



## Bacterial Endocarditis: Infection of Endocardium

Luis Cesar\*

Department of Cardiology, University of Barcelona, Barcelona, Spain

\*Corresponding Author: Luis Cesar, Department of Cardiology, University of Barcelona, Barcelona, Spain; E-mail: celuis@barc.es

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### Description

Bacterial endocarditis is a serious infection that affects the lining of the heart chambers (endocardium) and heart valves. It occurs when bacteria enter the bloodstream and attach to damaged or abnormal heart valves, leading to the formation of infected masses called vegetations. This study will explore the causes, symptoms, diagnostic approaches, and treatment options for bacterial endocarditis.

### Bacterial endocarditis

Bacterial endocarditis occurs when bacteria from another infection site, such as the skin, teeth, or respiratory tract, enter the bloodstream and reach the heart. Normally, the healthy endocardium is resistant to bacterial colonization. However, when there is damage to the heart valves or other structural abnormalities, bacteria can adhere to these sites and trigger an infection.

### Causes

**Dental procedures:** Dental procedures that cause bleeding, such as tooth extraction or gum surgery, can introduce bacteria into the bloodstream. People with pre-existing heart valve conditions or prosthetic heart valves are at an increased risk of bacterial endocarditis after dental procedures.

**Intravenous drug use:** Intravenous drug use, especially when contaminated needles or equipment are used, can introduce bacteria directly into the bloodstream. This poses a significant risk for developing bacterial endocarditis, particularly among individuals with a history of substance abuse.

**Cardiac procedures:** Invasive cardiac procedures, such as heart valve surgeries or catheterization, can also increase the risk of bacterial endocarditis. The manipulation of the heart valves or the presence of foreign materials during these procedures can provide an entry point for bacteria.

**Pre-existing heart conditions:** Certain heart conditions, such as congenital heart defects, damaged heart valves (e.g., from rheumatic fever), or hypertrophic cardiomyopathy, can create an environment conducive to bacterial colonization and subsequent endocarditis.

### Symptoms and diagnosis

The symptoms of bacterial endocarditis can vary depending on the duration and severity of the infection.

**Fever:** Persistent or recurrent fever is often an early indication of bacterial endocarditis.

**Heart murmurs:** Healthcare professionals may detect abnormal heart sounds (heart murmurs) during a physical examination, indicating possible valve damage or dysfunction.

**Fatigue and weakness:** Individuals with bacterial endocarditis often experience extreme fatigue and weakness due to the infection's impact on cardiac function.

**Skin lesions:** Small, painless, and flat or raised red spots may appear on the skin, particularly on the palms of the hands or soles of the feet.

To diagnose bacterial endocarditis, healthcare professionals may perform several tests, including blood cultures to identify the specific bacteria causing the infection, echocardiography to assess heart valve abnormalities and vegetations, and other imaging studies to evaluate the extent of cardiac involvement.

### Treatment and management

The treatment of bacterial endocarditis typically involves a combination of antibiotics and, in some cases, surgical intervention. The specific antibiotic regimen depends on the type of bacteria involved and their antibiotic sensitivity. The treatment duration is generally prolonged, often lasting several weeks, to ensure eradication of the infection.

Surgery may be necessary in cases where complications arise, such as large vegetations, persistent infection despite appropriate antibiotic therapy, valve dysfunction, or heart failure. Surgical options may include valve repair or replacement, removal of infected tissue, or drainage of abscesses.

Prevention plays a crucial role in managing bacterial endocarditis. For individuals at high risk, antibiotic prophylaxis may be recommended before certain dental procedures or invasive medical interventions. However, guidelines for antibiotic prophylaxis have evolved in recent years, and it is essential to consult with healthcare professionals to determine the appropriate approach based on individual risk factors.

### Conclusion

Bacterial endocarditis is a serious infection of the heart's endocardium and valves, which can lead to severe complications if not promptly diagnosed and treated. Understanding the causes, recognizing the symptoms, and seeking medical attention are essential for early intervention. Through appropriate antibiotic therapy, surgical intervention when necessary, and adherence to preventive measures, the management of bacterial endocarditis can improve outcomes and reduce the risk of recurrent infections. If a person experience any symptoms or have underlying heart conditions, consult a healthcare professional for a comprehensive evaluation and guidance.

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