



Your Care after Catheter Heart Valve Repair



THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER



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For a digital copy of this book, please visit go.osu.edu/pted4369.

Talk to your doctor or health care team if you have any questions about your care.

For more health information, go to wexnermedical.osu.edu/patiented or contact the Library for Health Information at 614-293-3707 or health-info@osu.edu.

Starting Your Recovery

Taking care of yourself after having a heart valve repair means learning how to improve your healing process and lower your chances of problems. This includes:

- Taking care of your incision sites
- Limiting sodium
- Managing stress
- Following any activity limits
- Being active when you are ready

You may also need to take medicines or have other procedures.

Working with your team

Our goal is to help you return to the highest possible quality of life. We will work with you to:

- Learn more about your condition.
- Know what to expect as part of your recovery.
- Understand any barriers to your rehabilitation.
- Identify signs to watch for to prevent problems.
- Inform you about outpatient or community resources for follow up care and more education.
- Answer your questions and help make the transition from the hospital to home easier.

Your health care team may include doctors, nurses, dietitians, physical therapists, exercise physiologists, and others. But the most important member of the team is you. **Be an active partner in your care.** This partnership works best to help you become as independent as possible.

If you have questions or concerns

- **After You Go Home:** If you have any questions or concerns about your care, please call the doctors who provided your care or refer to your **After Visit Summary** for contact information.
- **After Hours:** If you have questions about your care after hours, please call 614-366-0586.
- **Cardiac Rehabilitation Program:** You will be able to start cardiac rehabilitation after your follow up visit, which is about 30 days after your procedure. There is more information about the program later in this book.
- **General Health:** If you have questions about your general health or issues not related to heart disease, please **call your primary care doctor.**

Thank you for choosing Ohio State Wexner Medical Center for your health care.

Care after Your Catheter Procedure

Transcatheter Aortic Valve Replacement (TAVR), Transcatheter Mitral Valve Repair (TMVR) or MitralClip

What to expect

- For up to a week after your procedure, your leg site may be sore, tender and have bruising.
- You may have a small lump at the site for about 2 to 3 weeks. It should not get any larger.
- You may have a small amount of oozing from the site when the scab comes off.

Food and Drink

- You can return to a heart healthy diet or follow the guidelines from your health care team.
- **Drink 6 to 8 cups of water each of the next 2 days** to help flush the contrast medicine or dye from your body after the procedure, unless directed by your doctor to limit fluids.

Leg catheter site care

- You may shower 24 hours after your procedure and remove the bandage over your leg site.
- Gently clean the site each day with soap and water and then pat dry. Do NOT scrub the site.
- **Do NOT soak your leg site in water for 7 days after the procedure or until site is fully healed.** This means no soaking in bath tub, hot tub, swimming pool or other water where your leg site would be under water.
- **Do NOT put lotion, powder or ointment on the site for 7 days or until the site is fully healed.**
- After you remove the bandage, you can cover the site with a band-aid for the next day or two if your clothes rub the site. Otherwise, leave the site uncovered.
- Check the site each day for any change in redness, swelling, bruising and drainage.
- **Call 614-366-0586 if you have any signs of infection at the site:**
 - More redness, swelling, bruising, pain or drainage at the leg site.
 - White or yellow drainage with an odor from the leg site.

Antibiotics before procedures

You will need to take antibiotics before any type of dental procedure (including a cleaning) or any invasive procedure (such as minor surgery, skin biopsy, or joint injections).

- If you have had a MitralClip, you will need antibiotics before procedures until **6 months** after your MitralClip placement.
- If you have had a heart valve replacement, you will always need to do this in the future.

If you are unsure if you will need antibiotics, contact your cardiologist or our office.

Tell your doctor or dentist so antibiotics can be prescribed for you. If this is the first time you are taking them for this reason, your dentist or doctor may ask that our office prescribe them for you. Please contact our office if you have any questions or need assistance getting antibiotics before a planned procedure.

Follow up visit

You will have an appointment for a follow up visit with a nurse practitioner about 30 days after your procedure. Check your **After Visit Summary** for the appointment day and time, which you will get as you prepare to leave the hospital.

Activity limits

- **Do NOT lift, push, or pull more than 10 pounds for 2 weeks.**
- **Avoid movements and activities that may cause strain on the leg site.** This could include straining when having a bowel movement, bending, squatting, yard work or playing sports.
- **Do NOT drive for at least 7 days.**
- You can start walking right away.
- You can do the stretching and conditioning exercises later in the book, as is comfortable. You may have activity limits, based on what procedure you had.

Incentive spirometer

Use an incentive spirometer every day for about 30 days after your procedure. This helps you take deep breaths to open the air sacs in your lungs and lowers your chance of breathing problems. Learn more about this later in this book.

When to call your provider

Contact **614-366-0586** or your primary care provider if you have any of these symptoms, concerns or need to schedule an appointment:

- Nausea and/or vomiting
- Constipation and/or diarrhea
- Tightness or pain in your chest
- Coughing at night
- Dizziness or fainting
- Lack of appetite
- Increased swelling in your legs, feet, ankles or stomach or your shoes or pants feel tight
- Illness or infection, such as a cold or the flu, with fever or chills
- A weight gain of 2 to 3 pounds in 24 hours, or 5 pounds or more in a week.
- More shortness of breath than usual (for example, if you need more pillows to sleep or need to sleep in a chair)
- Very fast heart rate (120 beats or more per minute)
- Very slow heart rate (50 beats or less per minute)
- Any side effects to medicines that cause you to have questions or concerns

Do not wait to ask questions until your next health visit. Call or make an appointment with one of your health care providers if you notice changes to your health for your health and safety.

Call 911 or get emergency care if you have:

- Leg site bleeding that does not stop after applying direct pressure for 30 minutes.
- Chest pain
- Shortness of breath
- Any unusual symptoms including chills, fever, nausea or vomiting.

Overview: What You Can Do

You can have a good quality of life if you actively manage your condition. These lifestyle behaviors will help you to protect your health and help your heart.

Take your cardiac medicines every day.

Take your medicines as directed by your provider. Plan for refills several days before you run out. It can take time to get medicines approved by your provider and filled. Talk to your provider **before** taking any over the counter (OTC) medicines for your safety.



Eat a very low sodium diet, less than 2,000 mg a day.

Read food labels and plan for low salt meals and snacks. Cook at home and use herbs and spices for great tasting meals instead of pre-packaged meals or processed foods.



If you have high blood pressure, check it every day.

Check your blood pressure at the same time each day. Contact your doctor if it stays high. Learn more about high blood pressure and how to check it on page 8.



Begin walking and moving.

It is good to begin walking and moving around right away. There is a basic walking program you can follow on page 22 of this book. You can also do the stretching and conditioning exercises on pages 17 to 21, as is comfortable. You may have some added activity limits from your doctor based on what procedure you had.



Attend cardiac rehabilitation.

You will be able to start cardiac rehabilitation after your follow up visit, which is about 30 days after your procedure. This is a medically-supervised program for heart patients that includes activity, education and support for a heart healthy lifestyle. It is often covered by insurance and there are also payment plan options. Learn more later in this book.



Learn how to save energy when doing your daily activities.

You may need to change how and when you do a task in order to not put unrealistic work demands on your body. The way you do a job is as important as what you do. Learn more later in this book.



Weigh yourself every morning.

