

Rheumatic heart disease (RHD) & Acute rheumatic fever (ARF)



Rheumatic fever and rheumatic heart disease are notifiable conditions¹

What is ARF?

Acute rheumatic fever (ARF) is an illness that may occur after a bacterial infection with group A Streptococcus bacteria. It is most common in children aged 5 to 14 years. Rheumatic heart disease (RHD) occurs as a complication of ARF. Although ARF and RHD are rare in the general Australian population, they are a common cause of heart disease in Aboriginal and Torres Strait Islander children and also occur among some migrant populations (particularly from Africa, Asia, the Middle East and Pacific Islands).

ARF is caused by an autoimmune reaction to the bacterial infection. This means that the immune system mistakenly attacks healthy body tissue. In some people, the body's immune response to a group A streptococcal infection results in inflammation of the heart, joints, skin and brain (ARF). Only a small percentage of people with streptococcal infection develop ARF, but those who have had ARF before are more likely to have repeated episodes.

Group A Streptococcus

Infection with group A Streptococcus may cause sore throat, tonsillitis or skin infection. Streptococci are spread when an infected person talks, coughs or sneezes small droplets containing infectious agents into the air. The droplets in the air may be breathed in by those nearby. The droplets may contaminate hands or objects such as drinking cups or eating utensils. Sometimes spread occurs by eating

contaminated food. Sometimes spread occurs by direct contact with infected wounds or skin sores.

There is a period of about 3 weeks between the initial infection with group A Streptococcus and ARF symptoms.

Symptoms

Symptoms of ARF include:

- > fever
- > malaise (feeling of being unwell)
- > painful and/or swollen joints (one or many joints) – usually affecting the elbows, wrists, hips, knees and ankles
- > chest pain, difficulty breathing, or a rapid heartbeat and heart murmur that may be detected by doctors
- > jerky movements and difficulty walking

Rarely ARF may present with:

- > painless lumps under the skin, especially at the elbows, wrists, knees, ankles and spine
- > skin rash on the trunk, arms and legs

What is RHD?

Inflammation of the heart that occurs with ARF can result in permanent damage to the heart, particularly the heart valves. This is called rheumatic heart disease (RHD). The likelihood of developing RHD increases with repeated episodes of ARF.

Healthy heart valves open and shut with each heartbeat, sealing each of the four chambers of the heart and preventing blood flowing in the wrong direction. With RHD the heart valves are unable to open and shut properly. This prevents the heart from pumping blood efficiently and puts excessive strain on the heart. People with RHD may have no symptoms for years or only mild symptoms

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(such as shortness of breath with exercise or on lying down, tiredness, weakness or palpitations) until complications develop.

Complications

Longer term complications of RHD are severe and include:

- > heart failure (when the heart cannot pump enough to meet the needs of the body)
- > infection of damaged heart valves
- > stroke due to clots forming in the heart or on damaged valves that break off and block blood vessels in the brain
- > rapid heartbeat or other disturbed heart rhythms.

Diagnosis of ARF and RHD

There is no single specific test to diagnose ARF. Diagnosis of ARF is based upon a medical assessment along with various tests such as echocardiography (ultrasound scan of the heart) to check the valves, an ECG (electrocardiogram) which shows the rhythm of the heart, blood tests and throat swabs (to look for recent group A streptococcal infection).

RHD is also diagnosed by a medical assessment and echocardiography.

Treatment

People with ARF are usually very ill and require hospital admission. Treatment includes antibiotics (usually penicillin), and other medicines for fever, arthritis and heart failure. Heart surgery may be needed if there is life threatening damage to the heart valves.

Once someone is diagnosed with ARF or RHD he or she requires long term treatment with penicillin injections every 3 to 4 weeks. The length of treatment is at least 10 years, and may be longer depending on the severity of damage to the heart valves. Penicillin injections

are given to prevent further episodes of ARF. This in turn prevents further damage to the heart valves.

Regular checks with the general practitioner and specialists such as a cardiologist or paediatrician are required to monitor the condition of the heart. Regular visits to the dentist are also important to prevent any infections in the mouth from spreading and damaging the heart valves.

Prevention

- > Get sore throats and skin sores checked at a health clinic especially if you have a history of ARF or if you are in a high risk group (Aboriginal and Torres Strait Islander people and migrants from countries where ARF and RHD are common).
- > Ensure all cuts and skin sores are kept clean.
- > Maintain good personal hygiene – brush teeth at least twice a day and have a bath or shower daily.
- > Always follow good hand washing procedures.

SA Rheumatic Heart Disease Register

In South Australia, a consent-based RHD Register is operating and cases of ARF and RHD should be reported to the Register. The Register supports people with ARF and RHD and their health professionals in providing appropriate ongoing care.

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Useful links

SA Rheumatic Heart Disease Control Program and Register www.sahealth.sa.gov.au/RHD

SA Health website www.sahealth.sa.gov.au

> Streptococcal sore throat

RHD Australia www.rhdaustralia.org.au

1 The law requires doctors and laboratories to report some infections or diseases to SA Health. These infections or diseases are commonly referred to as 'notifiable conditions'.

You've Got What? 5th Edition

Communicable Disease Control Branch

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The SA Health Disclaimer for this resource is located at www.sahealth.sa.gov.au/youvegotwhat



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Interpreter



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