What is Aortic Stenosis?

The aortic valve is one of four valves in your heart. These valves make sure blood flows through your heart in the right direction. When blood leaves the heart, it flows through the aortic valve.

Stenosis means a narrowing of the aortic valve opening. Aortic stenosis mostly happens as people age. Over time, the valve stiffens and can’t open enough to let blood through. This may cause you to feel short of breath, to have chest pain, or to feel faint or very tired.
Treatment Options for Aortic Stenosis

**Medication**

There are no medications to treat aortic stenosis, but there are medications that can be used to manage symptoms.

**Surgical Aortic Valve Replacement**

Until recently, the usual treatment for aortic stenosis has been open heart surgery. Open heart means your chest and the heart itself are opened so the surgeon can operate directly on the heart. The surgeon removes the diseased valve and replaces it with a new valve. While this surgery is being done, your blood is circulated outside the body through a special machine called a heart-lung bypass machine. This procedure is called aortic valve replacement.

*Surgical aortic valve replacement is the best option for most people.*

A surgical aortic valve replacement may not be the best option if:

- You’re older and have other diseases such as kidney or lung disease.
- You have had one or more open heart surgeries in the past.
- You’re not well enough for major surgery such as this.
- You have had radiation to your chest.

**Transcatheter Aortic Valve Replacement (TAVR)**

Transcatheter aortic valve replacement (TAVR) means we use a catheter (a small, flexible, hollow tube) to place a new aortic valve in your heart. We do this by making a small opening in an artery, then threading the catheter and the new valve into position (replacing the valve). Unlike open heart surgery, there is no need to open your chest for this procedure, but it’s still considered surgery because you go to the operating room and are given medication to sleep through the procedure (called an anesthetic).

**Heart Tests to Expect with TAVR**

We will ask you to have a number of heart tests to help us decide whether TAVR is the best option for you. You may have already had some of these tests done in the past. However, we do them again because the focus of the test is time-specific to TAVR.

- **Echocardiogram:** An echocardiogram is an ultrasound of the heart. “Echo” means using sound waves, “cardio” means heart, and “gram” means a printout. This test allows us to look at your heart muscle, the valves of the heart, the blood vessels of the heart, and how blood flows through the heart. While you’re lying on a bed, we slide an ultrasound probe (special camera) across the outside of your chest with the help of clear gel. This test takes 30-60 minutes to complete.

- **Cardiac Angiogram:** A cardiac angiogram (also called a “cardiac cath”) is a test to check the blood vessels around your heart and the blood pressure inside your heart. “Cardiac” means heart, “angio” means blood vessels, and “gram” means a printout. A cardiologist inserts a long flexible catheter into an artery in your groin or wrist through a small needle. Contrast dye (also called X-ray dye) is injected through the catheter so we can see your blood vessels better. This test takes about one hour, but you will need to stay in the hospital for about four to six hours after the test.

- **Computed Tomography:** Computed tomography (also called a CT scan or CAT scan) is a special X-ray that takes many pictures of your heart and blood vessels in small “slices.” The computer puts these pictures together to create a three-dimensional view of your heart and blood vessels. “Computed” means using a computer, “tomo” means a slice or section, and “graphy” means an image or printout. During the test we give you contrast dye to outline the heart and blood vessels so they can clearly be seen. To do this, we start an intravenous (commonly called “IV”) line and then inject contrast into your bloodstream to get the results of the test. This test takes about 30 minutes to complete.
What is Mitral Regurgitation?

**Medication**
There are no medications to treat mitral regurgitation, but there are medications that can be used to manage symptoms.

