Heart to Heart

WakeMed Heart & Vascular News
Winter 2021

Hearts Are Meant to Be Active.... at Every Age

All About the Mitral Valve

Dieting Isn't the Answer for a Healthy Heart

TAKE 5 with...

JASON HAAG, MD
Medical Director,
WakeMed Heart & Vascular

Jason Haag, MD joined WakeMed in 2013 and serves as the Medical Director for the WakeMed Heart & Vascular cardiology program. Here, we get to know a little about Dr. Haag as he shares his background, hobbies and perspective on COVID-19.

Q: 2021 is here – what's on the horizon that's new and exciting for WakeMed Heart & Vascular this year?

We have an exciting new office opening at Oberlin Road near Cameron Village in the spring and we hope to have several new physicians starting this summer to expand our access in our North Raleigh, Garner and Apex offices. We're also very excited to see our Siemens Healthineers agreement continue to unfold as we utilize the very latest cardiac imaging services for our patients.

Q: How is COVID-19 impacting heart and vascular patients?

COVID-19 has affected us all in so many ways. Aside from the disease itself, the biggest challenge is that it has taken us all away from our normal routines. What we are seeing now is that people are not as active as they used to be and weight gain is very common. It's important for cardiovascular patients to find new ways to maintain physical activity and a healthy lifestyle – while also staying safe in our current environment. I also try to remind my patients to stay engaged and talk with their loved ones regularly – which can help reduce stress and bring joy and companionship during these difficult times.

Q: What have you learned about working with patients virtually? How is your team leveraging technology to make sure patients are still getting the care they need?

Our virtual visits have been a great asset to our patients during these uncertain times. While I don't see this technology replacing the need for in-person visits, it works well for patients with transportation issues or those who live far away or just need routine care. The only downside I've seen is that virtual visits put a lot of work on the patient to convey their concerns and needs. We ask a lot of questions. We want our patients to be as verbal and descriptive as possible when we ask how they're feeling and this isn't easy for everyone. With that said, patients can receive exceptional care in a safe and controlled setting, and we're thankful we have the tools to offer this important service amidst the pandemic.

Q: How did you decide to get into medicine, and why did you decide on cardiology as your specialty?

Originally, I had planned to be an engineer, following in the footsteps of my older brothers (who still think I'm a failure for not completing my engineering degree!). But, to earn money for college, I spent one summer break working as a patient assistant at a local hospital. It was there that I fell in love with working with patients. There is no better feeling than watching someone feel better and knowing you played a small role in making that possible. I chose cardiology because it offers a great mix of leading-edge technology with 'bread and butter' medicine. It also offers the chance to care for the same patients both in the hospital and in the office – making for a long-term patient relationship that I find very rewarding.

Q: What do you do to stay busy and keep your heart healthy?

I have three very active children (aged 7, 5 and 2) so they keep me very busy. Because I have a strong family history of heart disease, I exercise every day for 30 minutes without exception and try to eat a heart healthy diet. My wife and I love to travel, and have enjoyed some close-to-home trips during the pandemic.

February is Heart Month!

American Heart Month is here, so the team at the WakeMed Heart & Vascular wants to remind you what it means to live a heart healthy lifestyle. Being good to your heart means eating right, managing your stress, not smoking, and getting 150 minutes of moderate-intensity exercise per week. Now is also a great time to talk to your doctor about ways to reduce your risk for cardiovascular disease and to check your blood pressure and cholesterol levels. For a complete list of heart healthy tips and resources, visit us online at **wakemed.org/heart-love.**

Heart to Heart
WINTER 2021

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EDITOR
Caroline Youngblood
Director, WakeMed Marketing & Communications

CONTRIBUTOR
Coleen Smith

DESIGN
Julie Schmidt

PHOTOGRAPHY
Brian Strickland

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WakeMed Marketing & Communications
3000 New Bern Avenue
Raleigh, NC 27610

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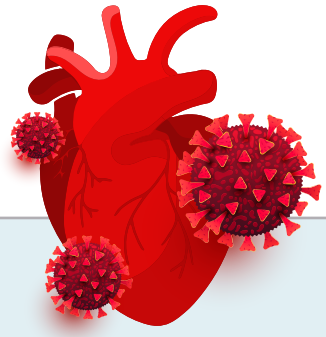
What's Inside



Outpatient Treatment for Patients with COVID-19

WakeMed is one of the only locations in the Triangle to offer a new, highly effective outpatient treatment for high-risk patients diagnosed with COVID-19. With a physician referral, monoclonal antibody (MAb) infusions are available to community members age 12+ who are considered high-risk per FDA guidelines. This includes anyone age 65+, anyone with a BMI of greater than 35, those who suffer from diabetes, chronic kidney disease, or anyone 55+ with heart disease, hypertension or chronic respiratory disease (such as COPD), or those who may be immunosuppressed.

This treatment mimics the function of our immune system by preventing the coronavirus from attaching and entering our cells. This slows the spread of the infection and has been proven to reduce the length and severity of symptoms, as well as the risk of hospitalization. The Infusion Clinic is located on the WakeMed Raleigh Campus and is open 7 days a week. If you are diagnosed with COVID-19 and meet this criteria, ask your doctor immediately for a referral to the WakeMed Infusion Clinic – treatment is more effective when administered in the earliest stages of the virus.

Vaccine

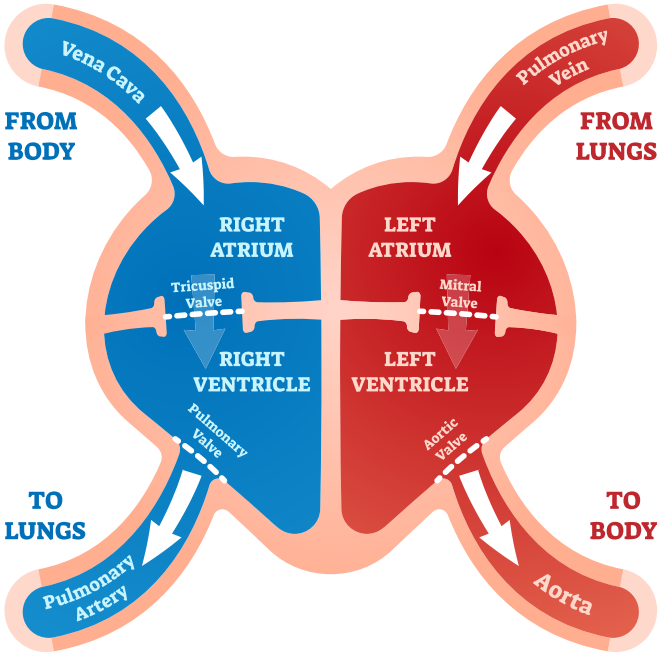
At this time, WakeMed has no control over when or how often we receive vaccine shipments. Our goal is to play an integral role in vaccinating our patients and the community as we receive the vaccine. To learn more about how WakeMed is helping to vaccinate patients and other community members, visit www.wakemed.org/patients-and-visitors/covid-19-information/covid-19-vaccine.

