



# Ross River virus and Barmah Forest virus

## What are Ross River and Barmah Forest viruses?

Ross River virus (RRV) and Barmah Forest virus (BFV) are the two most common mosquito-borne viruses in Western Australia and can cause severe symptoms in people.

## How do you catch these viruses?

In nature, RRV and BFV are passed back and forth between animals and mosquitoes. People can only catch these viruses after being bitten by an infected mosquito. RRV and BFV cannot be caught from direct contact with another person or animal.

Approximately 1 in 3 people will develop symptoms after being bitten by an infected mosquito, making it important to minimise the risk of being bitten whenever possible.

## When do symptoms appear?

For both viruses, the time between being bitten and becoming sick (the incubation period) is normally 7 to 14 days. It can vary, however, from as little as 3 days to up to 3 weeks.

## What are the symptoms?

People suffering from RRV or BFV diseases may experience a wide range of symptoms common to both viruses. Blood tests are used to diagnose the viruses.

Symptoms and their severity vary from person to person but can include:

- painful and/or swollen joints (the most commonly affected joints are the wrists, knees, ankles, fingers, elbows, shoulders and jaw). Pain usually develops quickly and may be intense and more severe in different joints at different times. Joint pain is much more common than swelling
- sore muscles
- aching tendons
- skin rashes (although these tend to be more common to BFV disease)
- fever
- tiredness
- headaches
- swollen lymph nodes.



Less common symptoms include:

- sore eyes
- sore throat
- nausea
- tingling in the palms of the hands or soles of the feet.

Symptoms tend to be milder in children and the illness often doesn't last as long.

## How long do the symptoms last?

Fever, nausea and skin rashes usually disappear within the first 2 weeks of illness. Joint, muscle and tendon pain may last much longer and can be distressing. People also often experience severe tiredness. Severe symptoms or those that last a long time can cause emotional distress or depression and affect family, social and work relationships. Symptoms eventually lessen with few or no long-term effects.

It is not possible to predict how long a person will take to fully recover from either disease. Some adults recover within 2 to 6 weeks of being infected, while others will still be unwell after 3 months. In rare cases, symptoms can persist for up to a year or more.

People with persistent symptoms are generally not sick all the time. After 3 months, many people have days when they feel well. As time goes by these days become more frequent. However, symptoms may recur suddenly and without warning.

Research suggests that BFV symptoms may not last as long as those for RRV. Research into the long-term effects of both viruses is still being conducted.

## How are RRV and BFV diagnosed?

The only way for a person to be properly diagnosed as having RRV or BFV is through a blood test.

A doctor who diagnoses RRV or BFV in a patient must notify the Department of Health so more can be understood about where the viruses are active and to allow public health action to be taken if necessary. These actions may include implementing mosquito control programs and the issuing of public warnings.

## What medical treatments are available?

There are no registered vaccines to prevent RRV or BFV, nor is there a specific medical cure.

Medical treatments focus on easing joint pain and swelling and minimising fatigue. For some people, simple painkillers such as aspirin or paracetamol are sufficient. Others require stronger medications to ease the inflammation. Gentle exercise, stress management, physiotherapy and plenty of rest, particularly in the early stages of infection, are important. Some people find hydrotherapy or gentle swimming in a heated pool very beneficial.

Emotional stress and physical fatigue may cause symptoms to worsen or last longer. People with long-term symptoms require emotional support and understanding. They should always keep in mind that they will get well.



## Can I catch these viruses again?

Most people who have been infected with RRV or BFV will not catch the same virus in the future. In rare cases, people may experience one or more symptoms after they appear to have recovered. Unfortunately, people who have been infected with RRV are not immune to BFV, and vice versa.

## Where and when are the viruses most active?

RRV and BFV can occur anywhere in Western Australia when conditions are:

- warm enough for the viruses to be active
- wet enough for the breeding of mosquitoes.

In the northern half of WA, it is warm enough for both viruses to be active anytime during the year when heavy rainfall or unusually high tides occur. Generally the risk of both viruses is greater during and just after the northern wet season (roughly December to June).

In the southern half of the state, RRV is most active between September and May, especially when above-average rainfall or unusually high tides create large mosquito breeding habitats. However, a small number of cases are also reported during winter.

While BFV is also active during these periods, evidence indicates that this virus may be active in slightly cooler temperatures when there is sufficient rainfall or high tides.

