



MRSA:

Natural Methods for Prevention

By Gene Bruno, MS, MHS

Smart Supplementation™ is a free series of educational literature created by Huntington College of Health Sciences (HCHS) as a public service. Although copyrighted, it may be freely photocopied and distributed, but may not be altered in any way. Smart Supplementation™ is not intended as medical advice. For diagnosis and treatment of any medical condition, consult your physician.

Whether you call it "staph", "staph A" or "MRSA" (pronounces *mersa*), it's all the same: Methicillin-resistant *Staphylococcus aureus*. MRSA is a bacterial infection which is resistant to methicillin and other antibiotics in the penicillin family.¹ Although staph is a common bacterium found on the skin of healthy people², if staph gets into the body it can cause a minor infection such as boils or pimples or serious infections such as pneumonia or blood infections. In fact, MRSA symptoms are similar to those for any type of Staph infection:

- Skin appears red and inflamed around wound sites;
- In serious cases may include fever, lethargy, and headache;
- Urinary tract infections, pneumonia, toxic shock syndrome, and even death.³

In addition, MRSA-specific symptoms include:

- Red bump that may be pus filled (sometimes mistaken for a spider bite)
- Warmth
- Pain
- Swollen, red, tender skin lesions⁴

MRSA is not just a kids problem

Listening to or reading news reports, you might think MRSA is only a problem occurring in children. Not so. In fact, MRSA was first seen

in hospital patients who are elderly or very ill. However, any place where people come in close contact may be a venue for contracting MRSA. This includes schools and gyms, as well as hospitals. You may also be at more risk if you have had frequent, long-term, or intensive use of antibiotics. In addition, those with long-term illnesses, intravenous drug users or those who are immuno-suppressed are also at increased risk.^{5 6}

Prevalence of MRSA

According to the Centers for Disease Control and Prevention, MRSA may be responsible for over 94,000 serious infections and is associated with nearly 19,000 deaths in the United States in 2005.⁷ It has been observed that these numbers make MRSA responsible for more deaths each year than AIDS.⁸

Conventional Treatment/Prevention

As you've undoubtedly heard from news reports, hand washing is a good way to help prevent MRSA. Alcohol based topical sanitizer are also an effective means of helping to prevent the transmission of MRSA.⁹

Although MRSA is resistant to traditional antibiotics, it can be treated with other types of sulfa drugs, tetracyclines, and clindamycin. Some types of MRSA are even resistant to these, but may be treated with vancomycin, or even newer drugs, such as linezolid.^{10 11}

Complementary & Alternative Treatment

From a complementary or alternative perspective, there are a number of things that can be done to help prevent MRSA. These include some adjustments to the diet, as well as the addition of certain dietary supplements to one's personal health program. Such changes may help build up immunity so that the body's

own defense systems can help prevent and fight infections of all types, including MRSA.

Adjustments to the diet

From a dietary standpoint, it is important to restrict sugar since sugar interferes with the ability of white blood cells to destroy bacteria. I'm not talking about the type or amount of sugar you get from eating fruit, but rather the amount you get from drinking soda and eating sweets and other junk food. Likewise, alcohol interferes with a wide variety of immune defenses, and excessive dietary fat reduces natural killer cell activity. So just eating a healthy diet can be beneficial for good immune function.¹²

Dietary supplements for general immune response

In terms of dietary supplements, there are some general immune-promoting nutrients which may have benefit in preventing MRSA infections:

- Vitamin A plays an important role in immune system function and helps mucous membranes, including those in the lungs, resist invasion by microorganisms.¹³
- Vitamin C stimulates the immune system by both elevating interferon levels and enhancing the activity of certain immune cells.¹⁴
- Marginal deficiencies of zinc result in impairments of immune function.¹⁵ Supplementation with zinc has been shown to increase immune function in healthy people.¹⁶

Dietary supplements against MRSA and staph

Some specific dietary supplements might have benefit against MRSA directly:

- Research on Pomegranate has shown beneficial effect on the human immune system and cardiovascular system, as well as offering antioxidant benefits. In one study¹⁷, pomegranate was also shown to have antibacterial activity against MRSA specifically. The authors of that study suggest a beneficial effect from the daily intake of pomegranate "as dietary supplements to augment the human immune system's antioxidant,

antimalarial and antimicrobial capacities."

- Green Tea & Pau D' Arco are herbs that have also been shown to reduce MRSA levels in patients, and have benefit against penicillin-resistant *staphylococcus aureus*, respectively.^{18 19}
- Other herbs have been shown to have benefit against regular *staphylococcus aureus*. These include Ginger, Feverfew, Echinacea, Golden Seal, Garlic, St. John's Wort and Cranberry.²⁰

Conclusion

With so many choices, it might be hard to decide which of these supplements to use. My personal recommendation would be to regularly take a basic foundation program of nutrients (e.g., a multiple vitamin, a vitamin C product, a vitamin E product and a multiple mineral) which would provide vitamins A, C and zinc, as well as other important nutrients that are needed anyway for good health; in addition to a pomegranate supplement, and an echinacea/goldenseal supplement. The basic foundation program and pomegranate supplement could be used all the time. The echinacea/goldenseal combination should only be used for about two months, and then there should be about one month's break. After that you can continue using just Echinacea. The reason for this is that ongoing use of goldenseal might deplete certain B vitamins. Also, goldenseal is only typically taken if an infection is present. However, given the current prevalence of MRSA, there may be preventive value in this short-term use of goldenseal.