All About the Mitral Valve

The mitral valve surgical program at WakeMed provides some of the best outcomes in the region and the state.

Your heart is a complex organ comprised of many parts – all designed to work together in harmony to keep blood, oxygen and hormones pumping throughout the body as needed. With four chambers and four valves, the heart and all its many functions are a lot to understand all at once. Here, we'll take a closer look at the mitral valve, its function, problems that can occur, and how it's treated.

Your heart's complex four-chamber system includes two atria located on the upper half and two ventricles, located on the bottom portion of the heart. One of four valves, the mitral valve (also known as the bicuspid valve) is located between your left chambers known as the left atrium and left ventricle.



The mitral valve's purpose is to keep your blood moving in the right direction. Every time your heart beats, the left atrium fills with blood and the mitral valve opens, which allows blood to flow to the left ventricle. Then, it closes to prevent blood from flowing back into the left atrium. This process occurs within seconds, but when any part of the process doesn't go according to plan – mitral valve disease is likely the culprit.

Types of Mitral Valve Disease

Mitral Valve Prolapse – Impacting nearly 8 million Americans, mitral valve prolapse is the most common reason for valve surgery. It occurs when the flaps (also known as leaflets) of the mitral valve bulge into the left atrium when the heart contracts. The condition is typically not life-threatening and may often go undetected for years. However, in some cases, it can cause blood to leak backward through the valve, which can lead to mitral valve regurgitation. While many patients are asymptomatic, some may experience shortness of breath, fatigue, dizziness or lightheaded-ness, arrhythmia or chest pain that is not caused by heart attack. While the cause is often unknown, mitral valve prolapse may be hereditary, or could be caused by certain connective tissue diseases.

Mitral Valve Regurgitation – This common valve disease known as leaky valve, mitral valve insufficiency or incompetence, and is caused by wear and tear so it's more common with advanced age. When the mitral valve doesn't close completely, blood leaks back to the left atrium. The condition impacts approximately 2 percent of the population or up to 200,000 people in the U.S. each year, and is the second most common reason for valve surgery. While it's often mild and progresses slowly, if a moderate to severe case goes untreated, mitral valve regurgitation can lead to heart muscle damage. This damage can cause heart failure, atrial fibrillation or pulmonary hypertension. Patients with mitral valve regurgitation often report fatigue, heart palpitations, swollen feet or ankles or most commonly, shortness of breath – especially during activity or while lying down. It's often diagnosed when your doctor listens to your heart using a stethoscope and hears a heart murmur, and can be confirmed by an echocardiogram.

STS 3-Star Rating: WakeMed Among North America's Elite for Mitral Valve Replacement & Repair Surgery

WakeMed and its cardiothoracic surgeons earned a distinguished three-star rating from the Society of Thoracic Surgeons (STS) for its patient care and outcomes in isolated mitral valve replacement and repair (MVRR) surgery. This rating, for reporting period January 2017 through December 2019, represents the highest category of quality and places WakeMed among the elite for MVRR surgery in North America. The STS star rating system is one of the most sophisticated and highly regarded overall measures of quality in health care, rating the benchmarked outcomes of cardiothoracic surgery programs across the United States and Canada.

Mitral Valve Stenosis – Mitral valve stenosis is the narrowing of the valve itself. As a result, the valve can't open properly, which blocks the flow of blood to your left ventricle. The most common cause of mitral valve stenosis is rheumatic fever that scars the valve. It can also be congenital or could be the result of calcium build-up around the valve. Signs of mitral valve stenosis include fatigue, shortness of breath, palpitations/irregular heartbeat, swollen feet or legs or coughing up blood. People with mitral valve stenosis often first experience symptoms between the ages of 15 and 40 during strenuous activity or exercise. Symptoms may also be triggered by an infection or pregnancy. When it's caused by calcium build-up, it typically occurs in those aged 70 and above.

Managing & Treating Mitral Valve Disease: Lifestyle and Medical Therapy Options

The good news is that many patients with mitral valve disease have mild symptoms or a disease state that can be managed with lifestyle modifications and/or medications.

Lifestyle Changes

Many heart-healthy lifestyle changes can help reduce the symptoms of heart valve disease, and in some cases, may even prevent the progression of certain symptoms. Eating a heart-healthy diet, aiming for a healthy weight, engaging in regular physical exercise, and managing your stress can help. Particularly in patients with heart failure caused by mitral valve disease, eating a low-sodium diet and watching your fluid intake can help prevent further complications. For patients with mitral valve regurgitation, quitting smoking can reduce the symptoms and improve your overall heart health.

Medical Therapy

For patients with moderate to severe mitral valve disease, your cardiologist may recommend one or more medications to help reduce or alleviate symptoms, improve heart function, restore normal rhythm, or slow the progression of heart failure. Drugs such as ACE inhibitors and ARBs or anti-arrhythmic medications, blood thinners, beta-blockers, diuretics and vasodilators are all commonly used to treat valve disease.

Managing & Treating Mitral Valve Disease: Procedural Options

When medications and lifestyle changes aren't enough or aren't indicated, your cardiologist may refer you to either a structural heart expert and/or surgeon to discuss procedural options. The two most common ways to permanently address mitral valve disease are to either repair or replace the faulty valve.

"While medication therapy is often a first-line treatment for valve problems, there are some cases where surgery is preferred. For example, patients with severe mitral valve regurgitation are typically first referred for surgery – even if they're asymptomatic," explains Dr. Bryon Boulton, cardiothoracic surgeon with WakeMed Heart & Vascular. "Research shows the long-term survival rates are better for those who have early repair rather than waiting for symptoms to begin."

BRYON BOULTON, MD, FACS
WakeMed Heart & Vascular

Repairing the Mitral Valve

In the case of a mitral valve prolapse or regurgitation, a valve repair can often lead to a complete resolution of symptoms. A wide range of procedures are available to repair the mitral valve.

"Heart valve procedures have come a long way in recent years, and we now have many minimally-invasive techniques to help our patients avoid the need for open heart surgery that we didn't have just ten years ago," explains Dr. Frances Wood, interventional and structural cardiologist with WakeMed Heart & Vascular.

"Our minimally-invasive heart valve program has grown exponentially over the past several years," explains Dr. Boulton. "These newer procedures allow us to help patients who are older or have other health problems who are at high-risk for open surgical procedures. These minimally-invasive options offer a better quality of life for many who are suffering from mitral valve problems."

