night & walk or exercise moderately if daytime;
- get out in the bright daylight — light in the morning is helpful after flying east & in the afternoon after flying west;
- keep the first 24 hours free of vigorous activities.

### **Diminishing jet lag risks**

Jet lag is not a serious disorder. Usually, you recover within three days.

Have severe insomnia? Sometimes a short-term dose of *Benzodiazepine* sleeping medication can help but discuss this with your doctor first.

If you plan to use the hormone *Melatonin*, check with your doctor first. Melatonin is not licensed in Australia.



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## Infections & infestations

### Cholera

**C**holera, a severe bacterial infection of the gut (small intestine) primarily causes an uncommon but very severe form of gastroenteritis with copious, watery diarrhoea. The name 'Cholera' comes from the technical name for the bacterium, *Vibrio cholerae*.

Cholera occurs in many countries of the world, especially tropical countries in regions and areas that don't have effective sewerage systems.

Cholera is usually transmitted by the contamination of water or food by infected faeces. Despite the extensive distribution of cholera in developing countries only about 1 in 500,000 travellers contract the disease.

#### Symptoms & signs

The initial symptoms and signs of cholera infection are fever, headache, abdominal pain, vomiting and the copious, watery diarrhoea. Symptoms switch on 1–5 days after infection. Diarrhoea can progress dramatically.

Diarrhoea can become so severe that large amounts of fluid are lost from the body. Dehydration with accompanying loss of body salts and electrolytes can result in the need for hospitalisation and can cause death.

Some people can become asymptomatic and carriers of the bacteria which they can excrete in their faeces for many years.

#### Infection

Cholera is usually spread by the contamination of drinking or bathing water from infected faeces or untreated sewerage. A person can become infected when drinking unsterilised or untreated water.

When travelling in countries where cholera is present and/or where sewerage is lacking either:

- Drink bottled or canned water or drinks (preferred option); or
- Boil all drinking water for 10 minutes.

*Be prepared* principles apply: Brush your teeth with boiled water; avoid ice in drinks; avoid foods such as salads and fruit that may have washed in contaminated water (or any food that has been prepared in contaminated water); and make sure water has been boiled adequately for tea or coffee.

Cholera can also be transmitted by seafood, especially if raw or undercooked.

#### Vaccination

It is much more effective to avoid cholera by only drinking sterilised water and avoiding at-risk foods.

Although there is cholera vaccine, it is not recommended because it is effective in only between 47–57 per cent of cases and it is only effective for six months.

Cholera vaccination is no longer generally required by any country unless a recent epidemic has occurred.

#### Treatment

Cholera can be treated but the diagnosis may not be realised until the symptoms are well established.

No. 1 priority is to replace fluid and electrolyte loss; this often requires hospitalisation. Prompt treatment generally leads to a full recovery.



## Dengue fever

**D**engue fever is a viral infection transmitted by mosquito bite.

There are two types:

- Dengue fever (DF) which is generally a mild illness; and
- Dengue haemorrhagic fever (DHF) a more severe form causing shock with harm to liver and lungs (haemorrhagic relates to blood loss).

The type of mosquito responsible for the spread of dengue fever is found in *northern Queensland* as well as in most overseas tropical countries. The mosquito responsible for dengue fever mostly bites during the day. Currently there is no vaccine for immunisation against dengue fever.

### Symptoms & signs

#### *Dengue fever*

The main symptoms of the milder DF are fever, headache, pain behind the eyes or watering eyes, severe muscle and joint pains (hence the alternate name *breakbone fever*), and an irritating rash of small red spots. Symptoms may last for a few days and then recur in a milder form after 2–3 days.

DF, sometimes, can cause strange skin sensations and a metallic taste in the mouth. Bleeding of the gums and nose can occur with an accompanying low platelet cell count (platelets are blood cells for the arrest of bleeding). Rarely, DF can cause encephalitis (inflammation of the brain).

#### *Dengue haemorrhagic fever*

DHF is a much more severe disease and can be fatal. DHF starts with the same symptoms as fever, severe headache and muscle pains. DHF can cause haemorrhage within organs of the body such as liver and lungs resulting in shock and the threat of death.

**Dengue fever spreads by the bite of the Aedes group of mosquitoes with *Aedes aegypti* the main species.**



The mosquito causing dengue fever *mostly bites during the day*; you need *daytime protection*.

### Transmission

The mosquito that carries DF is found mostly in tropical countries, particularly Indo-China, Africa and South America, but it has in northern Australia and New Guinea and the Pacific Islands.

