Your Lung Transplant

A guide for transplant recipients and their families

VANDERBILT UNIVERSITY
MEDICAL CENTER

Vanderbilt Transplant Center

Vanderbilt Transplant Center in Nashville, Tennessee, is one of the South's main providers of solid organ and stem cell transplantation. We offer programs in heart, kidney, liver, lung, pancreas, and bone marrow transplantation. Our outcomes are among the best in the country. Our specialists strive to return every patient to a full and active life. Our mission is to provide end-stage organ failure patients the opportunity to lead extraordinary lives. Thank you for trusting us with your care.

As we treat you, we promise to:

- include you as the most important member of your health care team
- personalize your care with a focus on your values and needs
- work with you to coordinate your care
- respect your right to privacy
- communicate clearly and regularly
- serve you and your family with kindness and respect.

Call the Lung Transplant Office at (615) 936-0393 any time you:

- have shortness of breath or coughing
- have symptoms you're worried about
- have blood glucose higher than 250
- have more fatigue, body aches, or chills
- gain 3 or more pounds in 1 day or 5 or more pounds in 1 week
- feel sick to your stomach, vomit, or have diarrhea
- stools that are black or bloody
- can't keep your medicines down
- a temperature that is 2 degrees above your usual temperature
- develop a fast heart rate
- increased amounts or color changes in your sputum
- decrease in your FEV1 by more than 10 percent for 3 readings in a row
- decrease in your oxygen saturation (your pulse oximeter reading)
- very bad headache that won't go away.

Also call us when you:

- have questions for the nurse
- need to make an appointment
- need to have a prescription filled.

If you need to reach us after hours:

Our office is open Monday to Friday, 8:00 a.m. to 5:00 p.m. After hours and on weekends, you'll reach the answering service. Tell them you need the doctor on call to give you a call back.

Call 911, or go immediately to the ER if you have:

- chest pain
- sudden and bad shortness of breath
- trouble breathing
- been unconscious.

About this book

This book explains how the lung transplant process works and what you can expect after surgery, including the medicines you'll take for the rest of your life, the type of diet you'll need to eat, guidelines you'll need to follow to stay healthy, and what you can expect as you recover.

For you to stay healthy after transplant, you must take responsibility for your own care for the rest of your life. There is a lot for you to learn. We don't expect you to know it all at once, but we do expect you to make your best effort to be independent. We'll help you. But remember: the most important person in your health care team is YOU.

Some things you need to do:

- Take your medicines exactly like your doctor tells you.
- Keep all of your scheduled doctor and blood work appointments.
- Develop or keep your healthy habits. This means you need to eat healthy, exercise on a regular basis, and develop healthy ways to cope with stress.
- Communicate well with your family and the transplant team.
- You must have 2 people who agree to be your caregivers. One will be your primary caregiver. The other will be your secondary caregiver. Two caregivers are required for you to be able to have a transplant.

Contents

After surgery: At the hospital

Pain

After surgery, it's normal to have some pain and discomfort. Previous transplant recipients have described this pain as very manageable.

- For the first 24 hours after surgery, we'll most likely give you pain medicine through an IV and an epidural.
- When you're able to drink fluids by mouth again, we'll likely switch you from IV pain medicine to oral pain medicine.

Your incision

It's normal for fluids to drain from your incision for some time after your surgery. We'll check the dressing on your incision often and will change it as needed.

Chest tubes

After surgery, you'll have 2 to 8 chest tubes draining fluid from around your heart and lungs. As you recover and the amount of fluid decreases, your doctor will start to take out the tubes. There's a chance you'll go home with at least 1 chest tube still in place.

Tests and measurements

- We'll do daily blood tests while you're in the hospital.
  - We'll do blood tests every morning.
  - We do these tests to follow your progress and to find out if we need to adjust your daily medicines.
- We'll measure and test the amount of body fluids your body is making.
- Other tests, such as X-rays, will be done when and if they're needed.
- We'll regularly check your vital signs. This includes checking your blood pressure, your breathing, your heart rate, and your temperature.
  - We may wake you at night to check your vital signs. This helps us know how your body is responding to your new lungs.
  - We'll encourage you to take your vital signs as soon as you're able, so you can take part in your own care.
- We'll do bronchoscopies to inspect your airways and to help keep your lungs clear.
- While you're in the hospital, we may need to schedule additional tests and procedures as well.

Exercising your lungs

Exercising your lungs can help keep you from getting pneumonia—a common problem after any kind of surgery. We'll expect you to begin coughing and doing deep breathing exercises while you're still in the recovery room after surgery. We'll show you what to do.

If you have any pain or discomfort when you cough, pressing a pillow against your incision can help.

Checking your weight and numbers

- We'll weigh you every morning before breakfast. It's important that we weigh you at the same time each day, on the same scale, and while you're in similar clothes. This is a habit you need to continue after you leave the hospital.
- We'll also check your blood pressure, heart rate, and blood sugar levels several times a day when you are in the hospital.
- After you leave the hospital, you'll continue to check your weight, blood pressure, heart rate, and blood sugar. You'll also check your oxygen saturation and spirometry. We'll teach you and your caregivers how to check your spirometry. You'll need to be able to do this at home 2 times a day. Each time you check your numbers, write them in your daily logs. Bring these logs with you to every appointment.

Sleeping

Some people have trouble sleeping in the hospital. And some people have strange dreams that seem very real. Many transplant recipients also say they have memory problems after the surgery. These problems are temporary and should not worry you.

Walking

As soon as the first day after surgery, we'll encourage you to get out of bed and walk around. Walking increases your blood circulation, helps relieve gas pains, and helps keep your muscles toned.

Our goal is for you to walk around your room and down the hall at least 3 times a day. Always wear your mask when you leave your room.

Learning about your care

While you're in the hospital, we'll teach you how you'll need to to care for yourself at home. You'll have many things to remember. Taking an active role in your self-care and developing a daily routine while you're in the hospital will help you better care for yourself once you get home.

As you know, getting new lungs is a lifelong commitment. Your new organ will need a lot of care, attention, and monitoring to do its job. Your role as a member and a partner of the transplant team becomes more important than ever after surgery.

The role of your caregivers

Remember, you must have 2 committed caregivers to help you through the transplant process. During your time at the hospital, your 2 caregivers will learn how to help care for you. They will:

- be with you when we give you medicines
- learn what your medicines do and what their side effects are
- learn how to care for your transplant incision as you heal
- learn how to give the Lovenox injections you'll need
- learn how check your spirometry
- learn to check your blood sugars and give you insulin injections if you need them.

By the time you leave the hospital, your caregivers will:

- know all about your medicines and their side effects
- be able to help you take your medicines exactly how you're supposed to
- be able to help you keep track of the medicines you take by writing down in a daily medicine log the times you take your medicines and the doses you take
- be ready to go with you to your lab and clinic appointments and your other medical visits to discuss your condition with the doctor and report any issues you're having
- have learned about (and be able to help you watch for) signs of organ rejection, medicine side effects, or any other medical issues after you have left the hospital
- be ready to help you with your personal care, such as bathing or shaving
- keep helping you check all your numbers and vital signs, including blood pressure, oxygen saturation, FEV1, and glucose (if needed).

Tips for a faster recovery

We'll work with you while you're in the hospital to help you get stronger faster. Here are some of the ways you can feel better faster:

1. Keep walking!

Walking before and after transplant will help keep your muscles strong and help you recover faster. At first, you may need our help. But as you build strength, you'll be able to walk by yourself.

2. Eat healthy!

When you first begin to eat after surgery, we'll give you clear liquids. If that goes well, we'll five you more solid foods until you're eating normally. Your body will need extra calories while you heal. It's important that you eat. The dietitian will meet with you after your transplant to talk with you about your diet.

3. Make it a priority to relax!

It's important that you relax while you recover. Any quiet activity that you enjoy can help you pass the time and keep you relaxed. Needlepoint, reading, playing cards, or puzzles are some good examples. Activities like these can also help minimize any pain you may have.

The length of your hospital stay

The average hospital stay after a lung transplant is 9 to 10 days. It's possible you'll need to stay longer. You may also need outpatient rehab. How long you'll be in the hospital depends on:

- your personal situation and history
- how your body responds to your new organ
- how your body responds to your new medicines.

Visitors

You are allowed to have visitors while you're at Vanderbilt. One person 18 or older can even stay with you in your room. Cots may be available on request.

Because of infection risk, we ask that school-aged children not visit you while you're in the hospital.

After the hospital: Your recovery

Know when to call us!

When you leave the hospital, you'll still be recovering. You and your caregiver need to follow all the care instructions we give you. Make sure you know the signs of organ rejection, infection, and other problems.

You can reach us at (615) 936-0393 at any time—day or night

- If you call after hours or on a weekend, an operator will answer your call. Ask to talk to the on-call lung transplant doctor. The operator will get your message to the doctor. The doctor will call you back as soon as possible.
- If you don't get a call back in 20 minutes, call again.
- If you still don't get a call back, call (615) 322-5000. Ask the operator to page the on-call lung transplant doctor.

Call us at (615) 936-0393 if you have:

- questions about your medicines or doses
- a temperature 2 degrees above your usual temperature
- blood pressure higher than 140/90
- a fast heart rate
- flu-like symptoms such as chills, aches, joint pain, headache, and fatigue
- a sick stomach, vomiting, or you aren't able to keep your medicines down
- diarrhea or bad stomach cramps
- increased pain, redness, or tenderness over your transplant site
- abnormal drainage from or around your incision
- frequent urination or changes in your urine, including dark or tea-colored urine less urine or no urine at all, or pain or burning when you urinate
- light or clay-colored stools
- yellowing of the eyes or skin
- a 3-pound weight gain in less than 24 hours, or 5-pound weight gain in 1 week
- abnormal blood sugar numbers
- a sore throat
- shortness of breath or drop in oxygen saturation
- decrease in your FEV1 of 10 percent or more
- long coughing spells or cough that produces sputum.