Minimally-invasive Valve Repair – The majority of patients who need mitral valve repair will benefit most from a surgical repair as it is has the best long-term survival and durability compared to non-surgical approaches. This minimally-invasive procedure involves the use of a small incision (approximately 3 inches) on the right-hand side of the chest, which is a significant improvement over traditional techniques that required cutting through the sternum (breastbone). On average, patients stay in the hospital for 4 days and are back to life and work after a 4-6 week recovery.

As an expert in minimally-invasive approaches, Dr. Boulton offers minimally invasive surgery for not only mitral valve surgery, but for aortic, tricuspid, and multi-valve surgeries.

MitraClip™ – During this simple, minimally-invasive procedure to repair the mitral valve, doctors attach and implant a small clip to the mitral valve. This clip helps the mitral valve close more completely and restore normal blood flow through the heart. It's typically indicated for high-risk patients who aren't good candidates for an open surgical procedure.

Balloon mitral valvuloplasty – Used to treat mitral valve stenosis, this procedure addresses mitral valve blockages using highly-specialized balloon catheters. The balloon is threaded into the heart through the femoral vein (in the groin). When the balloon is inflated, it helps enhance blood flow across the mitral valve.

Replacing the Mitral Valve

For patients whose mitral valve damage is so severe that a repair isn't possible, a valve replacement is recommended. This is most often seen in patients with mitral valve stenosis. Dr. Boulton explains that in these patients, a replacement is indicated since the valve has typically been damaged beyond repair.

"...We now have many minimally-invasive techniques to help our patients avoid the need for open heart surgery that we didn't have just ten years ago."

FRANCES WOOD, MD, FACC
WakeMed Heart & Vascular

Valve replacements can be performed using minimally-invasive techniques, or if the patient is scheduled for another open heart surgery, the replacement can be done at the same time. Minimally-invasive techniques mean a smaller incision (typically 3 to 4 inches) on the right side of the chest, and require a shorter recovery period. In most cases, patients will spend four nights in the hospital, followed by 6-8 weeks of recovery.

Types of Replacement Valves

Mechanical valve – A mechanical valve is typically indicated in younger patients – those age 70 or under. That's because they can last a lifetime, although they come with increased risk of blood clotting and bleeding that requires patients to take blood thinners, like warfarin, for life.

Tissue/biological valve – These valves are made using human or animal donor tissue, and they typically last 10-15 years. One benefit of the tissue valve is that there is no need for long-term medications such as blood thinners. However, when used in young patients, the likelihood of needing a second valve replacement later in life is relatively high.

As one of the highest-volume Heart Centers in the region, WakeMed Heart & Vascular's Structural Heart and Cardio-vascular & Thoracic Surgery teams are highly-trained in these techniques.

"The success rate for mitral valve repair and replacement surgeries are extremely high – particularly when performed in a hospital with high volumes like we have at the akeMed Heart Center where we handle hundreds of heart valve surgery cases per year," Dr. Boulton concludes.

NEW + NOTEWORTHY

Watson Health®

50 Top Cardiovascular Hospitals 2021

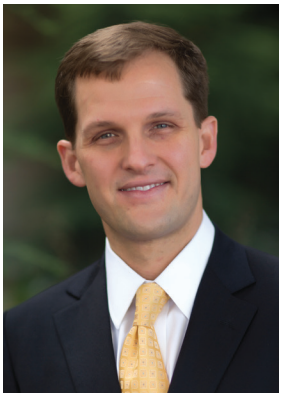
WakeMed Earns Top Cardiovascular Hospitals Recognition from IBM Watson Health™, Fortune and American Heart Association

WakeMed was named one of the nation's 50 Top Cardiovascular Hospitals by IBM Watson Health™ and *Fortune*. The annual study spotlights top-performing cardiovascular hospitals in the U.S. that are setting the standard for high quality, efficient, patient-centric care for heart disease. Based on a balanced scorecard of publicly available clinical, operational and patient satisfaction metrics and data across 980 U.S. hospitals with cardiovascular service lines, the top 50 hospitals delivered better outcomes while operating more efficiently and at a lower cost.

WakeMed is also one of 19 hospitals on this year's 50 Top Cardiovascular Hospitals list – *and the only hospital in the Triangle* – to achieve the additional distinction of meeting the criteria established by the American Heart Association's (AHA) Get With The Guidelines® (GWTG) programs, which promote evidence-based guidelines and improved patient care and outcomes.

"I am extremely proud of the unrivaled commitment of our multidisciplinary team at the WakeMed Heart Center, which has again earned top honors for heart care and cardiovascular quality," said Dr. Judson B. Williams, cardiovascular surgeon and executive medical director of WakeMed Heart & Vascular. "Cardiovascular disease is a leading cause of death among American adults and this recognition indicates the attention to detail and proven outcomes we achieve to make a real difference in the lives of all the cardiovascular patients we touch."

"I am extremely proud of the unrivaled commitment of our multidisciplinary team at the WakeMed Heart Center."



JUDSON WILLIAMS, MD, MHS
Executive Medical Director,
WakeMed Heart & Vascular

WakeMed Lung & Chest Health | WakeMed Primary Care | Cancer Care Plus+ A WAKEMED + DUKE HEALTH COLLABORATION | WakeMed | DukeHealth

New Smoking Cessation Program Helps WakeMed Primary Care Patients Quit for Good

WakeMed Primary Care patients who want to quit smoking now have access to our new virtual tobacco cessation program – Quit With WakeMed. Featuring a team of specially-trained tobacco cessation experts, Quit With WakeMed is a personalized treatment program aimed at helping patients quit smoking for good using a combination of medication and counseling. This new service is offered as part of *Cancer Care Plus+*, with the Duke Cancer Institute's tobacco cessation program, Quit at Duke. This model has been proven to be approximately 10 times more effective than quitting on your own. To learn more, visit wakemed.org/quit.

WakeMed Introduces Biplane Equipment for Advanced Imaging

ANDREY BELAYEV, MD
Raleigh Neurosurgical Clinic

In November, the WakeMed Heart Center introduced the new ARTIS Icono Biplane imaging equipment that is used for cardiovascular and neurovascular interventions. This new technology, made by Siemens Healthineers, allows us to establish a world-class hybrid procedure room that provides care teams with the tools and ability to diagnose and treat life-threatening conditions with precise imaging, accuracy and speed.

"This advanced biplane technology allows us to use non-invasive techniques and unparalleled imaging to detect and treat stroke, aneurysms, and other cardiovascular and neurological conditions with less exposure to radiation, smaller incisions and less patient risk," explains Dr. Andrew Belayev, neurosurgeon with Raleigh Neurosurgical Clinic.