Weigh yourself after using the bathroom and before breakfast every morning. Weigh yourself at about the same time, wearing clothing of similar weight to get an accurate measure of weight. Place the scale on a flat, hard surface, such as wood or tile flooring, not carpet.



Find ways to relax and manage stress.

Stress can be bad for your heart. Learn relaxation techniques to reduce and manage stress later in this book. Try different techniques to find what works best for you.



High Blood Pressure

Blood pressure is the force put on artery walls when your heart pumps and relaxes with each heart beat. It is measured with a blood pressure cuff.

High blood pressure is also called hypertension. It is caused by the narrowing of arteries from plaque deposits. The harder it is for your blood to flow through your arteries, the higher your blood pressure is.

Having high blood pressure puts you at risk for heart disease, kidney disease and stroke. Most people have no symptoms, so the only way to know if it is high is to have it checked.



Your blood pressure reading

The top number of your blood pressure reading is called **systolic**. It is the pressure measured in the arteries when the heart pumps out blood to the body. The bottom number is called **diastolic**. It is the pressure measured in the arteries when the heart relaxes and fills up with blood to prepare for the next pump of blood to the body.

- **Normal blood pressure:** systolic less than 120 and diastolic less than 80.
- **Elevated blood pressure:** systolic 120 to 129 and diastolic less than 80.
- **High blood pressure (hypertension) stage 1:** systolic 130 to 139 or diastolic 80 to 89.
- **High blood pressure (hypertension) stage 2:** systolic 140 or higher or diastolic 90 or higher.
- **Hypertensive crisis (consult your doctor right away):** systolic higher than 180 and/or diastolic higher than 120.

Your monitor

- Ask about getting a blood pressure monitor to use at home to check your blood pressure. Your insurance may also have certain devices that are covered by your plan. If you are unsure what to get, you can talk to your pharmacist.
- If you bring your monitor to your 30-day follow up visit, our team can show you how to use it.

Checking your blood pressure

- Take your blood pressure at the same time each day.
- Rest for a few minutes before taking it.
- Place your arm on the table, palm up. Your arm should be at the level of your heart.
- Sit in a comfortable position.
- Push your sleeve up and lay your arm on a table with your palm up. If your clothes are too tight around your arm, take your shirt or blouse off before checking your blood pressure.
- Call your health care provider if your blood pressure stays high.

If you have high blood pressure

In most cases, the cause of high blood pressure is unknown. Although there is no cure for high blood pressure, it can be controlled. Lifestyle changes and medicines can lower blood pressure. Your doctor may try one medicine or a combination of medicines to see what works best for you.

- Follow your doctor's advice and make lifestyle changes.
- Stay on your medicines, even if you feel fine and your blood pressure returns to normal.
- Talk to your doctor if your medicine is giving you side effects. **Do not stop taking the medicine without first talking with your doctor.**

Lowering your blood pressure

- Take your blood pressure medicine as ordered. Continue to take your medicine even if you feel well and your blood pressure is normal.
- Lose weight if you are overweight.
- Limit sodium in your foods and drinks.
- Stop tobacco use and limit alcohol.
- Aim to be active at least 30 minutes a day.
- Practice relaxation daily to reduce stress.



How to Use an Incentive Spirometer

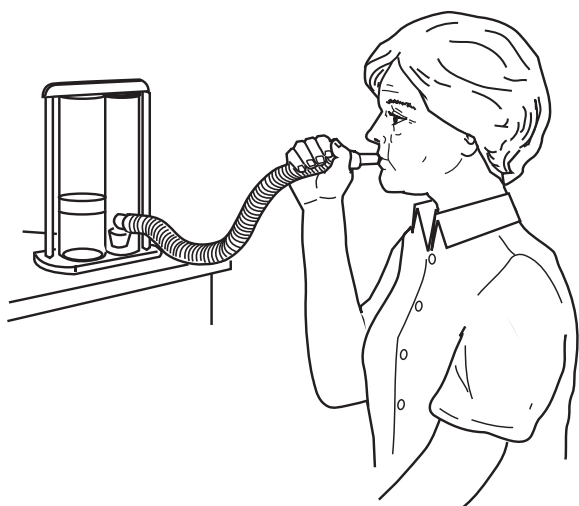
Using the incentive spirometer, also called a breathing exerciser, helps you take deep breaths to open the air sacs in your lungs. This can help reduce the chance of developing breathing problems, such as pneumonia.

Use the incentive spirometer as instructed to help your recovery, usually for 30 days after your procedure.



Steps for use

1. If possible, sit up straight. It may help to sit on the edge of a chair or your bed.
2. Hold the incentive spirometer upright.
3. Breathe out, then close your lips tightly around the mouthpiece and take in a slow deep breath through your mouth.
4. As you take a deep breath, the piston in the clear chamber of the incentive spirometer will rise. It is important to breathe in slowly to allow the air sacs in your lungs time to open. Your incentive spirometer has an indicator to let you know if you are breathing in too fast.
5. After you breathe in as deeply as you can, hold your breath for 3 to 5 seconds. Set the goal indicator tab at the level that you reached.



6. Take out the mouthpiece and breathe out slowly. Relax and breathe normally for a few seconds until the piston returns to the bottom of the chamber.
7. **Repeat these steps for a total of 10 times every 1 to 2 hours or as directed by your doctor.** If you start to feel lightheaded or dizzy, slow down your breathing and give yourself more time between deep breaths.
8. After you do the 10 deep breathing exercises, it is very important to take a deep breath and cough to clear the mucus from your lungs.

If you have had surgery on your chest or stomach, support your incision by holding a pillow or folded blanket firmly against your incision. This will provide support and decrease the pain you may feel when you cough.

Helpful hints

- Take medicine to control your pain. It is harder to take a deep breath if you are having pain.
- Keep the incentive spirometer within reach, so you remember to use it as directed.
- Use your incentive spirometer when you go home to help keep your lungs clear while you recover.

Limiting Sodium or Salt

When your body has too much sodium, fluid in the body builds up. Extra fluid increases the work of your heart and kidneys and can make blood pressure or other chronic health conditions worse. When limiting salt you also need to limit fluids. Fluids and salt in the body need to balance for heart health.

Small changes can reduce overall sodium totals

Choosing carrots with low salt hummus over pretzels saves salt. Even small amounts of salt can be a lot for your body on a low salt diet:

1/4 teaspoon	600 milligrams
1/3 teaspoon	900 milligrams
1/2 teaspoon	1,200 milligrams
3/4 teaspoon	1,800 milligrams
1 teaspoon	2,300 milligrams



Centers for Disease Control and Prevention

Read nutrition labels

This nutrition label shows how quickly salt adds up in your diet:

- This package has 4 servings. Each serving has 430 milligrams (mg) of sodium.
- If you ate the entire package, that is 1,720 mg of sodium.
- To stay with your heart healthy diet, find another product with less sodium in it or cook at home where the amount of salt can be controlled.

1 serving has 430 milligrams of sodium.

Nutrition Facts	
4 servings per container	
Serving size	1 1/2 cup (208g)
Amount per serving	
Calories	240
	% Daily Value*
Total Fat 4g	5%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Sodium 430mg	19%
Total Carbohydrate 2g	1%
Dietary Fiber 7g	25%
Total Sugars 4g	
Includes 2g Added Sugars	4%
Protein 11g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 6mg	35%
Potassium 240mg	6%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet 2000 calories a day is used for general nutrition advice.

