Heart disease and stroke
Your guide to prevention and care

336-716-WAKE (9253)
WakeHealth.edu/AllHeart
Why should I be worried about getting heart disease or having a stroke?

According to the American Heart Association, heart disease is the number 1 cause of death in the United States. That’s why it’s important to make healthy lifestyle choices, focus on prevention, and get the care that your heart needs.

Stroke is the fourth-leading cause of death in the U.S. and the leading cause of serious, long-term disability. A stroke can happen to anyone. However, if you are over age 55, have high blood pressure, high cholesterol, diabetes, heart disease, smoke, or are African American, you are at an increased risk for a stroke.
“As a cardiologist, I see patients who want to discuss their risk for heart disease to those who have been diagnosed. If you came to see me after recently having a heart attack, we would discuss what that means for your heart and what we can do to avoid another heart attack. We will find the right balance of lifestyle changes, medication, and testing to improve your heart health and reduce your risk.”

Dr. Karl Richardson

What are signs of a heart attack? What should I do?

- Uncomfortable pressure, fullness, squeezing, or pain in the center of chest
- Chest discomfort with difficulty breathing
- Chest discomfort with light-headedness, fainting or sweating
- Chest discomfort with nausea
- Unusual symptoms: jaw pain, pain across the shoulders, fatigue

If you think you are having a heart attack, call 911 immediately and go to the nearest emergency department.

DID YOU KNOW?

When women have a heart attack, they are somewhat more likely than men to experience shortness of breath, nausea/vomiting and back or jaw pain. They also may not experience chest pressure.
Recognizing the signs and calling 911 quickly gives the best chance of avoiding brain damage and its long-term effects. “FAST” is an easy way to remember and identify the most common symptoms of a stroke.

Also look for:
- Sudden trouble seeing in one or both eyes.
- Sudden trouble walking, dizziness, or loss of balance or coordination.
- Sudden, severe headache with no known cause.

Treatment for a stroke must begin within 3 to 4.5 hours from the time the first symptoms appear. The faster the treatment, the better chance of a good outcome.

DID YOU KNOW?
North Carolina is one of 11 Southeast states in the “Stroke Belt,” where stroke is more prevalent.

Dr. John Wilson, Dr. Stacey Wolfe and the Wake Forest Baptist Health Stroke team provide nationally recognized stroke care to patients. By using the latest minimally invasive techniques, they help minimize lasting damage and improve chances for recovery.
What is my risk for developing heart disease?
Take our online Heart Health Profiler to estimate your risk of developing cardiovascular disease. Then, talk to your doctor about your results. Visit WakeHealth.edu/AllHeart.

What is my risk for having a stroke?
Take our online Stroke Risk Profiler to estimate your risk for having a stroke. Then, talk to your doctor about your results. Visit WakeHealth.edu/AllHeart.

How can I manage my heart disease and stroke risk factors?
According to the American Heart Association, there are some risks you cannot control. The good news is that there are many you can.

Risk factors you cannot control:
♥ Age
♥ Gender
♥ Family history
♥ Race
♥ Previous stroke or heart attack

Risk factors you can control:
♥ Blood pressure
♥ Cholesterol
♥ Tobacco use
♥ Regular physical activity
♥ Weight
♥ Diabetes

What are my heart-healthy numbers?
Knowing your heart-healthy numbers will help you spot early warning signs of heart disease and stroke. Your primary care doctor or cardiologist can help you manage these important numbers.

Know your numbers
♥ Blood pressure: Below 140/90 mm HG
♥ Cholesterol
  ◦ LDL: Lower than 130 / 70 – 100 (for high risk individuals)
  ◦ HDL: 40 or higher
  ◦ Triglycerides: Under 150
♥ Blood sugar: 100 mg/dL (fasting)
♥ Body mass index (BMI): Lower than 30 (obese)
♥ Waist size
  ◦ Men: Smaller than 40 inches
  ◦ Women: Smaller than 35 inches

Weight can affect your heart disease and stroke risks. Your doctor and the Wake Forest Baptist Health Weight Management Center team can help create a program centered around your lifestyle and weight loss goals. Call 336-716-WAKE to make an appointment. To learn more, visit WakeHealth.edu/Weight-Management-Center.

DID YOU KNOW?
Diabetes is a major risk factor for stroke and heart disease. Controlling your blood glucose levels, working with your health care team, and developing healthy lifestyle changes can reduce your risk.
What simple lifestyle changes can I make?

