

# MRSA

## Methicillin Resistant *Staphylococcus Aureus*

### What is *Staphylococcus Aureus*?

*Staphylococcus aureus* (SA) (often called “staph”) are bacteria that may live in the nose and on the skin of healthy people. If SA enters a person’s body through a break in the skin it can cause wound and skin infections, pneumonia and urinary tract infections.

### What is MRSA?

Methicillin is one of the antibiotics used to treat SA infections. Over time, these bacteria develop resistance to methicillin (which means that methicillin will no longer work to kill the bacteria) and are referred to as methicillin resistant *Staphylococcus aureus* (MRSA). To diagnose MRSA, a sample is taken from the infection area, and the lab determines what type of bacteria is present. If MRSA is detected, a physician will determine the best course of treatment, and if detected early, it can usually be treated effectively with antibiotics other than methicillin.

### What is the difference between MRSA colonization and infection?

Colonization means the MRSA is living in or on a body without causing any illness. MRSA can colonize in the moist areas of the body, such as the nose and the skin. A person colonized with MRSA is a carrier of MRSA and can spread it to others, who in turn may become sick if the bacteria enter their body and the person has the risk factors for developing an infection.

Infection means that the MRSA has entered the body and the person’s immune system was not able to fight the bacteria and the person develops an illness.

### How does MRSA spread?

MRSA can be spread by people who are colonized or infected to others by direct skin-to-skin contact (e.g., unwashed hands) or by indirect contact by touching surfaces contaminated with MRSA. MRSA are hardy organisms that can survive on environmental surfaces for weeks (e.g., counters, door knobs). Touching someone with hands that are contaminated with MRSA can lead to colonization of this person. It is very important to practice good hand washing, especially after caring for someone with MRSA. MRSA is **not** spread through the air and is inactivated in recreational water by normal disinfectant levels.

### Who is likely to get a MRSA infection?

The risk factors that make a person more susceptible to acquiring MRSA infections include: prolonged hospital stays; surgical procedures or open wounds; residing in a long-term care home; frequent use of antibiotics; poor hygiene; exposure to a person colonized or infected with MRSA; severe or chronic diseases; weakened immune systems; or insertion of a catheter or tube. Healthy people are usually not at risk of becoming infected with MRSA.



## What is community-associated MRSA?

Recent evidence has shown that MRSA can begin in the community with groups such as sport teams, homeless people, military troops and children who attend child care centres. The spread of infection is likely due to crowding, frequent skin-to-skin contact, poor hygiene and sharing contaminated personal items. Most of these infections are skin related (pimples, boils, cellulitis, impetigo), but occasionally these infections can be serious.

## What can be done to stop the spread of MRSA?

**1. Practice good hand washing.** This is the most effective way to stop the spread of MRSA.



- **Wash hands frequently** for at least 15 seconds using the 6-step method OR
- **Use a hand sanitizer** when handwashing facilities are not available and hands are not visibly soiled. When using a hand sanitizer, apply enough to wet the entire hand and rub solution into hands until completely dry.

**2. Clean the environment.** Our environment plays a crucial role in disease spread. In addition to practicing good hand hygiene, it is important to clean and disinfect surfaces we touch often using a two-step method:

- **Step#1 - Cleaning.** Remove dirt and debris from a surface. Clean with an all-purpose detergent, water and friction, and clean from least soiled to heaviest soiled areas.
- **Step#2 - Apply a disinfectant.** Disinfectants need to be applied to a clean surface for the correct period of time and at the correct strength to achieve proper disinfection. Disinfectants must have a Drug Identification Number (DIN); the exceptions are common household bleach and isopropyl alcohol. Always follow manufacturer's recommendations. If you are using a bleach solution, ensure it remains wet on the surface for five minutes to allow for proper disinfection.

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A 500ppm bleach solution will kill MRSA (concentration of 1:100).

**To make this solution follow these steps:**

- Use undiluted household bleach (5.25% or ~50,000ppm)
- Add bleach to water - do not add water to bleach

**Recipes to make a 500ppm bleach solution:**

- Mix ¼ cup + 2 t (50 ml) of bleach with 19 ¾ cups (5L) of water OR
- Mix 5 t (25 ml) of bleach with ~10 cups (2.5L) of water OR
- Mix 2 t (10 ml) of bleach with ~4 cups (1L) of water
- Store bleach solutions in closed, properly labelled containers, away from heat and light

Note: No special precautions are required for handling dishes or waste.

**3. Clean clothes/fabric.** Wash clothes/fabric separately if they are heavily soiled with feces. First rinse off feces and then clean in a hot water cycle with soap. Dry items in the dryer with high heat if possible. Dry clean where appropriate.

**4. Use antibiotics wisely.** To limit the development of new antibiotic resistant organisms, antibiotics must be used properly. It is important to take and finish any antibiotics as prescribed for you (do not share with others) and use antibiotics only for serious bacterial infections (they do not work against viruses).

**Can people with MRSA have visitors?**

**Yes.** Restrictions on activities or visitors at home or in the community are not necessary.

- If you are visiting a person with MRSA in a hospital or a long-term care home, staff may ask you to wear gloves and a gown before having contact with the person or his/her environment. It is very important to perform hand hygiene after visiting these facilities.
- If you have MRSA, it is important to inform health care providers in the community (doctor, nurse, physiotherapist) so they can take the appropriate precautions (e.g., hand washing, use of gloves).

**References:**

Fact Sheet – Community-Acquired Methicillin-Resistant Staphylococcus aureus (CA-MRSA). Public Health Agency of Canada. 2008. <http://www.phac-aspc.gc.ca/id-mi/camrsa-eng.php>

Fact Sheet –Methicillin-Resistant Staphylococcus aureus (MRSA). Public Health Agency of Canada. 2008. <http://www.phac-aspc.gc.ca/id-mi/mrsa-eng.php>