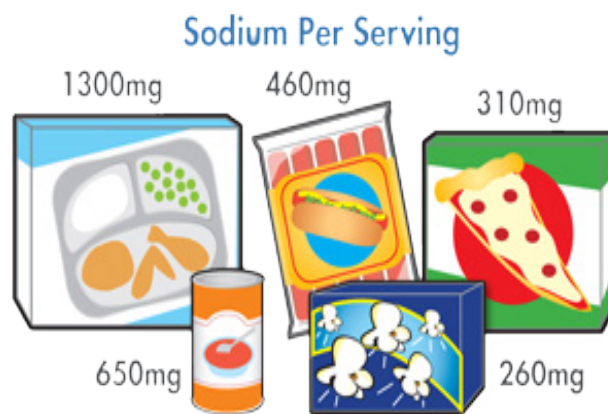
Amounts listed are for only 1 serving (1 1/2 cup).

1 serving (1 1/2 cup) has 19% of the Daily Value of sodium.
- 5% is low
- 20% is high
For this label, 19% is close to high.

What sodium labels mean

Look for these labels when shopping or eating out:

- **Sodium free:** less than 5 mg/serving
- **Very low sodium:** 35 mg or less/serving
- **Low sodium:** 140 mg or less/serving
- **Reduced sodium:** It has 25% less salt than the original product. These products still may have high levels of sodium in them.
- **Light in sodium or lightly salted:** It has at least 50% less sodium than the regular product.
- **Unsalted, no salt added or without salt added:** It is made without added salt, but there may be natural salt or sodium in the product.



Food and Drug Administration (FDA)

Be careful with salt substitutes

Many salt substitutes have high amounts of potassium. Ask your provider if you can use a salt substitute or if you need to be "salt free". Many products called lite salts still have too much sodium for a low sodium diet.

Finding hidden salt

Nutrition labels may have other names for salt. Look for these terms for salt.

- Any term with the word salt or sodium, such as regular table salt, sea salt or kosher salt.
- Natural types of salt, such as Himalayan pink, Celtic or refined salts. They may have a different taste and texture, but are still salt.
- Products with salt in them, such as garlic salt, onion salt or celery salt.
- Meat tenderizers or seasoning salts, including monosodium glutamate or MSG.



More terms for salt on food labels:

- sodium alginate
- sodium ascorbate
- disodium phosphate
- sodium benzoate
- sodium bicarbonate (baking powder or baking soda)
- sodium citrate
- sodium sulfite
- potassium bicarbonate
- potassium citrate
- trisodium phosphate

Eating well on a low sodium diet

Planning meals and portions may take a little time at first, but you can eat most foods and reduce your sodium to heart healthy levels.

Low Sodium Diet Menus

Sodium by meal	1,500 mg sodium menu
Breakfast (488 mg)	1 cup (8 oz) milk--110 mg 4 oz orange juice--2 mg 1 hard boiled or 1 fried egg in (1 tsp. canola/olive oil)--70 mg 2 slices (2 oz) whole grain toast--235 mg 1 teaspoon margarine and jelly--35 mg 1 medium banana--1 mg
Lunch (595 mg)	1 cup (8 oz) water 1 grilled chicken sandwich with 4 ounces grilled chicken, with 1 Tablespoon (Tbsp) of mayonnaise, lettuce and tomato--150 mg 1 whole wheat roll--250 mg 1/2 cup carrot sticks with 2 Tbsp ranch dressing--195 mg 1 medium apple--1 mg
Snack (70 mg)	1 cup (8 oz) water 4 cups unsalted popcorn--60 mg 1 cup fruit cocktail--10 mg
Dinner (270 mg)	1 cup (8 oz) milk--110 mg 5 ounces lean beef--105 mg 1 medium baked potato--5 mg 1 cup steamed broccoli (fresh or frozen) with 2 tsp olive oil, lemon and salt free herbs--40 mg 1/2 cup fresh peaches--10 mg
Snack (105 mg)	1 cup (8 oz) tea--5 mg 1 cup (8 oz) ice cream--100 mg
Sodium total	1,488 mg

Sodium by meal	2,000 mg sodium menu
Breakfast (500 mg)	1 cup (8 oz) coffee/tea--5 mg 1 cup (8 oz) milk--110 mg 1 cup frosted shredded wheat squares cereal--10 mg 1 poached egg--70 mg 2 pieces of whole grain toast--235 mg 2 teaspoon butter and jelly--70 mg 1 medium banana--1 mg
Lunch (701 mg)	12 oz can lemon/lime soda --40 mg 2 slices (2 oz) whole grain bread--235 mg 3 ounces low-sodium turkey plus 1/2 cup avocado--425 mg 1 medium apple--1 mg
Snack (50 mg)	1 cup (8 oz) iced tea, unsweetened with lemon--6 mg 8 unsalted crackers--40 mg 1 stick low sodium mozzarella cheese--4 mg
Dinner (583 mg)	1 cup (8 oz) water 1 cup low sodium condensed tomato soup, plus 1 cup low fat milk--170 mg 5 oz pork chop with 2 tsp olive oil and salt-free herbs--235 mg 1 cup mashed potatoes, dehydrated with milk--164 mg 1/2 cup steamed corn and 1/2 cup steamed green beans (fresh or frozen) salt free herbs--7 mg 1/2 cup fresh peaches--7 mg
Snack (145 mg)	1 cup (8 oz) water 1 apple--2 mg 2 Tbsp caramel--143 mg
Sodium total	1,979 mg

10 Ways to Lower Salt in Your Diet

How to make a low salt diet work for YOU

- 1. Limit processed foods.** Most processed foods, such as chips, cookies, canned soups, tomato sauces, lunch meat and frozen meals have a lot of added salt and sugar. Choose fresh fruits and vegetables, low-sodium whole grains and low-sodium cheeses as snacks.
- 2. Plan for salt across your daily meals and snacks.** Plan for 3 meals and 2 snacks a day. Start with a low-salt commercial cereal or no-salt cooked cereal at breakfast. Choose low salt bread or crackers at lunch. Instead of processed meat, cook your own meat at home and use it for a sandwich. Add lettuce and tomato for flavor, instead of condiments. Use herbs and grilled vegetables with chicken for dinner.
- 3. Read nutrition labels to guide your food choices.** Choose sodium free, very low sodium or low sodium products. Make healthy choices when food shopping, such as:
 - Cheese with less than 80 mg sodium per ounce.
 - Breads with less than 100 mg sodium per slice.
 - Soups with less than 100 mg sodium per ounce.
- 4. Buy fresh or frozen foods instead of canned.** Choose fresh foods when you can or go for frozen without any added sauces. If using canned foods, drain and rinse foods to reduce salt. Rinsing beans, tuna and canned vegetables before using them does remove some, but not all of the salt. **Avoid canned, smoked or processed meats, such as bacon, sausage, pre-packaged lunch meat or products where salt or saline is added.**
- 5. Eat more fruits and vegetables.** Add them to salads, main dishes, side dishes or eat them plain. Fruits and vegetables help your body to remove water and avoid fluid build-up. They are also low calorie and naturally low in salt.



6. Learn to enjoy the natural taste of food. Many foods are so processed that we have to learn to get used to foods with less salt. It is about changing both how food is prepared and change our taste to enjoy food with spices other than salt. Try to cook meat at home and add unsalted nuts or seeds, lentils, unsalted or low-sodium broth, and herbs or spices. Use the cooking process, such as grilling, poaching and baking, to add taste and flavor. Taste food as you cook to know what each food item adds to a dish.

