Health Facts for You

Transplant medicines

UWHealth

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After your transplant, you will be on many medicines. You will be on many of them for the rest of your life. This can include medicines which:

- Prevent rejection
- Prevent infections
- Control blood pressure
- Manage blood sugars
- Protect your stomach
- Prevent bone loss
- Provide you with extra vitamins and minerals

The team will help you learn about the medicines you need, why you need them, and the dose prescribed for you. Taking your medicines incorrectly can lead to rejection and other health problems.

Taking Your Medicines

Why is it important to take your medicines?

You **must** take your medicines exactly as directed by your transplant team. If you do not take your medicines, it can lead to organ rejection and loss.

- Do not stop a medicine without talking to the transplant team.
- Take the right amount of medicine prescribed for you.
- Take your medicines at the correct dose and frequency.
- Do not take medicines or supplements that are not prescribed.
- Alert the transplant team of any new medicines, over the counter medicines, supplements or herbals.

Why do some people not take their medicines?

Confusion

- There is confusion about "the right way" to take medicines.
- If have questions about how to take your medicines talk to your Transplant Coordinator.

Unable to pay

- The pharmacy team will check with your insurance after your transplant. If you are concerned about paying for your medicines after you leave the hospital, talk to your transplant coordinator or social worker.

Lack of supply

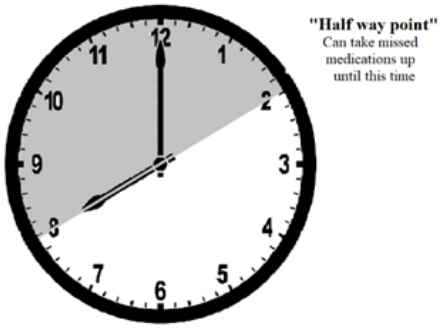
- Transplant medicines are not common, so they may not be in stock at all pharmacies.
- You will leave the hospital with a 1 month supply of your new medicines.
- UW Health Pharmacies can be your main pharmacy for refills; a mail order service is also offered for our transplant patients.
- If you use your local pharmacy for refills, **let them know a week before you run out of medicine** so they can order the medicines and fill them.
- When you are traveling (this includes traveling to clinic visits), bring a day of medicines with you in case of delays or other travel issues.

Side Effects

- If side effects are serious or bothersome, call your transplant coordinator right away to discuss ways to manage them.
- **Do not stop** taking your medicines unless your transplant coordinator or doctor tells you to.

What if I miss a dose of medicine?
If you miss a dose, follow the **"Half-Way" Rule.**

- If you are less than "half-way" to your next dose, take your missed dose.
- If you are more than "half-way" to your next dose, skip it and continue with your next scheduled dose
- **Never** take extra medicine to make up for a missed dose.
- Call your transplant coordinator when you miss more than one dose of anti-rejection medicine.



How should I store my medicines?
Store your medicines in a cool, dry place out of reach of children. Bathrooms, kitchens and cars are not good places because of changes in heat and humidity.

Who should know about my medicines?
Tell **all** of your healthcare providers that you are on anti-rejection medicines, including:

- Dentists
- Doctors or surgeons
- Pharmacists (try to choose one pharmacy to use for all your medicines)

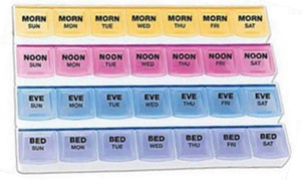
Tell your transplant coordinator right away if other doctors make medicine changes.

Medicines List
Every patient should have an up-to-date medicine list that has:

- Names and doses of medicines you take
- How often you take them
- Why you take them
- Name of your doctor
- Allergies and reactions to any medicines
- Health history

Bring this list to **all** appointments/hospital visits and keep it in your wallet/purse.

Medicine Box
Medicine boxes organize your medicines and make them easier to take. You may be asked to bring your medication box to the transplant clinic for transplant pharmacist review.



UW Mail Service Pharmacy
If you would like to use the UW Hospital's prescription mail order program, please ask your transplant pharmacist or coordinator.

Pharmacy Services
Some pharmacies fill medicine boxes for you or offer automatic refill reminders. Call your local pharmacy to see what services they offer.

