

# Mosquito borne disease program

## Ross River virus and Barmah Forest virus

### The facts



**In Australia, there are more than 70 different viruses spread by insects. Only a few of these viruses are known to cause illness in humans. Two arboviral infections – Ross River virus and Barmah Forest virus – are important because of their frequency and the disabling rheumatic symptoms they can cause.**

Ross River virus (RRV) is the most common and widespread of the arboviruses that infect humans in Australia.

Barmah Forest virus was discovered in 1974, more recently than Ross River virus (1963). It is also widespread in Australia and causes a similar illness. However, Barmah Forest virus disease has not yet been as intensively studied. The symptoms are similar to Ross River virus and anyone who thinks they may have symptoms of either disease should see their doctor.

Both diseases can be confirmed by blood tests.

#### Infection

These viruses occur throughout Australia and Ross River virus disease has been found in eastern Indonesia, Papua New Guinea and the nearby Pacific Islands. In Victoria, infection can be acquired in most parts of the State except the highest or driest.

Infection does not occur directly from person to person. The mosquito picks up the virus from an infected animal and transmits it by feeding on another animal or human.

The prevalence of the viruses varies according to the place and season. These viruses, particularly Ross River virus, occur as a few sporadic cases or small outbreaks. At other times, when climatic conditions are conducive, large epidemics occur. Both viruses affect all age groups and men and women are equally susceptible.

#### Symptoms

Between 70–90 per cent of people infected with RRV have slight or no symptoms. Between 10–30 per cent of these develop an illness which may include a rash, general effects and rheumatic symptoms.

#### Rash

A rash occurs in about half of all cases. This may be only a few spots on the hands and feet or it may cover the whole body. The rash consists of small red spots, often slightly raised. Sometimes it may look purplish or like bruises or small blisters similar to chicken pox. The rash rarely itches, however, the skin may be sensitive to touch, especially on the hands or feet.

The rash usually lasts around seven to ten days and can occur up to two weeks before or after other symptoms. It can be indistinguishable from the rash of rubella and certain other infectious diseases.

#### General effects

General effects of the virus vary greatly. In more serious infections they can be severe, with fever, chills and high temperature, severe headache and irritation by strong light. Usually the temperature is normal throughout, though there is still general discomfort like that of the 'flu. Tiredness is common and can persist or recur later in the illness.

#### Rheumatic symptoms

Rheumatic symptoms—such as pain, tenderness, stiffness in and around the joints and in the muscles, and difficulty moving—can appear suddenly. These symptoms may be felt initially in only a few joints and then develop gradually or explosively over the next two weeks. Any joint can be affected, including the jaw, however symptoms tend to be more common and persist longer in the limbs. Individual joints can be quite swollen and ligaments near joints and tendons, such as the Achilles tendon, can be painful.

#### Recovery

The worst of the symptoms can last up to eight weeks, however complete rest is generally required only for a week or two. Some people need hardly any rest, especially if they respond to treatment quickly. In the later stages of the illness, stiffness can occur with rest or immobility, for example a long car trip, and it is relieved by movement. Most people do not need any treatment at this stage.

The severity and extent of the symptoms gradually diminish. Some people will recover fully in three months and most within one year.

#### Long-term effects

Despite the severe effects that people sometimes suffer in the early stages of the illness, there is no permanent damage, instability or weakness. Strenuous exertion can briefly aggravate the symptoms, however, in the later stages it is important to be mobile so that secondary stiffness does not develop.

#### Diagnosis

A blood test will confirm that there has been recent Ross River virus or Barmah Forest virus infection, and it may need to be repeated to be certain. The doctor may also ask for other blood tests to exclude other conditions. If there is fluid in a joint, it can be removed through a fine needle with local anaesthetic. This may allow an immediate diagnosis of virus arthritis, though the exact kind will have to be shown by blood tests. The fluid test can also help to exclude other kinds of arthritis.

#### Confirming the diagnosis

Anyone who develops symptoms of these viruses should see the doctor so that the exact condition can be diagnosed. This is important because the features are very similar to rubella and the more serious condition, rheumatoid arthritis, which need to be identified and treated. Also, the prevalence of these diseases is useful for authorities that are working to reduce the risk of infection within the community.

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## Treatment

In the acute stage of the illness and in later flare-ups of the rheumatic symptoms, anti-rheumatic treatments provide relief and allow people to resume all or most of their essential activities. With the range of treatments now available, there is a much better chance of finding an effective drug that does not produce troublesome side-effects.

## Prevention

The species of mosquito that can transmit the virus varies from place to place and with temperature and other factors. Council Environmental Health Officers can provide information about local environments.

In some areas, the breeding of mosquitoes around the home or workplace can be reduced by ensuring that water does not collect. On farms, good irrigation practice can greatly reduce the problem.

Personal measures include:

- Wearing loose-fitting light-coloured clothing, especially in late afternoon and early evening.
- Having effective insect screening in the home, including fireplaces in the warmer months.
- Using a 'knock-down' insecticide (such as pyrethrin) in the house before going to bed.
- Using an insect repellent effective against mosquitoes on exposed areas of skin. See the brochure Protecting against Mosquito Bites and Disease.

## More information

**For more information, contact your local council or the Communicable Diseases Section of the Department of Human Services on (03) 9637 4133.**

<http://www.dhs.vic.gov.au/phd>

Prepared by the Department of Human Services in conjunction with the Victorian Arbovirus Task Force.