In the southern half of WA the area of greatest risk is the coastal plain between Mandurah and Busselton during spring and summer. In some years, this risk will spread to other areas within the southern half of the state, including parts of the Perth metropolitan area.

Research now shows people living within three kilometres of salt marshes, brackish wetlands (i.e. estuaries and tidal rivers), and freshwater wetlands are at greater risk of contracting RRV and BFV diseases. People living near such wetlands should take particular care to avoid mosquito bites.

## How can I protect myself against these viruses?

The best protection against RRV and BFV diseases is to minimise your risk of being bitten by an infected mosquito. Simple tips to avoid mosquito bites include:

### Houses

- Insect-proof houses by screening all doors and windows.
- Doors should be self-closing and open outwards.
- In high-risk areas build a fully screened outdoor area to protect yourself when outside.



## Cover up and use repellents

- Avoid mosquitoes when they are most active, particularly around dawn and dusk. Some mosquitoes will also bite during the day. Reduce the risk of contracting RRV or BFV by timing outdoor activities to avoid periods of greatest mosquito activity.
- Cover up with long, loose-fitting and preferably light-coloured clothing. Mosquitoes can bite through fitted clothing, even denim jeans.
- Mosquito repellents are an important way of avoiding exposure to diseases transmitted by mosquitoes. When outdoors, carry an effective mosquito repellent for use if mosquitoes are active.
- The most effective repellents contain either diethyl toluamide (DEET) or picaridin.
- Lotion or gel repellents are the most effective. Always read the label. Apply and re-apply repellents in accordance with the manufacturer's instructions.
- Natural or organic repellents are generally not as effective as DEET or picaridin and may need to be applied more frequently.
- The best protection for babies and young children is protective clothing, bed nets and other forms of insect screening. Only infant-strength repellents should be used on young children.

## Travelling and camping

- If you are travelling, discuss with your GP how to protect yourself against diseases carried by mosquitoes.
- Screen caravans, tents, swags and other sleeping equipment or use a mosquito net.
- Recognise and avoid areas of mosquito activity such as swamps, salt marshes, billabongs and river floodplains.

## Eliminate backyard breeding habitats

- Dispose of all containers that hold water.
- Stock ornamental ponds with mosquito-eating fish such as goldfish. Keep vegetation away from the water's edge.
- Keep swimming pools well chlorinated, filtered and free of dead leaves.
- Level or drain depressions in the ground that hold water.
- Fit mosquito-proof covers to vent pipes on septic tank systems. Seal all gaps around the lid and ensure leach drains are completely covered.
- Screen rainwater tanks with insect-proof mesh, including inlet, overflow and inspection ports. Ensure guttering is not blocked and does not hold water.



- Empty pot plant drip trays once a week or fill with sand. Empty and clean animal and pet drinking water bowls once a week.
- Some plants (especially bromeliads) hold water in their leaf axils. These should also be emptied weekly.

Residual chemical sprays can be used to further reduce mosquitoes. This should not, however, replace the removal and prevention of backyard breeding sites which is a more effective control method. Always read the label and apply residual sprays in accordance with the manufacturer's instructions.

## What broader mosquito control measures are in place?

With assistance from the Department of Health, many local governments conduct mosquito control programs in some of the worst mosquito breeding areas. However, it is simply not possible to eliminate all mosquitoes in the natural environment. Therefore, it is important to take personal measures to reduce the risk of catching a mosquito-borne disease.

## Video - Protect yourself against mosquitoes

Watch more of our videos at the WA Health YouTube channel (external site).

Read video transcript – Protect yourself against mosquitoes.

## More information

For further information contact:

- your local government environmental health officer (external site)
- Environmental Health Directorate  
Department of Health  
Telephone: 9388 4999  
Email: [ehinfo@health.wa.gov.au](mailto:ehinfo@health.wa.gov.au)
- For more information on RRV and BFV diagnoses, treatment, support groups and education programs, contact Arthritis and Osteoporosis WA (external site).

## Where to get help

- See your doctor
- Visit a GP after hours
- Visit *healthdirect* or call 1800 022 222



Government of **Western Australia**  
Department of **Health**

This document can be made available in alternative formats on request for a person with a disability.

Produced by the Communications Directorate © Department of Health 2016

Copyright to this material is vested in the State of Western Australia unless otherwise indicated.  
Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the *Copyright Act 1968*, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.