**Surgical Mitral Valve Replacement**
If you have symptoms and are diagnosed with moderate-severe or severe mitral regurgitation, surgery is generally recommended to repair or replace the mitral valve. This typically involves open heart surgery, which means your chest and the heart itself are opened so the surgeon can operate directly on the heart. While this surgery is being done, your blood is circulated outside the body through a special machine called a heart-lung bypass machine. Recovering from mitral valve surgery may take several months as you gradually regain normal physical function and activity.
Getting Ready for Your Heart Procedure

What to Expect at Your Clinic Evaluation

- You will have time to ask all your questions.
- We will arrange for you to have heart tests, if necessary.
- You will answer questions about your everyday life, what you can and cannot do for yourself, your living situation, and your heart symptoms.
- You will do a walking test.
- Your cardiologist will give you a medical check-up and ask you questions about your heart and your health.
- You will be given information about the best treatment option for you.

Determining Your Best Treatment Option

After your clinic evaluation and heart testing, your heart team will meet to review all the information we have about you, including your assessment and the results of your heart tests. From this information, the team will determine the best treatment option for you.

- **Keep active.** Ask your doctor what level of activity is best for you. Exercise is important for your heart and general health. Exercise every day, even if only for short periods of time. Slow down if you get short of breath, have chest pain, or feel faint.
- **Eat a healthy diet.** It’s important that you continue to eat a well-balanced diet to prepare for your procedure. If your doctor has restricted the amount of liquids and salt you should have, continue to follow your doctor’s recommendations.
- **Take your medications.** Continue to take the medication your doctor has prescribed.
- **Plan ahead.** It’s important that you plan ahead for your return home before you come to the hospital for your procedure. Also, plan for any help you may need once you return home. For example, most people who have TAVR say it takes them one to two months to fully recover.
Recovering at Home After Your Heart Procedure

This guide gives you a general idea about how long it will take you to recover. But keep in mind that each person recovers at a different pace. Follow the steps below to get better as quickly as possible.

Activity

- No strenuous exercise for five days after your procedure. We do encourage you to participate in light activities, such as walking, over the first several days while you recover.
- You will have a small opening and/or incision in your groin. Minimize bending the leg for the first 24 hours. If you need to cough, support the area where the catheter was inserted with your hands. Minimize walking up stairs for the first few days. Avoid sexual activity for the first five days after your procedure. Don’t lift, push, or pull anything over 10 pounds (like vacuuming, laundry, groceries, or gardening).
- Start cardiovascular rehabilitation—you’ll be referred by your physician at discharge.

Care of the Catheter Site

- Check your incision site every day. Normal changes to expect after the procedure include bruising, mild discomfort, and a small lump under the site. You may also notice the bruise slowly moving down your thigh. It’s not normal if the lump gets bigger or hardens quickly. Please call our office or your doctor if you have any questions.
- Remove your dressing the day after your procedure. You may shower at any time beginning the day after your procedure. Keep the catheter site clean and dry. No pool, bathtub, or hot tub for one week.

Call your doctor or seek immediate medical attention if:

- You’re bleeding from the area where the catheter was placed in your leg. Immediately lie down and apply direct pressure to the site for 5-10 minutes. If the bleeding does not stop after 5-10 minutes, CALL 911.
- You have signs of infection, such as:
  - Increased pain, swelling, warmth, drainage, or redness
  - Fever or chills
  - Your leg looks blue or feels cold, numb, or tingly

Follow-up Appointments

1. You’ll be scheduled for a follow-up appointment one month after your procedure. We’ll call you to make this appointment. You’ll then be followed annually or more often if needed.
2. You’ll be referred for cardiovascular rehabilitation (also called cardiac rehab) after your procedure. This program will help you learn about heart health, participate in heart-healthy education, and learn how to safely return to your activities of daily living and hobbies.
The goal of cardiovascular rehabilitation is to stabilize, slow, or even reverse the progression of cardiovascular disease. A program of cardiovascular rehabilitation, or cardiac rehab, is recommended by the American College of Cardiology for the following people, unless their physician determines there’s a specific reason not to. These people include:

- Those who’ve had a heart attack
- Those who’ve had a stent placement (even without heart attack)
- Those who’ve had heart surgery (valves, heart transplant, coronary artery)
- Those who have persistent chest pain despite treatment (medication or intervention)
- Some people who have congestive heart failure

Rehab is recommended because it decreases your risk of dying from heart disease, diabetes, cancer, stroke, and dementia, helps you improve your quality of life, and creates a sense of well-being and optimism about the future.

