

Patient Handout: Methicillin-resistant *Staphylococcus aureus* (MRSA)**What is *Staphylococcus aureus* (staph)?**

Staphylococcus aureus, often referred to simply as "staph," are bacteria commonly carried on the skin or in the nose of healthy people. Approximately 25% to 30% of the population is colonized (when bacteria are present, but not causing an infection) in the nose with staph bacteria. Individuals who carry this organism are usually totally healthy, have no problems whatever and are considered simply to be carriers of the organism. Sometimes, staph can cause an infection. Staph bacteria are one of the most common causes of skin infections in the United States. Most of these skin infections are minor (such as pimples and boils) and can be treated without antibiotics (also known as antimicrobials or antibacterials). However, staph bacteria also can cause serious infections (such as surgical wound infections, bloodstream infections, and pneumonia).

How are Staph bacteria spread?

If the organism is on the skin then it can be passed around by physical contact. If the organism is in the nose or is associated with the lungs rather than the skin then it may be passed around by droplet spread from the mouth and nose.

What is MRSA (methicillin-resistant *Staphylococcus aureus*)?

Some staph bacteria are resistant to antibiotics. MRSA is a type of staph that is resistant to antibiotics called beta-lactams. Methicillin was an antibiotic used many years ago to treat patients with *Staphylococcus aureus* infections. It is now no longer used except as a means of identifying this particular type of antibiotic resistance. Beta-lactam antibiotics include methicillin and other more common antibiotics such as oxacillin, penicillin and amoxicillin. While 25% to 30% of the population is colonized with staph, approximately 1% is colonized with MRSA.

Who gets staph or MRSA infections?

Staph infections, including MRSA, occur frequently among persons in hospitals and healthcare facilities (such as nursing homes and dialysis centers) who have weakened immune systems. These healthcare-associated staph infections include surgical wound infections, urinary tract infections, bloodstream infections, and pneumonia. Individuals can become carriers of **MRSA** in the same way that they can become a carrier of ordinary *Staphylococcus aureus* which is by physical contact with the organism. But not all staph infections are associated with the hospital or healthcare facilities. There is also community-associated MRSA.

What is community-associated MRSA (CA-MRSA)?

Staph and MRSA can also cause illness in persons outside of hospitals and healthcare facilities. MRSA is transmitted most frequently by direct skin-to-skin contact. MRSA infections that are acquired by persons who **have not** been recently (within the past year) hospitalized or had a medical procedure (such as dialysis, surgery, catheters) are known as CA-MRSA infections. Staph or MRSA infections in the community are usually manifested as skin infections, such as pimples and boils, and occur in otherwise healthy people.

What does a staph or MRSA infection look like?

Staph bacteria, including MRSA, can cause skin infections that may look like a pimple or boil and can be red, swollen, painful, or have pus or other drainage. More serious infections may cause pneumonia, bloodstream infections, or surgical wound infections. Staph abscesses are often blamed on spider bites, but are in fact a bacterial infection.



How is a staph infection diagnosed?

We can find out if and where *Staphylococcus aureus* is located on a patient by taking various samples, sending them to the laboratory and growing the organism. Tests done on any *Staphylococcus aureus* grown from such specimens can then decide how sensitive the organisms is to antibiotics and if it is a methicillin resistant (MRSA) organism. These test usually take 2-3 days.

How can I prevent staph or MRSA skin infections?

Practice good hygiene:

1. Keep your hands clean by washing thoroughly with soap and water or using an alcohol-based hand sanitizer.
2. Keep cuts and scrapes clean and covered with a bandage until healed.
3. Avoid contact with other people's wounds or bandages.
4. Avoid sharing personal items such as towels or razors.
5. Using a barrier (e.g., clothing or a towel) between your skin and shared equipment (such as at work or in a health club).
6. Wiping surfaces of equipment before and after use.

Are staph and MRSA infections treatable?

Yes. Most staph and MRSA infections are treatable with antibiotics. If you are given an antibiotic, take all of the doses, even if the infection is getting better, unless your doctor tells you to stop taking it. Do not share antibiotics with other people or save unfinished antibiotics to use at another time. In addition to antibiotics, there are times when topical creams or soaps (either applied within the nose or to the entire body) will be utilized to prevent future infections or to decrease the potential of spreading the bacteria to other people.

However, many staph skin infections may be treated by draining the abscess or boil and may not require antibiotics. Drainage of skin boils or abscesses should only be done by a healthcare provider. If after visiting your healthcare provider the infection is not getting better after a few days, contact them again. If other people you know or live with get the same infection tell them to go to their healthcare provider.

Is it possible that my staph or MRSA skin infection will come back after it is cured?

Yes. It is possible to have a staph or MRSA skin infection come back (recur) after it is cured. To prevent this from happening, follow your healthcare provider's directions while you have the infection, and follow the prevention steps after the infection is gone. When patients experience recurrent infections health care providers will often prescribe topical antibiotics to attempt to eradicate staph colonization.

If I have a staph, or MRSA skin infection, what can I do to prevent others from getting infected?

1. **Cover your wound.** Keep wounds that are draining or have pus covered with clean, dry bandages. Follow your healthcare provider's instructions on proper care of the wound. Pus from infected wounds can contain staph and MRSA, so keeping the infection covered will help prevent the spread to others. Bandages or tape can be discarded with the regular trash.

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2. **Clean your hands.** You, your family, and others in close contact should wash their hands frequently with soap and warm water or use an alcohol-based hand sanitizer, especially after changing the bandage or touching the infected wound.
3. **Do not share personal items.** Avoid sharing personal items such as towels, washcloths, razors, clothing, or uniforms that may have had contact with the infected wound or bandage. Wash sheets, towels, and clothes that become soiled with water and laundry detergent. Drying clothes in a hot dryer, rather than air-drying, also helps kill bacteria in clothes.
4. **Talk to your doctor.** Tell any healthcare providers who treat you that you have or had a staph or MRSA skin infection.