Medicine Refills

- If you are on your last refill of a medicine, call the transplant clinic.
- Request medicine refills at least 7 days before running out. This might need to be longer around holidays.
- Your primary care provider should **not** refill your transplant medicines but should refill your other medicines.

Anti-Rejection Medicines

When your body's immune system fights your organ, it is known as rejection. Anti-rejection medicines lower your body's immune system response to stop your body from rejecting your new organ. Each anti-rejection medicine works differently to lower your immune system. The medicines you take depend on the type of new organ and your medical history. Anti-rejection medicines are never stopped unless directed to by your transplant doctor.

Prednisone

Common Side Effects	High blood pressure, cholesterol and blood sugar, thinning skin, easier bruising, swelling, increased restlessness/feeling 'jittery', mood changes, lower bone mass, stomach upset, stomach ulcers, trouble sleeping, bigger appetite, and cataracts
Food	Take with food to prevent upset stomach and ulcers
Special Tips	• If you have high blood sugar or diabetes, your dose may be twice a day. • If you take prednisone once a day, you should take it in the morning so it is easier to sleep. If you are taking prednisone twice a day take the second dose in the afternoon, not the evening. • Have an eye exam once a year for cataract prevention. • You will need scans of your bones (a DEXA scan) at least every other year to monitor bone health.

Tacrolimus (Prograf/Envarsus XR/Astagraf XL)

Common Side Effects	Tremor, headache, kidney injury, hair loss, diarrhea, nausea/vomiting, trouble sleeping, and high cholesterol, blood sugar and blood pressure
Food	Take with or without food, but be **consistent** in what you choose
Interactions	Avoid grapefruit or grapefruit juice, since they increase tacrolimus levels.
Monitoring	• Tacrolimus blood levels are drawn to make sure you are getting the right amount of the medicine. • Blood is drawn right before your morning dose to measure the amount of drug in your body when it is lowest (a trough). Take your dose the day before as directed by your transplant coordinator. This will be either 12 or 24 hours before you will have your level drawn. **Do Not** take your morning dose until AFTER your blood is drawn. • Your transplant coordinator will tell you your goal tacrolimus level.

Special Tips	• Call your transplant coordinator if:
	  ○ tremor or headache worsen
	  ○ you notice burning in your fingers
	  ○ the shape and/or color of your medicine changes.
	• If you take a liquid suspension of tacrolimus, be sure to have an right sized syringe for measuring and adapter to fit your bottle with syringe. Shake the bottle to mix the suspension before drawing up your dose.
	• Let your transplant coordinator know if you are changing where you get your labs drawn as this may affect your tacrolimus level.

Mycophenolate Sodium (Myfortic) or Mycophenolate Mofetil (Cellcept)XL)

Side Effects	Diarrhea, nausea/vomiting, headache, and low white blood cell and hematocrit
Food	Take with food to help prevent stomach upset and diarrhea
Special Tips	• Do not crush, chew or cut mycophenolate tablets. • Pregnant persons or people trying to get pregnant should not handle the tablets or capsules due to risk of harm to unborn babies. • People who are able to get pregnant who take mycophenolate must use at least one form of acceptable form of birth control as prescribed by your doctor. If you plan to get pregnant, talk with your transplant coordinator at least 3 months before to change to a different medicine.

Cyclosporine (Neoral) – ALTERNATIVE to Tacrolimus

Common Side Effects	Hair growth, diarrhea, nausea/vomiting, headache, tremor, gum growth, high cholesterol, blood sugar and blood pressure.
Food	Take with or without food but be **consistent** in what you choose.
Interactions	**Avoid** grapefruit or grapefruit juice, since they increase cyclosporine levels.
Monitoring	• Blood levels of cyclosporine are drawn to make sure you are getting the right amount of the medicine. • Blood is drawn right before your morning dose to measure the amount of drug in your body when it is lowest (a trough). Take your evening dose 12 hours before you will have your level drawn. • **Do not** take your morning dose until **after** your blood is drawn. • Your transplant coordinator will tell you your goal cyclosporine level.
Special Tips	• Tell your transplant coordinator if the shape and/or color of your medicine changes. • Different brands may lead to different blood levels. • The oral solution is dispensed in a glass container and should **not** be refrigerated. • Have 6-month dental cleanings and brush twice daily to prevent gum growth. • Let your transplant coordinator know if you are changing where you get your labs drawn as this may affect your cyclosporine level.

