



Methicillin-Resistant *Staphylococcus aureus* (MRSA) in schools and among athletes

Frequently asked questions

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What is *Staphylococcus aureus*?

Staphylococcus aureus, usually called “staph,” is one of the most common causes of skin infections in the United States. Staph can be found on the skin and in the noses of healthy people. This is called colonization. As many as one in three people are colonized with staph bacteria.

What is Methicillin–Resistant *Staphylococcus aureus* (MRSA)?

MRSA is a kind of *Staphylococcus aureus* (“staph”) bacterium resistant to a class of antibiotics that includes methicillin, oxacillin, penicillin, and amoxicillin. In the past, MRSA was found only in healthcare facilities and caused infections in people who were sick. MRSA now appears in the community causing infections in healthy people, and is known as community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA).

How is MRSA spread?

In the community, staph infections start when bacteria get into a cut, scrape or other break in the skin. This often happens through direct skin to skin contact. Staph, including CA-MRSA, is also spread by contact with items that have come into contact with someone else’s infection. Items like towels used in locker rooms or on the playing field and gym equipment are examples.

Where do MRSA skin infections occur?

MRSA skin infections can occur anywhere. Many people carry staph (including MRSA) in their noses or on their skin, and do not know they are carrying it. About one in every 100 people is colonized with MRSA. They usually do not get skin infections, and they do not have signs or symptoms of illness.

Factors in some settings make it easier for MRSA to be transmitted.

- These factors, known as the 5 **C**’s, are: **C**rowding, frequent skin-to-skin **C**ontact, **C**ompromised skin (i.e., cuts or abrasions), **c**ontaminated items and surfaces, and lack of **C**leanliness.
- Settings in which the 5 **C**’s are common include school athletic

programs, dormitories, military barracks, households, correctional facilities and child care centers.

What are the symptoms of an infection caused by MRSA?

The symptoms of an MRSA infection and the symptoms of an infection due to other staph are the same. In the community, MRSA commonly causes skin infections that might look like spider bites, infected turf burns, impetigo, boils or abscesses. Pimples, rashes, pus-filled boils, especially when warm, painful, red or swollen, can also indicate a staph skin infection. These skin infections commonly occur at visible skin trauma sites, such as cuts and abrasions, and on areas of the body covered by hair (e.g., the back of the neck, groin, buttock, armpit, beard area of men).



Staph, including Community-Associated MRSA, can cause rare conditions such as severe skin infections, bloodstream infections, or pneumonia. Symptoms of severe skin infections might include high fever, swelling, heat and pain around a wound, headache, and fatigue.

How are MRSA infections treated?

MRSA needs to be diagnosed by a healthcare provider, usually by sending a sample of the drainage to a laboratory to be tested (cultured). Almost all skin infections can be effectively treated by drainage of pus. Antibiotics may or may not be needed.

When needed, treatment with antibiotics should be based on the results of the wound culture and sensitivity tests. If prescribed, it is important to use antibiotics as directed. If the infection has not improved within a few days after seeing the healthcare provider, the patient should contact the provider again.

How do I protect myself from getting MRSA?

You can protect yourself by:

- Practicing good hygiene (e.g. keeping your hands clean by washing with soap and water or using an alcohol-based hand sanitizer (60 percent alcohol or greater) and by showering immediately after participating in contact sports),
- Covering skin trauma such as abrasions or cuts with a clean dry bandage until healed,
- Not sharing personal items that come into contact with skin, such as towels, bar soap and razors; and using a barrier (like clothing or towels) between your skin and shared equipment, such as weight-training benches, and
- Maintaining a clean environment by establishing cleaning procedures for frequently touched surfaces and surfaces that come into direct contact with people's skin.

I have an MRSA skin infection. How do I prevent spreading MRSA to others?

Recommendations for MRSA and all skin infections:

- Clean your hands frequently. You, your family, and others in close contact with you should wash their hands frequently with soap and water or use an alcohol-based hand sanitizer (60 percent alcohol or greater), especially after changing your bandage or touching the infected wound.
- Cover your wound. Keep wounds that are draining or contain pus covered with clean, dry bandages until healed. Follow a healthcare provider's instructions on proper care of the wound. Pus from infected wounds can contain bacteria, including MRSA, so keeping the infection covered will help prevent spreading it to others. Discard bandages and tape with the regular trash.
- Do not share personal items. Avoid sharing personal items, such as towels, washcloths, razors, bar soap, clothing or uniforms that might have had contact with the infected wound or bandage. Wash sheets, towels, and clothes that become soiled according to manufacturer's

recommendations, and dry thoroughly.

What are the School's and/or School Nurse Responsibilities?