Also, call us if:

- you cannot or did not take your anti-rejection medicines
- your drainage tube comes out
- you're short-of-breath or have chest pain
- you have stomach pain or indigestion that won't go away
- your urine is cloudy, bloody, or has a bad smell
- you're exposed to someone who is sick with the flu, strep throat, chicken pox, measles, German measles, mumps, or other illness
- you lose 3 or more pounds in less than 1 day
- you have increased swelling in your hands or feet
- another doctor changes one of your medicines or prescribes new medicine
- you have sores or blisters in your mouth
- you see white spots on your tongue or in your mouth.

Please call us any time you have a question and even if you "just don't feel right."

Track your daily numbers

Every day, check and write down your:

- weight
- blood pressure
- heart rate
- temperature
- blood sugar levels
- FEV1 levels
- oxygen saturation.

Some tips

- Urinate before you weigh.
- Weigh every morning using the same scale and wearing clothes that weigh about the same.
- Record your blood pressure, heart rate, temperature, FEV1, and oxygen saturation every morning and evening at about the same time.
- Always bring your daily logs with you to every appointment so we can check your numbers.

When you check blood sugar

After transplant, you'll be taking medicines that can raise your blood sugar levels. This can happen even if you're not diabetic. We'll talk with you and give you a schedule that tells you when to check your blood sugars. Make sure to follow it.

- When you check your blood sugar, always write down your numbers.
- If you need to give yourself insulin, always write down how much.

Drink enough fluids

- Your fluids should be mostly water and drinks with no caffeine.
- Limit drinks with caffeine to 1 or 2 a day.

You may need to limit your fluids

After lung transplant, some people need to limit their fluids. If this is true for you, we'll talk with you about it.

Take care of your incision

Keep your incision clean and dry as it heals. If there's an open area, your doctor may ask you to shower to help clean the wound. DO NOT scrub your incision. Sometimes patients leave the hospital with a small drain that removes extra fluid from the surgical site. If you leave the hospital with a drain or chest tube in place, the nurses will teach you how to empty the drain and record the amount of drainage that you have.

Is it OK to shower?

In general, it's OK for you to take showers once you're home. However, if you go home with a drain or chest tube, you'll need to wait to shower until 48 hours after the drain or tube is removed.

When can I take baths?

Avoid taking baths until the staples are removed from your incision and your incision is completely healed.

Stay healthy while caring for pets

For the rest of your life after transplant, do not clean birdcages or change litter boxes. The medicines you take to prevent rejection mean that the bacteria around animal waste are now more likely to make you sick. You could breathe in the bacteria or get it on your hands or clothing and eventually get an infection.

Avoid getting scratched or bitten.

Keep up with your care

Your doctor will follow your health for the rest of your life to make sure your new lungs are working like they should. It's important for you to keep all of your follow-up appointments.

- After you leave the hospital, our lung transplant provider team will keep track of you and your health as you recover.
- For the first month, you'll need to come to the clinic every week. After that, your visits may decrease.
- Once you're back home, you should make an appointment with your primary provider and your lung doctor. You'll need to update them and your condition. They need to be part of your ongoing care.
- Remember: You'll need ongoing care from the lung transplant team for the rest of your life after transplant.

The Lung Transplant Office

We're in the Pulmonary Clinic, located at room B817 of the Vanderbilt Clinic on the medical center campus. If you need to talk with someone between your appointments there, call us at (615) 936-0393.

Going back to work

If you work, you can't go back to your job until your transplant doctor says it's safe. Most patients have to wait at least 1 year before going back to their jobs after transplant.

When your doctor has said it is OK for you to go back, your social worker will help you make plans for going back to work. We also have a return-to-work specialist who will be happy to help you get back to work or even change to a new kind of job.

Sexual activity

You can have sex as soon as you're ready after your transplant. You won't hurt your new lungs; they're well-protected. Do avoid putting any direct pressure on your sternum for at least 3 months after surgery. Remember to stay safe when you have sex. This means you should use a condom and avoid high risk behaviors such as having multiple sexual partners.

Sex drive

If you feel that you don't have your normal sex drive, if intercourse is painful, or if you have any problems regarding your sexuality, please talk to your transplant team. We are concerned about your overall health and well-being and that includes sexuality.

If you're a man

Impotence can be caused by some of the medicines you take after transplant. If this is a problem for you, talk to your transplant team. They'll suggest further treatment.

If you're a woman

Birth control

If you're a woman of child bearing age who is still fertile, it's important you use birth control after transplant. You may be taking medicines that could harm a fetus. Don't become pregnant while taking such medicines.

Do not use any kind of birth control (except condoms) without talking to your doctors first. Talk to your gynecologist about your birth control. You, your gynecologist, and your transplant doctor must all agree on the kind of birth control you plan to use. All medicines, including birth control medicines, affect your liver. Some of these medicines can harm someone who has had a transplant. These medicines may also interact with other medicines you take.

Women's health appointments

Stay on track with your women's health appointments. At least once a year, see your primary care provider or gynecologist for recommended appointments and screenings. Remember that national guidelines vary based on age and health history.

Living with denervated lungs

When lungs are taken out of a donor's body, the nerves going to and from the lungs have to be cut and disconnected from the donor's nervous system. When those lungs are then transplanted into the new body, it isn't possible to reconnect all the nerves to the recipient's nervous system.

This means that your new lungs are denervated. They aren't connected to your nervous system in the way your old lungs were. Because of this, the nerves that control the feeling in your lungs probably won't work. Your cough reflex and your ability to clear mucous will not be the same.

However, even though your new lungs are not connected to your nervous system in the same way, they'll continue to exchange air like normal lungs do. It will be possible for you to have a comfortable breathing pattern with your new lungs.

You'll now have to do a few extra things to keep your new lungs healthy

Make yourself cough

After transplant, coughing is something you'll have to make your lungs do. They will no longer do this on their own. You need to start this as soon as you're off the breathing machine.

The general rule of thumb is for you to make a strong effort to cough and clear your airways anytime you feel mucous or fluid in the back of your throat.

Use breathing treatments and medicines

To prevent lung infection with denervated lungs, you may need several kinds of treatments and medicines. These include those that help loosen mucous and those that keep airways open. Things that do this include aerosol breathing treatments and medicated inhalers.

Do your breathing exercises

The respiratory therapist and nurses will teach you breathing exercises. You'll do these often. They'll help keep the small air sacs in your lungs open and clear your lungs of mucous.

We'll give you a device called a flutter valve. When you blow through the valve, it sends vibrating air into your chest, which helps break up and clear mucous. You'll use the valve to help you keep your lungs and airways clear.

Potential complications of a lung transplant

Common complications

- rejection
- infection
- high blood pressure
- diabetes
- delayed lung function
- bleeding
- blood clots or thrombosis
- recurrence of original disease
- dehydration.

Organ rejection

Organ rejection is a possible complication of lung transplant. It happens when the body's immune system recognizes the new organ as something foreign in the body and tries to destroy it.

Organ rejection can happen at any time during the life of your new organ. There are 3 major types of lung transplant rejection:

- acute cellular rejection
- antibody mediated rejection
- chronic rejection.

For the first year after your transplant, you'll be monitored for rejection. This will include routine bronchoscopies with biopsies.

Bronchoscopies and biopsies

Lung biopsies are done by a test called bronchoscopy. To do a bronchoscopy, your doctor uses a flexible fiber-optic device (called a bronchoscope) to look inside your lungs. The scope has a camera and light on one end. This end is put down into your lungs through your mouth and windpipe. Bronchoscopy is the only way to test you for acute cellular rejection.

How often you have these tests will depend on your recovery and how you're doing. We'll talk with you about your schedule so you know what to expect.

Usually, bronchoscopy tests are done on the 5th day after transplant and then at months 1, 3, 6, 9, and 12 after your transplant.

Acute cellular rejection

Acute rejection is a sudden reaction of your immune system against your new lungs. More than half of all lung transplant patients will have acute rejection at least 1 time in the first year after transplant.

- Acute rejection usually happens during the first year after transplant. But it can happen at any time.
- An acute rejection episode may require you to return to the hospital.
- Rejection does not usually mean that you'll need another transplant.
- Your regular biopsies (via bronchoscopy) will help us detect any signs of rejection early.

Signs of acute cellular rejection

- feeling tired or weak
- a temperature that is 2 degrees above your usual temperature
- shortness of breath when you're at rest or doing light activity
- a 10 percent or higher drop in your FEV1 numbers
- flu-like feelings
- increased cough and the production of sputum.

Remember that rejection can happen without you having any of these symptoms at all. This is why it's so important for you to follow up with the transplant clinic and to have all of your blood work, bronchoscopies, and biopsies done on schedule. Do not miss these appointments.

Treating acute cellular rejection

There are several ways to treat an acute rejection episode. The goals of treatment are to stop your immune system from rejecting your lungs and to stop any further damage.

- One treatment is to give you large doses of steroids through an IV. This treatment may cause you to feel agitated and restless. This feeling is temporary and will usually go away in a few hours.
- Other strong immunosuppressive drugs may also be given to you through IV.
- Your daily medicines may also be increased.

Antibody mediated rejection

This type of rejection happens when your body makes antibodies in response to your donor's DNA. This can hurt your lungs and how well they work. We'll test for this through your blood work.

Chronic rejection

This is the slow decline of lung function that happens over time. By writing down your FEV1 numbers, we'll be able to see if this is happening.

Infection after transplant

Infection is the most common complication of transplant. The anti-rejection medicines that you take after transplant will lower your body's ability to fight infection. This puts you at greater risk for getting an infection.

Common infections after transplant

The most common infections after transplant are from bacteria and viruses you already had in your body before surgery that were previously dormant. It's also possible for a dormant virus in the donor lungs to cause an infection in your body.

Other common infections are:

- lung infections
- infections of the surgical incision
- bladder or urinary tract infections.

Signs of infection

- a temperature that is 2 degrees above your usual temperature
- tiredness
- diarrhea or vomiting
- redness or drainage around your incision
- a cough, sore throat, or increased sputum
- changes in your mental status
- drop in your oxygen saturation
- drop in your FEV1 numbers.