By capturing highly detailed 2D and 3D images of blood vessels, tissue and blood flow in the brain, arteries and spine in real-time, surgeons can better diagnose and make treatment decisions quickly – saving precious time in situations where every second counts. It will also provide a significant reduction in scan times and radiation exposure for patients and staff.

Dr. Joseph Salfity Represents WakeMed Heart & Vascular at National TCAR Meeting

JOSEPH SALFITY, MD

WakeMed Heart & Vascular

Vascular surgeon Dr. Joseph Salfity represented WakeMed Heart & Vascular by speaking at a TCAR virtual national conference. TransCarotid Artery Revascularization (TCAR) is a relatively new, minimally-invasive procedure for improving carotid artery disease that reduces the risk of stroke – particularly for high-risk surgical patients. Under Dr. Salfity's leadership, WakeMed was designated as a TCAR Center of Excellence in 2019. Congratulations to Dr. Salfity for his participation in this important event!

WakeMed Introduces 24/7 Reads & Results for Patients with Suspected DVT

Deep vein thrombosis (DVT) is a dangerous and potentially life-threatening health problem – making prompt diagnosis critical. A DVT occurs when a blood clot forms in a vein located deep inside the body – most commonly in the legs. They become dangerous when the clot breaks off, travels to the lungs and blocks blood flow, which is known as a pulmonary embolism (PE).

To ensure rapid diagnosis, WakeMed is proud to announce the introduction of 24/7 rapid testing and results for patients with suspected DVT, offered by our cardiovascular testing and imaging services teams. Confirming a DVT diagnosis requires a lower venous doppler test, which is an ultrasound of the affected area that uses sound waves to detect a clot. This new offering means patients who are screened for DVT will have their results read by a radiologist within an hour of testing.

"In our emergency departments, WakeMed sees hundreds of patients per year with suspected DVT," says Doug Trocinski, MD, Wake Emergency Physicians, PA, and Chief Medical Officer of WakeMed Cary Hospital. "Getting a definitive diagnosis within an hour means we can improve our speed to treatment and ultimately, save more lives. It also helps prevent the unnecessary use of blood thinners in patients who don't have DVT, reducing the risk of bleeding."

Those at risk for DVT include those who sit for long periods of time (for example, during a long flight) or those who are pregnant. DVT affects nearly one million Americans each year – and causes up to 100,000 deaths annually.

DOUG TROCINSKI, MD

Wake Emergency Physicians, PA, and Chief Medical Officer of WakeMed Cary Hospital

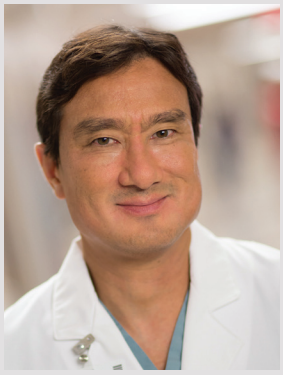
DVT AFFECTS NEARLY

1,000,000 AMERICANS EACH YEAR

WakeMed Offers Bystander CPR Training Kits for High-Risk Patients

Thanks to a generous and anonymous donor, WakeMed is thrilled to offer certain high-risk, hospitalized patients with an American Heart Association "CPR Anytime" kit before they are sent home from the hospital. The goal is to help family members and loved ones know what to do in the event of a sudden cardiac arrest by providing bystander CPR training that involves just two steps – calling 9-1-1 and performing chest compressions until emergency medical response teams arrive.

"CPR is the most effective way to keep a patient alive who has suffered from a cardiac arrest," explains WakeMed Heart & Vascular Cardiologist Dr. Brian Go. "Without it, patients can't get blood or oxygen to body or brain – which leads to death in a matter of minutes. Hands-only CPR can double or triple the patient's chances of survival. It's a skill everyone should have but is especially important for those who live with a person who has a history of cardiovascular problems."



BRIAN GO, MD, FACC
WakeMed Heart & Vascular

The program teaches basic lifesaving skills using a 20-minute training video and a mini "Annie" doll for practicing the chest compressions that are the foundation of hands-only CPR training. The charitable donation is funding 100 kits for WakeMed's highest risk patients, to include those with a recent history of sudden cardiac arrest or heart attack, or certain patients who suffer from cardiac arrhythmia or heart failure.

"For years, WakeMed has been teaching hands-only CPR at events throughout the region as part of its commitment to improving the health of the community," explains Felecia Williams, PhD, RN, clinical supervisor/educator for WakeMed Heart & Vascular Services. "The addition of these easy-to-use kits will help us provide this valuable education to those at most risk for sudden cardiac arrest – and will help reassure family members by learning what to do in the event of a future cardiac emergency."

CPR Anytime kits are also available for purchase to the public via the American Heart Association's web site. Priced at $38.50, they make a great investment for families battling heart disease and cardiovascular problems. To learn more, visit shopcpr.heart.org/courses/cpr-anytime.

Felecia Williams (second from right) and Dr. Trevor Upham (far right) deliver CPR Anytime Kits to WakeMed Heart & Vascular patient educators.

Managing a Healthy Weight – Dieting Isn't the Answer for a Healthy Heart

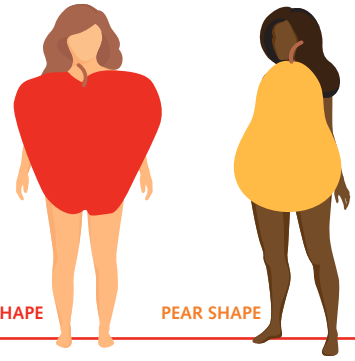
Managing a healthy weight is an important way to reduce your risk of developing or worsening heart disease, high blood pressure, stroke, diabetes, metabolic syndrome and certain cancers. Losing weight can also improve quality of life, boost confidence, enhance your ability to sleep soundly, and can help reverse or improve other health conditions such as sleep apnea or joint pain, among others. Yet, losing weight can be challenging without the proper support.

What Defines a 'Healthy Weight'?

When it comes to heart health, there are several tools a doctor may use to determine if a patient is at a healthy weight.

Body Mass Index: Known as BMI, your body mass index provides an estimate of body fat based on your height and weight. While it's a helpful tool, BMI measurement has its limitations – such as overestimating fat in people with muscular bodies or underestimating the amount of body fat in older adults who may have lost muscle mass over the years. Regardless, it's still an effective first-line tool to determine whether weight loss could help reduce cardiovascular risk factors.

Waist Measurements: While apples are heart healthy, an apple-shaped body is not a sign of good health. Doctors say those with apple-shaped figures are at greater risk for heart disease than those with pear-shaped bodies. That's because research shows that those who carry more weight around their middle are at greater risk for heart disease, type 2 diabetes and premature death.



