

# Acinetobacter

## What is *Acinetobacter*?

*Acinetobacter* species are gram negative aerobic bacilli that are ubiquitous in fresh water and soil environments. Additionally, these bacteria are a part of normal skin flora and may colonize the oral cavity, the respiratory tract, and the intestinal tract. At least 23 species of *Acinetobacter* have been associated with human disease, but some of these species are unnamed. *Acinetobacter* species impose a particular risk to immunocompromised patients and those with preexisting conditions. Common routes of bacterial transmission include contaminated medical devices such as respirators, intubations, and ventilation devices.

## What are the most common species of *Acinetobacter*?

The species of *Acinetobacter* that have been associated with human infection and disease include:

- *A. baumannii* complex; *A. baumannii* and *A. calcoaceticus*
- *A. johnsonii*
- *A. baumannii* accounts for approximately 80% of reported infections
- *A. ursingii*
- *A. lwoffii*
- *A. schindleri*

## Where are *Acinetobacter* found?

*Acinetobacter* species can live in both moist and dry environments and are found in:

- Fresh water
- Soil
- Hospital water distribution systems
- Contaminated medical devices such as respirators, ventilators, catheters, and medical tools
- Contaminated surfaces in a hospital environment

## Who is at risk for *Acinetobacter* infection?

*Acinetobacter* species are generally considered nonpathogenic to healthy individuals. Those with preexisting conditions or patients in high risk hospital units are most likely to acquire infection.

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## What are the symptoms of bacterial infection?

Acinetobacter species can cause infection in any part of the human body. Infections include:

- Respiratory infections, such as pneumonia
- Skin or wound infections
- Urinary tract infections
- Bacteremia
- Meningitis

## How is bacterial infection diagnosed?

As a common environmental bacterium, isolation of Acinetobacter species can represent colonization, but does not always indicate infection. Samples collected from the infected site are cultured and identified in the lab through biological tests.

## What is the treatment for *Acinetobacter* species infection?

*Acinetobacter* species have high rates of resistance to many different classes of antibiotics. Additionally, these bacteria have the ability to develop an antibiotic resistance to new antibiotics. Carbapenems like imipenem have shown to be effective for treatment.  $\beta$ -lactam antimicrobial agents can also be used in combination with other antibiotics. Multi-drug resistant strains have also shown susceptibility to polymyxins.

## Sources

- Multidrug-resistant Acinetobacter Infection Mortality Rate and Length of Hospitalization. Sunenshine RH et al. Emerg Infect Dis 13(1): 2007
- Acinetobacter Infections in Healthcare Settings (CDC)

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