- Refer to a licensed health care provider. Skin infections might need to be incised and drained and/or antibiotic treatment given, based on a wound culture and sensitivity test results.
- Prevent spread:
 - Encourage good personal hygiene and hand washing with soap and water for at least 15 seconds.
 - If soap and water are not available, use an alcohol-based hand sanitizer (60 percent alcohol or greater).
 - Individuals with open wounds should keep them covered with clean, dry bandages taped on all four sides.
 - Gloves should be worn when contact with non-intact skin or mucous membranes is expected. Hands should be washed immediately after removing gloves.
 - Make sure supplies are available to comply with prevention measures, such as soap dispensers in showers and at sinks, bandages for covering wounds, and alcohol-based hand sanitizer (60 percent alcohol or greater).
 - Potentially contaminated surfaces should be cleaned with:
 - An EPA-registered disinfectant labeled effective against *Staphylococcus aureus*. Follow the manufacturer's recommendations. EPA provides a list of registered products that work against MRSA (List H): <http://epa.gov/oppad001/chemregindex.htm>.
 - Household bleach diluted 1:100 (1/4 cup of bleach to one gallon of water) or per manufacturer's directions. A fresh solution should be mixed for each day's use.
 - Athletes should not participate in wrestling until wounds are healed in accordance with the 2007 NCAA Wrestling Rules.
 - Athletes in contact sports other than wrestling should cover wounds with a securely attached bandage that will contain all drainage and remain intact throughout the activity. If an athlete in a contact sport cannot cover wounds with a bandage so that

the drainage is contained, the athlete should not participate in the sport until wounds are healed.

If MRSA infection is found among students, should I test and treat *all* students for MRSA?

No. Treatment and testing are not recommended for all students, if one or more students in your school have an MRSA infection. Any student with a skin infection should be encouraged to see his or her healthcare provider. The healthcare provider will determine the best course of treatment.

Do I need to alert parents and staff if a student has a MRSA infection?

When MRSA occurs within the school population, consult with the school nurse, school physician or health service to determine, based on medical judgment, whether some or all parents and staff should be notified. Prior to parent notification, discuss the issue with the school administrator.

Should students or student athletes with MRSA skin infections be excluded from attending school or participating in sports?

Unless directed by a physician, most students with MRSA infections should not be excluded from attending school. Students with active infections should cover their wounds.

Exclusion from school or sporting activities should be reserved 1) for those with wound drainage (pus) that cannot be covered and contained with a clean, dry bandage, 2) for those who cannot maintain good personal hygiene or 3) under direction of the patient's physician.

Athletes should not wrestle until wounds are healed in accordance with 2007 NCAA Wrestling Rules.

Should schools close or athletic events be canceled because of MRSA infection?

The decision to close a school or cancel a sporting event for any communicable disease should be made by school officials in consultation with

local and/or state public health officials. In most cases, it is not necessary to close schools or cancel sporting events because of student or athlete MRSA infections. MRSA transmission can be prevented by simple measures such as hand hygiene and covering infections.

Should the school be closed to be cleaned or disinfected when an MRSA infection occurs?

- In general, it is not necessary to close schools for disinfection when MRSA infections occur. MRSA skin infections are transmitted primarily by skin-to-skin contact and contact with surfaces that have come into contact with someone else's infection. Covering infections will greatly reduce the risk of surfaces becoming contaminated with MRSA.
- When MRSA skin infections occur, cleaning and disinfection should be performed on surfaces that are likely to contact uncovered or poorly covered infections. Cleaning procedures should focus on commonly touched surfaces and surfaces that come into direct contact with people's bare skin each day.
- There is a lack of evidence that large-scale use (e.g. spraying or fogging rooms or surfaces) of disinfectants will prevent MRSA infections.

How can I prevent MRSA infection in athletes?

It is important for school athletic departments to coordinate infection control efforts with school health professionals, environmental services staff, and other colleagues to effectively prevent and control infections.

General Guidance

- Remind athletes that frequently washing their hands with soap and water for at least 15 seconds is one of the best things they can do to prevent MRSA and other diseases. Alcohol-based hand sanitizers (60 percent alcohol or greater) should be used when soap and water are not available.
- Liquid soap, either plain or antibacterial, should be accessible from a wall dispenser in showers and handwashing areas.

- Towels should not be shared. If they are washed at school, they should be washed and dried thoroughly.
- Repair or dispose of equipment and furniture with damaged surfaces that do not allow for adequate cleaning.
- Equipment, such as helmets and protective gear, should be cleaned according to the equipment manufacturers' instructions to make sure the equipment will not be harmed.
- Shared equipment should be cleaned after each use and allowed to dry.
- Use a barrier like clothing or a towel between skin and shared equipment such as weight training, sauna, and steam-room benches.
- Wear practice clothes and uniforms only once, and then wash them according to manufacturer's recommendations. Dry thoroughly.
- Athletic facilities such as locker rooms should always be kept clean whether or not MRSA infections have occurred among the athletes. Review cleaning procedures and schedules with environmental services staff.
 - Cleaning procedures should focus on commonly touched surfaces and surfaces that come into direct contact with bare skin each day.
 - Potentially contaminated surfaces should be cleaned with:
 - An EPA-registered disinfectant labeled effective against *Staphylococcus aureus*. Follow the manufacturer's recommendations. EPA provides a list of registered products that work against MRSA (List H): <http://epa.gov/oppad001/chemregindex.htm>.
 - Household bleach diluted 1:100 (1/4 cup of bleach to one gallon of water) or per manufacturer's directions. A fresh solution should be mixed for each day's use.
- Instruct athletes to report skin abrasions, wounds and potential skin infections to a coach, trainer and the school nurse.
- Athletes should not participate in wrestling until wounds are healed in accordance with 2007 NCAA Wrestling Rules.
- Athletes in contact sports other than wrestling should cover wounds with a bandage. If an athlete in a contact sport cannot properly cover wounds with a securely attached bandage that will contain all drainage