Treating infection

If you get an infection, you'll be treated with antibiotics, anti-viral medicines, or anti-fungal medicines. If needed, the medical center's infectious disease team will meet with the transplant team about your case.

Preventing infection with medicine

After transplant, you may need to take anti-bacterial, anti-viral, and anti-fungal medicines for a period of time to help prevent infection. If you get an infection after you leave the hospital, you'll probably be given antibiotics and treated as an outpatient. Sometimes, however, people do need to come back to the hospital to be treated with IV medicines.

Preventing infection by wearing a mask

After transplant, you'll need to wear a mask when you're out in public.

Handwashing to prevent infection

Washing your hands is one of the best ways to prevent infection.

- Always wash your hands with soap and water before you eat and after you go to the bathroom.
- When you're out, you may also use antibacterial gels to clean your hands.
- When people come to visit, make sure they're well. They should also always wash their hands when they come to visit you to prevent the spread of germs
- For the first 3 months after transplant, avoid being around school-aged children.

High blood pressure

Some patients develop high blood pressure after transplant. If this happens to you, your doctor will prescribe you medicine that will help lower it. If you already take blood pressure medicine, your doctor may change your dose or type of medicine.

Bleeding

Sometimes, patients have too much bleeding after surgery. This may require a blood transfusion. On rare occasions, a second surgery may be needed to control the bleeding.

Blood clots and deep vein thrombosis

Some patients get blood clots or deep vein thrombosis (DVT) after their transplant. This is associated with the central IV lines that are used during and after surgery.

Signs of blood clots or DVT

- pain in one of your legs
- warmth in one of your legs
- swelling in one of your legs.

About Your Medicines

Learn about your medicines, and take them as prescribed

One of the leading causes of organ rejection is not taking medicines correctly. Use your MedActionPlan!

- Refer to your MedActionPlan for your correct medicine doses instead of the directions on your medicine bottles. This is because your doses will change a lot during the first year after transplant. Your MedActionPlan is up to date.
- NEVER crush or cut a tablet unless you're advised to do so.
- NEVER open any capsules.
- If you're ever unable to take any of your medicines because they make you feel sick to your stomach or they make you vomit, contact your doctor immediately.
- You should discuss any new medicine with your transplant team BEFORE you take it. Many medicines can interact with your anti-rejection medication, including all over-the-counter and herbals.
- Do not leave your medicines in your car. Store your medicines in a cool, dry place and away from direct sunlight. Do not allow liquid medicines to freeze.
- Store your medicines in their bottles or in a medicine organizer (pillbox).
- Be safe: Always keep all your medicines in a place where children and animals cannot get to them.
- Do not drive or operate dangerous machinery within 24 hours of taking narcotic pain medicine.
- Always call us if you have any questions about your medicines or doses.

Keep track of your medicines

Keep a current list of your medicines with you at all times, including all over-the-counter and herbal medicines.

Make sure you don't run out of your medicines

Make sure you always refill your medicines before you run out! Missing just 1 or 2 doses of your anti-rejection medicines, or even taking them late, can cause organ rejection.

Call the transplant center if you need any help paying for medicine

If you ever have problems paying for your medicines, your copays, or any problems resulting from changes to your insurance coverage, call us. We can help you.

Keep track of your medicines when you travel

- Take your medicines with you if you're away from home for a long time.
- If you fly, carry your medicines with you.
- Do not check your medicines with your luggage.
- Take an extra 3 to 4 days of medicines in case you're delayed getting back home.

Tips for remembering your medicines

- Get a pill box with days of the week and times on it.
  - Fill your pill box once a week.
  - Keep your pill box in a place where You'll see it often during the day.
- We'll give you a medicine chart to use to keep track of your medicines. Each time you take a dose, mark it on the chart.
- If you have a smart phone, you can download and use a medication reminder app.
- Set an alarm clock, kitchen timer, or alert on your smart phone to remind you when to take your medicines.
- It may be easier to remember to take your medicines at the right time if you take them when you're doing things you do every day, like with meals or when a certain TV show starts or ends.

Common medicines for transplant recipients

As a transplant recipient, you'll need to take various medicines for the rest of your life. The medicines listed in this section are ones transplant recipients commonly take.

Prograf

- Prograf is also known as:
  - tacrolimus
  - FK or FK506
- This is an anti-rejection medicine used to stop your body from rejecting your new organ.

Important

On the days of your transplant follow-up appointments, do not take your regular morning dose until after your blood has been taken for your lab work.

Possible side effects

- headache
- hand tremor
- hair loss
- high blood pressure
- increased blood sugar
- infection
- decrease in kidney function

Special instructions

- Take your dose at the **same time** each day, spaced 12 hours apart.
- Do not eat or drink anything with grapefruit, blood orange, or pomegranate in it at any time when you're taking this medicine.
- Take this medicine with food.

Neoral, Gengraf

- This medicine is also known as cyclosporine.
- This is an anti-rejection medicine used to stop your body from rejecting your new organ.

Important

On the days of your transplant follow-up appointments, do not take your regular morning dose until after your blood has been taken for your lab work.

Possible side effects

- high blood pressure
- headache
- increased hair growth
- hand tremor
- gum over-growth
- infection
- decrease in kidney function

Special instructions

- Take your dose at the same time every day, spaced 12 hours apart.
- Never eat or drink anything that has grapefruit, blood orange, or pomegranate in it when you're taking this medicine.
- Do not store capsules outside of the original package for more than 7 days.
- Take this medicine with food.

CellCept, Myfortic

- This medicine is also known as mycophenolate or MMF.
- This is an anti-rejection medicine used to stop your body from rejecting your new organ.

Possible side effects

- diarrhea
- feeling sick to your stomach or throwing up
- decreased blood counts

Special instructions

- Pills should always be swallowed whole.
- Never crush, chew, or open these pills.
- This medicine can cause birth defects and miscarriages if taken during pregnancy.
- Use 2 different types of birth control to avoid pregnancy when you're using this medicine and for 6 weeks after stopping this medicine, unless you or your partner has an IUD, tubal ligation, or vasectomy. If you're female, the 2 methods of birth control you can choose are:
  - two different barrier methods at the same time (a condom and a diaphragm)
  - one barrier method along with a hormonal method (oral contraceptive, pill, patch, or ring).
- Take this medicine with food.

Prednisone

This is an anti-rejection medicine used to stop your body from rejecting your new organ.

Possible side effects

- anxiety and mood changes
- difficulty sleeping (insomnia)
- acne, thin skin, or rash
- weight gain
- higher blood sugar levels
- swelling of face or feet
- stomach ulcers
- increase in blood pressure

Special instructions

Take this medicine with food.

Imuran

- This medicine is also known as azathioprine.
- This is an anti-rejection medicine used to stop your body from rejecting your new organ.

Possible side effects

- low white blood cells
- higher liver test numbers
- nausea and vomiting.

Special instructions

- Take this medicine 1 time a day.
- Never take the medicine allopurinol while you are taking Imuran!

Nystatin

This is an anti-fungal medicine that you'll use to prevent yeast infections from happening in your mouth and throat. You take this when you are taking prednisone. Once you stop taking prednisone, you will stop taking this medicine too.

Possible side effects

- upset stomach
- vomiting

Special instructions

- Take this medicine after every meal, and take it at bed time.
- Do not eat or drink for 20 to 30 minutes after you take this medicine.
- When you take this medicine, first swish it around in your mouth. Then swallow it.
- The transplant team will tell you when you can stop taking this medicine.

Bactrim

- This medicine is also known as:
  - trimethoprim/sulfamethoxazole
  - TMP/SMZ
  - septra
- This medicine is used to prevent a certain type of pneumonia.

Possible side effects

- rash
- greater sensitivity to sunlight

Special instructions

- If you get any skin rashes, tell your doctor.
- Take this medicine with food.
- Use suncreen with an SPF 30 or higher.

Dapsone

This medicine is used to prevent a certain type of pneumonia.

Possible Side Effects

- anemia
- rash

Special Instructions

Take this medicine with food.

Valcyte

- Valcyte is also known as valganciclovir.
- This medicine is used to prevent viral infections.

Possible side effects

- lowers white blood cells
- feeling sick to your stomach
- vomiting
- changes in taste

Special instructions

- Swallow tablets whole; do not crush.
- This medicine can cause birth defects when used during pregnancy or by the father at the time his sexual partner becomes pregnant.
  - Use 2 different types of birth control to avoid pregnancy while you're using this medicine and for 6 weeks after stopping this medicine, unless you or your partner has an IUD, tubal ligation, or vasectomy. The two methods of birth control you can choose are:
    - two different barrier methods at the same time (a condom and a diaphragm).
    - one barrier method along with a hormonal method.
  - Take this medicine with food.

In some cases, you may be prescribed acyclovir or valacyclovir instead.

Magnesium

This medicine contains magnesium in the form of magnesium oxide. It's used to raise the levels of magnesium in your body.

Possible side effects

- diarrhea
- feeling sick to your stomach

Special instructions

Take this medicine with food.

Statin

- Statins are used to lower cholesterol.
- If needed, your provider may prescribe pravastatin, atorvastatin, or rosuvastatin.

Possible side effects

- muscle pain
- dark urine

Calcium with vitamin D

- This medicine is a supplement that promotes bone health. This is important, because taking prednisone can harm your bones.
- Your doctor may also have you to take vitamin D alone if you have low levels of it in your body.

Aspirin

- This medicine is used to keep blood clots from forming in your blood vessels.
- Your transplant team will tell you if you need to take aspirin.

Possible side effects

- bleeding
- bruising

Lovenox (enoxaparin)

- This medicine helps keep blood clots from forming in your blood vessels. It is commonly called a "blood thinner."

Possible side effects

- bleeding
- pain in the area where you inject the medicine
- bruising

Noxafil (posaconazole)

This medicine helps prevent and treat certain kinds of lung fungus.

Possible side effects

- decrease in liver function
- nausea and vomiting

Special instructions

- Never stop taking this medicine without talking to your transplant team first.
- This medicine can change the way your other medicines work in your body, including drug levels.