Azathioprine (Imuran) – ALTERNATIVE to Mycophenolate

Common Side Effects	Nausea/vomiting, diarrhea, rash, low white blood cell counts, fever
Food	Take with food to prevent stomach upset.
Interactions	**Do not** take mercaptopurine, allopurinol, or febuxostat with azathioprine. ~~If~~ taking warfarin, reach out to your warfarin manager when starting this medicine.

Sirolimus (Rapamune): May take instead of or in addition to other anti-rejection medicines

Common Side Effects	Constipation or diarrhea, nausea, headache, swelling, slow wound healing, mouth ulcers, anemia, high cholesterol, blood sugar, and blood pressure
Food	Take with or without food but be **consistent** in what you choose
Interactions	**Avoid** grapefruit or grapefruit juice, since they increase sirolimus levels.
Monitoring	• Blood levels of sirolimus are drawn to make sure you are getting the right amount of the medicine. • Blood is drawn right before your morning dose to measure the amount of drug in your body when it is lowest (a trough). Take your dose 24 hours before you will have your level drawn. • **Do not** take your morning dose until **after** your blood is drawn. • Your transplant coordinator will tell you your goal sirolimus level.
Special Tips	• **Do not** crush, split, or chew the tablets. • Sirolimus should be taken 4 hours after cyclosporine. • Let your transplant coordinator know if you are changing where you get your labs drawn. This may affect your sirolimus level.

Everolimus (Zortress): May take instead of or in addition to other anti-rejection medicines

Common Side Effects	Diarrhea, nausea/vomiting, headache, rash/itching, fatigue, fever, swelling, slow wound healing, anemia, increased cholesterol and blood pressure.
Food	Take with or without food but be **consistent** in what you choose.
Interactions	**Avoid** grapefruit or grapefruit juice, since they increase everolimus levels.
Monitoring	• Blood levels of everolimus are drawn to make sure you are getting the right amount of the medicine. • Blood is drawn right before your morning dose to measure the amount of drug in your body when it is lowest (a trough). Take your evening dose 12 hours before you will have your level drawn. • **Do not** take your morning dose until **after** your blood is drawn. • Your transplant coordinator will tell you your goal everolimus level.
Special Tips	• **Do not** crush, split, or chew the tablets. • Take at the same time as cyclosporine or tacrolimus (if prescribed). • Let your transplant coordinator know if you are changing where you get your labs drawn. This may affect your everolimus level.

Belatacept (Nulojix): May take instead of or in addition to other anti-rejection medicines for kidney or pancreas patients only.

Common Side Effects	Diarrhea or constipation, nausea/vomiting, anemia, fever, swelling, high cholesterol, blood sugar and blood pressure.
Special Tips	• Patients must have a blood test showing they have immunity to Epstein-Barr Virus to receive belatacept. • This medicine is through your vein (intravenous (IV)) and must be administered in a clinic or infusion center at least once a month.

Anti-Infective Medicines

After transplant, you are more at risk for getting sick because your immune system is lowered. Anti-infective medicines help prevent infections.

Types of Infection	Medicine
General infections and pneumonia	**Trimethoprim/sulfamethoxazole (Bactrim DS or Septra DS) or TMP/Sulfa** • Take lifelong after transplant • Side effects: Sun sensitivity, nausea/vomiting, diarrhea, rash, high potassium, low white blood cell counts **Atovaquone (Mepron®) – Alternative to TMP/Sulfa** • Take lifelong after transplant • Side effects: headache, insomnia, rash, nausea, change in taste **Dapsone – Alternative to TMP/Sulfa** • Take lifelong after transplant • Side effects: low red and white blood cell counts, liver problems
Viral Infections (Cytomegalovirus – CMV) CMV is a virus that may hide out in the body. This virus is normally harmless but is dangerous when your immune system is lowered. The antiviral medicine you take depends on whether you or your donor have had CMV.	**Valganciclovir (Valcyte®)** • Most people will take for 12 months after transplant. Some people will need to keep taking it. • Side effects: Decreased white blood cell counts **Letermovir (Prevymis®)** • May take instead of valganciclovir • Most people will take for 12 months after transplant. Some people will need to keep taking it. • Side effects: upset stomach **Valacyclovir (Valtrex®)** • Take for 3 months after transplant instead of valganciclovir if at low risk for CMV • May take at the same time as letermovir • Side effects: headache, upset stomach **Acyclovir (Zovirax®)** • Take for 3 months after transplant instead of valganciclovir if at low risk for CMV • May take at the same time as letermovir • Side effects: headache, upset stomach
Yeast infection – oral thrush Yeast may take advantage of a lowered immune system and start growing in the mouth. This can cause painful, white spots in your mouth and throat.	**Nystatin (Swish and Swallow)** • Take for 1-3 months after transplant • Shake the bottle well. Swish in your mouth and swallow. • **Do not** eat or drink for 15 minutes after taking your dose. • Side effects: nausea, odd taste in the mouth **Clotrimazole Troche (Mycelex) or "Suck Tab") – alternative to Nystatin** • May take for 1-3 months after transplant if unable to take Nystatin