**Decreases Risk of Dying and Disability**

Studies show that heart patients participating in cardiac rehabilitation can decrease their risk of dying of all causes over the next 10 years up to 45%, compared to heart patients who don’t participate in cardiac rehab.

St. Luke’s medically supervised program is tailored to fit each client’s needs, and includes:

- Exercise
- Nutrition
- Weight Management
- Medication and Symptom Management
- ECG Monitoring
- Education
- Counseling and Emotional Support

Clients learn to modify risk factors including:

- High Blood Pressure
- Tobacco Use
- High Blood Cholesterol
- Physical Inactivity
- Obesity
- Diabetes

They are also counseled on topics such as:

- Appropriate use of prescribed medication
- Overcoming depression and building stress resilience
About Our Facilities
St. Luke’s has cardiovascular rehabilitation programs in Meridian and Twin Falls. Our Heart Health and Rehabilitation Center in Meridian is the first of its kind in Idaho. The 12,500 square-foot center features more than 80 pieces of heart-healthy exercise equipment, a full size walking track with joint-friendly surface, classrooms with audio-visual equipment for ongoing learning opportunities, and a kitchen for nutrition presentations and practice. Our new, custom-designed Cardiopulmonary Rehabilitation Clinic in Twin Falls opened in 2015, bringing state-of-the-art rehab services close to home for people in the Magic Valley and surrounding area.

Rehabilitation Specialists
Your cardiovascular team may include a physician medical director, nurses, nurse practitioners, respiratory therapists, occupational therapists, physical therapists, exercise physiologists, and additional support staff who are on-site to monitor each client’s condition and progress as he or she moves through the prescribed physical activities. Your team may also include a registered dietitian, licensed clinical social worker, and tobacco cessation specialist. Updates regarding your progress will be sent to your physician.

Check out our video on YouTube to learn more about cardiac rehab at St. Luke’s. Search by St. Luke’s Cardiac Rehab and choose “The Patient Experience.”

Physical Benefits
- Decrease weight, stored body fat, blood pressure, resting heart rate, triglycerides, LDL “bad” cholesterol, and blood glucose.
- Increase HDL “good” cholesterol, fitness, endurance, work tolerance, flexibility, and balance.
- Reduce risk factors for further heart problems.

Psychological Benefits
- Decrease tension, stress, fear, anxiety, depression, fatigue, sleep disturbances, and feelings of isolation.
- Increase self-confidence, sense of well-being, zest for life, overall quality of life, ease of re-entrance into work, and participation in social activities.
Heart-Healthy Eating

There are many ways to incorporate heart-healthy foods into your diet. One way is to adopt the “Mediterranean diet,” which has been shown to prolong life expectancy, improve HDL “good” cholesterol, and decrease the risk of type 2 diabetes, stroke, heart attack, dementia, Alzheimer’s, and even depression.

The Mediterranean diet includes a variety of fresh vegetables, fruits, nuts, healthy fats, and oils. It’s rich in whole grains and fish, and limits red meat, sodium (salt), and sugar. It also avoids all trans fats because they increase your levels of “bad” cholesterol and decrease your levels of “good” cholesterol.