7. Ask restaurants for low salt substitutions. Ask wait staff or the chef how food is prepared. Choose foods made to order or low-salt preparations. Have sauce or dressings on the side where you control the amount used. Choose grilled, broiled, baked, boiled or steamed foods instead of fried. Avoid casseroles where there may be hidden salt, based on the ingredients used.

8. Create low sodium condiments. Make your own low salt salad dressing, dip, gravy or sauce. Most commercial or packaged products are high in sodium. If you choose the low salt or no salt options, you may be able to have more. Otherwise, limit these ingredients:

- Salted butter or margarine, 4 Tablespoons a day
- Mayonnaise, 2 Tablespoons a day
- Sour cream, 2 ounces (1/4 cup) a day
- Ketchup or mustard, 1 Tablespoon a day
- Regular salad dressing, 2 teaspoons a day
- Canned tomato paste, 1/4 cup a day
- Regular tomato sauce, 1/2 cup a day

9. Choose low salt or salt-free beverages. Save salt for the food you eat. Water, coffee, tea, carbonated seltzer water and fruit juices have very low or no salt in them. Limit milk to 2 cups of low fat milk a day. Avoid energy and sport drinks, commercially made milkshakes and instant cocoa that have added salt.

10. Check over the counter and non-prescription drugs and supplements for salt. Many antacids, laxatives, aspirin, and cough medicines have salt or sodium. Many mouthwashes also have sodium. Ask your doctor or pharmacist for help before you buy these products and check product labels.



Online resources

Check out these links for tips and nutrition calculators:

US Department of Agriculture
www.choosemyplate.gov

American Heart Association
www.heart.org (nutrition center)

Academy of Nutrition/Dietetics
www.eatright.org

American Association of
Heart Failure Nurses Patient
Education
www.aahfn.org/mpage/patient_tip_sheet

MyFitnessPal
www.myfitnesspal.com

Seasoning Food without Salt

Focus on good seasoning choices, such as fruits, vegetables and herbs, for great tasting meals. Avoid most salt substitutes, unless it is Mrs. Dash or approved by your provider. Avoid most lite salts as they have too much sodium for a very low sodium diet. Many salt substitutes have potassium chloride instead of sodium, and this can cause medical problems.

Choose these products

All fresh or frozen fruits and vegetables without added sauces, such as apple, cherry, banana, peach, berries, green pepper, mushrooms, or onion. Fruit/vegetable juice must be low sodium.	
Allspice	Lemon/limes, juice or lime zest
Basil	Low salt ketchup (limit 1 - 2 Tbsp)
Bay leaves	Marjoram
Cayenne pepper or red pepper flakes	Mint or mint jelly
Celery pepper	Mustard, limit 1 tsp
Chili powder	Nutmeg
Cinnamon	Onion powder
Cloves	Oregano
Cocoa powder	Paprika
Cumin	Parsley
Curry	Pepper--white, black, lemon pepper
Dill	Rosemary
Dry mustard	Sage
Flavored extracts: vanilla, almond, mint, hazelnut	Seasoning blends without salt, such as Mrs. Dash
Garlic	Thyme
Ginger	Tomato sauce or paste (low sodium or no salt)
Horseradish	Unsweetened applesauce

Avoid/limit these products

Alfredo mixes	Pickle relish
Barbecue mixes	Plum sauce
Bouillon cubes or canned broth	Pickling (packaged) mix
Baking soda and baking powder	Poultry seasoning
Celery salt	Regular ketchup
Cooking wine or cooking sherry	Salt--sea salt, salt sense, most salt substitutes, lite salt or other seasonings that have salt
Dry meat marinades or mix	Soy sauce
Dressing (salad) mixes or packets	Steak sauce
Dry instant soup mixes	Stir fry sauces
Fish sauce	Stock (canned beef, chicken or vegetable)
Garlic salt	Taco seasonings or taco sauce
Gravy mixes	Tomato sauce (regular)
Kosher salt	Teriyaki sauce
Meat tenderizer	Vegetable juices
Monosodium glutamate (MSG)	Worcestershire sauce
Onion salt	

Stretching Exercises

You can begin doing stretches after your procedure. You may have some activity limits based on what procedure you had. Your healthcare team will let you know if you should not do some of these.

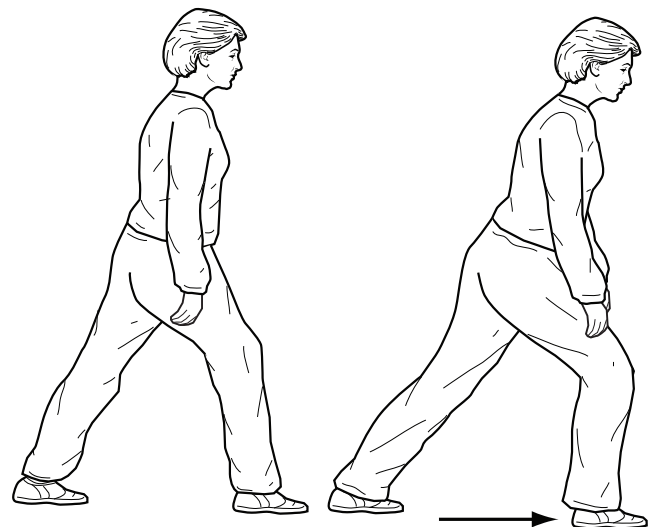
For these stretches:

- Stretch warm muscles only. Walk around the room, step side to side, ride a bike or walk on a treadmill for at least 5 minutes to warm up before doing these stretches.
- Hold each stretch for 30 to 60 seconds. Do NOT bounce.
- You should feel the stretch in the muscle, not the joint.

Lower body stretches

Calf muscle stretch:

1. Move your left foot back and keep your leg straight.
2. Move your right foot forward with the knee bent. Keep the knee in line with your ankle.
3. Press the heel of your left foot into the floor.
4. You should feel a stretch up the back of your left lower leg, from your heel up to the back of your knee.
5. Repeat with the right leg back and the left leg forward.



Hamstring stretch:

1. Sit in a chair or on the edge of the chair.
2. Bring your left foot forward, placing the heel down and your toes raised to the ceiling. The knee should be slightly bent.
3. Lean forward and feel the stretch in the back of your upper leg.
4. Bring your right foot forward and repeat.



Quadriceps stretch:

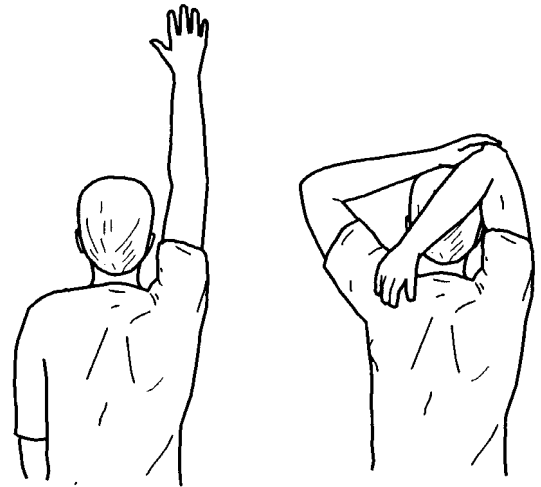
1. Sit in a chair.
2. Bring your foot back under the chair, so the top of your foot is on the floor.
3. Keep your lower back straight and lean back.
4. Feel the stretch in the front of your upper leg.
5. Repeat with your other leg.