Other Medicines

Blood Pressure Medicines (Goal blood pressure: less than 120/80 mmHg)

- Many transplant patients have high blood pressure or develop high blood pressure as a side effect of anti-rejection medicines.
- Some patients resume their blood pressure medicines from before transplant. Some patients may need new medicines added, or some patients may be able to stop taking blood pressure medicine.
- It is important to own a blood pressure cuff and monitor your blood pressure at home.
- You should keep a logbook of your blood pressure and bring it with you to appointments.
- Blood pressure can also be improved by:
    - Diet and exercise (lose excess weight)
    - Avoiding high-salt foods (Dietary Approaches to Stop Hypertension (DASH) diet)
    - Quitting smoking

Medicines for High Blood Sugar/Diabetes

- Prednisone and tacrolimus can cause you to have high blood sugar (diabetes).
- You may need insulin or other medicine to lower your blood sugar.
- You may be asked to check your blood sugar up to 4 times a day.

Stomach Protection

Transplant patients will need to take a medicine such as pantoprazole (Protonix®) or omeprazole (Prilosec®) to help reduce stomach acid and protect the stomach for at least 1 month after transplant.

Vaccines

- **Do not** get vaccines within the first 6 months after transplant unless approved by your transplant coordinator or transplant doctor.
- **Avoid** live vaccines, including measles, shingles, chicken pox, and the influenza nasal spray**.**
- People living with you should get the influenza vaccine. They can receive the live vaccine.
- Call your transplant coordinator if you have been around someone who has chicken pox.
- Talk to your transplant team about what vaccines you need after transplant.

Supplements/Over-the-Counter Medicines

Avoid other prescription, over-the-counter (OTC), herbal, homeopathic, or dietary supplements unless recommended by your doctor and approved by your transplant coordinator.

The supplements/medicines listed below are available without a prescription. You may be told to take these supplements. They will be listed on your discharge medicine list. You will need to buy these at a store or pharmacy after discharge.

Supplement/ Medicine	Purpose	Side Effects
Calcium (carbonate or citrate) Look at the "Supplement Facts" on the back of the bottle to see how much elemental calcium is in each tablet.	Bone Health	Constipation or diarrhea
Vitamin D (cholecalciferol) You can purchase a combination of calcium + vitamin D.	Bone Health	None
Multivitamin Choose any multivitamin appropriate for your age group	General health	Stomach upset

Herbal Medicines
The use of herbal medicines is **not advised**. These products are not regulated by the FDA. They may contain toxins and filths. Many herbal medicines interact with your immunosuppressive medicines.

Before Choosing an OTC Medicine
Tell your doctor, nurse, and pharmacist if you:

- Are allergic to any medicine, either prescription or OTC.
- Are pregnant or intend to become pregnant while using this medicine.
- Are breast-feeding.
- Are taking any other prescription or OTC medicine or herbal products.
- Have other medical problems or have diabetes.