**Eat right**
- Focus on fruits, vegetables, whole grains and meals you make yourself. Avoid foods with trans fat and high sugar/sodium content. For heart healthy recipes, visit [WakeHealth.edu/AllHeart](http://WakeHealth.edu/AllHeart).

**Move it**
- Aim for 30 minutes of activity every day. Take it slowly at first. Talk to your doctor before starting any new exercise program.
- Fitness trackers, mobile fitness apps and other wearable devices can help keep you motivated and up to date with your fitness and weight loss goals.

**Kick the habit**
It’s never too late to quit smoking! One year after you quit smoking, your risk of heart attack is cut in half. Five years after you quit, your risk is nearly the same as someone who has never smoked. Call 1-800-Quit-Now for free 24/7 phone support by trained specialists (sponsored by QuitlineNC).

**Snooze or snore?**
Loud snoring can be a sign of sleep apnea, a significant risk factor for high blood pressure and cardiovascular disease.

Wake Forest Baptist Health Sleep Center experts evaluate patients of all ages to assess and treat sleep apnea and other sleeping disorders. For an appointment, call 336-716-WAKE. To learn more, visit [WakeHealth.edu/Sleep](http://WakeHealth.edu/Sleep).

**Manage your meds**
Tell your doctor what medications you are taking. That includes aspirin, vitamins and supplements. The more medications you take, the greater the risk for problems to occur.

Wake Forest Baptist Health has pharmacy, specialty pharmacy and cardiology pharmacy services to meet your medication needs. Our pharmacists can discuss possible side effects and interactions of the medications you are taking.

**DID YOU KNOW?**
Even just regular moderate exercise, such as walking briskly for two hours each week can reduce your risk of cardiovascular disease by more than 40 percent and reduce your risk for heart attack and diabetes.
The Wake Forest Baptist Health difference

Because we are part of an academic medical center, you’ll receive the depth of care that few hospitals can provide. From preventing heart disease and strokes to emergency care and managing ongoing conditions, our experts can help you, whether your condition is simple or complex.

Your team of heart and stroke care experts includes:
♥ Cardiologists and cardiovascular surgeons
♥ Neurologists and neurosurgeons
♥ Nurses
♥ Pharmacists
♥ Dietitians
♥ Cardiac rehabilitation specialists
♥ Emergency medical responders

Diagnosis and unique treatment options

Our cardiovascular and stroke teams offer personalized treatment plans and state-of-the-art tests to help accurately diagnose your condition. These specialists also offer unique treatment options—such as minimally invasive procedures and advanced technology—not found at other hospitals.

Safety awards—Wake Forest Baptist:
♥ Was named an IBM Watson Health’s Top 50 Cardiovascular Hospital. This study identifies the nation’s best providers of cardiovascular care based on clinical, operational and other performance standards.
♥ Has the only 5-star heart transplant rating in the state and is one of only eight such programs in the country.

Clinical trials

Our doctors, along with researchers and public health scientists, participate in national clinical trials studying the effects of heart disease and stroke. We use these findings to help provide comprehensive screening services and treatment. If you want to learn more about our clinical trials or join one, visit WakeHealth.edu/BeInvolved.

Women’s heart health

Women face the same risk for heart disease as men do. The effects of pregnancy, menopause and certain heart conditions can lead to serious problems that require specialized care. For example, our heart specialists work with our Obstetrics and Gynecology team for pregnancy-related conditions, and help make sure that treatments for menopause don’t harm a woman’s heart.

Cardio-oncology care

If your cancer treatments may have contributed to your heart condition, we will work with cardio-oncology experts to provide you with specialized screenings.

Pediatric care

The Pediatric and Congenital Heart Program of Brenner Children’s Hospital specializes in heart care for infants and children. We treat kids born with congenital heart defects, helping them prevent and manage complications through adulthood. Brenner Children’s also has a dedicated pediatric electrophysiologist who examines children with heart rhythm problems.
What are some of the most common heart conditions? How are they treated?

Wake Forest Baptist Health offers comprehensive diagnosis and treatment for the full range of heart and vascular conditions, from simple to complex. For some patients, medical management and lifestyle changes may be an effective alternative to surgery. In other cases, more invasive treatment may be needed.

Common conditions we treat include:

**Aneurysms** occur when an artery’s wall weakens and a bulge in the artery appears. If this bulge ruptures, it will cause internal bleeding. Aneurysms can develop slowly over several years, but they can also be sudden and a serious health risk.