Upper body stretches

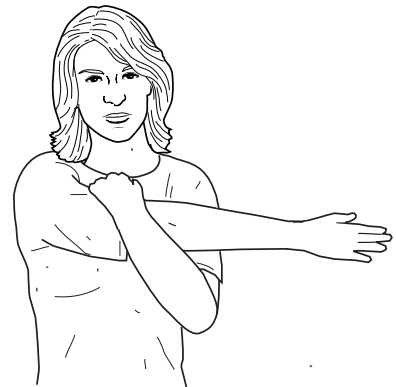
Side and triceps stretches:

1. Raise one arm into the air and reach for the ceiling. Feel the stretch through your side.
2. Bring the hand down behind your head reaching across towards the opposite shoulder blade.
3. Reach up with your other hand and gently pull your elbow towards your back. If you cannot reach to pull your elbow back from behind your head, gently push your elbow back from the front of your arm.
4. Feel the stretch in the back of your upper arm.
5. Repeat with the other arm.



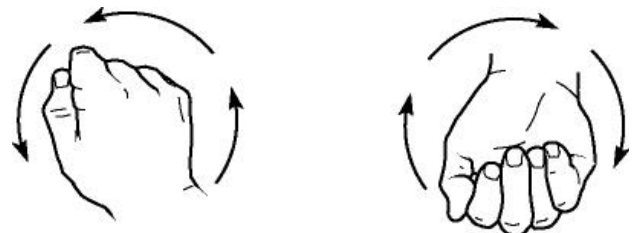
Stretch for the back of your shoulders:

1. Sit or stand and bring one arm across your body at shoulder height.
2. Place your other hand on your elbow or upper arm and pull it close to your chest.
3. Feel the stretch in the back of your shoulder.
4. Repeat with the other arm.



Wrist circles:

1. Hold your arms in front of you at shoulder height.
2. Move your wrists to the right and to the left in circles.



Neck stretches:

1. Sit facing forward. Relax your arms at your sides.
2. Press your chin into your chest. You should feel a stretch up the back of your neck. Return to looking straight ahead.



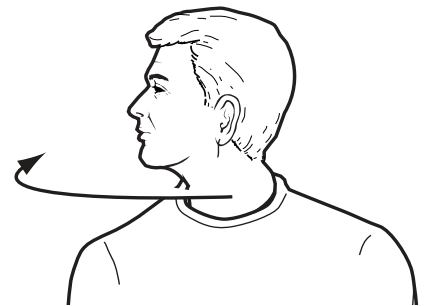
3. Press your right ear to your right shoulder. Do not raise your shoulder to your ear. Feel the stretch in the side of your neck. Return to looking straight ahead.



4. Press your left ear to your left shoulder. Do not raise your shoulder to your ear. Feel the stretch in the side of your neck. Return to looking straight ahead.



5. Turn your head to the right as far as you can and feel the stretch. Return to looking straight ahead.



6. Turn your head to the left as far as you can and feel the stretch. Return to looking straight ahead.

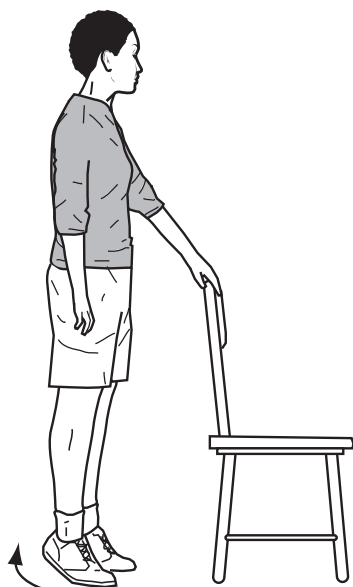


Conditioning Exercises: Standing

You can begin doing these exercises after your procedure. You may have some activity limits based on what procedure you have had. Your healthcare team will let you know if you should not do some of these.

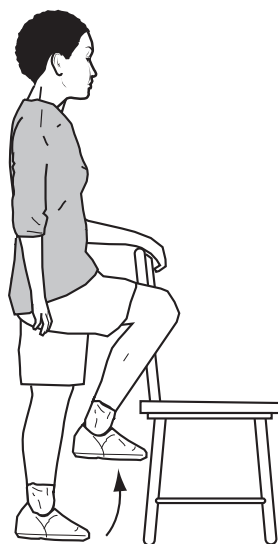
- Do all these exercises slowly.
- Do not hold your breath during these exercises.
- If unusual pain occurs in your joints or muscles while you are exercising, do not continue the exercise.
- Do only the exercises checked (✓) below.

Repeat each exercise _____ times, _____ times a day



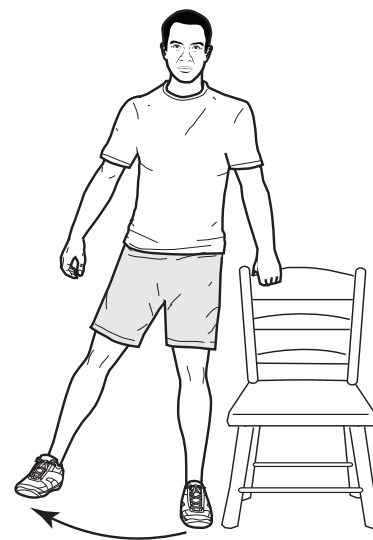
Heel Raises

- Stand with your hands on your hips and your feet slightly apart.
- Rise up on your toes and return to your heels.



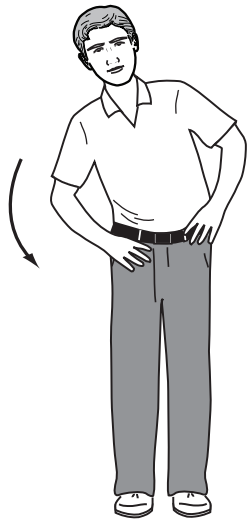
Hip / Knee Flexion

- Stand with your feet slightly apart.
- Lift your right knee up to waist level.
- Return your foot to the floor.
- Repeat with your left leg.



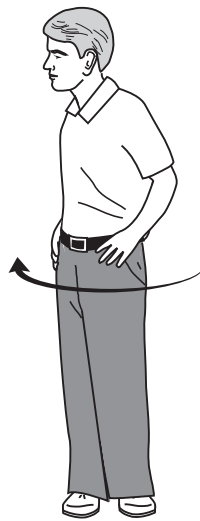
Hip Abduction

- Hold onto a chair for balance.
- Move your leg out to the side then return to the starting position.
- Repeat with your other leg.



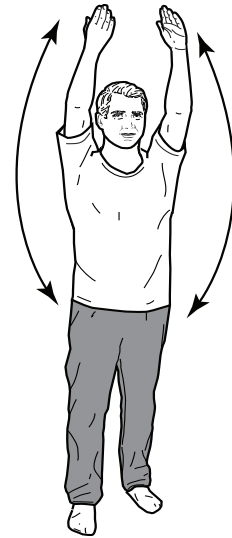
☐ Trunk Lateral Flexion

- Stand with your hands on your hips and your feet slightly apart.
- Bend to the right and then return to an upright position.
- Bend to the left and then return upright.