Acid reducer

- You may be prescribed famotidine, omeprazole, pantoprazole, or esomeprazole.
- This medicine is used to prevent acid reflux.
- This medicine is used to keep ulcers from forming in your stomach.

Possible side effect

headache

Special instructions

Take this medicine on an empty stomach.

Laxative or stool softener

- You may be prescribed senna, miralax, or a stool softener (docusate).
- This medicine is used to soften your stools and prevent constipation.

Possible side effects

- diarrhea
- crampy or achy stomach pains

Special instructions

Don't take this medicine if you have diarrhea.

Stay safe when taking over-the-counter medicines

After transplant, you need to be very careful about the medicines you take, including over-the-counter medicines. **Many of these medicines ARE NOT safe!** Read these pages and make sure you and your caregiver know exactly which medicines are safe and which medicines are not safe.

Herbal supplements

Avoid any herbal supplement unless it has been approved by your transplant doctor.

Call the transplant office if you have:

- a temperature that is 2 degrees above your usual temperature
- nausea
- vomiting
- tremors
- really bad pain
- bleeding

Remember:

The most acetaminophen (Tylenol) you can take in any single day is 3,000 mg!

You may take these over-the-counter medicines

For a cold or congestion

- Tylenol Chest Congestion (contains acetaminophen and guaifenesin)
- Ocean Nasal Spray
- Dimetapp Long Acting Cough and Cold (chlorpheniramine and dextromethorphan)
- Tavist (clemastine)
- Zicam (zincum aceticum; zincum gluconicum)
- Coricidin HBP
- Vicks Vaporub
- Afrin Nasal Spray (oxymetazoline), but do not use for any longer than 3 days

For allergies

- Tylenol Severe Allergy (acetaminophen and diphenhydramine)
- Claritin or Alavert (loratidine)
- Zyrtec (cetirizine)
- Allegra (fexofenadine)
- Benadryl (diphenhydramine)
- Xyzal (levocetirizine)

For cough or sore throat

- Tylenol Cough and Sore Throat (acetaminophen and dextromethorphan)
- Tylenol Cough and Sore Throat Nighttime (acetaminophen, dextromethorphan, and doxylamine)
- Delsym or Robitussin (dextromethrophen)
- Mucinex (guaifenesin)
- Mucinex DM or Robitussin DM (guaifenesin and dextromethrophen)
- Cloraseptic spray and lozenges

For headache

- Tylenol (acetaminophen) or Tylenol Extra Strength (Never take more than 2,000 mg of acetaminophen a day!)
- Tylenol PM (acetaminophen and diphenhydramine)

For arthritis

- Tylenol Arthritis
- Capsaicin Cream (use sparingly)

The medicines on this page are safe.

You may take these over-the-counter medicines

For diarrhea

- Metamucil
- Fiber-Con

For constipation

- Colace (docusate)
- Dulcolax or Correctol (bisacodyl)
- Metamucil
- Fiber-Con
- Miralax
- Senna
- Peri-colace (senna and docusate)

For insomnia

- Benadryl (diphenhydramine)
- Tylenol PM (acetaminophen and diphenhydramine)

For intestinal gas

- Mylanta Gas (simethicone)
- Gas X (simethicone)

For indigestion or heart burn

- Zantac (ranitidine)
- Pepcid (famotidine)
- Prilosec OTC (omeprazole)
- Prevacid OTC (lansoprazole)
- Nexium OTC (esomeprazole)

The medicines on this page are safe.

NEVER take these over-the-counter medicines!

DO NOT take these pain relievers

- Motrin, Advil, Midol (ibuprofen)
- Aleve (naproxen)
- Aspirin for pain relief (a baby aspirin for heart protection is OK)
- Excedrin (acetaminophen, aspirin, and caffeine)
- Anacin (aspirin and caffeine)
- BC Powder (aspirin, caffeine, and salicylamide)
- Goody's Powder (acetaminophen, caffeine, and aspirin)
- Doans (magnesium salicylate)
- Orudis KT (ketoprofen)

DO NOT take these decongestants

- Sudafed (pseudoephedrine)
- Sudafed PE (phenylephrine)
- Alka-seltzer Cold

DO NOT take these stomach or bowel medicines

- Maalox or Mylanta (magnesium hydroxide, aluminum hydroxide, and simethicone)
- Milk of Magnesium (magnesium hydroxide)
- Magnesium Citrate
- Fleets (sodium phosphate)
- Pepto Bismol
- Cimetidine

The medicines on this page are NEVER safe!

Eat right, and keep a healthy weight

Good nutrition is key!

One of your goals after transplant is to establish and keep good eating habits. Good nutrition is essential to your recovery after transplant. Good nutrition is also necessary to preserve the function of your newly transplanted organs. A good diet will help keep you healthy for life.

A good diet will also:

- help you keep a healthy weight.
- help you avoid some of the side effects of the anti-rejection medicines You'll take. Potential side effects of these medicines (especially, Cyclosporine [Neoral, Gengraf] and Tacrolimus [prograf, FK-506]) include:
  - weight gain
  - protein loss
  - elevated blood sugar
  - high cholesterol
  - high triglyceride levels
  - high blood pressure
  - swelling
  - thinning of the bones (osteoporosis)
  - increased infection risk, including sickness from bacteria in foods.

Building a nutrition plan

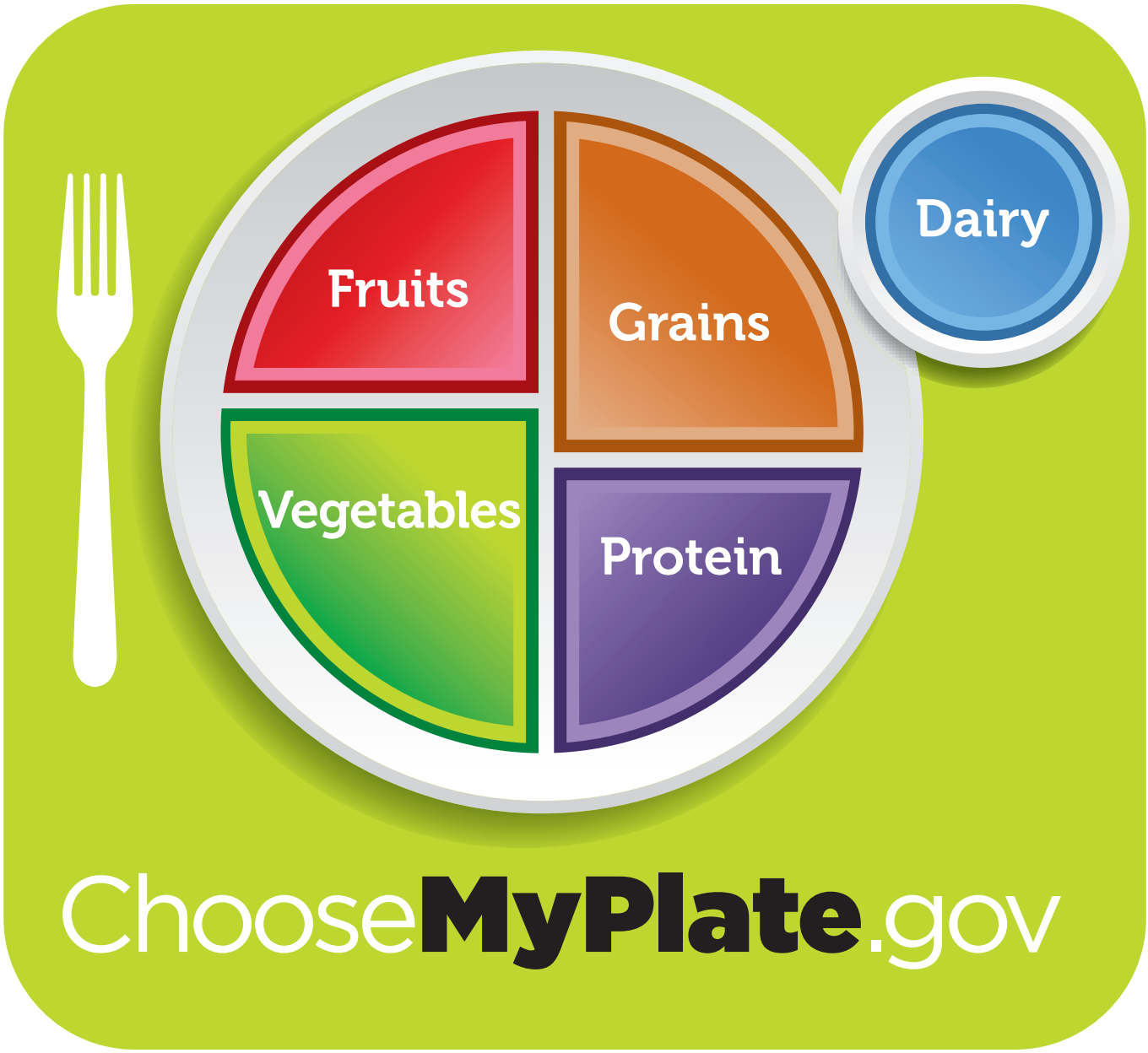
You may schedule an appointment to see the transplant dietician at any time.

Eat a variety of foods every day

Food Group	Foods Included	Servings a Day	Serving Size
Grains	Whole grain bread, pasta, oatmeal, brown rice, unsweetened breakfast cereals, tortillas, grits	6 to 8 servings, based on age and activity level	1 slice of bread; ½ hamburger bun, hotdog bun, or English muffin; 1 cup dry cereal; ½ cup cooked rice, pasta, or cereal
Vegetables	Any vegetable or 100 percent vegetable juice	3 to 5 servings	1 cup raw or cooked vegetables or vegetable juice; 2 cups of raw leafy greens
Fruits	Fruit or 100 percent fruit juice, except grapefruit, pomegranate, or blood orange. **IMPORTANT:** no grapefruit, pomegranate, or blood orange drinks or products!	2 to 4 servings of fruits. Limit juice to no more than 1 serving a day	1 cup of fruit or 100 percent fruit juice; ½ cup dried fruit.
Dairy	Skim or 1 percent milk, low-fat yogurt, and cheese	3 servings	1 cup milk or yogurt; 1 ½ ounces of cheese.
Protein	Lean meat, poultry, fish, dried beans, peas, eggs, nuts, seeds, peanut butter, cholesterol-free egg substitute	6 to 9 ounces (3 servings of 2 to 3 ounces each)	1 ounce meat, fish, poultry; ¼ cup dried beans or peas; ¼ ounce nuts or seeds; 2 Tbs peanut butter.
Fats and sweets	Oils, margarine, butter, mayonnaise, salad dressing, sugar	1 to 3	1 tsp butter, margarine, oil, or sugar.