Impact on Life & Lifestyle: If being overweight or obese is making it difficult or impossible for you to exercise or be active, your cardiologist may recommend weight loss. Similarly, if your weight is impacting your mental health by causing stress or depression, your doctor may encourage you to develop a plan for achieving a healthier weight. That's because mental health is thought to be a risk factor for heart disease since stress hormones like adrenaline and cortisol can impact your blood pressure and heart rate.

Know Your Numbers

BMI TARGETS

BMI	WEIGHT STATUS
Below 18.5	**Underweight** You are underweight, you may need to put on some weight. You are recommended to ask your doctor or a dietitian for advice.
18.5 – 24.9	**Normal or Healthy Weight** You are at a healthy weight for your height. By maintaining a healthy weight, you lower your risk of developing serious health problems.
25.0 – 29.9	**Overweight** You are slightly overweight. You may be advised to lose some weight for health reasons. You are recommended to talk to your doctor or a dietitian for advice.
30.0 and Above	**Obese** You are heavily overweight. Your health may be at risk if you do not lose weight. You are recommended to talk to your doctor or a dietitian for advice.

Check yourself: *To check your BMI, visit wakemed.org/manage-your-health/bmi-calculator.*

WAIST CIRCUMFERENCE TARGETS

Men: less than 40 inches

Women: less than 35 inches.

Check yourself: *Using a tape measure, measure all the way around your middle – starting at the top of your hip bone or just above your belly button. Check the number on the tape measure right after you exhale a breath (but don't hold in a breath).*

HIP-TO-WAIST RATIO TARGETS

Men: 0.9 or less

Women: 0.85 or less

Check yourself: *To check your hip-to-waist ratio, measure the distance around the largest part of your hips, which is the widest part of your buttocks. Divide your waist circumference (see above for instructions) by your hip circumference.*

Why Dieting Isn't the Answer

Dieting is a short-term strategy that may result in temporary weight loss, but is often followed by fluctuations in weight that can be frustrating and in some cases, even more detrimental to your overall health.

According to research, yo-yo dieting is linked to more weight gain over time – and therefore an increased risk for diabetes, high blood pressure and heart disease. In fact, a 2017 study published in *The New England Journal of Medicine* looked at nearly 10,000 adults and demonstrated that 'weight cycling' (also known as yo-yo dieting) was associated with greater risk of coronary artery disease.

Additionally, dieting and quickly losing fat can decrease certain hormones that help you feel full. This can end up increasing your appetite as your body tries to 'restock' the energy it lost during dieting.

"When working with patients on achieving a healthy weight, I never use the word 'diet,'" explains WakeMed Heart & Vascular cardiologist Dr. Chelsea Ngongang. "Diet sounds like a short-term strategy, but when it comes to losing weight and reducing cardiovascular risk factors, I encourage my patients to instead pursue a long-term, gradual lifestyle change."

CHELSEA NGONGANG, MD, FACC
WakeMed Heart & Vascular

Still, each year, new fad diets surface – intriguing us with the promise of rapid weight loss. From keto to intermittent fasting to older diets like Atkins and South Beach, most heart patients have tried one or more of these diets with limited success.

"When it comes to fad diets, the reality is that most of them just aren't sustainable," explains Dr. Tiffany Lowe-Payne, bariatric medicine specialist with WakeMed Bariatric Surgery & Medical Weight Loss. She explains that many fad diets are so restrictive that they just don't last – and the cravings and feelings of deprivation they cause can often lead to overeating and weight gain over time.

TIFFANY LOWE-PAYNE, DO
WakeMed Bariatric Surgery & Medical Weight Loss

"Weight loss is a journey – not a destination. For patients who have been dealing with an unhealthy weight for a long time, you can't expect to change your diet and lifestyle in a week or two like fad diets want you to. It's about developing new, healthier habits one step at a time."

Setting Realistic Goals and Making Small Changes

Dr. Ngongang reiterates that changing your lifestyle won't happen overnight – and that she sees the greatest long-term success when she meets patients where they are and helps them set smaller, more realistic goals along the way. The great news is that losing just 5 to 10 percent of your body weight – regardless of how much you weigh – can significantly change your overall health profile. Studies have shown losing even small amounts of weight can improve cholesterol, blood pressure and blood sugar.

> "There are always small, healthy steps that can be made to get one step closer to losing weight and reducing cardiovascular risk factors."

Acknowledging that each patient needs different strategies, Dr. Ngongang reminds us that success doesn't look the same for everyone. "I have patients who are truck drivers, so asking them to go to the gym daily and eat salad three times a day wouldn't be realistic. Instead, I encourage eliminating sugary drinks, keeping healthy snacks like almonds and bananas in the truck, and I tell them to walk 10 laps around each truck stop. Regardless of each patient's situation, there are always small, healthy steps that can be made to get one step closer to losing weight and reducing cardiovascular risk factors," Dr. Ngongang concludes.

Getting the Support You Need to Be Successful

If losing weight were easy, there wouldn't be so many diets out there to choose from. So, how do you get started on the journey to a healthier weight? Here are a few suggestions from our experts.

- **Plan & Prepare.** Planning meals ahead of time and shopping with a list can help you make healthy choices. Prepare meals at home when possible to avoid hidden calories, fat and sodium. Try to space your meals 4-5 hours apart.
- **Practice Portion Control.** Use the plate method or your hand to measure portions. One portion of veggies is the size of your open hand; one serving size of protein is the size of your palm; and your fist should be your guide for the amount of grains and fruit you should have.
- **Avoid Added Sugar.** Eliminating sweetened drinks such as soda, juice, sweetened coffee drinks and sweet tea is a good place to start. From there, try to avoid foods high in added sugar – often found in processed snacks, desserts and baked goods.
- **Be Mindful.** Eat until you are satisfied, not stuffed. Pay attention to what causes you to overeat such as screen time, boredom, anxiety and/or stress. Address your emotions head-on instead of eating to feel better.
- **Write it Down.** Keep a log of your food, drinks and exercise using a notebook, the computer or an app. Tracking your intake keeps you accountable and mindful.
- **Exercise.** To lose or maintain your weight, experts recommend 250 minutes of exercise per week. Include both cardio and strength training exercise.
- **Find a Support System.** A relative, friend or an online tool can help keep you accountable. Enlisting the support of your primary care doctor, cardiologist or a medical weight loss expert can also help you develop a plan and track your progress. Doing so can help ensure your weight loss is achieved in a healthy way – keeping in mind your health history, risk factors and more.
- **Set Goals.** Setting realistic goals along the way can help success feel more attainable. Small and gradual changes help build confidence as you achieve results.
- **Consider Medications.** While there's no magic pill for weight loss, medical therapies have come a long way and can help jumpstart weight loss for those struggling. Some medications work to combat cravings, others suppress your appetite and there are even options to help prevent emotional eating. Talk to your doctor to discuss your options.