Our experts in open and noninvasive aneurysm repair can help. A new technology, fenestrated endograft, allows us to noninvasively repair an aneurysm while maintaining the integrity and function of your arteries. Noninvasive procedures reduce pain and recovery time.

**Angina** is chest pain or discomfort that occurs when your heart is not getting enough oxygen-rich blood. This is often a sign of some other underlying cardiovascular disease, such as coronary artery disease, that can lead to a heart attack. Angina can be either stable or unstable (most concerning).

**Arrhythmia** is an abnormal heart rhythm. This includes any rhythm of the heart that deviates from normal, such as:
- Atrial fibrillation
- Tachycardia (fast heart rate)
- Bradycardia (slow heart rate)
- Ventricular tachycardia (VTach/VT)
- Ventricular fibrillation (VFib/VF)
- Atrial flutter

**Ventricular Assist Device (VAD)** is an implantable mechanical pump that helps the heart pump blood from the lower portion of your heart to the rest of your body. VADs are used for people who have weakened hearts or heart failure and are surgically implanted.

**Carotid artery disease** is a narrowing of the vessel which is usually caused by plaques or other buildup in the carotid artery. This is a form of cardiovascular disease and is a risk factor for stroke.

**Coronary artery disease (CAD)** is very common and is the leading cause of death in the U.S. for both men and women. CAD is often the underlying cause of a heart attack, heart failure and angina.

**Heart failure** occurs when the heart is not able to adequately pump enough to meet your body’s demand. Symptoms include swelling in the legs and lower extremities, shortness of breath (especially with exercise or lying down), and extreme fatigue or tiredness. If you are diagnosed with heart failure, Wake Forest Baptist offers daily clinics so you can be quickly seen and helped. This will help improve your outcome and reduce your chances of readmission.

Stents are small, mesh-like metal tubes that are placed into a narrowed coronary artery. The percutaneous coronary intervention (PCI) procedure uses a stent to open the narrowed vessel and keep it open.
Heart valve disease is when any of the four valves in your heart (tricuspid, pulmonic, aortic, mitral) become hardened, leak, or regurgitate (blood flows backward into the heart chamber). Depending on your specific condition, treatments include minimally-invasive and open procedures.

High blood pressure occurs when your blood pressure levels rise above 139/89. High blood pressure can be managed and prevented by adopting a healthy lifestyle. If you have a family history of blood pressure, are 20 pounds or more overweight, or have reached menopause, you may be at a higher risk for heart disease. If your blood pressure is normal (less than 120/80), continue to annually visit your primary care doctor or cardiologist. If you have high blood pressure (over 139/89), speak with your doctor because you need to be monitored more closely.

High cholesterol can be controlled by diet and medication. LDL is “bad” cholesterol which can raise your risk of cardiovascular disease and heart attack, while HDL is “good” cholesterol. There are generally no symptoms of high cholesterol, and it is monitored during routine medical visits.

First in region to offer WATCHMAN.

The WATCHMAN™ procedure is a minimally invasive treatment that places a “parachute” in the left atrial appendage to seal it off. This procedure helps reduce your risk of a stroke by as much as 77 percent. It also allows you to stop taking blood thinners within 45 – 60 days.

“We try medications first. However, if that fails, we may then use the WATCHMAN catheter-based technology to help you maintain normal heart rhythm. There’s no absolute cure for AFIB, but there is better management, and we have the technology to do so.” – Dr. Elijah Beaty
Patent foramen ovale (PFO) is a hole between the atria (the two upper heart chambers). Everyone is born with this opening, but generally it should close after birth. Approximately 25 percent of the population still has this opening when they are adults. There is a chance that PFO can cause a stroke, but most people never know they have it, and many times they don’t need treatment.

Peripheral artery disease (PAD) is the narrowing of the peripheral arteries, generally in the legs and arms (sometimes in the stomach and head). Symptoms in legs include pain in the lower extremities that does not go away when resting, and swelling or cramping when walking or climbing stairs.

Pulmonary embolism (PE) is a blood clot in the lungs or pulmonary arteries. Symptoms include shortness of breath, difficulty breathing or coughing up blood. Women that take oral contraceptives are often at increased risk for PE.

Structural heart disease includes a wide range of problems such as birth defects and damage to valves and vessels caused by wear and tear. Depending upon your condition, treatments include aortic valve replacement, mitral valve replacement, aortic root repair and more. Wake Forest Baptist Health has the most comprehensive and experienced Structural Heart Program in the region. We do many of these procedures under conscious sedation — rather than anesthesia — so you can have quicker recovery and a shorter hospital stay.

