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# Methicillin-resistant *Staphylococcus aureus* (MRSA)

## Overview

### What is MRSA?

MRSA is a type of staph infection. “Staph” is the common name for the *Staphylococcus aureus* bacteria.

MRSA stands for “methicillin-resistant *Staphylococcus aureus*.” The infection is resistant to the antibiotic methicillin, as well as some other common antibiotics (such as oxacillin, penicillin and amoxicillin). This makes MRSA infection hard to treat.

Two main types of MRSA have been identified. These are **community-associated MRSA (CA-MRSA)** and **health care-associated MRSA (HA-MRSA)**. CA-MRSA was once rare but is becoming more common. HA-MRSA accounts for well over half of the total number of staph infections.

## Symptoms

### What are the symptoms of MRSA?

MRSA skin infections appear as bumps that may look like pimples and boils. These bumps can be red, swollen, painful or have pus. Cuts, scrapes and hairy areas of the body are common places for these bumps to appear. Bumps from MRSA infection can quickly turn into abscesses, which are deep, infected wounds filled with pus.

## Causes & Risk Factors

### Who is at risk for HA-MRSA?

People in hospitals and health care facilities who have weak immune systems are at risk of more serious complications if they get HA-MRSA. Many things can weaken a person’s immune system. Some chemotherapy drugs and medicines taken after an organ transplant can weaken the immune system. So can having the human immunodeficiency virus (HIV). Risk factors for getting HA-MRSA include having surgery, having a medical device implanted (such as a catheter) or having recent antibiotic treatment.

HA-MRSA can spread when health care workers don’t wash their hands well enough between seeing patients. To kill all of the bacteria, hands must be washed thoroughly using soap and water or an alcohol-based hand sanitizer. If this isn’t done, the bacteria can spread between infected patients and healthy ones.

To reduce the spread of HA-MRSA, some health care facilities have started testing patients for MRSA when they arrive. The facilities may also monitor those in high-risk areas, such as intensive care units (ICUs).

## Who is at risk for CA-MRSA?

Even if you are generally healthy, you can get CA-MRSA. It is spread when you have direct skin-to-skin contact with someone who is infected. You can also get it by using items or touching surfaces that have been contaminated with MRSA.

The Centers for Disease Control and Prevention (CDC) has identified factors that increase the risk of spread. These are referred to as the "5 Cs":

- **Crowding**
- **Frequent skin-to-skin Contact**
- **Compromised skin, such as skin with cuts or scrapes**
- **Contaminated items and surfaces**
- **Lack of Cleanliness**

Schools, dormitories, military barracks, jails, prisons and daycare centers are some common locations for the 5 Cs. MRSA outbreaks have also occurred among members of sports teams, where skin-to-skin contact, minor cuts and scrapes occur frequently.

## Diagnosis & Tests

### How will my doctor know I have MRSA?

Several tests can show if you have MRSA. Your doctor may swab your wound or nasal passages. He or she may also take a sample of urine or blood to send to the laboratory. Results of this type of test (called a culture) should be ready in about 24 to 48 hours.

A new test called a rapid blood test provides results more quickly -- in about 2 hours. While new, this test is becoming more widely available.

## Treatment

### How is MRSA treated?

For mild cases of MRSA, your doctor may drain the skin boil or abscess, then cover the wound with a clean dressing. The dressing will need to be changed regularly. Your doctor may prescribe an ointment that includes mupirocin to treat your MRSA. Often, this is all that is needed to treat the infection. Schedule a follow-up visit to make sure the site is healing well. Call your doctor if you don't see any improvement after a few days.

For more serious cases, your doctor may prescribe antibiotics that work effectively against MRSA. They include:

- **Clindamycin**
- **Doxycycline**
- **Linezolid**
- **Minocycline**
- **Tetracycline**
- **Trimethoprim-sulfamethoxazole**
- **Vancomycin**

However, strains of staph that are vancomycin resistant (called VRSA) have begun to appear.

Be sure to take all the doses of the antibiotic even if you're feeling better, unless your doctor tells you otherwise. Contact your doctor if you do not improve after a few days or if the infection gets worse.

You may need to be hospitalized if you have a severe case of MRSA, if you have other health problems, or if your infection is life-threatening or may cause the loss of a limb. When you're in the hospital, you will be monitored closely and receive powerful antibiotics called "broad-spectrum" antibiotics because they are designed to fight a wide range of infections.

### **What precautions should I take if I have a MRSA skin infection?**

Follow your doctor's instructions for caring for your infection.

- Keep the area covered until it's healed, changing the dressing as advised.
- Wear disposable gloves to prevent spreading the infection.
- Throw away bandages and tape with the regular trash. (If heavily soiled, first place inside a separate bag.)
- Wash your hands often, using soap and water or an alcohol-based hand sanitizer.
- Don't share any personal items, such as bed or bath linens, clothing, razors, makeup, or sports or office equipment.

### **What should I do if I think my belongings have been exposed to MRSA?**

If your clothing, sheets or towels are contaminated with the MRSA bacteria, wash them in hot water (at least 160°F) and laundry detergent. Use a hot dryer rather than air drying. Clean surfaces with household cleaners.

## *Complications*

### **What complications can result from MRSA?**

Healthy people who develop MRSA skin infections rarely develop more serious problems. But people who have weak immune systems and who get HA-MRSA can develop serious, even life-threatening infections. These can include infections of the blood, bone, heart valves or lungs, and infections at the site of surgery.

## *Prevention*

### **How can I keep from getting MRSA?**

Good hygiene is the best defense against MRSA and other bacterial infections.

- Wash your hands often, using soap and water or an alcohol-based hand sanitizer.
- If you have any cuts or scrapes, keep them clean and covered with a bandage until they heal.
- Avoid contact with other people's wounds or bandages.
- Don't share personal items.
- Put a towel or other "block" between you and any other surfaces, such as sitting on a towel in the locker room.
- If you are in the hospital, ask all staff to wash their hands or use an alcohol-based hand sanitizer before treating or touching you.

## Questions to Ask Your Doctor

- Am I at risk for getting MRSA?
- I work at a hospital. What can I do to prevent MRSA?
- My husband has MRSA. What can I do to protect myself and my family from getting it?
- What is the best treatment for me?
- I have a wound that is infected with MRSA. Will I lose my limb?
- How should I care for my wound that was just drained?
- Should I get rid of my bed linens?
- Is there any special way I should get rid of my bandages and wound dressings?
- I have HIV. What should I do if I get infected with MRSA?
- Someone at my child's daycare was just diagnosed with MRSA. Should I have my child tested for it?

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