A visual tool to help you eat a balanced diet ...

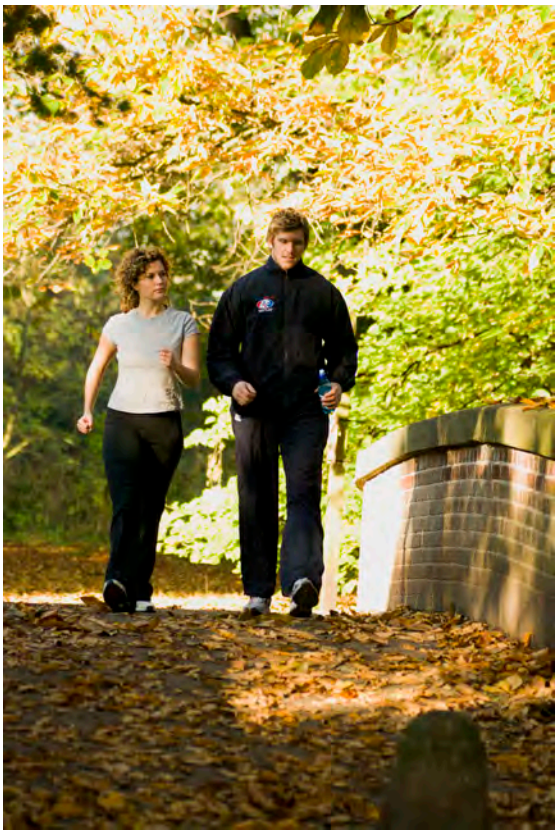


Keep a healthy weight

Your healthy body weight is a range of _____ to _____ pounds. Try to stay in this range.

Stay active

Regular exercise will help you control your weight. We suggest 30 to 60 minutes of physical activity every day.



Don't eat more food than you need

Be aware that prednisone and some of the other medicines You'll take can cause you to feel hungry even though you have already eaten as much food as you need.

To keep from eating too much, follow these tips:

- Eat more low-calorie foods like whole fruits and vegetables instead of high-fat foods and sweets.
- Have a bowl of clear soup or broth before lunch or dinner.
- Add a salad with 1 tablespoon of dressing or oil to your lunches and dinners.
- Add fiber-rich foods to your diet. Foods with a lot of fiber help slow down your digestion, leaving you feeling full longer. Fiber-rich foods include:
  - whole fruits and vegetables
  - 100 percent whole-grain products, such as bread, pasta, cereals, and brown rice
  - popcorn.

Eat enough protein

- Eat at least 6 ounces of meat or fish every day along with an additional serving of another source, such as low-fat cottage cheese, beans, unsalted nuts, or peanut butter.
- Eat or drink 3 servings of skim or low-fat dairy foods every day for more protein.

Limit sugary foods and desserts

If you already have diabetes, remember that having a transplant will not cure pre-existing diabetes. Also, some medicines, such as prednisone, tend to raise blood glucose levels, even in people who do not have a history of diabetes. Over time, high blood sugar can damage the kidneys and lead to a decline in heart function. For this reason, you should limit foods containing a large amount of sugar. Limiting your sugar will help you keep your blood sugar levels in the normal range.

Carbohydrates

All carbohydrates raise your blood sugar levels. This includes all grains, corn, peas, potatoes, milk, yogurt, beans, and fruit. If you have limited your sugars and your desserts, but your sugar levels are still high, make sure you're only eating the amount of carbohydrates suggested in the chart on page 28.

It will also help if you eat carbohydrates consistently. For example, have foods with carbohydrates at every meal instead of only eating them at 1 or 2 of your meals. This will help your blood sugar levels stay regulated.

Avoid or limit	Substitute with
Sugar, honey, syrup	Splenda, Sweet N' Low, NutraSweet, Equal, Light syrup, Stevia
Jam, jelly	Sugar-free and light products
Candy, cookies, doughnuts, pastries, cake	Vanilla wafers, angel food cake
Sodas, colas, sugary drinks, sweetened teas	Water, tea sweetened with sugar substitutes
Fruit sweetened in syrup	Fruit packed in its own juice
Jello, pudding, custard	Sugar-free jello, puddings, and custards

Eat a low-fat diet

A diet low in saturated fat, cholesterol, and trans fats along with regular exercise can help you keep healthy cholesterol levels.

- Choose foods that contain less than 2 grams of saturated fat per serving. Saturated fats are found in:
  - animal products such as meats, whole milk, and cheeses
  - palm oil
  - coconut oil.
- Choose foods that do not have trans fats in them. Processed and pre-packaged foods that contain the term "partially- hydrogenated" products on the label contain trans fats.

Avoiding trans fats

Trans fats are often found in cakes, cookies, crackers, icings, margarine, and even microwave popcorn. It's important for you to keep this in mind so you can avoid them.

Cooking tips for a low-fat diet

- Braise, boil, steam, poach, or use an outdoor grill. These ways of cooking are good, because they require no added fat.
- Roast meats on a rack to let fats drip off.
- Use tomato sauce to keep fish or poultry moist while baking. Or dip in skim milk and roll in seasoned bread crumbs or cornflakes and bake for a crunchy finish.
- Use plain, nonfat yogurt, fat-free mayonnaise, or sour cream as a base for salad dressings or in recipes.
- Make stews, gravies, and soups a day ahead. This allows you to skim off hardened fat after they've cooled. Making them in advance also gives the flavors time to blend.
- Always trim the extra fat off meat or the skin off chicken both before and after you cook them.
- When you cook with hamburger meat, choose extra lean ground beef that has less than 10 percent fat.
- Use non-stick sprays and non-stick pans to lower the fat in your cooking.

What to eat when you go out

Though it's best to eat home-cooked food as much as you can, it's possible to make good choices when you go out to eat, even at fast food restaurants. Here are some tips:

- If you have meat, choose fish or chicken. Make sure it's baked not fried and that it's cooked well-done.
- If you choose chicken, make sure the skin has been removed.
- If you have a hamburger, choose a small one. Add onion, lettuce, and tomato. Make sure it's cooked well-done.
- When you order a salad, get the dressing on the side, and use only a small portion of the dressing (1 tablespoon, or about the size of a ping-pong ball).
- Choose fresh fruits or vegetables when possible.
- Skip the cheese on sandwiches and burgers.
- Do not add mayonnaise or salad dressing to sandwiches unless it's pasteurized.
- Avoid mayonnaise-based salads such as potato or macaroni salad.
- Avoid French fries and onion rings. Choose a baked potato instead. Ask for toppings on the side and use only small amounts of them.
- Do not order foods with any raw or undercooked meat, poultry, seafood, sprouts, or eggs.
- Avoid eating at buffets and from salad bars. Both carry the risk of infection and food poisoning.

Eat less sodium (salt)

Sodium is a mineral found in many foods. Salt is the term commonly used when people talk about sodium. Your body needs some sodium to work properly, but most Americans eat 3 to 4 times more than they need every day!

Restrict your sodium intake to no more than 2,400 milligrams each day.

The effects of too much sodium

Too much sodium can cause high blood pressure. This is because sodium:

- makes your heart work harder
- can cause your artery walls to thicken, which causes them to narrow. When arteries narrow, they may eventually become clogged.

If your arteries become narrow and clogged:

- your heart must work even harder to pump blood through your body
- extra fluid may stay in your lungs, and make it hard for you to breathe
- if you're still eating too much sodium, your kidneys will then have to work harder as they try to get rid of the extra sodium.

Sodium and swelling

Too much sodium may also cause swelling. Usually, this swelling is in the feet and ankles. Remember that being swollen does not automatically mean you should drink less fluid. Drink less fluid only if your doctor tells you to.

Use food labels to make low-sodium choices

Always read the nutrition labels on foods. This way you can make good choices and control how much sodium you eat. Practice reading food labels using the picture of the label below.

- Start by looking for how much sodium there is in the food.
  - First, check the serving size amount.
  - Second, see how much sodium is in one serving.
  - Finally, think about how much You'll eat of that food. For example, if you think You'll eat 2 servings, the amount of sodium would double.
- Tip: You can use the "% Daily Value" section on the right-hand side of the food label as a quick sodium guide.
  - Less than 5 percent sodium means a food is low in sodium, and it's a good choice.
  - More than 20 percent sodium means a food is high in sodium, and it's NOT a good choice.

Make eating a low-sodium diet easier

- Never add salt to your food. Remember:
  - one half of table salt is all sodium
  - and just one teaspoon of table salt contains 2,300 mg of sodium!
- Take the salt shaker off your table.
- Don't add salt to your food when you cook.
- Don't use seasonings that contain the word "salt."
- Experiment with herbs, spices, and fruit juices to add flavor to foods.
- Don't use spices that are labeled as salt substitutes. They are very high in potassium. Too much potassium can be dangerous for some people after transplant.

Watch out for processed foods!

According to the Centers for Disease Control and Prevention, 77 percent of sodium in the American diet comes from processed foods.

The top 10 processed food sources, are:

- breads and rolls
- cold cuts and cured meats
- pizza
- enhanced poultry
- soups
- sandwiches
- cheese
- pasta dishes
- meat dishes
- snack foods.

Remember: Sea salt is still salt!