Precautions While Using OTC Products

- Check the labels of all OTC and prescription medicines you take. Many OTC medicines sold for different uses have the same active ingredients.
- If you are taking multiple medicines, read labels carefully. This decreases the risk of an accidental overdose.
- Possible side effects for OTC medicines are listed on the instruction sheet that comes with the product.
- Be careful not to take OTC medicine when on prescription drugs of the same type.
- If your **symptoms do not improve in 2 or 3 days, get worse, or if you have a fever or chills, contact your doctor.**

Suggestions for OTC Medicines by Symptom

Symptom	Medicine
Headache, fever, body aches, and joint pain	Acetaminophen (Tylenol®) can help relieve mild pain and fever. Many products may contain acetaminophen. Check labels for the amount in each product. • The maximum dose of acetaminophen is 4000 mg in 24 hours. This means no more than 12 regular strength or 8 extra strength tablets. • If you have had a **liver transplant**, the dose should not be more than 2000 mg in 24 hours. This means no more than 6 regular strength or 4 extra strength tablets. Higher doses can harm your liver. **Joint Pain** • Capsaicin cream (Capzasin-P®) **Pain Medicines to Avoid:** Do not take nonsteroidal anti-inflammatory drugs (NSAIDs) because they can harm your kidney or interact with certain immunosuppressants. Common NSAIDs are: • Ibuprofen (Advil®, Motrin®, Midol® Cramp Formula) • Naproxen (Aleve®) • Diclofenac (Voltaren®) • Celecoxib (Celebrex®) **Avoid** taking aspirin unless your doctor prescribed it. Aspirin is in some other pain relievers such as Excedrin® or Bayer®.
Sneezing, itching and runny nose	Medicines that are considered non-drowsy: • Loratadine (Claritin®) • Cetirizine (Zyrtec®) • Fexofenadine (Allegra®) • Levocetirizine (Xyzal®) • Cromolyn (NasalCrom®) Medicines that can make you sleepy: • Diphenhydramine (Benadryl®) • Chlorpheniramine (Chlor-trimeton®) These are best used at bedtime. Talk to your doctor before using an antihistamine if you have glaucoma, an enlarged prostate or trouble urinating. **Avoid** combination cold, sinus, and flu products (TheraFlu®, Nyquil®).

Symptom	Medicine
Nasal and sinus congestion	Topical nasal sprays are the most helpful for congestion. Do not use for more than 3 days. Longer use can cause more congestion. • Oxymetazoline (Afrin®) • Phenylephrine (Neosynephrine®). Long term use for decongestion. • Sodium chloride 0.65% (Ocean® spray) • SinuCleanse® saline solution used as a nasal washing through a device or bottle. Oral decongestants, such as pseudoephedrine (Sudafed®) and phenylephrine (Sudafed PE®) should be used with care because they can raise your blood pressure. Make sure to check the list in any cough or cold product for pseudoephedrine and phenylephrine.
Sore throat	Most throat lozenges can be used safely.
Chest congestion	Make sure to drink plenty of water to help loosen chest congestion. • Guaifenesin (Robitussin®) • Coricidin® HBP Chest Congestion & Cough
Cough	Loose cough • Guaifenesin (Robitussin®) for a loose cough. Dry cough, • Dextromethorphan (Delsym®) • Guaifenesin/DM combination (Robitussin DM®) • Coricidin® HBP Chest Congestion & Cough (safe for patients with high blood pressure.) All types of coughs • Vicks® VapoRub ointment • Vicks® VapoSteam.
Painful urination	**Do not** use • Phenazopyridine (Azo-Standard®) to treat undiagnosed urinary tract pain. This product treats painful symptoms but not the source of the infection. Contact your doctor if you have urinary pain.

Symptom	Medicine
Constipation	Constipation can be treated with: • Bulk-forming products: Metamucil®, Fiberall® • Stool softeners, such as docusate (Colace®) • Bisacodyl (Dulcolax®) • Senna • Milk of magnesia (Phillip's®) • Polyethylene glycol (MiraLAX®) • Combinations of a stool softener with a stimulant such as docusate with senna (Senokot-S®). Long-term use of stimulant laxatives should be avoided because they may result in long-term diarrhea and changes in your electrolytes. If you are **constipated for more than 48 hours**, please contact your primary care doctor.
Diarrhea	Loperamide (Imodium AD®) may be used for short-term treatment of diarrhea. **Do not** take: • Pepto-Bismol® • Kaopectate®
Upset stomach	Stomach upset can be treated with: • Calcium Carbonate (TUMS®) • Famotidine (Pepcid AC®) • Nizatidine (Axid AR®) • Omeprazole (Prilosec OTC®) • Esomeprazole (Nexium 24HR®) **Do not take:** • Cimetidine (Tagamet®)
Gas	• Simethicone (Gas-X®) for gas symptoms
Insomnia (trouble sleeping)	• Diphenhydramine (Benadryl®, ZzzQuil®) • Doxylamine (Unisom®) • Melatonin
Dry eyes and eye irritation	• Artificial tears eye drops • Ketotifen (Zadiator®)
Nausea and vomiting	• Meclizine (Antivert®)
Skin irritation/dry skin	• Sarna lotion • Oatmeal lotion • Vaseline
Insect bites and poison ivy	• Topical corticosteroids, such as hydrocortisone cream (Cortisone-10®) Use of topical corticosteroids should be short term.

