

# Stenotrophomonas maltophilia

## What is *Stenotrophomonas maltophilia*?

*Stenotrophomonas maltophilia* is a motile, gram-negative non-fermentative bacillus previously known as *Pseudomonas maltophilia* and *Xanthomonas maltophilia*. The bacterium is an obligate aerobe that is common throughout the environment, particularly in water.

## Where is *Stenotrophomonas maltophilia* found?

*Stenotrophomonas maltophilia* can be found in a variety of environments:

- Soil
- Water
- Contaminated medical solutions such as saline rinse solutions, or humidifier water
- Contaminated medical devices such as catheters and breathing tubes

## Who is at risk of *Stenotrophomonas maltophilia* infection?

*Stenotrophomonas maltophilia* is an opportunistic pathogen. Specifically, individuals with existing conditions such as cystic fibrosis, immunosuppression, organ transplantation, malignancies, chemotherapy, prior broad-spectrum antimicrobial therapy, or presence of an indwelling catheter and respiratory therapy equipment are at highest risk of infection. *Stenotrophomonas maltophilia* infection in intensive care unit (ICU) patients has been identified as an independent risk factor for mortality. Contaminated water or medical devices in hospital settings are the primary causes of infection.

Individuals with intact immune systems can also become infected if it enters the body via a contaminated wound or an infected catheter.

## How is *Stenotrophomonas maltophilia* transmitted?

Contaminated water in a hospital setting can transmit *Stenotrophomonas maltophilia* to patients through:

- Direct entry into the body, either through ingesting, bathing, or contaminated surgical instruments
- Implantation of contaminated medical devices

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## How is *Stenotrophomonas maltophilia* transmitted?

- Indirect contact from contaminated surfaces via health worker's hands
- Colonization of the oropharynx from tap water

## What are the clinical manifestations of infection?

Some clinical presentations of *Stenotrophomonas maltophilia* infection include:

- Bacteremia
- Pneumonia
- Urinary tract infection
- Soft tissue infection
- Ocular infection
- Endocarditis
- Meningitis

## How is *Stenotrophomonas maltophilia* infection diagnosed?

As a common environmental bacterium, isolation of *Stenotrophomonas maltophilia* can represent colonization, but does not always indicate infection. *Stenotrophomonas maltophilia* isolation from normally sterile sites like blood, cerebrospinal fluid, or pleural fluid can confirm infection. Additionally, laboratory testing can biochemically identify the bacterium. *Stenotrophomonas maltophilia* can be cultured on a variety of laboratory media.

## Is infection difficult to treat by antibiotics?

Yes; *Stenotrophomonas maltophilia* is inherently resistant to multiple antimicrobial agents that are used to treat gram-negative infections, such as cephalosporins, carbapenems, and aminoglycosides.

## What is the treatment for infection by the bacterium? (cont.)

For susceptible strains, trimethoprim-sulfamethoxazole is recommended as the primary antimicrobial therapy. Combination therapy can be given for life-threatening infections. The combination of trimethoprim/sulfamethoxazole and ticarcillin/clavulanate or trimethoprim/sulfamethoxazole and ceftazidime, if the isolate is susceptible to ceftazidime, can be administered. If infection might have been acquired through a contaminated medical device, immediate removal of the device is strongly recommended. No vaccine is available for the prevention of infection.



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## Sources

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