Mitral regurgitation is caused by a leaky mitral valve. The Mitraclip® procedure is a less invasive technique that allows the mitral valve to be repaired without surgery. This clip is attached to the mitral valve through the skin, allowing the valve to more completely close and restore normal blood flow through the heart.

DID YOU KNOW?
If you are overweight, losing just 10 pounds may lower your blood pressure and improve the effects of blood pressure medicine. It also may reduce other heart disease and stroke risk factors such as diabetes and high cholesterol.
Most experienced in region using ECMO.

ECMO (Extracorporeal Membrane Oxygenation) is a temporary support system that replaces the functions of the heart and lungs. By mechanically pumping the blood outside the body to get oxygen and then pumping the blood back into the body, the heart and lungs have time to rest and recover. ECMO is most often used with children, but is also used in adults with cardiac or respiratory failure.

The difference between cardiac arrest and a heart attack.

Cardiac arrest is when the heart stops beating appropriately. You are not breathing normally or not breathing at all. A cardiac arrest patient needs immediate CPR (cardiopulmonary resuscitation) and defibrillation (electric shock to the heart to make the heart rhythm normal again).

A heart attack occurs when blood flow to the heart is blocked. It can either progress into or be the cause of cardiac arrest.
Breakfast Oatmeal Chili
5-10 minutes | 4 cups

Ingredients:
♥ 1 cup oats, old-fashioned, dry
♥ 2 cups skim (non-fat) milk
♥ 4 teaspoons vanilla extract
♥ 8 slices apples, chopped into small pieces
♥ 1/4 cup raisins
♥ 1/2 cup nut pieces
♥ 1 cup whole grain cereal
♥ 1/8 cup brown sugar or honey
♥ Cinnamon as desired

Directions:
1. Add oats, milk and vanilla in medium saucepan on medium to medium-high heat.
2. Stir occasionally.
3. While oats are cooking, chop apple pieces and set aside.
4. Measure dried fruit, nuts and cereal. Set aside.
5. Cook oats to desired consistency (about 5-7 minutes). Add fruit, nuts and cereal.
6. Sprinkle with cinnamon and the brown sugar or honey.

Asian Salmon
25 minutes | 5-6 servings

Ingredients:
♥ 1.5 pounds salmon cut into 5-6 pieces
♥ 2 tablespoons Dijon mustard
♥ 3 tablespoons reduced-sodium soy sauce
♥ 4 tablespoons olive oil
♥ 1/2 teaspoon minced garlic

Directions:
1. Place salmon skin side down in a 9” x 13” glass dish.
2. Mix together Dijon mustard, soy sauce, olive oil and minced garlic to make a marinade.
3. Pour half of marinade on top of salmon and evenly coat with a spoon. Set salmon aside and allow it to marinate for 5-10 minutes.
4. Once marinated, place salmon in a large skillet skin side down on medium heat. Cook for 4-5 minutes on each side and baste fish with leftover marinade.
5. Salmon is done when the thickest part flakes upon piercing the fillet with a fork.

DID YOU KNOW?
According to a JAMA: Internal Medicine study published in 2014, most U.S. adults consume about 22 teaspoons of added sugars a day. The American Heart Association recommends no more than 6 teaspoons (100 calories) a day for most women and no more than 9 teaspoons (150 calories) a day for most men.
**Pesto Chicken Wrap**

20 minutes | 6 wraps

**Ingredients:**
- 1 pound pre-cooked, grilled chicken strips
- 1 tablespoon olive oil
- 6 Lite Flat Out Italian wraps
- 6 tablespoons pre-made pesto
- 4 roma tomatoes, thinly sliced
- 1/2 red onion, finely chopped
- Shredded part-skim mozzarella cheese

**Directions:**
1. Place large skillet on medium-high heat. Add 1 tablespoon of olive oil to the skillet.
2. Place chicken in skillet and cook. Remove chicken from skillet when warm throughout.
3. While chicken is cooking, lay wraps on a flat surface and spread 1 tablespoon of pesto on one long end of each wrap.
4. Place desired amount of spinach and tomatoes on top of pesto.
5. Divide the chicken into 6 equal servings and place on top of the spinach and tomatoes for each wrap.
6. Sprinkle desired amounts of mozzarella cheese and onions on top of chicken.
7. Roll the wrap up by starting with the ingredient end first.