**What to Eat**

- Make half of each meal vegetables and fruit.
- Eat a variety of fruits and vegetables such as broccoli, peppers, carrots, spinach, kale, eggplant, tomatoes, grapes, blueberries, oranges, and apples. To ensure you’re getting the most fiber from your fruit, be sure to eat the fruit itself rather than drinking fruit juice.
- Make one-quarter of each meal whole-grain foods and healthy starches such as oats, brown rice, whole grain bread or pasta, quinoa, or barley.
- Make one-quarter of each meal healthy proteins:
  - Fish (at least twice weekly)
  - Legumes (beans) such as pinto, kidney, garbanzo, lentils, split peas, and lima beans (consider eating 1/2 cup of these a day)
  - Skinless poultry such as chicken and turkey
  - Eggs (up to 5 a week is a reasonable limit; add extra egg whites to increase protein)
  - Lean meats with fat trimmed off; avoid red meats or limit to 2 times a week.
  - Cheese (use 1% or fat-free whenever possible)
  - Avoid deep fried foods such as french fries, fish and chips, chicken strips, potato chips, and finger steaks.
  - Avoid processed foods such as bacon, sausage, pepperoni, bologna, and hot dogs.
- Choose healthy fats such as olive, canola, and sesame oils; avocados; unsalted nuts; and raw sunflower or pumpkin seeds.
- Limit butter, palm oil, coconut oil, and animal fats, which are high in saturated fat.
- Enjoy sweets at a celebration or as a rare treat. Snack on fruits and vegetables. Avoid ice cream, pastries, and cookies.

**Tips for Heart-Healthy Eating**

- Dip sliced raw vegetables in hummus for a delicious appetizer or snack.
- Instead of using butter on your bread, try dipping it in 2 parts olive oil to 1 part balsamic vinegar.
- Dip fresh sliced fruit in low-fat or non-fat vanilla yogurt instead of ice cream for dessert.
- Sauté chicken or fish in olive oil or canola oil.
- Switch whole milk to fat-free or 1%.
- Eliminate processed foods as much as possible from your diet. Processed foods are typically found in boxes or bags at the grocery store. Stick with whole, fresh foods which are mostly found on the outer perimeter of the grocery store.
- Instead of using salt, use herbs, spices, vinegars, and squeezes of citrus to accentuate the flavor of foods. Salt (sodium) goals are 1,500-2,000mg per day.
- Use moderation when drinking alcohol. The general guidelines are no more than two drinks per day for men and no more than one drink per day for women (1 drink=12 oz. beer, 5 oz. wine, 1.5 oz. liquor).
• Do an easy 5-minute warm-up and easy 5-minute cool-down after the higher intensity portion of your workout.

• Work up to exercising for at least 30 minutes (not including warm-up and cool-down) four to six days per week, working up to 45-60 minutes per session. The recommended amount of exercise for good health is 150 to 300 minutes a week of modest activity, like walking. You should be “pleasantly fatigued” after exercise, not exhausted!

• For good health, your time can be cumulative (three 10-minute bouts or two 15-minute bouts to total 30 minutes); bouts must be at least 10 minutes in duration. For fitness or to help increase endurance, however, it’s best to do just one continuous bout of exercise.

• Don’t increase time or intensity by more than 10% per week.

• Vary format of exercise to avoid boredom. For example, alternate treadmill, elliptical trainer, walking, hiking, and cycling. All of these different cardiovascular exercises, performed at the same level of intensity, are equally beneficial for your heart.

\[\text{Guidelines for Cardiovascular Exercise}\]

\[
\text{• Plan on exercising 5-6 days a week. That way, if you miss one or two you’ll still have done enough.}
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\[
\text{• Log your activity. Keeping track of your exercise is a great way to follow your progress and stay consistent.}
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\[
\text{• Sitting is the new smoking—get up and move! Use a pedometer to track the number of steps you take every day; try to increase you steps until you’re taking at least 10,000 per day.}
\]

\[
\text{• Incorporate exercise into your daily routine. Park at the far end of the parking lot, take the stairs, walk around the block when you get home—it all adds up.}
\]

\[
\text{• Remember, anything is better than nothing!}
\]

\[\text{Tricks for Staying Consistent in your Exercise Routine}\]

\[
\text{• Exercising with a partner (spouse, dog, friend) makes it much more likely you’ll exercise on the days you don’t quite feel up to it.}
\]

