

Infections

To protect your new kidney and prevent your immune system from rejecting it, you are taking “immunosuppressive medicines.” These anti-rejection medicines try and stop or limit your immune system (the white blood cells that fight infection) so that the new kidney is not seen as a foreign object by your body. But, these same important medicines increase your risk for infection. The types of infections that can happen include:

- Viral (infection from a virus)
- Bacterial (infection from bacteria)
- Fungal (infection from fungus)
- Other (parasite)

Preventing Infections

Protect Yourself

- Wash your hands carefully and frequently. This is the best way to stop the spread of germs and to prevent infection
- We recommend you or your care partner keep a bottle of hand sanitizer with you all the time
- Keep your hands away from your face and mouth
- Wash your hands after coughing or sneezing, and throw tissues in the trash immediately
- Take good care of your skin. No matter how small, clean cuts and scrapes with soap and water. If you are taking prednisone, your skin will not heal as quickly as before your transplant and may bruise more easily
- Shower daily
- Practice good dental hygiene
- Eat a healthy, well-balanced diet and follow safe food preparation guidelines
- Do not eat unpasteurized foods (farm-fresh eggs/milk/cheeses)
- Limit your visitors for the first several weeks
- If your visitors have cold or flu symptoms, ask them to return when they are well
- If someone in your family becomes ill with a cold or flu, have that person follow normal precautions (using separate drinking glasses, separate towels, covering mouth when coughing, frequent hand washing, etc.)
- Keep your house clean and free of excess dust
- Do not work in or visit any form of construction site. Dust can cause fungal infections which may be harmful. If visiting this type of area becomes necessary you need to talk with your transplant team and see if you should wear a mask
- If you enjoy fishing, be very careful with fish hooks, fish fins and fillet knives. Protective gloves should be worn when handling these items

Infections, continued

- You may keep your pets, but you should not handle animal waste. Do not clean bird cages, fish or turtle tanks or cat litter boxes. The feces of some animals contain parasites and can cause infections. Fish tanks can develop fungus and can be infectious. If you cannot avoid pet waste, use excellent hand washing afterwards. Also, wash hands after petting animals. Keep pets' vaccinations up to date
- Wear gloves and wash hands after gardening and wear a mask if moving mulch (better yet, have someone else move mulch for you)

Caring For Your Incision

- Check your incision every day until it is healed for signs of infection such as redness, drainage, odor or increased pain. Call the transplant center if you notice any of these changes
- You may shower daily. Wash the incision with soap and water, gently, do not scrub incision site. Pat dry with a clean towel
- Do not soak in the tub or swim until your skin incision is completely healed. This usually takes about one month
- You may put a dry gauze dressing over the incision to absorb any drainage
- Always wash your hands before and after treating your incision

Viral Infections

During the pre-transplant workup, you were tested for past exposure to:

- Cytomegalovirus (CMV)
- Herpes simplex virus (HSV)
- Hepatitis viruses
- Human immunodeficiency virus (HIV/AIDS virus)

A history of infection with CMV or HSV is common. You may have been exposed to these viruses in childhood. They can stay dormant in the body for a lifetime. They can reactivate after a transplant when you are on immunosuppressive medicine and cause illness.

Cytomegalovirus (sahy-toh-meg-uh-loh-vahy-ruh s) (CMV)

CMV, is a common infection following kidney transplant. You are at greatest risk in the first three months after transplant because of the high doses of immunosuppressive medicines. More than half of all Americans have had exposure to CMV, which usually causes a mild illness, with flu-like symptoms in the general population. Reactivation of the dormant or new infection with CMV can cause serious infection after transplant. You will be placed on valgancyclovir, valacyclovir or acyclovir for the first three to six months in order to prevent serious illness from this virus.

Infections, continued

Signs of CMV infection:

- Extreme tiredness (fatigue)
- Fever
- Night sweats
- Aching joints
- Headaches
- Nausea
- Vomiting
- Diarrhea
- Shortness of breath
- An overall feeling of “just not feeling good”

Call your transplant team if you have any of these symptoms.

