

## Evaluating the Prevalence and Risk Factors for Carrying *Staphylococcus aureus* in the Nonhospitalized U.S. Population

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The full report is titled “A U.S. Population-Based Survey of *Staphylococcus aureus* Colonization.” It is in the 7 March 2006 issue of *Annals of Internal Medicine* (volume 144, pages 318-325). The authors are P.L. Graham III, S.X. Lin, and E.L. Larson.

### What is the problem and what is known about it so far?

*Staphylococcus aureus* (*S. aureus*) is a type of bacteria commonly carried on the skin and in the noses of healthy people without causing infection. This is known as bacterial colonization. However, when *S. aureus* organisms invade the body, they can cause serious infections. Some *S. aureus* organisms can be treated easily with antibiotics (methicillin-sensitive *S. aureus* [MSSA]) while others are resistant to antibiotics, such as methicillin (methicillin-resistant *S. aureus* [MRSA]). Doctors don't know how commonly people in the United States are colonized with *S. aureus* and whether certain factors increase the risk for being colonized with MRSA.

### Why did the researchers do this particular study?

To know the extent and pattern of colonization with *S. aureus* in the United States, what the risk factors were for being colonized with MRSA or with MSSA, and what antibiotics could be used to treat infections with these bacteria.

### Who was studied?

9622 people from the general population of the United States who participated in a national health study (the 2001–2002 National Health and Nutrition Examination Survey [NHANES]) and who had bacterial cultures performed from a nasal swab specimen. The participants were representative of the U.S. population.

### How was the study done?

The researchers analyzed the results of the most recent NHANES study, evaluating bacterial culture results, antibiotic resistance patterns of the bacteria, and personal characteristics of the participants (age, sex, race, ethnicity, education, and birthplace), as well as participants' insurance coverage, health status, and history of treatment with antibiotics and hospitalizations.

### What did the researchers find?

The researchers estimated that 84 million people in the United States were colonized with MSSA and 2 million were colonized with MRSA. The highest rate of colonization with MRSA occurred among people who had lived in a long-term care facility within the past 12 months, those with diabetes, women, and people who were 65 years of age or older. Half of those colonized with MRSA had a genetic type of *S. aureus* that has previously been associated with hospital-acquired infections, and half had a type that has previously been associated with community-acquired infections. Black people and those of Mexican birth were less likely than others to be colonized with *S. aureus*. Those with the community type of MRSA were more likely to respond to antibiotics, such as erythromycin, clindamycin, and ciprofloxacin, all of which can be given by mouth.

### What were the limitations of the study?

The data from the NHANES study are now several years old and may not provide an up-to-date picture of current patterns of colonization.

### What are the implications of the study?

Doctors can use the information from this study to evaluate the risk for colonization with MRSA and provide more appropriate antibiotic care when infection occurs.

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