### Preventive measures

Apart from the normal protective measures against mosquito bite (see [#MosquitoBiteProtection](#)) these principles apply during the day as this is when you are most vulnerable. As much as possible, the areas around dwellings should be kept clear of breeding opportunities for mosquitoes (such as water storage containers, coconut shells).

### Treatment

DF is a viral infection. Antibiotic treatment is not effective. Fever, headache and muscle pains can be treated with rest and analgesics.

Liver or lung infection with or haemorrhage or shock requires hospitalisation.



## Japanese encephalitis

**J**apanese encephalitis (JE) is viral inflammation of the brain ('encephalo' means brain). The virus is transmitted by mosquito bite.

JE can be a very severe form of encephalitis. A number of deaths have occurred; some are left with brain damage.

JE occurs in all types of climate, more so in tropical areas. It can also occur in subtropical and temperate areas after a wet season.

A vaccine is currently available in Australia.

### Symptoms & signs

Initial JE symptoms and signs are fever, headache, drowsiness and convulsions. Because the brain is affected the infection, in some people, can eventually cause coma, brain damage and even death.

It doesn't affect everyone in this way. Most people who get infected are asymptomatic and there is no physical harm. If a person with the virus does develop symptoms, they are usually severe.

### Transmission

The main mosquito group that transmits JE to humans is the *Culex* species. This type of mosquito is common in all types of climates from tropical to temperate.

The virus infects animals such as pigs, horses and wild birds. This is where the mosquito picks up the virus before spreading it to humans. JE occurs year round in subtropical and tropical regions of Asia, India and Southeast Asia; JE epidemics occur regularly after the wet season in subtropical and temperate countries like northern Thailand, Japan, Korea, China, and lowland areas of Nepal.

There have been JE outbreaks in northern Australia, the Torres Strait Islands and New Guinea.

### Vaccination

A vaccine called JE-VAX is given as three injections over a month or so (0.5 ml for children aged 1–3 years and 1 ml for those over 3 years).

The following duration of stay guidelines should be considered by travellers to countries where JE is prevalent:

- More than a month in *rural areas*; and
- A year or more in *urban areas*.

The seasonal pattern in the country to be visited, if any, should be considered.

Allergic reactions to the vaccine occur. You should have the vaccine at least 10 days before you travel in case of delayed reaction. The vaccine is not recommended for infants under the age of 1 year, and for people who have had previous severe allergies to foods, drugs or bee stings.

### Treatment

As JE is a viral infection, there is no effective antibiotic treatment for the inflammation. Severe symptoms, convulsions or coma require hospitalisation.



## Malaria



**M**alaria is an infection of red blood cells and liver cells from a protozoan parasite (a micro-organism living in another organism, in this case a human).

Malaria is a disease transmitted by a mosquito bite and is very common in all the tropical countries. *Plasmodium* is the name of the parasite. The parasite kills the red blood cells which transport oxygen from our lungs to the cells in our tissues.

Some forms of malaria are mild. A very severe form called ‘cerebral’ (the brain) malaria affects the brain and can be fatal, if not treated, within 48 hours.

If you are travelling overseas, you need to check with your GP/family physician as to the likelihood of being exposed to malaria, preventive measures and the types of anti-malarial drugs you should take.

### Symptoms & signs

Symptoms and signs vary according to the species of the *Plasmodium* parasite. Each causes a different type of malaria: *Plasmodium vivax* (vivax malaria), *Plasmodium falciparum* (cerebral or falciparum malaria), *Plasmodium malariae*, and *Plasmodium ovale*. Symptoms and signs appear after an incubation period as short as 12 days and as long as 10 months.

*Vivax* is the commonest form. *Vivax* causes recurrent severe fevers and chills, headache, nausea and vomiting, with swollen liver and spleen. Each attack lasts 4–8 hours. Attacks can occur every 2–3 days. The time between attacks is characterised by lethargy. The initial infection can last weeks or months. *Vivax* can become dormant in the body and relapse over months or years, although the relapses do become milder. Usually, there are no serious complications with this type of malaria.

*Falciparum* is a serious and potentially fatal form of malaria. The initial symptoms are also headache, fevers, and vomiting. Also known as ‘cerebral malaria’, this parasite can cause a brain infection (encephalitis) with coma, convulsions or death

A rare and serious complication of *falciparum* is kidney failure with massive destruction of red blood cells and the leaking of blood cell pigment into the urine (called ‘blackwater fever’).

*Falciparum* can also have serious effects in pregnancy such as stillbirth. Children are also very susceptible to its complications.