BK Virus

BK virus, also called polyomavirus, is a virus that most people get in childhood. Once you get a BK virus infection, the virus stays in your system forever. This is called latent, or like being “asleep” in your body. But it does not cause a problem in most people.

Sometimes, when your immune system is not working well, the virus “wakes up.” Then it can cause symptoms of infection. The BK virus can become active in the transplant patient as a result of the anti-rejection medicines and can affect the transplanted kidney. The BK virus can harm the kidney and slow the functioning of the kidney. It can even cause the kidney to fail. In order to detect and treat the virus before any changes in kidney function are seen, the transplant team screens your blood for the BK virus.

Treatment for BK virus usually includes decreasing the anti-rejection medicines and possibly giving an oral medicine called leflunomide or an IV medicine called Cidofovir®. Early diagnosis and treatment are important—so get your labs drawn.

Herpes Simplex Virus (HSV)

These viruses most often infect the skin, but they can also appear in other areas like the eyes and lungs. HSV type 1 causes cold sores and blisters around the mouth. HSV type 2 causes genital sores. HSV is transmitted by direct contact of secretions from an infected person to one who is not infected. Most infections are mild, but sometimes they can be severe. Although there is no cure for HSV, it can be treated.

Symptoms of herpes include:

- Tingling sensation before an outbreak
- Painful, fluid-filled sores in your mouth or genital area. If you have sores or lesions, contact your transplant team right away
- Fever

Report any pain with swallowing. Women should also watch for any unusual vaginal discharge. Contact your transplant team right away if you think you may have HSV around your mouth or genitals.

Infections, continued

What You Can Do

- Keep the areas around the sore as clean and dry as possible
- Wash your hands with soap and water after touching the sore
- Wear loose-fitting clothing to avoid irritating the genital sores and spreading the virus
- Avoid kissing or having oral sex with someone who has a cold sore
- Avoid having oral sex or intercourse with someone who has genital sores

Varicella-Zoster (Chickenpox)–(VZV)

Chickenpox used to be a common childhood illness in the United States. It's much rarer now, thanks to the varicella vaccine. Most people that have had chickenpox are immune from having it again. However, the VZV virus continues to live in the body for life and can come back as shingles. Stay away from anyone with active chickenpox. It can cause a more severe infection in transplant patients who were never exposed to the virus. Or, it may cause shingles in those who have previously had chickenpox. Call your transplant coordinator immediately if you have been exposed. Do not wait to see if you are going to get sick. Do not get the chickenpox (varicella) vaccine.

Herpes Zoster (Shingles)–(VZV)

Shingles is also called herpes zoster. It is a painful skin rash caused by the herpes zoster virus. This is the same virus that causes chickenpox. After a person has chickenpox, the virus remains inactive in the nerve cells. Years later, the virus can become active again and travel to the skin. It appears as a rash or small water blisters, usually very painful and most commonly on the chest, back or face. They run along the nerve pathways on the surface of the skin. Call your transplant coordinator immediately if you have this kind of rash. Do not get the shingles vaccine.

Bacterial Infections

Bacterial infections can happen after organ transplant surgery. Right after surgery your wound may get infected. This is due to the anti-rejection medicine you are taking. Also, the incision site must be watched closely for any signs of redness, swelling, tenderness or drainage. You may or may not have a fever. You should call your transplant team if you have symptoms of infection. They can happen at any place in the body, including:

- Lungs
- Bloodstream
- Urinary tract
- Incision area

Infections, continued

Fever is the most common sign of a bacterial infection. If being treated with medicine to fight the infection, called antibiotics, it is very important to finish all of the medicine. Even if you feel better before taking all of your medicine, you must finish it as ordered. Do not start antibiotics until speaking with the transplant team.

Pneumocystis Carinii

Pneumocystis jirovecii [noo-muh-sis-tis] is caused by a fungus. This fungus is common in the environment and rarely causes illness in healthy people. However, it can cause a lung infection in people with a weakened immune systems like patients on anti-rejection medicine.