\[
\text{• Remember the “5-minute Rule.” On days you don’t want to exercise, get dressed, warm-up, and do 5 minutes of your workout. If you still don’t feel good/right, stop and take the day off.}
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\text{• Make exercise convenient. Exercise close to home or work so it’s not a chore.}
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\text{• Exercise outside as much as possible—fresh air and sunshine are good for you!}
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\[
\text{• Remember that you can always walk! “Big Box” stores (Wal-Mart, Home Depot, etc.) and the Mall are good places when the weather’s bad.}
\]
St. Luke’s is dedicated to helping you achieve and maintain your best quality of life. From the hospital to the home, our cardiovascular teams will work with your primary care physician to provide expert medical care and compassionate support, help you learn about your disease and treatment, and connect you with the resources you need.

**Primary Care Providers:** These include physicians who practice family medicine and internal medicine. They’re considered generalists who care for your entire health and work with you to decrease your risk factors for disease throughout your lifetime. They should be your personal “quarterback” for your healthcare!

**Cardiologists:** These physicians specialize in treating diseases and disorders that affect the heart and its associated blood vessels. Cardiologists work in partnership with your primary care provider and your inpatient and outpatient care teams.

**Patient Educators:** While you’re in the hospital, patient educators will assess your education needs and provide you and your loved ones with education about the disease.

**Cardiac Rehabilitation Physician and Staff:** A vital part of your team! They help you take the necessary steps to optimize your lifestyle, reduce risk factors, and prolong and optimize your quality of life.

**Care Transition Nurses:** If needed, a care transition nurse will visit you at home to check on your health and provide services such as helping plan your care, answering your questions, offering tips for stocking your pantry and fridge with heart-healthy, low sodium food, and following up on the education you received at the hospital and clinic. After the home visit, the care transition nurse will follow up with you by phone.

**Dietitians:** Registered dietitians are available to provide education and support while you’re in the hospital, and are available by phone after you leave the hospital. They’re a valuable resource, especially if you’re following more than one diet. They can assist you with meal planning, tips, and resources.

**Social Workers:** Medical social workers can help you with your discharge planning and finding resources to help you manage your disease, such as social and financial services, support groups, and community programs.

**Mended Hearts:** Cardiac rehabilitation graduates and veteran “Phase 3” clients reach out to new cardiac patients while they are still in the hospital, with support and encouragement.

**Nutrition for Cardiac Patients:** This free class is offered every other Wednesday, from 4-5 p.m., at St. Luke’s Magic Valley.

**Friends in Action (Boise):** This nonprofit, volunteer-based program serves family caregivers and the elders they care for. Friends in Action offers classes in managing a long-term illness and being a caregiver for someone managing a long-term illness. Other services include caregiver respite and minor home safety repairs. Minimal fees apply for some services; scholarships are available. Learn more at fiaboise.org or call (208) 333-1363.

**WomenHeart of Boise:** The local chapter of the National Coalition for Women with Heart Disease meets regularly in Boise, with a mission to improve the health and quality of life of women living with or at risk of heart disease, and to advocate for their benefit. Go to womenheart.org and search by “Boise.”

**Resources**

Be careful about misinformation on the internet. Go only to reliable websites, such as:

- **American Heart Association:** americanheart.org
- **Healthwise:** Go to stlukesonline.org and click on “Health Library”
- **Mayo Clinic:** mayoclinic.org
- **“Old Ways” Mediterranean Foods Alliance** at oldwayspt.org. Learn about the Mediterranean Diet, including recipes.
- **Centers for Disease Control and Prevention.gov:** cdc.gov
- **National Heart, Lung, and Blood Institute:** nhlbi.nih.gov
Free valet parking is available. Pull up on the circular drive at the main entrance on Bannock Street. Ask for valet parking at the information desk in the lobby.

Sources: abbottvascular.com, heartandstroke.com