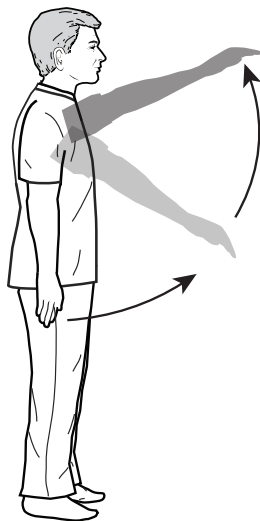
☐ Trunk Rotations

- Stand with your hands on your hips, feet slightly apart.
- Turn your upper body and head toward the right and then turn over to the left.



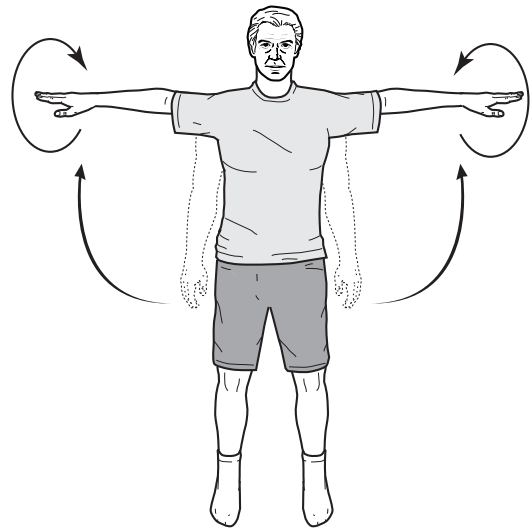
☐ Shoulder Abduction

- Stand with your feet slightly apart and your arms at your sides.
- Move your arms out from your side and up over your head.
- Return your arms to your sides.



☐ Shoulder Flexion

- Stand with your feet slightly apart and your arms at your sides.
- Raise your arms over your head in front of you as far as you can.
- Lower your arms to your sides.



☐ Shoulder Circles

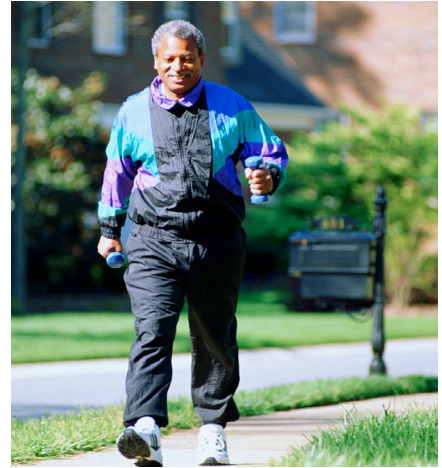
- Stand with your feet slightly apart.
- Raise your arms out to the side at shoulder level.
- Make arm circles forward and then backward.

Eight-Week Walking Program

You can begin walking right after your procedure.

Talk to your doctor about how much exercise is right for you before starting any exercise program. If you have been inactive, this program can help improve your fitness.

Consider investing in comfortable walking shoes to prevent injury. Walk most days of the week and over time walk longer or faster.



About the program

This program starts slowly to rebuild your strength and stamina. You will walk short distances and then rest. This is called interval training. Your speed or pace when walking will slowly increase over time.

Walk at a pace that does not leave you out of breath. Only move to the next level if you feel you can. It is okay to repeat a week if the effort needed is moderately difficult for you to achieve. The goal is to increase activity safely for your body.

Week #	Walking interval	Rest interval	Repeat the intervals	Total activity time (minutes)
1	2 minutes	1 minute	5 times	10
2	4 minutes	2 minutes	4 times	16
3	5 minutes	2 minutes	4 times	20
4	7 minutes	2 minutes	3 times	21
5	5 minutes	2 minutes	5 times	25
6	10 minutes	2 minutes	3 times	30
7	15 minutes	2 minutes	2 times	30
8	20 minutes	2 minutes	2 times	40

If you have chest pain, nausea or light-headedness during exercise, stop exercising and seek medical help.

Saving Energy and Making Work Simple

You may need to change how and when you do a task in order to balance demands on your body. The way you do a job is as important as what you do.



General tips

- Decide if any tasks can be assigned to someone else to save energy.
- Sit when doing a task. Standing takes more energy.
- Do work with your arms instead of your legs. Working with your legs takes more energy.
- Wait 30 minutes after eating before doing a task. Work done after a meal causes more demand for oxygen to your heart.
- Avoid doing activities in temperatures above 80 degrees F with humidity and below 20 degrees F. Extremes of heat and cold have a dangerous effect on the heart.

Pace yourself to save energy

- Get at least 6 to 8 hours of sleep each night.
- Rest for 20 to 30 minutes at least twice a day. If you get tired, stop and rest for 15 minutes whether you have finished the task or not.
- Alternate easy tasks with hard tasks or spread a task out over the day.
- Ask for help if the demands on your energy are too much. Hire help as needed.

Use labor-saving methods and devices

- Sit to work when you are able, like at a table to make food, shave, or apply makeup.
- Organize work areas and keep items where you use them. Store things used often at chest height to avoid stretching.
- Get rid of unneeded work, such as wearing clothes that do not need to be ironed.
- Use an electric can opener, mixer, clothes dryer, sander, riding mower, electric saw, and dishwasher. Use cruise control when driving.
- Use wheels to move things, such as a garbage can on wheels, or using a cart for cleaning supplies or to move laundry.
- Use proper body mechanics. Slide rather than lift things. Do not lean forward without supporting yourself. Instead rest your elbows on counter tops. Bend at the knees to lift.
- Use aids for bathing dressing, such as wearing slip on shoes or using a long-handled shoe horn and sock aid. Use a shower bench to sit and an elevated toilet seat.

Medicines for Heart Disease

There are different medicines you may need to take after having your procedure. Ask your doctor, nurse, or pharmacist if you have questions about your medicines.



General tips

- Take medicines as directed.
- **Do NOT stop taking your medicines because you feel better or because you have no more refills on the prescription.** Check with your doctor before you stop taking any medicine. Many heart medicines will need to be taken long term.
- Tell your doctor or nurse if you are taking any over the counter medicines or herbal supplements. They may interact with medicines.
- Talk with your doctor or nurse if you have side effects from your medicines. Side effects are an unwanted effect of a drug.

Anti-platelets

These medicines prevent platelets in the blood from clumping or clotting. These medicines are often used after a heart attack or stroke, or after stent procedures to prevent platelets from blocking the stent.

Do not stop taking this medicine without talking to the doctor who ordered it.

Stopping your anti-platelet medicine puts you at risk for forming clots or for the stent to get blocked.

Side effects may include: allergic reaction, black, bloody or tarry stools, nausea, vomiting, abdominal pain, skin bruising, dizziness, confusion, hallucinations, loss of hearing, or ringing in ears.

Medicine names:

- aspirin (Bayer, Bufferin, Ecotrin, St. Joseph's or other generic brands)
- clopidogrel (Plavix)
- prasugrel (Effient)
- ticagrelor (Brilinta)

Beta blockers

Beta blockers improve the heart's ability to relax and block the effect of other hormones in the body (adrenaline/norepinephrine). They slow the heart rate and help control blood pressure. These medicines are used to treat high blood pressure, heart failure, angina (chest pain), and may be used after heart attack.

Side effects may include: dizziness, slow heart rate, fatigue, shortness of breath when first starting medicine, and sexual dysfunction.