### Spread

The malaria protozoan parasite (*Plasmodium*) infects humans by a mosquito bite. Only one species of mosquito (*Anopheles*) does this.

*Anopheles* is normally only found in tropical countries. You can’t catch it when you go to a country where the *Anopheles* mosquito doesn’t live. Malaria cannot be spread by direct contact with an infectious person.

The mosquito picks up the parasite from an animal or person, and when it bites another animal or person, spreads the parasite into the blood by its salivary system. The parasite then infects the liver and red blood cells of the body. Multiplication of the parasite results in the destruction of red blood cells and the release of more parasites with potential for more red cell destruction.

### Problem countries

Malaria is a serious epidemic problem in any country where the *Anopheles* mosquito lives — most tropical countries with constant high temperatures and high rainfall.



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Currently malaria is a major problem for travellers to countries in Africa, Indo-China and South East Asia, Oceania, Central and South America. The problem is more serious in some parts of the world because the parasite has developed resistance to antimalarial drugs.

### Preventing malaria

General principles for protecting yourself from bites by mosquitos apply (see [#MosquitoBiteProtection](#)).

There are a number of *antimalarial prophylactic drugs* (preventive medications). The prophylactic medication you should take depends on the country you are visiting, how likely you will be exposed to the Anopheles mosquito (for example, going into rural areas), and whether the malaria parasite in that country is resistant to any particular drugs.

Your GP/family physician can advise on the prophylaxis right for your travels.

### Treatment

Malaria can be treated with a number of antimalarial drugs. The success of treatment, however, does depend on early diagnosis and treatment as well as the type and severity of the malaria.

If on return from an overseas holiday you suddenly develop fever or severe illness for no apparent reason, then see your doctor who can arrange tests for malaria.

Falciparum malaria needs urgent treatment and may require hospital admission. Malaria is most likely to occur within a month after exposure but it can be longer — for Falciparum malaria, up to 12 months.

### Prophylactic (preventive) anti-malarial medicines

#### Doxycycline

Brand names: *Vibramycin, Doryx, Doxsig, Doxilyn*.

Not to be taken by children or during pregnancy.

Can cause a sunlight-induced rash in some.

Is taken after eating otherwise it can result in gastric (stomach) irritation.

#### Chloroquine

Brand name: *Chlorquin*.

Usually quite safe. Can be toxic in overdose. Needs to be stored safely away from children.

In many areas, malaria is resistant to Chloroquine.

#### Mefloquine

Brand name: *Larium*

Used in areas with chloroquine resistant malaria.

Has side effects for some such as nightmares, anxiety or dizziness.

Not to be taken during pregnancy.

#### Proguanil

Brand name: *Paludrine*.

Used in areas with chloroquine resistant malaria.

*Antimalarials need to be started before entering the malarious area, while you are there, and for a period after leaving. Your GP/family physician will advise you on specific regimens.*

For those who need to travel in very high risk areas, there is a 'self treatment' plan you can use, but this needs to be discussed with your doctor.



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## Ross River virus



**R**oss River virus (RRV), also called *Ross River fever* (RRF), is a mosquito transmitted infection. *Barmah Forest virus* (BFV) is a like infection to RRV.

RRV is a non-fatal illness that can cause very debilitating joint and muscle pain (polyarthritis), and fatigue, for a long time.

RRV occurs in Australia, New Guinea and some Pacific islands. There is no vaccine for RRF.

### Symptoms & signs

The main symptoms and signs of RRF are fever, pain and swelling of the joints, muscle pains, headache, rash and fatigue. The symptoms generally last for 4 to 6 weeks, but in some people the joint and muscle pains and fatigue can last up to 12 months. Most eventually recover. RRV does not cause any permanent complications or joint damage.

With BFV, polyarthritis is less marked but the rash may be more prominent.

### Transmission

RRF is spread by the bite of a number of types of mosquitoes—mostly mosquitoes from the *Culex* and *Aedes* groups—found in areas of Australia and Pacific islands.

Outbreaks of the disease usually follow the rainfall in late summer and early autumn. RRV occurs mostly in rural areas of Australia where there is a lot of vegetation, water and rivers along with indigenous animals that harbour the virus. In Australia, most people contract the disease travelling or working in circumstances where these conditions apply.

### Prevention

General principles for protecting yourself from bites by mosquitos apply (see [#MosquitoBiteProtection](#)).

### Treatment

RRV and BFV are viral infections. There is no effective antibiotic treatment.

Headaches, joint pains and muscle pains can be treated symptomatically with rest and analgesics (pain relieving drugs).



