

Passing the ball may also pass disease, study finds

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UC Irvine researchers have demonstrated that basketballs and volleyballs can spread potentially dangerous germs among players. Their findings may bring a new awareness to athletes, coaches, trainers and parents regarding safe sanitation practices for athletes.

The undergraduate independent study project was supervised by Joshua A. Cotter, a postdoctoral fellow in [orthopedic surgery](#), and led by Brandon Haghverdian, who graduated with a bachelor's degree in biological sciences and starts medical school at UC Irvine in the fall. The research was presented by graduating biological sciences student Nimesh Patel at the American College of Sports Medicine national conference in May 2013.

Staphylococcus aureus, a germ known for causing [staph infections](#) in athletes, was selected for the study. Methicillin-resistant *Staphylococcus aureus*, commonly referred to as MRSA, is a kind of staph that is particularly worrisome because of its resistance to many antibiotics. Athletes with MRSA infections often must endure emergency room visits, costly outpatient follow-ups, and time away from games and practice. The NCAA has initiated a campaign to help identify and prevent diseases which can be spread among athletes.

During the study, the researchers analyzed the germ threat on volleyballs and basketballs, the players' hands and the gym floor. For each phase of the study, two of the three surfaces were sterilized, and the third was left in its native state. Germicidal Ultraviolet "C" (UVC) light was used to

sterilize the ball and the floor tiles, whereas hands were sanitized by washing with antibacterial soap.

Staph. aureus cultures were then sampled from all three surfaces. Next, the players dribbled and passed the ball in a specified pattern and duration to simulate actual sports play. In each study, the previously sterile surfaces accumulated more *Staph. aureus* through play. Moreover, the investigators discovered that *Staph. aureus* was capable of surviving on the sports ball after 72 hours in storeroom conditions.

"The overwhelming prevalence of *Staph. aureus* we encountered supports our understanding of the gym environment as a reservoir of germs," Cotter said. "Institutions, coaches, and athletes should take note of the role the sports ball can play as a vehicle for the transmission of potentially life-threatening germs."

Although not part of this research, Cotter added that other dangerous bacteria and viruses may also be spread among [athletes](#).

Provided by University of California, Irvine

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