If you need support from a physician to achieve or maintain a healthy weight, talk to your cardiologist, primary care doctor or one of WakeMed's bariatric medicine specialists. For more information, visit wakemed.org/weight-loss.

Top 7 Heart Healthy Foods You Shouldn't Live Without

Health experts spend a lot of time talking about unhealthy foods to avoid like those high in fat, sugar and cholesterol. But with so many great foods to choose from, it's worth taking the time to learn about the natural, unprocessed foods that provide the greatest health benefits. These "superfoods" can and should be incorporated into your diet on a regular basis.

"While there's no single food that can provide all the health benefits needed to keep us nourished, starting with "superfoods" is a great way to ensure you're getting loads of nutrients that actually promote better overall health," explains Monika Kraus, WakeMed dietitian. When it comes to heart health, here are seven of the heart healthiest foods worth adding to your eating plan.

1

Colorful berries pack a healthy punch.

Berries such as blueberries, raspberries, blackberries, strawberries and acai berries. Naturally sweet and rich in color, berries provide a great source of fiber, which is important for your digestive system. They're also loaded with antioxidants that may help to improve blood sugar and insulin resistance. Research suggests a diet rich in berries could help increase good cholesterol (HDL) while lowering blood pressure. Low in calories and loaded with water, berries are high in folate, which may help with heart health. While you can eat berries all by themselves, they're also great on yogurt, salads or smoothies.

2

Fatty fish including salmon, mackerel, tuna, sardines, cod, and lake trout.

These foods are loaded with omega-3 fats that may reduce your risk of heart disease by decreasing inflammation throughout the body. Omega-3s are also an important nutrient for brain health and they may lower blood pressure and triglycerides. Finally, fatty fish is a great source of protein. The American Heart Association recommends eating at least two servings of fish per week (a serving is 3.5 ounces).

3

Dark Leafy greens including spinach, kale, chard, beet greens, collards and leaf lettuce.

Greens are high in fiber and nutrients and low in calories – making them great for maintaining a healthy weight. Due to helpful phytochemicals, a diet rich in leafy greens has also been linked to a reduced risk of heart disease and high blood pressure. They're also a great source of many beneficial nutrients and minerals including Vitamin A and C, folate, Vitamin K, calcium and potassium. When it comes to leafy greens, there are so many great and easy ways to prepare them. Try them raw in salads or mixed into smoothies, sautéed with olive oil and garlic, or incorporated into your favorite recipes.

4

Legumes including black, red, kidney, garbanzo beans, soybeans and peas.

Beans are such a versatile way to get the perfect blend of protein and fiber – which can help you feel full for longer. Because they're a plant protein, they don't have the saturated fat found in many animal proteins. A meta-analysis of research published in a 2013 issue of the medical journal *Circulation* concluded that eating nuts and beans could reduce the incidence of coronary heart disease. Beans are great in soup, chili, salad or in hummus. Because canned beans can be high in sodium, rinse them first to remove some of the salt.

5

Olive oil, used in moderation.

Olive oil is believed to be the healthiest of all fats – better for your heart than butter, margarine, vegetable oil or mayonnaise. It's an integral part of the Mediterranean diet, which is the only diet that has been shown to reduce risk factors for heart disease, promote health and prevent chronic disease. Olive oil is also a good source of Vitamin E, polyphenols and monounsaturated fats – which help reduce the risk of heart disease. It's also rich in antioxidants, which provide protective health benefits. Olive oil is great for low-heat sautéing, in salad dressings, drizzling over cooked vegetables or as a dip for bread.

6

Avocado.

Loaded with monounsaturated fats, avocados can help keep you full since they are loaded with healthy fats. Their high fiber content is good for digestive health and they're packed with folate, which may help reduce a person's risk of heart disease and stroke by up to 20%. A study published in the *Journal of the American Heart Association* found that eating one avocado a day can help improve bad cholesterol levels in overweight and obese individuals. Avocados are great sprinkled with a little salt and pepper, on salads or in guacamole.

7

Nuts and seeds, especially walnuts, almonds, pecans and pumpkin seeds (pepitas).

A good source of plant protein, nuts and seeds are high in monounsaturated fats – which may help to reduce heart disease. Most nuts are also a great source of Vitamin E and omega-3 fats. You can eat them by the handful, but remember to enjoy in moderation – a serving is just 1.5 ounces of whole nuts (a small handful) or 2 tablespoons of nut butter. That's because even though they're healthy, they are high in fat and calories. Nuts make great toppings for soups and salads – and seeds such as flaxseed and chia seeds are great tossed into cereal or oatmeal, or blended into a smoothie.

SERVES 4

Wild Salmon in Honey Mustard With Pecan Crust

INGREDIENTS

Four, 4-ounce salmon fillets, frozen or fresh

¼ c. Dijon mustard
1 tsp. of salted butter
2 Tbsp. honey
½ c. pecan pieces, chopped
½ c. Panko breadcrumbs
2 tsp. fresh parsley, chopped
1½ tsp. fresh tarragon, chopped

Garnish:
4 parsley stems
4 lemon wedges for garnish

INSTRUCTIONS

1. If using frozen salmon, thaw overnight in the refrigerator. Once thawed, preheat oven to 375°.
2. Melt the butter and combine with the honey and mustard. Coat the salmon fillets by brushing the honey mustard all over them.
3. Combine the Panko, chopped pecans and herbs. Roll the coated salmon in pecan mixture to coat them all over.
4. Lay the coated salmon out on sheet pans lined with parchment paper. Bake at 375° for approximately 15 minutes or until an internal temperature of 145°F is reached for 10 seconds.
5. Plate the salmon and garnish with parsley and lemon. Enjoy!

NUTRITIONAL INFORMATION PER SERVING: Calories: 292; Total fat: 16 g (2 g Saturated fat); Cholesterol: 51 mg; Carbohydrates: 11 g; Fiber: 2 g; Sugars: 10 g; Protein: 25 g; Sodium: 432 mg

SERVES 1

Avocado Toast

INGREDIENTS

½ of a fresh ripe avocado
1/8 tsp. kosher salt
½ tsp. fresh squeezed lemon juice
1/8 tsp. fresh cracked black pepper
1 slice multigrain bread
3 sprigs fresh mint
1 Tbsp. fresh sliced radish
1 Tbsp. green peas, frozen
1 tsp. extra virgin olive oil

INSTRUCTIONS

1. In a small bowl, combine avocado, lemon juice, salt and pepper. Gently mash with the back of a fork.
2. Place the bread in a toaster or pre-heated 350 degree oven. Cook bread until nicely toasted, around 2-3 minutes.
3. Spread avocado mixture on top of the toast. Top with peas, radishes, mint sprigs and drizzle with olive oil and enjoy.