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**Greek Yogurt Pound Cake**

60 minutes | 8-10 servings

**Ingredients:**
- 1-1/2 cup all-purpose flour
- 2 teaspoons baking powder
- 3/4 teaspoon salt
- 1/4 teaspoon cinnamon
- 1/8 teaspoon nutmeg
- 3/4 cup sugar
- 2 eggs
- 3/4 cup (6 ounces) Greek yogurt
- 1/2 cup canola oil
- 1 teaspoon vanilla extract

**Directions:**
1. Preheat oven to 350 degrees F.
2. Grease loaf pan.
3. In a medium bowl combine flour, baking powder, salt, cinnamon and nutmeg.
4. In a separate small bowl, whisk together sugar, eggs, yogurt, oil and vanilla.
5. Pour wet ingredients into the bowl with the dry ingredients and use a spatula to fold ingredients together just until combined.
6. Pour batter into greased loaf pan and bake in oven for 45 – 50 minutes or until a toothpick in the center comes out clean.
7. Let cake cool in pan for at least 15 minutes then flip onto cooling rack to cool completely.

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Recipes courtesy of Brenner FIT®
Convenient locations throughout the area

Bermuda Run
1 Davie Medical Center – Bermuda Run
329 NC Highway 801 North
Bermuda Run, NC 27006

Clemmons
2 Medical Plaza – Clemmons
2311 Lewisville Clemmons Road
Winston-Salem, NC 27012

Greensboro
3 Medical Plaza – North Elm
3903 N. Elm Street
Greensboro, NC 27455

Hickory
4 Catawba Valley Medical Center
810 Fairgrove Church Rd SE
Hickory, NC 28602

High Point
5 Wake Forest Baptist Health – Premier
4515 Premier Drive, Suite 402
High Point, NC 27265

Kernersville
6 Kernersville VA Health Care Center
1695 Kernersville Medical Park
Kernersville, NC 27284

Lexington
7 Lexington Medical Center
14 Medical Park Drive
Lexington, NC 27292

Mount Airy
8 Northern Hospital of Surry County
830 Rockford Street
Mount Airy, NC 27030

North Wilkesboro
9 Wilkes Medical Center
1370 West D Street
North Wilkesboro, NC 28659

Salisbury
10 W. G. Hefner Veteran’s Affairs
1601 Brenner Avenue
Salisbury, NC 28144

Sparta
11 Alleghany Memorial Hospital
233 Doctors Street
Sparta, NC 28675

Statesville
12 Vascular Services – Statesville
(In partnership with Iredell Health System)
770 Hartness Road
Statesville, NC 28677

Winston-Salem
13 Wake Forest Baptist Medical Center
Medical Center Boulevard
Winston-Salem, NC 27157

14 Medical Plaza – Country Club
4610 Country Club Road
Winston-Salem, NC 27104
Patient with stroke and PFO returns to active life

When Keith Davis began experiencing stroke symptoms, he knew something was wrong. He was young and healthy, and he never thought he was a potential stroke candidate.

After Keith was admitted to the hospital, his doctors discovered that the root cause of the symptoms was a transient ischemic attack (TIA). The TIA was a brief, stroke-like attack due to a patent foramen ovale (PFO). He was one of the 25 percent of the population with this unclosed opening in the heart. This opening can go untreated and unnoticed, but for Keith, it had caused the TIA.

Keith, Dr. Patrick Reynolds and Dr. Sanjay Gandhi discussed his options and chose a more definite fix to prevent a future stroke. “This was the option that gave me the least risk for a recurrent stroke and that restored me to full capability. I don’t live life slowly. I can jump back into the way I want to live,” Keith said.

Minimally invasive TAVR procedure saves Triad man’s life

Jack Vynalek, age 66, was just minutes from death when his heart valve stopped working. Diagnosed at age 25 with high blood pressure, Jack was no stranger to heart issues. In 2017, Jack’s bovine valve suddenly failed. Jack was rushed to Wake Forest Baptist Health where our doctors performed the first emergency valve replacement in the region. “If they hadn’t taken me right then to surgery and replaced my heart valve, I wouldn’t have made it. The heart team was very decisive, calm, cool and collected in performing the procedure that day that helped me survive,” Jack said.

“Many heart patients with failing valves are diagnosed over a longer period which gives the patient and doctors time to prepare for surgery. Mr. Vynalek’s sudden failure represents a unique case, but the experience of our heart team with the TAVR device* is an example of how advances in technology give us another tool that can quickly benefit patients” – Dr. David Zhao

* Transcatheter Aortic Valve Repair/Replacement

To make an appointment with one of our heart or stroke specialists, call or visit: 336-716-WAKE (9253)
WakeHealth.edu/AllHeart