Medicine names:

- carvedilol (Coreg)
- atenolol (Tenormin)
- metoprolol (Toprol-XL, Lopressor)
- propranolol (Inderal)
- bisoprolol (Zebeta)
- Other _____

Angiotensin-converting enzyme (ACE) inhibitors

ACE inhibitors widen the blood vessels and help increase blood flow by blocking the production of a hormone in your body that tightens blood vessels. They help lower blood pressure, lessen the amount of work the heart needs to do, and protect the kidneys. These medicines are used to treat high blood pressure, heart failure, and may be used after heart attack.

Side effects may include: dizziness, weakness, cough, and decreased ability to taste. **If you have swelling throughout face, tongue, or lips, stop taking the medicine right away and call your doctor.**

Medicine names:

- benazepril (Lotensin)
- captopril (Capoten)
- enalapril (Vasotec)
- lisinopril (Prinivil, Zestril)
- ramipril (Altace)
- other _____

Angiotensin II receptor blockers (ARB)

ARBs widen the blood vessels and help increase blood flow when a person cannot take an ACE inhibitor. They work like ACE inhibitors by blocking a hormone in your body. These medicines are used to treat high blood pressure, heart failure, and may be used after heart attack.

Side effects may include: dizziness and weakness. **If you have swelling throughout face, tongue, or lips, stop taking the medicine right away and call your doctor.**

Medicine names:

- candesartan (Atacand)
- losartan (Cozaar)
- valsartan (Diovan)
- other _____

Statins (HMG-CoA Reductase inhibitors)

Statins block the production of cholesterol in the liver. This lowers total cholesterol and bad LDL cholesterol levels, but raises good HDL cholesterol levels. High levels of bad cholesterol in the body increase the risk of heart disease.

Your cholesterol levels should be checked with blood tests 1 to 2 times each year.

Side effects may include: muscle weakness or pain, elevated liver enzymes, and upset stomach.

Your doctor will check your liver function with a blood test before starting a statin. You should also have liver function testing done if you have signs of liver problems while taking a statin, such as feeling very weak or tired, loss of appetite, upper belly pain, dark urine, yellowing of your skin, or the whites of your eyes.

Medicine names:

- atorvastatin (Lipitor)
- lovastatin (Mevacor)
- pravastatin (Pravachol)
- rosuvastatin (Crestor)
- simvastatin (Zocor)
- other _____

Aldosterone inhibitors

Aldosterone inhibitors are weak diuretics or water pills. These medicines hold on to potassium while getting rid of extra sodium (salt) and fluid in the body by blocking a hormone called aldosterone. This medicine may be given to you after a heart attack or to prevent your heart failure from getting worse.

Side effects may include: high potassium, fatigue, or enlargement or breast tenderness of one or both breasts in men may be seen with spironolactone only.

Medicine names:

- eplereonone (Inspra)
- spironolactone (Aldactone)

Nitrates

These medicines help relax the blood vessels, so blood flows more easily through the body. They open the coronary blood vessels, so more oxygen is supplied to the heart. These medicines are used to treat angina (chest pain) and may be used for heart failure.

Side effects may include: headache, dizziness, light-headedness, flushing of face, or neck, and skin rash.

Medicine names:

Nitroglycerin, also called nitro, may be given to patients who have chest discomfort (angina) due to coronary artery disease (CAD). The blood vessels widen to allow for better blood flow to the heart.

- Sublingual nitro tablets or spray
 - You may feel tingling or a headache when you take nitro.
 - Keep your nitro tablets or spray with you at all times.
 - Keep nitro bottle out of moist areas, such as the bathroom.
 - Check the expiration date and be sure to throw the medicine away after the expiration date. Keep refills up to date.

Use sublingual nitro tablets or spray if you have chest pain:

1. Sit down and rest before using nitroglycerin.
2. If you have nitroglycerin tablets, put one tablet under your tongue and let it dissolve. **Do not swallow the tablet.** If you use nitroglycerin spray, spray it into your mouth towards the back of your throat.
3. Rest and wait 5 minutes. Take a second tablet under your tongue if you still have chest discomfort or pain or use the spray.

At any time if your chest discomfort or pain does not improve or is getting worse even with nitroglycerin, call 911 and seek emergency treatment. Do not drive yourself to the hospital because you may be having a heart attack.

4. Rest and wait another 5 minutes. Take a third tablet under your tongue or use your spray if the chest discomfort or pain has not gone away.
5. If you have taken 3 tablets or sprays and your chest discomfort or pain is still present after 15 minutes, **call 911 and seek emergency treatment.**

There are other nitrate medicines that are used to decrease chest pain, but **should NOT be used for a sudden attack.** These medicines include:

- Nitroglycerin patch (Nitro-dur, Minitrin, Transderm-nitro) – place on non-hairy skin and rotate sites.
- Isosorbide dinitrate (Isordil) - short acting
- Isosorbide mononitrate (Imdur) - long acting

Diuretics

Diuretics, or water pills, remove excess sodium (salt) and water from your body by increasing the flow of urine. Your heart can work better, and you may breath easier when the extra fluid is removed from your body. These medicines are used to treat high blood pressure, heart failure, and fluid build up in lungs, feet, or hands.

Side effects may include: dizziness, weakness, muscle cramps, dry mouth, and increased thirst.

Medicine names:

- bumetanide (Bumex)
- hydrochlorothiazide (HCTZ)
- furosemide (Lasix)
- metolazone (Zaroxolyn)
- torsemide (Demadex)
- other _____

Calcium channel blockers

This type of medicine lowers blood pressure by either slowing the heart rate or widening the blood vessels that lowers blood pressure and lessens the amount of work the heart needs to do. These medicines are used to treat high blood pressure, angina (chest pain), and slow the heart rate.

Side effects may include: dizziness, lightheadedness, shortness of breath, slow heart rate, and constipation.

Medicine names:

- amlodipine (Norvasc)
- diltiazem (Cardizem, Dilacor, Tiazac)
- verapamil (Calan, Isoptin, Covera)
- other _____

Other medicines

Amiodarone (Cordarone)

Slows the heart rate to allow the heart's electrical system to beat normally. Used to treat irregular heart rhythms, such as atrial fibrillation or ventricular tachycardia.

Side effects may include: slow heart rate, palpitations, fatigue, headache, dizziness, nausea, vomiting, unusual taste in the mouth, stomach pain, constipation or diarrhea, difficulty breathing, rash, and vision problems.

Digoxin (Lanoxin)

Digoxin can strengthen the heart muscle, so it pumps better. It also helps control the rate of your heart. It is used to treat heart failure and atrial fibrillation.

Digoxin may build up in your body, causing the amount of the drug in your blood to be higher than normal. Your doctor may order a blood test to check your level.

Side effects may include: loss of appetite, nausea and vomiting, diarrhea, frequent headaches, changes in vision, and skipped or slow heart beats.



Over the counter medicines for other problems

Check with your doctor or pharmacist before starting any new medicines, whether prescription or over the counter. There are some over the counter medicines that may cause side effects that can impact your heart condition.

Acetaminophen (Tylenol)

Used for pain, fever, colds, muscle soreness, headache, arthritis, back aches, and toothaches.

Avoid alcohol when taking acetaminophen because it may cause liver damage.

Side effects may include: allergic reaction, unusual bleeding or bruising, liver damage, fatigue, nausea, vomiting, and abdominal pain.

Patients with a history of heart failure, heart attack, stroke, or stent in their heart should avoid use of ibuprofen or naproxen sodium because it may increase the risk of another heart attack or stroke.

