

## MRSA in Sports Participation

Skin infections occasionally become a problem in all sports. Some activities are more prone to them than others. Recent outbreaks of MRSA (Methicillin-Resistant *Staphylococcal aureus*) have occurred prompting the development of new guidelines to: help identify an outbreak, means to minimize its spread and preventative measures to reduce its occurrence. First and foremost, simple hygienic measures must be used to prevent any form of infection from developing. All athletes should shower after each practice or competing event. Work-out gear or clothing needs to be washed at the end of each day or practice. Be sure to properly clean and disinfect all equipment that is in direct contact with an athlete's skin, i.e. mats, on a daily basis. Notify your parent and coach about any suspicious skin lesion and seek medical attention before practice or competing.

### MRSA

*Staphylococcal aureus* is a common bacterium that can exist on the body and under special circumstances in the nose. Rarely does it invade the skin and cause infections. When it does, it's usually in the form of impetigo or folliculitis. Methicillin-resistant *staphylococcal aureus* is a form of this bacterium that has developed resistance to certain antibiotics. One reason for concern is that this organism, previously only thought to exist in hospitals or nursing homes, has now spread into the community. Antibiotics, such as Penicillin and related medicines, which were used in the past, are now ineffective causing the problem we presently have. An aggressive form<sup>1</sup> that can spread quickly and usually appears as a boil or abscess (59%). Other forms, cellulitis (42%) and folliculitis (7%) can occur, but less frequent. This infection can invade deeper tissues and cause significant damage to the skin and muscles. Occasionally it can spread to the lungs and cause a serious type of pneumonia.

### Risk Factors for MRSA

Several issues increase the risk for MRSA to develop. Male-to-male sexual contact, history of intravenous drug usage and known contact with individuals with this bacterium serve as the greatest risk. Children and adolescents have a greater preponderance than adults<sup>2</sup>. Other factors are: contact sports, i.e. football, wrestling, rugby and soccer, and history of recurrent boils<sup>3-7</sup>.

### What to do with an outbreak in an athlete

As with any skin infection, treat the individual and remove them from competition and practice. All players should be screened for similar infections on a daily basis. If possible, work with one health care provider in your community. Continuity of medical care is of the utmost importance in managing these infections. If suspicious, culturing these infections will be necessary to ensure the proper antibiotics are being used. If multiple outbreaks develop on a team, i.e. clusters, contact your Public Health Department for assistance. Multiple outbreaks could indicate there are carriers for the bacteria on the team. If present, consider having nasal cultures obtained on all team members, including coaches, to determine who these carriers are. With a contact sport, consider treating all infected and carrier individuals with oral antibiotics. Once being treated, performing hexachlorophene (ex: Betacept®) body washes daily for one week will help to remove or 'decolonize' the bacterium from the body<sup>8</sup>.

### What to do to prevent an outbreak

All clothing for practice and competition needs to be cleaned daily. Equipment-intense sports, i.e. football, hockey, need to address means to properly clean these items on a routine basis\*. Wrestling mats and gymnastic horse need to be disinfected (1:100 solution of household bleach and water) before each practice and several times a day throughout a tournament. Don't share any personal sporting equipment, i.e. gloves, knee pads. Don't use a whirlpool or cold tub with any open wounds, scrapes or scratches.

Individuals need to shower immediately after practice and competition, consider showering multiple times during tournaments when several events occur each day and before using whirlpools or common tubs. Use soap from liquid dispensers, not shared bar soap<sup>8</sup>. Require the use of personal towels and hygiene products. Sharing of these is felt to be a major source of spreading the bacterium to others<sup>8</sup>. Refrain from cosmetic shaving of the skin, i.e. chest, back and pubic regions.

Provided there aren't any outbreaks, carriers of MRSA can continue to compete in sporting events. Proper care of all skin abrasions or cuts will minimize the risk of an infection and its spread.

\* Cleaning of these equipment-intense sports can be difficult and costly. Manual disinfecting with 1:100 solution of household bleach and water is recommended. If not feasible, there are several companies that can clean larger pieces of equipment using various modalities (i.e., detergents, ozone). Consider seeking help from these companies or contact your local dry cleaners for assistance.

### Simple Measures to Prevent or Minimize the Risk of MRSA

- Shower after all competition
- Wash all work-out gear after practice or competition
- Certain sports require cleaning equipment (mats) before each practice or event
- Use liquid soap, not bar soap
- Refrain from cosmetic (whole body) shaving
- Don't share towels or hygiene products
- Notify parents and coach about any skin sores and have it evaluated by health care provider before returning to competition
- Shower before using whirlpools or cold tubs
- Refrain from using whirlpools or cold tubs with any open sores, scrapes or scratches

## References

1. Fridkin SK, et al. Methicillin-Resistant *Staphylococcal aureus* disease in Three Communities. N Engl J Med. 2005;352:1436-44.
2. Minnesota Department of Health: Disease Control Newsletter. Nov./Dec. 2004. Vol.32,No.6:61-72.
3. Cohen PR, Kurzrock R. Community-acquired methicillin-resistant *Staphylococcal aureus* skin infection: an emerging clinical problem. J Am Acad Dermatol. 2004;50:277-280.
4. Cohen PR, Grossman ME. Management of cutaneous lesions associated with an emerging epidemic: community acquired methicillin-resistant *Staphylococcal aureus* skin infections. J Am Acad Dermatol. 2004;51:132-135.
5. Centers for Disease Control and Prevention: Methicillin-resistant *Staphylococcal aureus* infections among competitive sports participants-Colorado, Indiana, Pennsylvania and Los Angeles county, California, 2000-3. Morb Mort Wkly Rep (MMWR). 2003;52:793-5.
6. Lindenmayer JM, Schoenfeld S, O'Grady R, et al. Methicillin-resistant *Staphylococcal aureus* in a high school wrestling team and surrounding community. Arch Intern Med. 1998;158:895-899.
7. Centers for Disease Control and Prevention. Outbreaks of community-associated methicillin-resistant *Staphylococcal aureus* skin infections-Los Angeles county, California, 2003-3. Morb Mortal Wkly Rep (MMWR). 2003;52:88.
8. Nguyen DM, Mascola L, Bancroft E. Recurring Methicillin-resistant *Staphylococcal aureus* Infections in a Football Team. Emerg Inf Dis. 2005.Vol.11,No.4: 526-32.