NUTRITIONAL INFORMATION PER SERVING: Calories: 249; Total fat: 14.9 g (2.2 g Saturated fat); Cholesterol: 0; Carbohydrates: 26.5 g; Fiber: 6.4 g; Sugars: 3 g; Protein: 5.6 g; Sodium: 430.7 mg

Hearts Are Meant to Be Active…At Every Age

Having a heart condition doesn't mean you can't be active. In fact, exercise is one of the best ways to help improve cardiovascular risk factors and keep heart problems under control. But, don't take our word for it – meet these remarkable WakeMed Heart & Vascular patients who've been diagnosed with serious heart valve problems, have undergone major surgery, and are already back to doing the activities they love.

Meet Ruth Pearce – In the Water

Ruth Pearce has always been an avid exercise fan. As a tomboy growing up, she was active and athletic. In her adult years, Ruth took aerobics classes for decades – she recalls working out to Michael Jackson in the 1980s. When she hit her 60s, some serious back and neck problems caused her to slow down a bit and shift to lower-impact activities like cycling and swimming – but she never stopped moving. Because she was active, thin, and ate a healthy diet, Ruth never gave much thought to her heart.

In 2018, Ruth needed to have a major neck surgery, but her primary care provider insisted that she get a heart check-up before they'd clear her for surgery due to her advanced age. A feisty patient, Ruth was frustrated by these demands. "I told them I have been stressing my heart my entire life through rigorous exercise and that I didn't need to get checked out," Ruth recalls. "My blood pressure, cholesterol and all my vitals were good, so on paper, I was perfectly healthy."

Luckily for Ruth, her physician's assistant held her ground. She visited Dr. Marc Silver, her husband's long-time cardiologist, for an EKG and stress test. Her EKG came back very abnormal, but her stress test was good. Dr. Silver explained that she had some narrowing of her aortic stenosis caused by degenerative valve disease.

While it wasn't life-threatening at the time, he explained that she'd need to have it checked out once a year and he went ahead and cleared her for the neck surgery. Shortly after the procedure, Ruth recovered and was back to her active lifestyle.

In December 2019, during one of her husband's checkups, Ruth tried to convince Dr. Silver that she didn't need another heart check-up. He made her a deal that he'd perform an ultrasound of her aortic valve and if all looked good, she could wait two years to return for her next screening.

The day before Christmas, Dr. Silver called to tell her she had very significant deterioration of her valve – and that if she didn't take it seriously, it could be life-threatening. From there, Ruth recalls that things moved very quickly. She was promptly scheduled for a cardiac cath in order to assess the damage, and from there, she was scheduled for a valve replacement just a week later. Performed by Dr. Frances Wood and Dr. Bryon Boulton, Ruth's procedure was seamless. "Every nurse or person who cared for me made me feel like I was important to them – they were completely focused on me. The kindness and compassion I saw not only toward me as a patient but among the staff was a beautiful thing to see and so reassuring."

At age 81, Ruth recovered quickly and immediately noticed how much better she felt – with more stamina and easier breathing than she'd experienced in years. Looking back, Ruth recognized that she'd been ignoring symptoms such as chest pain and shortness of breath that she'd written off as either reflux or normal symptoms of aging. After a month, Ruth got back to exercise – starting with four miles a day on the stationary bike. By March 2020 (when COVID-19 hit), Ruth was biking up to 12 miles a day since the pool was closed. When the pool reopened in September, Ruth got back to her favorite activity – water aerobics, which she now attends twice a week.

With 5 kids and 7 grandchildren, Ruth is glad to be back to good health and is very grateful for her WakeMed care team, including Dr. Silver, Dr. Boulton, Dr. Wood and all the nursing and support staff.

"For me, staying active is my saving grace – and at my age, roadblocks come often. I've learned that there is always support to be found, and if you look hard enough – you can surely find another way to keep moving. Water aerobics keeps me from being stuck in a chair, and for that I am so thankful."

Meet Heather Pavese – On the Green

Heather Pavese is no stranger to heart troubles. In 2012, she had a mechanical heart valve put in due to an aortic aneurysm. Shortly after moving to North Carolina in 2018, Heather suffered a heart attack and recovered with the help of WakeMed's care team and got connected with cardiologist Dr. Raj Fofaria for ongoing care. This past summer (June 2020), Heather wanted to travel home to see her family in Portland, Oregon – but she wanted to get medical clearance before traveling due to COVID-19 concerns. She checked in with Dr. Fofaria and had an echocardiogram that revealed significant deterioration of the mechanical heart valve. She was referred to Dr. Judson Williams and it was determined that she needed a new valve due to a rare blood clotting disorder that her previous surgeons didn't know she had. On August 24, 2020, Heather arrived for surgery and immediately fell in love with her care team. She recalls her experience, "Every nurse I encountered cared for me like I was a member of their family. It was so comforting to be in the care of people who treated me like I was a person and not just another patient."

Shortly thereafter, however, Heather experienced a rare and life-threatening blood transfusion complication known as a transfusion-related acute lung injury (TRALI). Heather's lungs immediately started filling with fluid, making it difficult for her to breathe and get oxygen to her blood and organs. Her life was in danger, but WakeMed's team responded quickly by performing extracorporeal membrane oxygenation (ECMO) through a new program introduced at WakeMed in the spring of 2020. Venous-arterial (VA-ECMO) is a type of advanced life support that works as a temporary replacement for the heart and lungs – providing support for days to weeks while doctors treat the underlying issue. ECMO ensures the body has enough blood flow and oxygen by temporarily managing the workload of the heart and lungs.

Once placed on ECMO, Heather was transported to Duke University Medical Center for further treatment and monitoring. After a little over a week, Heather was stable, but still needed a lot of ongoing care and monitoring. She opted to return to WakeMed to continue her recovery closer to home and family under the care of her surgeon, Dr. Judson Williams and the care team she'd come to know and love.

"I will never forget the way my WakeMed care team treated me – washing and braiding my hair when I couldn't do it myself, encouraging me to get up and move so I could recover faster, and providing the best care I could have imagined for nearly an entire month. I am so grateful to Dr. Williams, Dr. Fofaria and every nurse and staff member we encountered."

Today, Heather is feeling better than she has in years. She's back to playing golf regularly and being active again – after months of slowly declining health and fatigue that she'd mostly overlooked. "After the procedure, I immediately had so much more energy. Today, I feel great and I'm ready to golf to my heart's content."