Low-sodium seasoning ideas

Blend #1(for vegetables and meat)

1 teaspoon thyme

¾ teaspoon rosemary

1 teaspoon marjoram

½ teaspoon sage

Blend #2 (for vegetables, poultry, and meat)

¾ teaspoon marjoram

½ teaspoon oregano

½ teaspoon rosemary

½ teaspoon thyme

½ teaspoon sage

Blend #3 (for fish)

¾ teaspoon parsley flakes

½ teaspoon sage

¼ teaspoon paprika

¼ teaspoon onion powder

¼ teaspoon marjoram

Blend #4 (for meat, potatoes, and vegetables)

1 teaspoon dry mustard

½ teaspoon thyme

½ teaspoon sage

¼ teaspoon marjoram

Blend #5 (For meat, potatoes, and vegetables)

½ teaspoon garlic powder

½ teaspoon onion powder

¼ teaspoon ground celery seed

½ teaspoon dry mustard

¼ teaspoon thyme

½ teaspoon paprika

½ teaspoon white pepper

More low-sodium seasoning ideas

Try using these spices and herbs to add extra flavor to your food.

Beef: Dry mustard, marjoram, nutmeg, sage, thyme, pepper, bay leaf, basil, caraway seed, curry, dill, rosemary, savory onion, garlic.

Roast beef: Rub with pepper and ginger.

Goulash: Onions, bay leaf, tomato, paprika.

Pork: Sage, basil, caraway seed, thyme, marjoram, rosemary, chives, onion, garlic. Serve with applesauce or spiced apples.

Lamb: Mint, rosemary, curry, dill, whole cloves, sage, marjoram, garlic, onion. Rub chops with pepper and ginger before broiling. Serve with broiled pineapple rings.

Veal: Bay leaf, ginger, marjoram, curry, basil, savory, sage, thyme, garlic, onion. Rub chops with pepper and saffron.

Chicken: Paprika, thyme, sage, parsley. Serve with cranberry sauce or baked apples.

Special sausage: Mix fresh ground pork with sage and freshly ground black pepper.

Fish: Dry mustard, paprika, curry, bay leaf, lemon juice, lemon, margarine.

Egg: Black pepper, dry mustard, paprika, curry, green pepper, onion. Serve with jelly.

Asparagus: Lemon juice, French dressing, grated nutmeg.

Cabbage: Mustard dressing, dill seed, margarine with lemon and sugar, vinegar.

Carrots: Parsley, mint, nutmeg, tarragon, chives.

Cauliflower: Nutmeg, bitters.

Cucumbers: Serve thinly sliced, raw. Combine with raw onion in vinegar.

Eggplant: Cook with tomatoes, bay leaf, oregano.

Green beans: Marjoram, lemon juice, nutmeg, dill seed, onion.

Sweet potatoes: Glaze with margarine and sugar or orange juice, sugar and cornstarch.

White potatoes: Mash and add freshly grated onion and nutmeg or chives. Or toss sliced potatoes with olive oil, rosemary, garlic powder, and black pepper and bake.

Rice: Cook and serve with honey or fresh fruits.

Squash: Onion, ginger, mace.

Tips for low-sodium grocery shopping

Avoid these high-sodium foods:

baking soda
biscuit mix
bouillon
canned soup
canned vegetables
cheese products
chips, pretzels, nuts, popcorn
corned beef
country ham
crackers
fast-food meals
fat back
frozen dinners
hot dogs
meat tenderizer
olives
onion or garlic salt
pickled foods
pickles
pork and beans
pot pies
potted meats (like Spam)
prepared foods
processed cheeses
processed lunch meats
sauerkraut
sausages
seasoned salts
self-rising flour
soy sauce
salt pork

Choose these low-sodium foods:

angel food cake
club soda
cooked cereals, pastas, rice without salt
dried beans and peas
eggs
fish
fresh or canned fruit
fresh or frozen meats
fresh or frozen vegetables without sauce
honey
lemonade
low-fat pudding
tea
unsalted peanut butter
unsalted pretzels, popcorn, or nuts
vinegar

Avoid these ingredients:

baking powder (sodium pyrophosphate)
baking soda (sodium bicarbonate)
brine
disodium
monosodium glutamate (MSG)
sodium metabisulfite
sodium nitrate
sodium nitrite
sodium phosphate
sodium propionate

Never eat grapefruit, blood oranges, or drink grapefruit juice!

Avoid all of these products that contain grapefruit or grapefruit juice extract

Coca Cola products	Dr. Pepper/7-Up products	Pepsi products
Fanta Grapefruit	Ruby Red Squirt	Citrus Blast
Fanta Grapefruit Lemon	Squirt and Diet Squirt	IZZE Sparkling Grapefruit
Fanta Grapefruit Lemon-Lime	Sun Drop and Diet Sun Drop	IZZE Fortified Sparkling Grapefruit
Fanta Grapefruit Pineapple		Ocean Spray Ruby Red Grapefruit Juice Drink
Fanta Grapefruit Raspberry		Season's Harvest Grapefruit Juice Beverage
Fresca and Diet Fresca		Tropicana Pure Premium Golden Grapefruit Juice
Fuze Tangerine Grapefruit		Tropicana Pure Premium Golden Grapefruit Juice with Vit D
Minute Maid Grapefruit Juice		Tropicana Pure Premium Ruby Red Grapefruit Juice
Simply Grapefruit		Tropicana Ruby Red Grapefruit Juice and Drink
		Tropicana White Grapefruit Juice

Avoid all of these products that possibly contain grapefruit or grapefruit juice extract

Coca Cola products	Dr. Pepper/7-Up products	Pepsi products
Canada Dry Citrus Blend	7-Up (all flavors)	Lipton Diet Green Tea with Citrus
Full Throttle Citrus Blend	Country Time Lemonade	Propel-Citrus Punch with Calcium
Nestea Citrus Green Tea	Crush (all citrus flavors)	Sierra Mist (multiple flavors)
Nestea Grapefruit Honey Green Tea	Orangina	Sobe Energy Citrus Flavor
Powderade Citrus Blend	Snapple (all citrus tea flavors)	Mountain Dew
Vitamin Water Tropical Citrus	Stewart's (all citrus flavors)	
	Sunkist (all citrus flavors)	

Get enough calcium in your diet

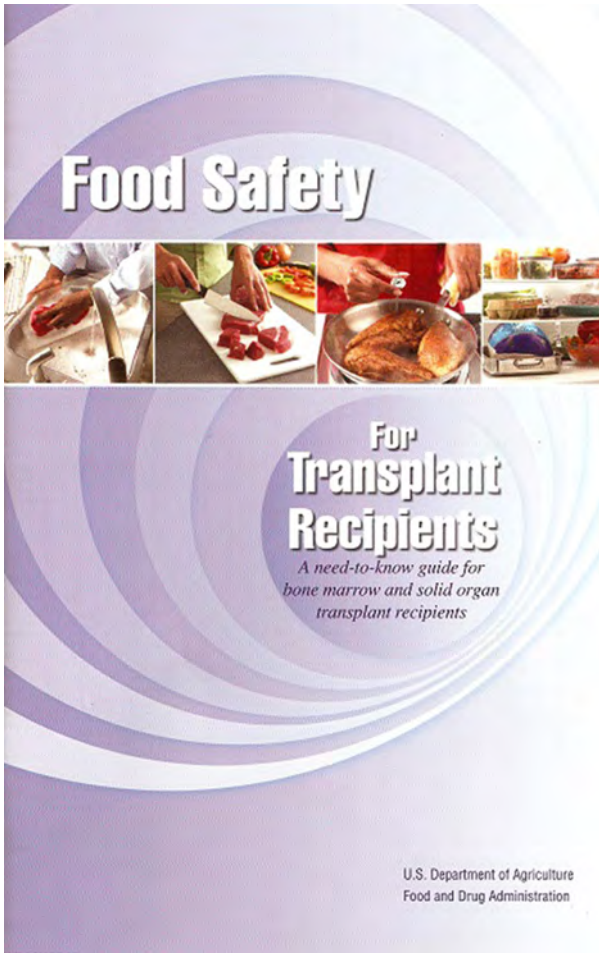
You need 1,200 to 1,500 mg calcium each day. Use the table below to calculate how much calcium you get from foods every day. You may need to take a supplement if you're not getting the recommended amount through foods.

Food	Serving size	Milligrams (mg) of calcium
2% milk	1 cup	297
Skim milk	1 cup	302
Plain low-fat yogurt	1 cup	415
Fruit low-fat yogurt	1 cup	314
1% Cottage cheese	1 cup	138
2% Cottage cheese	1 cup	155
Mozzarella cheese, part skim	1 ounce	183
Ricotta cheese, part skim	½ cup	337
Light n' Lively, Sharp cheddar	1 ounce	192
Light n' Lively, Swiss	1 ounce	214
Pink salmon, canned with bones	3 ounces	212

Practice food safety

After your transplant, you need to take extra care to prepare food safely. This will help prevent illness caused by unsafe food.

Use the "Food Safety for Transplant Recipients" booklet we give you to learn what you need to do to lower your risk of getting foodborne illness or food poisoning.



Watch your potassium levels if your doctor says to

If your medicine causes your potassium levels to be high, You'll need to avoid foods high in potassium. Your doctor will tell you if you need to eat a low-potassium diet. Information about potassium is not always listed on food labels. Use the information on the next 2 pages to learn which vegetables and fruits are high and low in potassium.

Potassium levels in vegetables

A serving of vegetables is ½ cup, unless otherwise specified.

Vegetables that are low in potassium (less than 200 mg per serving)

Asparagus	Corn	Kale	Rhubarb
Beets	Cucumber	Lettuce	Summer squash
Cabbage	Eggplant	Mushrooms	Tomato, ½ small
Carrots	Green beans	Mustard greens	Turnip greens
Cauliflower	Green peas	Okra	Turnips
Celery	Green pepper	Onion	Wax beans
Collard Greens	Hominy	Radishes	

Vegetables that are high in potassium (more than 200 mg per serving)

Baked beans	Great northern beans	Pumpkin	Sweet potato
Black-eyed peas	Lentils	Restaurant french fries	Tomato sauce
Broccoli	Lima beans	Restaurant potato salad	Tomato juice
Brussels sprouts	Navy beans	Sauerkraut	V-8 juice
Butter beans	Pinto beans	Soy beans	Winter squash
Chickpeas	Potatoes	Spinach	Yams
Crowder peas	Potato chips	Split peas	

Food tip: Lower the potassium in your potatoes when you cook them at home

To lower the potassium in white and sweet potatoes, first peel and cut them into small slices. Next, put the potato slices in a large pot or bowl, and fill the pot or bowl up with water. Fill it up all the way. Soak the potato slices for at least 2 hours. Drain and rinse. Finally, boil the potatoes in a large amount of new water. When they are done, drain and continue preparing the potatoes the same way you normally do.