References

- ¹ Foster T (1996). *Staphylococcus*. In: *Barron's Medical Microbiology* (Barron S et al, eds.), 4th ed., Univ of Texas Medical Branch.
- ² *Antimicrobial (Drug) Resistance: Methicillin-Resistant Staphylococcus aureus*. 2007. Retrieved November 26, 2007 from <http://www3.niaid.nih.gov/topics/AntimicrobialResistance/understanding/examples/mrsa/methicillin.htm>.
- ³ Methicillin-Resistant *Staphylococcus Aureus*. 2005. Canadian Centre for Occupational Health & Safety. Retrieved November 26, 2007 from http://www.ccohs.ca/oshanswers/biol_hazards/methicillin.html.
- ⁴ MRSA (Methicillin-Resistant *Staphylococcus aureus*). 2007. Visual Dx Health. Retrieved November 26, 2007 from <http://www.visualdxhealth.com/diseaseGroups/mrsa.htm>.

- ⁵ *Antimicrobial (Drug) Resistance: Methicillin-Resistant Staphylococcus aureus*. 2007. Retrieved November 26, 2007 from <http://www3.niaid.nih.gov/topics/AntimicrobialResistance/understanding/examples/mrsa/methicillin.htm>.
- ⁶ Methicillin-Resistant Staphylococcus Aureus. 2005. Canadian Centre for Occupational Health & Safety. Retrieved November 26, 2007 from http://www.ccohs.ca/oshanswers/biol_hazards/methicillin.html.
- ⁷ Klevens RM, Morrison MA, Nadle J, et al. Invasive Methicillin-Resistant Staphylococcus aureus Infections in the United States. *JAMA*. 2007;298(15):1763-1771
- ⁸ Stein R. Drug-resistant staph germ's toll is higher than thought. *Washington Post*, October 17, 2007. Retrieved on November 26 from http://www.washingtonpost.com/wp-dyn/content/article/2007/10/16/AR2007101601392_pf.html
- ⁹ *Community-Associated MRSA Information for the Public*. 2005. Centers for Disease Control and Prevention. Retrieved November 26, 2007 from http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_public.html.
- ¹⁰ *Antimicrobial (Drug) Resistance: Methicillin-Resistant Staphylococcus aureus*. 2007. Retrieved November 26, 2007 from <http://www3.niaid.nih.gov/topics/AntimicrobialResistance/understanding/examples/mrsa/methicillin.htm>.
- ¹¹ Schentag JJ, Hyatt JM, Carr JR, Paladino JA, Birmingham MC, Zimmer GS, Cumbo TJ. Genesis of methicillin-resistant *Staphylococcus aureus* (MRSA), how treatment of MRSA infections has selected for vancomycin-resistant *Enterococcus faecium*, and the importance of antibiotic management and infection control. *Clin Infect Dis* 1998; 26 (5): 1204-14.
- ¹² Bruno G. *Ailments & Natural Remedies*. New York: 59th Street Bridge Publishing Corp.; 2001
- ¹³ Semba RD. Vitamin A, immunity, and infection. *Clin Infect Dis* 1994;19:489-99
- ¹⁴ Bruno G. *Ailments & Natural Remedies*. New York: 59th Street Bridge Publishing Corp.; 2001
- ¹⁵ Fraker PJ, Gershwin ME, Good RA, Prasad A. Interrelationships between zinc and immune function. *Fed Proc* 1986;45:1474-9.
- ¹⁶ Duchateau J, Delespesse G, Vereecke P. Influence of oral zinc supplementation on the lymphocyte response to mitogens of normal subjects. *Am J Clin Nutr* 1981;34:88-93.
- ¹⁷ Reddy MK, Gupta SK, Jacob MR, et al. Antioxidant, antimalarial and antimicrobial activities of tannin-rich fractions, ellagitannins and phenolic acids from *Punica granatum L.* *Planta medica* 2007; 73(5):461-7.
- ¹⁸ Yamada H, Tateishi M, Harada K, et al. A randomized clinical study of tea catechin inhalation effects on methicillin-resistant staphylococcus aureus in disabled elderly patients. *J Am Med Dir Assoc* 2006; 7(2):79-83.
- ¹⁹ Blumenthal M (ed), et al. Austin, TX: *The ABC Clinical Guide To Herbs*; 2003.
- ²⁰ Blumenthal M (ed), et al. Austin, TX: *The ABC Clinical Guide To Herbs*; 2003.



For more than two decades, Huntington College of Health Sciences (HCHS) has offered more than a conventional undergraduate or graduate education. Our accredited*, distance learning degrees and diploma programs also include the breadth of responsible complementary and alternative medicine viewpoints, providing our students with a well-rounded and comprehensive approach to nutrition and the health sciences:

- Master of Science in Nutrition
- Bachelor of Health Science in Nutrition
- Associate of Science in Applied Nutrition
- Diploma in Comprehensive Nutrition
- Diploma in Dietary Supplement Science
- Diploma in Sports Nutrition
- Diploma in Women's Nutrition
- Diploma in Natural Sciences
- Diploma in Small Business Management

1204D Kenesaw
 Knoxville, TN 37919
 865-524-8079 • 800-290-4226
 E-Mail: studentservices@hchs.edu
www.hchs.edu

*Accredited member Distance Education & Training Council.