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HEATHER PAVESE

"I like to do 'epic stuff' – I try to remember that I'm only going to live once... BART FILIPIAK

Meet Bart Filipiak – On the Trail

Avid runner and extreme marathoner Bart Filipiak is a 46-year-old who can barely believe he's had a heart condition for the past 15+ years. As a kid, Bart always knew he wanted to be an Air Force pilot. He earned his private pilot's license by the time he graduated college and went on to join the Air Force. Sadly, his health screening upon entry revealed a very mild case of mitral valve prolapse – one of the most common types of valve disease affecting up to 8 million Americans a year. Crushing his dreams of becoming a military pilot didn't stop Bart who went on to enjoy a successful Air Force career in communications engineering, followed by his current civilian career in wireless telecommunications.

When Bart was nearing age 40, he noticed he'd started putting on some extra weight and wasn't in his best shape. He adopted a Paleo diet, lost some weight and signed up for a "Couch to 5K" event that helped him train for his first 3.1-mile race since high school. In the years that followed, Bart and some friends from a local fitness and fellowship group trained for event after event – of increasing duration and intensity. By 2020, Bart had participated in four 50K running/endurance events that took him up and down the mountains of Vermont, to the top of North Carolina's Mount Mitchell, and through Pilot Mountain and into Hanging Rock – each race lasting anywhere from 6 to 12 hours through rain, snow and wild obstacle courses meant to test his endurance and strength.

Bart's heart never wavered. He barely gave it a second thought – until about a year ago when he had a single unexplained episode of chest pain while sitting at his desk at work. While the emergency department ruled out a heart attack and diagnosed him with reflux or indigestion, he decided to check in with a cardiologist. WakeMed Heart & Vascular's Dr. Padma Hari performed a thorough evaluation – half expecting everything to be normal based on his extremely active lifestyle, but instead found his mild case of mitral valve prolapse had progressed to a severe case. She explained that if he didn't have surgery within a few years, he would go into heart failure.

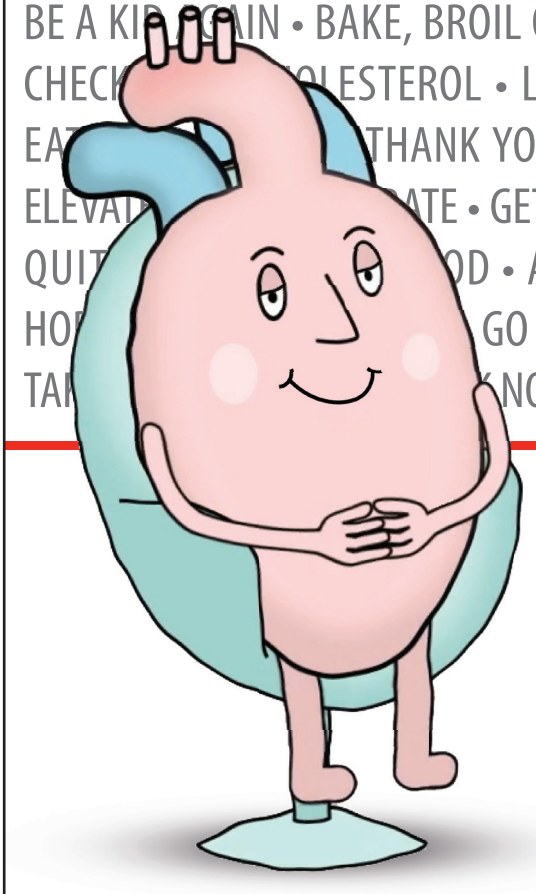
Bart was shocked – he remembers telling her that surely she'd made a mistake because there was no way he could participate in all the crazy athletic events he'd completed in the past several years with a severe heart condition. She performed one more test, a transesophageal echocardiogram, to confirm the diagnosis and referred him to WakeMed Heart & Vascular structural heart surgeon Dr. Bryon Boulton. Dr. Boulton reassured Bart that his condition was fully treatable with a valve repair procedure. "I was hesitant to have surgery and initially planned to put it off," explains Bart. "After a month or so, I went back in for a second consult where Dr. Boulton explained everything to me from an engineering perspective – which I really appreciated. He assured me that with a successful procedure, and adherence to the prescribed rehab and recovery guidance, I would be back to my racing events within a year, so I scheduled my surgery so I could get it done and move onto recovery."

On November 16, 2020 Bart had minimally-invasive valve repair surgery at the WakeMed Heart Center. "Everyone on my care team – from the surgeons to the nursing staff on every unit were fantastic. They were so caring and responsive – and when I pushed that call button, they all made me feel like I was their only patient."

Bart's recovery has been painless, and he's eager to get back to his extreme events. The first week after surgery, Bart took short walks three to four times a day. A month later, he was up to four miles a day and counting down the days until he can finish his next race event, get his pilot's license back – and take up a new type of racing called 'adventure racing,' which is a combination of biking, canoeing, hiking and running – using only a map and compass.

"I like to do 'epic stuff' – I try to remember that I'm only going to live once, so I want to take full advantage of my youth and health while I have it," he explains.

EAT YOUR VEGGIES • MANAGE YOUR WEIGHT • GIVE A HUG, GET A HUG • WALK THE DOG (AGAIN)
MONITOR YOUR BP • DANCE, DANCE, DANCE • TAKE TIME FOR YOURSELF • GET UP AND MOVE
GIVE YOGA A TRY • SHAKE OFF THE SALT • TAKE THE STAIRS • WARM UP TO OATMEAL
EXPLORE YOUR GREENWAY • GET HOOKED ON FISH • SPICE THINGS • UP GET REGULAR
CHECKUPS • DREAM SWEET DREAMS • KNOW YOUR NUMBERS • KNOW YOUR RISK FACTORS
BE A KID AGAIN • BAKE, BROIL OR STIR FRY YOUR FOOD • PAY IT FORWARD • BE ACTIVE
CHECK OLESTEROL • LEARN TO MANAGE STRESS • DON'T WORRY, BE HAPPY
EA THANK YOUR CARDIOLOGIST • GO TO THE MOVIES • HIT THE GYM
ELEVA ATE • GET PLENTY OF EXERCISE • GET PLENTY OF SLEEP • MEDITATE
QUIT OD • AVOID SECONDHAND SMOKE • MANAGE YOUR WEIGHT
HO GO FOR A RIDE • KNOW YOUR FAMILY'S HEALTH HISTORY
TA NOTHING BUT POSITIVE THOUGHTS • LISTEN TO YOUR HEART



Hey, it's me, your heart.

With a very special Heart Month message.

Remember all those heart-to-heart talks about diet, exercise and managing stress? Well, they're working. You're listening to me. Not just how to keep me healthy, but who to go to if and when I need the leader in heart and vascular care. So keep up the good work. Because, should you revert to old habits, I can still be a real pain in the chest.

WakeMed
Heart & Vascular

wakemed.org/hearts