Potassium levels in fruits

Fruits that are low in potassium (less than 200 mg per serving)

Apple, 1 med
Apple juice, ⅓ cup
Applesauce, ½ cup
Berries, ½ cup
Canned fruit cocktail
Canned fruit nectars
Canned mandarin oranges, ½ cup
Canned pears, ½ cup
Canned plums, ½ cup
Canned peaches, ½ cup
Cherries, ½ cup
Grape juice, ⅓ cup
Grapes, ½ cup
Lemon, 1 med
Lime, 1 med
Peach, 1 med
Pear, 1 med
Pineapple, 1 cup
Pineapple juice, ⅓ cup
Plum, 1 med
Strawberries, ½ cup
Tangerine, 1 med.

Fruits that are high in potassium (more than 200 mg per serving)

Avocado
Banana
Cantaloupe
Dried apricots
Dried dates
Dried figs
Honeydew
Kiwi
Mango
Nectarine
Orange juice
Papaya
Prune juice
Raisins
Watermelon

Potassium levels in other foods

All foods contain potassium, but fruits and vegetables are the biggest sources. Other foods such as dairy products, nuts, seeds, and bran are good sources of phosphorus and magnesium, but are also good sources of potassium.

Work with your transplant dietician or nurse practitioner to keep all your minerals balanced by making the right food choices.

Increase the phosphorous in your diet if your doctor says to

Your doctor will tell you if you need to add more phosphorous to your diet. Information about phosphorous is not always listed on food labels. Use the information on this page to learn which foods are high in phosphorous.

These foods are high in phosphorous

Food	Phosphorous (mg)	Food	Phosphorous (mg)
All-bran cereal, ½ cup	345	Oatmeal, 1 cup	178
Almonds, ¼ cup	184	Pancake, plain, 2 4-inch	254
Beef, 3 oz.	225	Peanut butter, 2 Tbsp	120
Beef liver, 3 oz.	412	Pork chop, 3 oz	215
Brazil nuts, 1 oz. (6 to 8 nuts)	206	Salmon, 3 oz	214
Buttermilk, 1 cup	218	Sesame seeds, 2 Tbsp	124
Cheddar cheese, 1 oz.	145	Shrimp, 3 oz	174
Chicken, 3 oz	216	Soy milk, 1 cup	118
Cottage cheese (low fat), 1 cup	302	Sunflower seeds, 2 Tbsp	200
Crab, 3 oz.	240	Tuna, 3 oz	139
Crowder peas, 1 cup	268	Turkey, 3 oz	214
Crystal light "classic orange," 1 cup	100	Vitamin water, "revive fruit punch," 1 cup	261
Great northern beans, 1 cup	292	Waffles, plain, 2 4-inch	278
Halibut, 3 oz.	244	Whole-grain cereal, 1 oz	100
Lentils, 1 cup	356	Whole-wheat bread, 1 slice	64
Lima beans, ½ cup	105	Whole-wheat muffin	167
Milk (skim), ½ cup	247	Yogurt (low-fat), 1 cup	250
Oat bran (cooked), 1 cup	261		
Oat bran muffin, 1	214		

Increase the magnesium in your diet if your doctor says to

Your doctor will tell you if you need to add more magnesium to your diet. Information about magnesium is not always listed on food labels. Use the information on this page to learn which foods are high in magnesium.

These foods are high in magnesium

Food	Magnesium (mg)	Food	Magnesium (mg)
Almonds, 2 Tbsp	86	Multigrain cereal, ⅔ cup	16
Apricots, 3 medium	8	Oatmeal, 1 cup	55
Artichoke, 1 medium	180	Okra, 1 cup	41
Avocado, 1 medium	71	Oysters (cooked), 3 oz	19
Banana, 1 medium	33	Peanut Butter, 2 Tbsp	51
Black-eyed peas, ½ cup	43	Plantain, 1 medium	49
Bran muffin	60	Potato, 1 medium	55
Brazil nuts, 2 Tbsp	4	Pumpkin seeds, 2 Tbsp	152
Broccoli, ½ cup	19	Scallops, 3 oz	23
Brown Rice, ⅔ cup	57	Sesame seeds, 2 Tbsp	101
Cashews, 2 Tbsp	74	Soy milk, 1 cup	46
Cereal, whole grain, 1 oz	50	Soybeans, ½ cup	74
Chicken 3.5 oz	27	Spinach, ½ cup	78
Chickpeas, ½ cup	40	Sunflower seeds, 2 Tbsp	100
Halibut, 3 oz.	90	Swiss chard, ½ cup	76
Kiwi fruit, 1 medium	23	Tofu, ½ cup	118
Lentils, ½ cup	35	Whole-wheat bread, 1 slice	24
Lima beans, ½ cup	40	Whole-wheat English muffin	47
Mackerel, 3 oz	65	Whole-wheat pasta, 1 cup	42
Milk, 1 cup	34	Yogurt (low-fat), 1 cup	26

More Recommendations for Staying Healthy

Stay active

Regular exercise after transplant is as important as eating a healthy, balanced diet. Exercise will help you:

- control any weight gain
- keep your heart and body healthy
- increase your energy
- lower your stress
- improve your sleep
- feel good emotionally
- improve your digestion
- have good posture.

Exercising safely

- After your surgery, you'll need to go to pulmonary rehab. Remember to rest when you're tired.
- For the first 6 weeks after surgery, do not lift anything that weighs more than 5 pounds. This includes children, pets, and groceries.
- For the first 2 months after surgery, avoid hard exercise. This includes contact sports like football, basketball, and hockey, as well as jogging, tennis, and weight lifting.
- Avoid any activity that causes discomfort to your incision or could possibly result in a blow to the area of your new organ.
- Always talk to your doctor or nurse before you start any new exercise plan.
- Exercise you might consider includes biking and walking.

As you recover, it may seem as if there is a fine line between doing enough to get your body fit and doing too much. If you have any questions or concerns about your level of activity, talk with your transplant team.

Building strength and endurance

Your transplant team will give you an exercise plan. Follow this plan to help you regain both your muscle strength and your endurance. In addition to these exercises, you should gradually increase your activity.

- When you first leave the hospital, you'll need to attend pulmonary rehab.
- As you heal completely, you should plan to exercise at least 3 to 4 times a week for at least 30 minutes each time.

These exercise guidelines are the same that are given to everyone to stay healthy.

Staying motivated

Some things you can try:

- Find organized programs designed specifically for transplant patients.
- Find a friend or support person who will exercise with you.
- Try an exercise video.
- Join the YMCA or a gym.
- Talk to us about any questions about your personal exercise plan or any issues you have about exercising.

Prevent infection

The medicines You'll take for the rest of your life will make you more prone to getting infections. The good news is that you can help prevent infection with simple, good habits.

Some of these things You'll need to do for the rest of your life. Others may be lifted in time. Your transplant doctor or nurse practitioner will tell you when some of these restrictions may be lifted.

Tips for preventing infection:

- Stay away from people who are obviously sick with the flu or a cold.
- Try to avoid children with chicken pox, strep throat, or other illness.
- Wash your hands with soap and water before you eat and after you go to the bathroom. This is one of the best ways to prevent infection. When you're out of the house, you may also use anti-bacterial gels to clean your hands.
- Shower or bathe regularly.
- Clean cuts and scrapes right away with soap and water; then apply an antiseptic and a bandage.
- Do not, under any circumstances, change the litter in the cat box or birdcage without wearing gloves. This could cause a serious infection. Avoid cat scratches.
- After your transplant, it's best if you don't dig in the dirt or mow the lawn. Both of these things could cause a serious infection.
- Keep your fingernails and toenails clean and trimmed. If your toenails are hard to manage or are ingrown, see a foot specialist.
- Talk to your doctor about getting the flu and pneumonia vaccines. Neither vaccine contains live viruses. After 3 months, both vaccines will be safe for you to have.
- Do not get any vaccine that contains a live virus, such as the smallpox, polio, or shingles vaccines.
- Talk to your doctor if someone in your house will get a live virus vaccination for a virus you have not already been vaccinated against, such as chickenpox, zoster, oral polio, or diphtheria
- Do not smoke. And do not expose yourself to second-hand smoke.
- Avoid community whirlpools and pools.
- Avoid swimming in lakes or ponds.
- Avoid being around fires.

Take care of your skin

Transplant patients have a higher risk of getting skin and lip cancers. This risk increases with time. You must always protect your skin from the ultraviolet rays of the sun that cause skin cancers.

- Always use sunscreen (at least SPF 30) before going outside. Every 2 hours while you're outside, apply sunscreen again.
- Do not use tanning beds.
- Regularly check your skin for any unusual skin or mole changes.
- We recommend that you visit a dermatologist once a year.

Get your regular check-ups and screenings

See your primary care doctor regularly, and have the routine screenings he or she recommends for you.

Take care of your eyes

Visit your eye doctor once a year.

Take care of your teeth and gums

- Brush your teeth after each meal and at bedtime.
- Floss your teeth gently every day.
- Examine your mouth every day, and call your doctor or nurse if you have sores, blisters, or white spots.
- Visit your dentist every 6 months.
- Make sure the dentist knows what anti-rejection medicines you take before they do any dental work.
- Do not plan any routine dental work until you talk with your transplant team.
- To prevent infection, you may need to take an antibiotic before having some types of dental work. Regular dental cleanings usually do not require you to take an antibiotic. Talk to your transplant team about this. They'll tell you what you need to do.
  - Amoxicillin is usually the antibiotic of choice.
  - If you're allergic to amoxicillin, you can take clindamycin (Cleocin) instead.
  - If you're taking Prograf or Neoral, you should not take erythromycin, clarithromycin (Biaxin), or dirithromycin (Dynabac).
- The medicine Neoral can cause an overgrowth of your gum tissue that can become swollen and painful. Ask your dentist to suggest oral hygiene measures to relieve the discomfort.