## Schistosomiasis

**S**chistosomiasis (what a mouthful), also called *Bilharzia*, is a parasitic infestation of the gut and urinary system by a type of nematode (roundworm) called the Schistosoma blood fluke.

The life cycle of the Schistosoma fluke includes preadult (larval) development in *freshwater* snails that live in water contaminated with human sewage.

Swimming or bathing in water contaminated by the fluke and its larvae—be it an un-chlorinated pool, a canal or a lake—can result in skin penetration leading to Schistosomiasis infestation.

Schistosomiasis is common in Africa, the Caribbean, the Eastern Mediterranean and South America. Australians have to visit these tropical regions to get an infestation.

### Transmission

Both water and the freshwater snail become contaminated or infested, respectively, from the stool (faeces) and urine of infested people who swim or bathe in the water. The traveller wading or bathing in water contaminated by fluke larvae, and the water snail that carries them, is at risk of the larvae entering their body through the skin.

### Symptoms & signs

The swimmer or bather experiences an itch, called swimmer's itch, where larvae penetrate the skin.

The larvae produce eggs after about a month or so. Some people have no symptoms during this early phase; some will not experience symptoms.

Initial symptoms of parasite and egg infestation and accompanying inflammation may include fever, chills, cough and muscle pains.



Fluke eggs then move to the liver, intestine or bladder causing symptoms and signs such as abdominal pain, blood in the urine, diarrhoea and blood in the faeces. Eggs, occasionally, can infest the brain causing paralysis and weakness.

With treatment, most recover without complications.

### Treatment

Schistosomiasis can be treated with an anti-nematode drug called *Praziquantel*, brand name *Biltricide*. Worried that you may have been exposed to schistosomiasis during travel? A blood test can be done to look for evidence of antibodies in response to fluke infestation; urine and faeces can be examined for fluke eggs.

### Prevention

Travellers should not swim or bathe, in areas where the disease is known to exist, in un-chlorinated pools, canals, lakes or rivers. The lakes of East Africa (especially Lake Malawi) are the most common places for Australian travellers to contract this disease. Swimming in the ocean or chlorinated pools is generally safe. Wearing clothing when swimming, and then quickly drying afterwards, helps avoid infection. Using a DEET insect repellent on the skin before swimming also helps repel the larvae.



## Yellow fever



**Y**ellow fever is a viral infection, particularly of the liver and kidneys. The virus is transmitted by mosquito bite.

Yellow fever causes liver damage, jaundice and kidney failure and can be fatal.

Yellow fever is mostly confined to East and West Africa but can occur in Central and South America. To enter some countries in these regions requires a vaccination (the *WHO International Travel and Health* book has a map of zones where yellow fever occurs frequently).

### Symptoms & signs

Initial symptoms and signs of infection are fever, vomiting, and diarrhoea, followed by jaundice (yellowing of the skin plus dark brown urine due to liver infection). The infection gets its name from the accompanying jaundice. Yellow fever can cause kidney failure and death.

### Transmission

Yellow fever virus is spread by the bite of mosquitoes.

The main mosquito species that spreads yellow fever among humans is *Aedes aegypti*, a tropical mosquito (this is called *urban yellow fever*). Other mosquito species can spread this viral disease in animals (*jungle yellow fever*).

### Vaccination

A yellow fever vaccine is available but only from approved vaccination centres.

A yellow fever vaccination certificate dated more than 10 days but less than 10 years before arrival is required to enter countries where infection is endemic (generally or constantly found) or to enter another country following travel to an endemic zone.

Some countries even require evidence of vaccination if the travel has been to an endemic zone but not to a country listed by the WHO as yellow fever infected.

Australia requires a vaccination certificate from travellers aged over 1 year entering Australia within 6 days of staying overnight or longer in an infected country as listed in the *WHO Weekly Record*. Your GP/family physician can advise you on how to find out the specific requirements for your trip.

Yellow fever vaccine can interact with a number of other vaccines so check with your doctor or a Yellow Fever Vaccination Centre if other vaccines are required for your trip.

Yellow fever vaccine should not be given to those who:

- Have serious allergic reactions to eggs;
- Have problems with their immune system; or
- Are pregnant.

### Other prevention

General principles for protecting yourself from bites by mosquitos apply (see [#MosquitoBiteProtection](#)).

### Treatment

Yellow fever is a viral infection. There is no effective antibiotic treatment once you have it. Yellow fever is a serious and potentially fatal disease in non-immune people so the best possible medical care should be sought. Admission to hospital may be needed especially if there is liver or kidney involvement.