Symptoms include:

- Cough
- Fever
- Shortness of breath

For the first year after transplant, you will take Bactrim every day to prevent infection. If you are allergic to sulfa, you may be given a different medicine.

Fungal Infections

Candida (Yeast)

Yeast infection occurs when yeast that grows in moist areas of the body such as the mouth, groin, armpits or genital areas. When it is growing in the mouth, it is called thrush and appears as white, patchy fuzzy areas on the roof of the mouth, tongue, throat or food pipe (called the esophagus). It can cause pain and tenderness and make swallowing difficult. It is treated and prevented with nystatin "swish and swallow liquid." You will start this medicine after your transplant and continue for one month.

When yeast occurs on the skin, it can be treated with creams or lotions. Vaginal infections usually cause a discharge that may be yellow or white, lumpy, foul-smelling and often itchy. These infections will be treated with vaginal cream, suppositories or oral medicines. If yeast spreads inside the body, it can become a more severe infection and may require intravenous (IV) treatment with a variety of oral and/or IV medications.

Infections, continued

Aspergillosis

Aspergillus (as-pergillo-sis) is a common dust. It is mold found in decaying vegetation and airborne dust. Aspergillosis enters the body by breathing infected air found in damp or dusty places such as old barns, construction sites, basements, attics, etc. The spores are present in mulch and cow or horse manure. Even mowing grass will put you at risk for aspergillosis. Wearing a face mask and gloves is recommended.

Histoplasmosis

Histoplasmosis (his-toh-plaz-moh-sis) is a disease that travels through the air. It is found in bird and bat droppings. You can also come in contact with it when contaminated soil is disrupted by construction or renovation activities. You should avoid exposure to bird and bat droppings and construction sites which may be contaminated.

Other Types of Infection

Toxoplasmosis

Toxoplasmosis (tok-soh-plaz-moh-sis) is an infection caused by a parasite that is often found in cat feces. Because it can cause severe symptoms in someone with a weakened immune system, you should not change litter boxes. Notify your transplant team if you are bitten or scratched by cat.

Tuberculosis (TB)

Tuberculosis (too-bur-kyuh-loh-sis) is an infection caused by mycobacterium tuberculosis. It is contracted by breathing infected airborne droplets. TB is mainly an infection of the lungs. Tell the transplant team right away if you have contact with a person suspected of having or has been diagnosed with TB.

Symptoms include:

- Cough
- Coughing up blood
- Night sweats
- Shortness of breath
- Weight loss
- Chills

Immunizations

Ask your transplant team when you may continue your vaccination schedule. Usually we recommend you wait at least three months.

We recommend:

- Pneumonia vaccine every five years
- Flu shot yearly (not flu mist)
- Tetanus booster every 10 years

Infections, continued

Live Vaccines

Live vaccines should be avoided. Live vaccines include varicella (shingles), oral polio; measles, mumps and rubella (MMR); yellow fever; smallpox; and chickenpox. Ask your transplant team before you or your family member needs to receive any vaccinations. You should avoid contact for 2 weeks with anyone who has received a live vaccine.

Dental Exams

We recommend routine dental care. Daily teeth and mouth care are important because your mouth can also be a source of infection. Wait 3 months after your transplant before scheduling a dental appointment, except in cases of emergency. Taking antibiotics before a dental exam or a dental procedure is not necessary. However, there are many other medical conditions that do require antibiotics before seeing the dentist. Please contact your primary care doctor or other specialty doctor before your dentist appointment to find out if you will need antibiotics before your appointment.

Urinary Tract Infections

Symptoms include:

- Increased pressure and/or urgency to urinate
- Increased frequency to urinate
- Burning upon urination
- Low back or belly pain
- Blood in urine
- Fever

Prevent a urinary tract Infection

- Do not use bubble bath
- Women should clean from front to back after voiding and bowel movements
- Urinate before and after sexual intercourse