If you're a man

Do a testicle self-exam every month. Call your doctor if you see or feel any abnormal or unusual lumps.

If you're older than 50

- Get screened for prostate cancer once a year.
- Talk to your doctor about having a screening colonoscopy.

If you want to have a child

Although men may father children at any time after transplant, talk to your doctor before you try to conceive. It's important for you to be sure that the medicines you're taking, such as CellCept, will not harm a fetus.

If you're a woman

- Have a pap smear as directed by your primary care provider or gynecologist.
- Do a breast self-exam every month. The best time to do this is one week after your period ends.
- Talk to your transplant doctor or nurse about your method of birth control. Your body may begin making eggs again 2 to 6 months after your transplant surgery and even before your regular menstrual periods return. This is why birth control is highly recommended.

If you use tampons

Choose the smallest size needed to meet your needs. Change tampons often to avoid getting an infection.

Take care of your emotional health

It's common and even healthy for transplant recipients and their loved ones to have many different emotions throughout the transplant process. These feelings will vary from person to person. Everyone's responses are different. It's important to understand some of the reasons for your stressors and how to successfully manage them.

How physical stress may affect your emotions

It's common for emotional distress, like sadness or frustration, to increase during times of physical discomfort or when medical symptoms are present. This will improve as you get better.

Depression

It's very unlikely that you'll develop clinical depression following your transplant. (A person who is clinically depressed often loses interest in most activities and may have difficulty concentrating, have feelings of sadness, have less energy, sleep badly, and have a low appetite.)

However, it would not be uncommon if you feel sad or let down for a short period of time following your transplant.

Anxiety

You may also feel anxiety, worry, and fear during the transplant process. Such emotions are normal, and even healthy. Many patients, for example, have a fear that their bodies will reject their new organs. They also worry about what their lives and futures after transplant will be like. Again, keep in mind that these are normal thoughts and emotions.

Stress

Stress is a natural part of our daily lives; It's both healthy and necessary. But too much stress can be harmful. Emotions brought on by the stress of having a transplant include sadness, frustration, and anger.

To help lower your stress:

- get enough sleep
- don't smoke, use any form of nicotine, drink alcohol, or do illicit drugs
- do things that relax you, such as meditation, yoga, baths, reading, and listening to music.

Coping techniques

Coping refers to the way people react in the face of a challenge (such as getting a transplant) and how they comfort themselves in response to stress. Of course, not all ways of coping are healthy. Before your surgery, think of ways you have of coping that are healthy. Try to use these healthy coping techniques instead of unhealthy ones.

Learn as much as you can

It often helps to get as much information as you can about your medical condition. The more you know about what to expect and what You'll need to do throughout the transplant process, the more prepared You'll be. Knowing more will also help you have more realistic expectations, which can often lower stress.

Find support

Spend time with friends you can talk with about your feelings. You can also find support groups to join. It's important to have a place where you can talk about how you feel.

Patient Tools and Resources

Helpful organizations

There are many national and local organizations dedicated to providing information, support, referrals to other recipients, and financial help to transplant recipients. We encourage you to get as much information as you can as you go through this difficult time in you life.

The following is only a sampling of the resources available to you, and one resource will likely lead you to another.

Transplant Recipients International Organization, Inc.

TrioWeb.org

UNOS Transplant Living

TransplantLiving.org

Writing to your donor family

Tennessee Donor Services is a non-profit organization that was chosen by the federal government to manage organ donation in Middle Tennessee. The organization helps transplant recipients and donor families communicate in writing. All communication is completely anonymous and all identities are kept confidential.

The decision to write to your donor's family is a very personal one. Whether or not you decide to write to the donor family is your choice.

General information you might include if you decide to write a letter

- the state in which you live (not city)
- your job
- your family situation such as marital status, children, or grandchildren (do not include any last names)
- your hobbies or interests

Don't make any assumptions about your donor family's religious beliefs

Since you do not know anything about your donor family's religious beliefs (or if they have any religious beliefs at all), please consider this if you're including religious comments.

Talk about your experience

Some things you might include:

- your gratitude for the family and their gift
- how long you waited for a transplant
- what the wait was like for you and your family
- how the transplant has improved your health and changed the life of you and your family, for example:
  - things you can do now that you couldn't do before your transplant
  - trips you're able to take or traveling you can do that you couldn't do before your transplant
- what has happened in your life since your transplant, for example:
  - Did you celebrate another birthday?
  - Did you, your son, or your daughter marry?
  - Did you become a parent or grandparent?
  - Did you return to school or accept a new job?

Closing your card or letter

- Sign your first name only.
- Do not include your address, city, or phone number.
- Do not include the name or location of the hospital or your doctor(s).

Preparing your card or letter

- Place your card or letter in an unsealed envelope
- Include a separate piece of paper with your full name and date of your transplant written on it.
- Place these items in another envelope, and mail everything together.

Mailing your letter

When you're ready to mail your letter, You'll send it to us first. Contact your lung transplant social worker for further instructions. When we get your letter, we'll forward it to Tennessee Donor Services:

- A Tennessee Donor Services coordinator will read your letter to ensure confidentiality and will then contact the family to offer them the option of receiving the letter.
- If the family wishes to receive your card or letter, Tennessee Donor Services will mail it to them.

Allow for extra mailing time

Since your card or letter must be mailed to the Transplant Center first, and then forwarded to Tennessee Donor Services, please allow extra time for it to reach the donor family. It may take a few weeks after you have mailed your card or letter for the donor family to get it.

If you write a letter, you may or may not hear back from your donor family

Some donor families have said that writing about their loved one and their decision to donate helps them in their grieving process. Other donor families, though they are appreciative of your card or letter, prefer privacy and choose not to write to the transplant recipients. Some donor families may not even want to read your card or letter.

Places to stay in Nashville

Hospital Hospitality House
(615) 329-0477

The Hospitality House provides accommodations for patients and family members of patients staying in Nashville area hospitals at a minimal cost. Private rooms and bath accommodate 2 people, community kitchen and living space, free parking, Vanderbilt shuttle service, a stocked kitchen, and laundry facilities. Family members older than 14 can stay here. Reservations cannot be made in advance, only on the first day of the patient's or family's stay. Initial referral has to be made by the transplant staff or transplant social worker.

Scarritt Bennett Center
(615) 340-7500

Near Vanderbilt Hospital and offers discount rates. Vanderbilt shuttle service available. Referral has to be made from the transplant office. No kitchenettes. Microwave and refrigerator in common living room. Children can stay with an adult. Private room with a common bathroom that is adjoined to another guest room. Two people per room.

Homestead Suites
(615) 316-9020

Located near the airport, offers discount prices for short or long term stay for Vanderbilt transplant patients. No shuttle service provided.

Extended Stay America
(615) 383-7490
(800) 398-7829

Located near Vanderbilt on West End Avenue, offers short and extended stays. Shuttle service provided.

Best Western Music Row Inn
(615) 242-1631
(800) 937-8376

Located near Vanderbilt at the intersection of I-40, I-65, and I-24 on Music Row.

Holiday Inn Express
(615) 244-0150
(800) 465-4329

Only 2 minutes from the hospital, Holiday Inn Express provides a complementary continental breakfast and free shuttle service to and from the hospital.

The Hotel Preston
(615) 324-9826

Centrally located near the airport, Opryland, downtown Nashville and Cool Springs. Discounted transplant rates and shuttle service available.

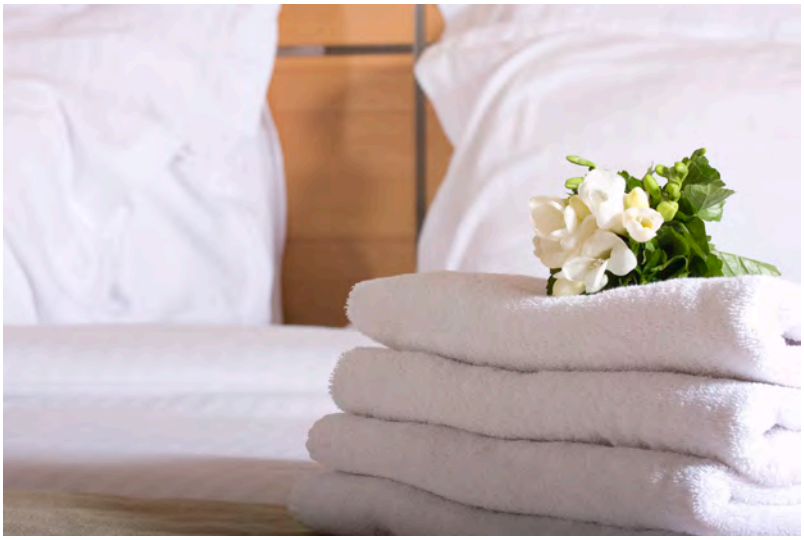
Comfort Inn
(615) 255-9977
(800) 424-6423

Located at 1501 Demonbreun Street. Within 1-mile radius of Vanderbilt.

The Village At Vanderbilt
(615) 320-5600

403 Village at Vanderbilt, Nashville, off 21st Avenue. Near the Vanderbilt campus.

**** Call for current rates and availability ****



When to call the Lung Transplant Office

Call us at (615) 936-0393 if:

- you have any symptoms you're worried about
- you have any questions for the nurse
- you need to make an appointment
- you need to have a prescription filled.

After hours, you should call the same number. An operator will answer. Tell them you need to talk with the on-call lung transplant doctor. The operator will get your message to the doctor who will call you back as soon as possible.

When to call 911, or go straight to the ER

Call 911, or go immediately to the ER if you have:

- chest pain
- sudden and bad shortness of breath
- trouble breathing
- been unconscious.

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VANDERBILT UNIVERSITY

MEDICAL CENTER