

The background of the page is a composite image. The top half shows a microscopic view of numerous green, rod-shaped bacteria, some with flagella, against a dark background. The bottom half shows a close-up of a person's hand being washed with white soap suds. The hand is positioned on the right side of the page, with fingers slightly curled. The overall theme is hygiene and infection prevention.

Catheter Related Bloodstream Infections: Patient Basics

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More than 1.5 million people around the world are treated with hemodialysis, a procedure that involves filtering the blood to remove wastes, extra salt and water when the kidneys cannot perform these functions. For these people, hemodialysis is a lifesaving procedure. At the same time, it is important to be aware of preventable complications that can compromise the health of kidney patients like catheter related bloodstream infections. Dialysis patients are over 100 times more likely than other people to get a bloodstream infection from methicillin-resistant *Staphylococcus aureus*, a common antibiotic resistant bacteria¹, so it's worthwhile to learn more about these infections and how they happen.

Catheters frequently have bacteria coating their inside surface. From time to time, the bacteria inside the catheter are released into the patient's bloodstream causing serious infection. Every time a kidney patient comes to dialysis, they have to expose the catheter to the skin and needles. Each time there is the possibility of introducing an infection into the catheter, and this happens three times a week. The longer you have the catheter, the greater the risk of infection.

These infections can be small nuisances or become life threatening if allowed to spread throughout the body. Twenty-one to thirty-one percent of hemodialysis patients with certain bloodstream infections can develop complications such as an infected heart valve (endocarditis) or bone infection (osteomyelitis)². Patients with an *S. aureus* infection could require hospitalization for an average of 9-13 days.²

1 <https://www.cdc.gov/media/releases/2013/p0513-dialysis-infections.html>

2 <http://www.cdc.gov/dialysis/PDFs/collaborative/Intro-to-cdc-dialysis-collabroative.pdf>

The good news is that there is a lot that patients and caregivers can do to prevent these infections from happening. In April 2009, the Centers for Disease Control launched a collaborative project with dialysis centers across the United States to prevent bloodstream infections among dialysis patients. Guidelines were developed and implemented which led to a 32% decrease in overall bloodstream infections and a 54% decrease in vascular access-related bloodstream infections among dialysis patients.³ There are precautions you can take at home as well:

- Keep your catheter bandage clean and dry. If your bandage gets wet, notify your healthcare professional.
- Check your vascular access daily for signs of infection such as redness, pus and swelling. Notify your healthcare professional if you notice these signs.
- Make sure that all healthcare providers clean their hands with soap and water or alcohol-based hand sanitizer before and after caring for you or your vascular access site. If they think they did, ask them, don't be afraid to speak up.
- Follow your healthcare team's recommendations regarding diet, medication and dialysis treatments. Consume adequate amounts of protein, calories and nutrients to build your body's immune system.

In addition, there are several pharmaceutical products that may be useful in preventing catheter related bloodstream infections. These include application of an antimicrobial ointment to the exit site of the catheter and infusing an antimicrobial solution into the catheter lumen after a dialysis procedure.⁴

Researchers are exploring new tools to help prevent these infections. A number of doctors around the country are participating in a trial called LOCK-IT-100, testing whether an investigational new drug solution called Neutrolin could help to safely prevent catheter-related infections and blood clots when instilled into your central venous/dialysis catheter. More information about this trial and other ongoing studies to prevent and treat catheter related bloodstream infections can be found at www.clinicaltrials.gov.

Researchers, doctors, nurses, patients and caregivers can do a lot to prevent catheter related bloodstream infections. As these groups work together to refine techniques, we can make these infections more rare each year. ●

³ <http://www.nephrologynews.com/dialysis-bloodstream-infections-significantly-reduced-by-following-cdc-guidelines/>

⁴ [http://www.ajkd.org/article/S0272-6386\(04\)01078-9/abstract?cc=y=](http://www.ajkd.org/article/S0272-6386(04)01078-9/abstract?cc=y=)