Managing Side Effects

Use the table below to help manage your side effects. If your side effects are serious or bothersome, call your transplant coordinator.

Side Effect	How to Manage
Acne	• Treat with prescription or over-the-counter medicines, such as benzoyl peroxide • Keep your skin clean by washing your face two times per day • **Avoid** moisturizing soaps and lotions with oils (try oil free) • **Do not** pick at pimples since it can increase your risk of infection
Hair Loss	• Use a conditioner after shampooing • **Avoid** perms, dyes, or bleaching • Limit your exposure to chlorine (swimming pools) and the sun • You can use shampoos such as Rogaine that help with hair growth
Swelling	• Can be treated with diuretics (water pills) when appropriate as prescribed by your doctor • Weigh yourself daily • Call your transplant coordinator if you gain more than 3 pounds/day or more than 5 pounds/week • **Avoid** salt • Increase physical exercise • Wear compression stockings and elevate feet when you are sitting down
Headaches	• Call your transplant coordinator if you have severe headaches • **Avoid** caffeine, bright light, stress, and loud noises • Try 1 or 2 regular strength Tylenol tablets to relieve a mild headache
Hair Growth	• Hair may be removed by bleaching, trimming, shaving or with hair removal products
High Cholesterol	• Take your cholesterol medicines as directed by your doctor • Exercise regularly • Eat a diet low in fat and cholesterol, and high in fiber
Infection	• Wash your hands often with antibacterial soap • **Avoid** contact with sick people • Use gloves if pet waste must be handled • Clean cuts with soap and water and apply a triple antibiotic ointment and cover
Bone Loss	• Take calcium and vitamin D daily as prescribed • Quit smoking • **Do not** use alcohol • Walk and lift weights to keep bones strong
Tremors	• Call your transplant coordinator if you have new or worsened tremors (shaking in hands): • Stretching exercises may help relieve mild tremors

Top 10 Medicine Tips

1. Take all medicines as prescribed by your transplant team. Use your most up to date medicine list rather than the directions on your pill bottle. Your transplant will not last if you do not take them.
2. Keep a list of your current medicines. **Bring this list, your medicine box or prescription bottles to all hospital and clinic visits.**
3. Do not take ibuprofen, naproxen, or ketoprofen. These NSAIDS can harm your kidneys.
4. Store your medicines in a cool, dry place. They cannot be near any heat source. Keep all medicine out of sight and reach of children and pets.
5. If you miss a dose of a medicine you take once a day, take it as soon as you remember. If you take a medicine twice per day, and if you are more than 6 hours late, skip the missed dose. Take the next dose at your normal time. Do not double up the dose.
6. If you or your local doctor feels that you need a new medicine, check with your transplant coordinator first.
7. Be careful not to run out of medicines. Get refills before your supply gets too low. Make sure you have enough between clinic visits and over weekends, holidays, or vacation.
8. When you get medicines from the pharmacy, make sure the name and dose match what the transplant team told you. If a refill looks different, be sure to tell your pharmacist.
9. If you become pregnant or plan to become pregnant, contact your doctor right away.
10. Your doctor will want to check the way your body responds to your medicine. Be sure to keep all your scheduled check-ups and blood tests.

Important Phone Numbers

Question about:	**Who to Call**
Mail order medicines	UW Mail Order Pharmacy: **(866) UWH-DRUG or (866) 894-3784**
Medicines filled through the UW pharmacy	UW Outpatient Pharmacy: **(608) 263-1280**
Medicines within 24 hours after discharge	Liver/Kidney/Pancreas Hospital Transplant Unit: **(608) 263-8737**

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 2/2025 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing HF#8174.