and remain intact throughout the activity, the athlete should not participate in the sport until wounds completely heal.

Coach

- Remind athletes that washing their hands with soap and water frequently is one of the best things they can do to prevent MRSA and other diseases. Alcohol-based hand sanitizers (60 percent alcohol or greater) should be used when soap and water is not available.
- Require showering immediately after matches, games, and practices.
- Use scoop (not hands) when taking ice out of cooler to make ice packs to treat sports injuries or for use in drinks. Also, clean scoop daily when in use and do not store scoop in ice cooler.
- Do not have shared drinking water bottles; each player should have his or her own water container.
- Include alcohol-based hand sanitizer (60 percent alcohol or greater) in coach's first aid kit so that coaches and trainers will always be able to sanitize hands before and after caring for each injured player on the field.
- Have disposable gloves available in first aid kit for use when caring for the scrapes and cuts of players. Use gloves once then discard, wash hands or use alcohol-based hand sanitizer (60 percent alcohol or greater) immediately after removing gloves.
- Check athletes for skin infections before practice, games and matches. Cover any wound so drainage is contained as previously described. In accordance with 2007 NCAA Wrestling Rules, do not let athletes participate in wrestling if they have wounds, even if covered.
- Refer athletes with potential skin infections to the school nurse or team physician and their own health care provider.
- Athletes with active skin infections or open wounds should not use the whirlpools or therapy pools.
- Inform parents of all these precautionary measures.

Athlete

- Wash hands with soap and water for at least 15 seconds frequently. It

- is one of the best things do to prevent MRSA and other diseases.
- Use alcohol-based hand sanitizers (60 percent alcohol or greater) when soap and water is not available.
 - Shower with soap and water immediately after practices, games and matches.
 - Do NOT share personal hygiene items (bar soap, towels, razors, clothing, or water bottles).
 - Do NOT share antibiotics or ointments and salves.
 - Do NOT touch other peoples' skin infections.
 - Do NOT touch face, nose or groin while in practice, matches, and games.
 - Consider NOT doing cosmetic (body) shaving.
 - Treat any draining wound as a potential skin infection.
 - Wear workout clothing that minimizes contact with weight benches and weight equipment, etc.
 - Wear practice clothes and uniforms only once, and then wash them according to manufacturer's recommendations. Dry thoroughly.
 - Report skin abrasions, wounds and potential skin infections to a coach or trainer and the school nurse.
 - Do NOT participate in wrestling until wounds are healed in accordance with 2007 NCAA Wrestling Rules.
 - Do NOT use whirlpools or therapy pools and other common-use water facilities like swimming pools until infections and wounds are healed.
 - Inform parents of all these precautionary measures.

Locker Rooms and Shower Rooms

- Provide wall-mounted dispensers for soap in showers.
- Soap dispensers should have disposable soap "unit" refills.
- Locker rooms and showers should always be kept clean whether or not MRSA infections have occurred among the athletes. Review cleaning procedures and schedules with environmental services staff.

Wrestling Room and Mats

- Wipe down padding along walls, benches and door handles with a

disinfectant routinely.

- Clean and sanitize mats after practice and matches. Before mats are rolled up, all sides of mats should be cleaned and allowed to dry.

Weight Room/Training Room

- Place wall dispensers with an alcohol-based hand sanitizer (60 percent alcohol or greater) at weight room door. Athletes and coaches should be instructed to use the hand sanitizer when entering and leaving weight room. If hands are visibly dirty, they should use soap and water to wash before entering the weight room.
- Replace all torn and worn out padding on weight machines.
- Remove tape from weight bars and grips. Metal surfaces are easier to wipe down.
- Wipe down all skin contact points of weight equipment such as pads, grips on weights, and lifting belts routinely.
- Clean benches, supports, pads, light switches, and door pulls/knobs routinely.

References

CDC – CA-MRSA Overview

www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html

CDC – CA-MRSA Prevention and Control

- Schools: http://www.cdc.gov/ncidod/dhqp/ar_mrsa_in_schools.html
- Athletics:
http://www.cdc.gov/ncidod/dhqp/ar_MRSA_AthletesFAQ.html

CDC – CA-MRSA Educational Materials

http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_posters.html

2007 NCAA Wrestling Rules and Interpretations

www.ncaa.org/library/rules/2007/2007_wrestling_rules.pdf