

Proper Hygienic Principles Needed to Combat CA-MRSA, Other Skin Infections

BY B.J. ANDERSON, M.D.

Antibiotic resistance is a significant problem in our society. It's a known fact we are running low on options for handling infectious diseases. What was once considered a simple choice has now become a difficult one requiring that we weigh the options of treatment against the risk of promoting drug resistance, as well as the possibility of reducing available antibiotics for use in the future. Antibiotic and antiviral medication usage is now highly scrutinized for every infection.

For the first time in 50 years, the annual Interscience Conference on Antimicrobial Agents and Chemotherapy failed to introduce a new antibiotic. The consequences of limited antibiotic availability directly affects the management of skin-related infections in sporting activities where CA-MRSA (community-associated methicillin resistant staphylococcus aureus) has reached epidemic proportions. In certain athletic activities, proper treatment is fraught with controversy among medical experts, as well as the lay public.

Several years ago I wrote an article about CA-MRSA that was first brought into the sports limelight with the St. Louis Rams professional football team. Since that time, CA-MRSA has spread rapidly into other sports, too.

As we evaluate sports that are prone to skin infections, it's important to review the different types of infection. Bacterial skin infections are due to organisms such as *Staphylococcus aureus* or beta-hemolytic streptococcus. They cause localized skin infections such as cellulitis and folliculitis and may develop into deeper infec-

tions such as a boil, also called an abscess or carbuncle.

CA-MRSA classically presents as boils that can require drainage and the use of antibiotics to heal. Recurrent outbreaks are due to persistent presence of the bacteria in the athlete's environment or on the skin. It is a difficult bacteria to eradicate due to its ability to "hide" in the nose of the athlete or those in close contact, such as team members, friends or family members. Spreading bacteria to these contacts is quite common and abscesses may also occur. Treatment focuses on general hygienic measures (see box), antibiotics and possibly draining the area if an abscess is present.

Fungal infections (ringworm or tinea corporis) can appear on the skin or in the scalp. Due to the dermatophyte *Trichophyton tonsurans*, it is considered a nuisance infection but can infect the groin, feet and even the scalp, where a deeper type of infection can develop (kerion). Fungal infections require treatment with antifungal creams and occasionally must be treated with oral medications. Scalp infections require up to four to six weeks of oral medication.

Viral infections such as Herpes Gladiatorum (HG), verrucous warts and molluscum contagiosum can be difficult to treat. Herpes Simplex-type 1 accounts for more than 90 percent of all HG outbreaks. Treatment with antiviral medications serves to clear an outbreak and may be used to reduce transmission when used prophylactically. It's important to remember that this virus will remain with the athlete for life. Recurrent outbreaks are the rule, not the exception.

Hygienic Principles for all Sports

1. Shower after each practice and competition at the event or school.
2. Use clean workout clothing for each practice.
3. Clean equipment on a routine basis.
4. Use your own towels with showering and don't share personal toiletry products.
5. Don't shave groin area due to increased risk for CA-MRSA.
6. Use pump bottle soap dispensers in the shower. Bars of soap have been implicated in spreading CA-MRSA among their users.
7. Notify your coach, ATC about any suspicious skin lesion. Have them evaluated by a health-care provider before returning to competition/practice.
8. Certain sports require specific guidelines to be followed when skin infections occur. Consult your state or NFHS guidelines for recommendations.



Molluscum contagiosum is due to a pox virus and also considered a nuisance type of infection. Along with verrucous warts, their removal is primarily to prevent their spread. Cryotherapy, hyfrecator or chemical/topical treatments can be used, but repeated treatments are necessary. They are not considered serious, yet it is necessary to remove them to prevent transmission to an opponent or teammate.

Two common facts serve as a reasonable explanation for the rapid rise in these skin-related infections: single-sport athletes competing year-round and a lack of proper hygiene. A recent study showed that military recruits had increased rates of skin infections due to living in close quarters for a prolonged period of time. Athletes in certain sports with repeated close contact show similarly increased rates of skin infections. High school wrestlers show a huge increase in skin infections during the month of January when teams participate in tournaments almost every weekend and more than 60 percent of seasonal matches occur.

Unfortunately, basic hygienic principles are not being followed. Many students do not shower after practice. During the past 20 years, the practice of showering after gym class appears to have been virtually abandoned and apparently physical education instructors are not demanding that students shower. These practices carry over into afterschool sports where a recent study performed by this author showed that nearly 10 percent of high school wrestlers did not shower even at the end of weekend tournaments!

Certain sports are more problematic due to equipment, increased skin-to-skin contact and the environments in which the athletes compete and perform. Football and ice hockey are high-impact, contact sports that are equipment-intense activities. Bac-

teria can be transmitted via direct contact with opponents and can be harbored on the equipment.

Several articles have been written about equipment in these sports serving as a source for bacterial spread from one athlete to another. Abrasions or cuts can regularly occur during the course of a season. Once the skin is open, infectious agents can easily seed the wound and develop into an infection.

Wrestling has more direct skin-to-skin contact than other sports. The constant rubbing of the skin can lead to increased risk for skin infections to develop. Sports with lower risk include baseball, basketball, swimming and golf. These sports have less direct skin-to-skin contact, but infections do occur from environmental contacts. Plantar warts and tinea pedis have been documented from floors surrounding pools.

With the progression of antibiotic resistance and increased year-round single-sport participation, it is important to focus on basic principles to help prevent and reduce the risk of skin infections and their complications. Good hygienic principles are a must and with the development of drug resistance, these rules serve as the first line of defense to prevent skin infections from developing.

If followed, these guidelines will reduce the athlete's risk of contracting and spreading skin infections. As medical treatments change, it is important that schools adapt accordingly to ensure the safety of these athletes for now and generations to come. ☉

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