

What is MRSA?

Staphylococcus aureus (*S. aureus*) is a bacterium which naturally lives on the mucus membrane of the anterior nares (vestibula nasi) and, less frequently, on the skin. Every third human being is physiologically colonized by *S. aureus*. Although *S. aureus* is usually only colonizing humans (which means that it lives on the skin or in the nares without causing symptoms or harm), infections might occur under certain circumstances. Such infections can be mild (abscess, pus formation, etc.), but, if the bacterium has the opportunity to reach “sterile” parts of the body (e.g. during a surgical intervention), it can lead to serious infections such as blood poisoning and/or pneumonia. In case of an infection, antibiotics help to eliminate the bacteria. Some *S. aureus* strains have developed resistance to the antimicrobial agent “methicillin” and many other antibiotics. Such Methicillin-resistant *S. aureus* strains are called MRSA. Hence, MRSA is an antibiotic-resistant variant of *S. aureus*. Whereas one third of all humans carry *S. aureus* bacteria, only 1-2% of the population (in Germany) is colonized with MRSA.

Why should we prevent the spread of MRSA?

S. aureus and MRSA can cause a broad spectrum of human disease. Although most persons are only “colonized” with these bacteria (which means that they carry the bacterium on the skin or in the anterior nares, often for years without causing an “infection”; i.e. clinical symptoms), there are several risk interventions, especially in the hospital setting, which can facilitate *S. aureus*/MRSA infections. These risk interventions include surgical interventions, placement of catheters or mechanical ventilation. If such infections occur in hospitals and are caused by MRSA, they require antibiotic treatment. Although there are a number of antibiotics which are still effective to treat MRSA, the spectrum of antibiotics is limited and patients with MRSA-infections usually have a worse outcome compared to other patients with infections. Therefore, hospitals have met the challenge to prevent MRSA spread among patients

Which preventive measures can prevent MRSA in a hospital?

- MRSA patients are nursed in a single room (or in a room shared with other MRSA carriers) in order to prevent the spread of the germs to other persons.
- The personnel and visitors enter the room wearing protective gowns, mouth/nose masks, gloves, and if necessary, a hair protection. Before the personnel, visitors or the MRSA-colonized patient leave the room, hand disinfection is carried out and protective clothing is discarded.
- If necessary, decontamination or curative therapy (see below) will be carried out.
- Swabs will be taken from your nose and throat, from the axillary and inguinale skin or, if applicable, from wounds. These will be tested in the laboratory. If in three successive series of swabs no MRSA are found, the patient will be considered provisionally “MRSA negative” and the special hygiene measures can be repealed.
- These control swabs should be repeated 2 or 3 times within the next 12 months to ensure that the results remain negative.



What does the term "MRSA contact-patient" mean?

MRSA contact-patient means that a patient shares or shared a room with an MRSA carrier. Thus the possibility exists that MRSA has been transmitted. In order to exclude or confirm this, swabs must be taken from the patient and tested for the presence of MRSA.

How can MRSA be transmitted?

MRSA are usually transmitted via direct contact (hand to hand). Rarely, transmission via droplets may occur.

In the context of MRSA, what does "curing", "decontamination" or "healing" or "eradication therapy" mean?

The so-called cure or curing therapy or decontamination or decolonization therapy aims at the elimination of the MRSA bacteria from the skin and the mucous membranes. In healthy humans without risk factors, MRSA can easily be removed from its main reservoir, the anterior nares (vestibula nasi). For this purpose antibiotic or antiseptic nasal ointments are used. Within a few days the MRSA is eliminated and the success of the treatment can be confirmed with swabs. The success rate of this simple treatment is very high and often permanent. If patients are attached to risk factors (e.g. wound, catheter, etc.) cure can be hindered until the risk factor is removed. Nevertheless, a curing therapy/decontamination, even in this case, might be effective for reducing the number of colonizing bacteria and thereby prevent infections.

Is it dangerous to have contact with an MRSA patient?

For healthy people, the risk of developing an MRSA infection, despite a residual risk, is small. As long as relatives and visitors are healthy, they are unlikely to be harmed. Normal contact, hand shaking and embracing have no risk. After contact, the hands should be washed, in hospitals disinfected.

I am MRSA carrier and I will be dismissed soon from hospital. Should I do something to protect my family from MRSA?

If MRSA decontamination has not been started yet this should be started by your general practitioner (GP). If you are colonised or infected by MRSA, you should pay attention to the following measures in order to protect your family from MRSA.

- Practice good personal hygiene, follow instructions from your doctor, cover infected wounds.
- Please tell nurses or physician at every hospitalization that you once were identified as an MRSA carrier.