Lifestyle Issues

Taking care of yourself means more than watching your diet, being active and limiting sodium. Caring for yourself also means checking your emotional and relational health.

Coping with a life change

You may need to change how you shop for food, how food is prepared and how your family eats. There may be changes with your job, and your ability to earn a living if your condition gets worse. Feeling anxious or stressed about these changes is normal. You are not alone.

- **Talk with someone** about your feelings, such as a counselor, spiritual leader or trusted family member or friend.
- **Join a support group**, online or in person, to learn how others have coped with a diagnosis of heart failure.
- **Talk with a social worker or contact social services** to see if there are resources to help in your community.
- **Ask for help** with everyday tasks or for changes in job tasks at work. When help is offered, be specific about your needs, such as help with running errands.
- **Practice meditation or relaxation, pray or write down your feelings** in a book to be aware of what you are thinking and feeling.
- **Focus on enjoyable activities**, such as hobbies, volunteering or exercise.
- **Treat yourself** to a gift of flowers, magazines, or something that makes you happy or brings happiness to others.
- **If you have signs of depression**, feel helpless or think of suicide, seek treatment and get help to feel better.



Relationships and sexual activity

When your doctor or health care provider has said it is okay to resume sexual activity, here are tips for safe sexual intimacy:

- If you can climb 2 flights of stairs or walk 1/2 mile at a brisk pace, you have the energy needed for sex.
- Find a position that uses less energy and use foreplay to allow your heart rate to build slowly.
- If you have **shortness of breath**, stop for a few minutes and then continue if it goes away. If it does not, call your doctor.
- If you have **chest pain**, stop and take nitroglycerine if it has been ordered by your doctor. Take 1 tablet and wait 5 minutes. If you still have pain take another tablet and wait 5 minutes. **If the pain does not go away, call 911.**
- If you are too tired for sex or have a low sex drive, try other forms of intimacy. Talk with your doctor about your concerns.
- **Do not take medicines for erectile dysfunction without first talking with your doctor.**

Relaxation Techniques

Learn relaxation techniques to reduce stress and anxiety. Try different techniques to find what works best for you. Practice your techniques often and your ability to relax will improve over time.

Listening to music

Listen to your favorite music by itself or play music while using another relaxation technique. Look for new music, which you find soothing and helps you feel calm and relaxed, such as classical music or nature sounds. Try also guided meditation music.

Breathing exercises

1. Find a quiet room.
2. Turn on music that you find relaxing.
3. Get into a relaxing position.
4. Close your eyes and think of an image in your mind that will help you to relax, such as a calm, peaceful setting or a place you have enjoyed visiting.
5. Breathe in deeply. Hold your breath and tense your muscles. Keep them tense for a second or two.
6. Relax your muscles as you breathe out.
7. Starting with the muscles in your lower legs, work your way up your body to your head, tightening and relaxing each muscle group.

Guided imagery

Close your eyes and think of a time and place when you felt safe and comfortable. Imagine those surroundings, sights, smells, and sounds. Bring as much of that experience back to the here and now as possible. When you feel ready, take a deep breath and open your eyes.



Aromatherapy

Aromatherapy is the use of essential oils from plants as therapy to improve your well-being. Some oils, such as lavender, are thought to produce a calming effect. They can be inhaled or diluted and used on skin. Dodd Hall has aromatherapy machines, so let staff know if you are interested in trying it.

Positive thinking

Thinking negative thoughts can cause stress and muscle tension. Create some positive statements to replace negative self-talk. Repeat these statements to yourself and use them to motivate you. Some examples:

- I am doing the best that I can.
- I care for my well-being.
- I will try again.

Relaxation resources

- **Guided Imagery Exercises**
go.osu.edu/guidedimagerypractices
- **Mindfulness**
go.osu.edu/mindfulness
- **Heart Centered Practices**
go.osu.edu/heartpractices
- **Relaxation Response**
go.osu.edu/relaxationresponse

Cardiac Rehabilitation Program

Our goal is to help you return to the highest possible quality of life. Cardiac rehabilitation works to address activity and lifestyle after you leave the hospital. It is offered in several phases.

Phase 1 (inpatient)

We provide education during your hospital stay and work with you on skills to keep you active when going home. Before you leave the hospital, we will also provide a referral for a local cardiac rehab program.

Phase 2 (outpatient)

After leaving the hospital, you will have a visit to check your heart health with a cardiac rehab nurse and exercise physiologist. After this evaluation, which may include testing, you will start a personalized wellness program. These are some of the skills covered:

- Learn more about your condition and know how to best manage your condition at home.
- Improve your heart and cardiovascular function.
- Improve your fitness level.
- Reduce the chance of future health problems by working to improve diet, weight, activity level, diabetes and/or cholesterol, stop tobacco use and manage stress.
- Ability to do daily activities without symptoms.
- Reduce fear or anxiety about your heart condition.
- Have a faster return to work and/or normal activities.

Phase 3 (maintenance)

This is an ongoing fitness and wellness program that continues at the end of Phase 2 cardiac rehab. The program will support you as you work toward your health, fitness and lifestyle goals.

If you would like to attend the program, you can ask for a referral from your doctor.

Cardiac rehabilitation is offered at two locations:

Ohio State Outpatient Care Upper Arlington
1800 Zollinger Road, 2nd Floor
Columbus, OH 43221
Phone: 614-293-6937

Ohio State Outpatient Care East (Phase 2)
543 Taylor Ave, Room 3068
Columbus, OH 43203
Phone: 614-688-6306

Resources

Heart Healthy Recipes

American Dietetic Association

www.eatright.org

American Heart Association, www.heart.org

Select “Healthy Living” from the menu bar

Cooking Light, www.cookinglight.com

EatingWell, www.eatingwell.com

Weight Loss/ Management

Ohio State’s Comprehensive Weight Management, Metabolic and Bariatric Surgery

Programs designed to meet your needs for weight loss or management.

wexnermedical.osu.edu/weight-management

Support and mental health

Call Social Work at 614-293-8427

A social worker will answer questions about insurance, finances, support groups and getting to clinic appointments. The social worker also will help you contact agencies near you.

Ohio State’s Couple and Family Therapy

Clinic can help you adjust to lifestyle changes, manage stress and connect with resources of support. For more information, call 614-247-7883.

Organizations

American Heart Association

www.americanheart.org / 1-800-AHA-USA1

Central Ohio Office: (614) 848-6676

5455 North High St, Columbus, Ohio 43214

Information about heart disease, care, and how to prevent disease. There are links to podcasts, online videos, and articles.

WomenHeart

www.womenheart.org

This Web site is organized by women who have survived heart disease. Medical experts provide disease care and prevention information. There are links to online chat and survivor stories.

National Heart, Lung, and Blood Institute

www.nhlbi.nih.gov

The U.S. National Institutes of Health sponsors this web site, which has trustworthy and up-to-date information about the disease, treatment, and prevention.

Community resources

Look for resources in your community to help you during your recovery:

- Local cardiac rehabilitation programs
- Your local doctor
- YMCA
- Local hospital community health education programs
- Local American Heart Association
- School adult education programs
- Mental health clinics
- Churches and synagogues
- Local department of health
- Home health nursing

LSS (Lutheran Social Services) 211 Central Ohio

<https://lssnetworkofhope.org/211centralohio/>
or call 2-1-1

Reach thousands of social service, government, and community resources in Franklin County to address any problem you may be facing or to be connected to volunteer opportunities.



THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

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