Color Me HEALTHY
The Importance of Eating the Rainbow
Dear Readers,

This summer, we extend a heartfelt “Thank you and Best Wishes” to longtime cardiologist and the “Father of Electrophysiology” at WakeMed — James (Jim) Foster, MD.

Dr. Foster, a cardiologist with Wake Heart & Vascular Associates and WakeMed for more than 20 years and a physician for 40 years, retired May 31. What an amazing career! Dr. Foster performed the first electrophysiology procedure in Wake County and provided heart rhythm care — including placement of defibrillators and pacemakers — to numerous patients. Known for his commitment to his patients, Dr. Foster will certainly be missed.

In May, we welcomed a new cardiology practice to the WakeMed Physician Practices network with the addition of Wake Specialty Physicians — Cary Cardiology to our health system. Providing comprehensive care in noninvasive cardiology, interventional cardiology, electrophysiology — including a fib ablation, noninvasive peripheral vascular and interventional peripheral vascular services, we welcome Cary Cardiology members PM Shah, MD, DN Shah, MD, Rama Garimella, MD, Sunil Desai, MD, Pratik Desai, MD, Joshua Macomber, MD and Pavlo Netrebko, MD, to our team.

Stroke interventions, including the use of thrombolytics or advanced interventional technology, can mean survival and even full recovery for many stroke patients. In our lead article, neurologist Rhonda Gabr, MD, provides insight on what stroke intervention is. Cardiologist Bhavani Balaravi, MD, also shares information about how high blood pressure, if left untreated, can lead to strokes. Atrial fibrillation, a heart rhythm disorder, can also cause a stroke, as we learn from Steve Toth, who survived and continues to make an amazing recovery after a massive stroke. Thanks to action by his wife Libbie who recognized the signs and symptoms of stroke, Wake County EMS, and the teamwork of the WakeMed stroke team, including WakeMed Raleigh Campus ED, WakeMed Heart Center cath lab team, neurologist Susan Glenn, MD, and cardiologist and neurovascular interventionalist Matthew Hook, MD, who performed Steve’s stroke intervention, Steve is back at work and continues to impress us all.

Steve spent some time in WakeMed’s Neuro Intensive Care Unit, which will soon be equipped with advanced eICU technology. This technology and the critical care nurses and physicians who will operate it offer patients in all of the WakeMed critical care units an advanced level of monitoring.

Recognizing symptoms is important in treatment of stroke and heart attack. Several of our seasoned cardiologists share information on the most uncommon heart attack symptoms they have seen in patients. While symptoms are one indicator of a heart attack, blood tests results can be another. In “It’s All in the Blood,” we talk to several cardiologists about what they look for in the blood to determine if a patient has had or is having a heart attack.

The bounty of fruits and vegetables, so plentiful this time of year, offer key nutritional benefits to support healthy heart and vascular lifestyles. Take a look at ways a “colorful” diet can boost your health, and freezing and canning methods to help you enjoy summer fruits and vegetables all year long.

Enjoy the final days of summer, stay hydrated and keep active — indoors and out!

From our heart to yours,

Betsy Gaskins-McClaine, RN, BSN, MSN-C
Vice President, Heart & Vascular Services,
WakeMed Health & Hospitals
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# Table of Contents

- **PAGE 4**: Advanced Interventional Stroke Treatments
- **PAGE 7**: Patient Profile: Steve Toth
- **PAGE 8**: Diagnosing Diagnostics: It's All In The Blood
- **PAGE 9**: Cary Cardiology Joins Wake Specialty Physicians
- **PAGE 10**: Get Moving
- **PAGE 12**: Color Me Healthy
- **PAGE 16**: Common vs. Uncommon Heart Attack Symptoms

Congratulations, Dr. Foster!
One definition of an intervention is the act of “interfering with the outcome or course especially of a condition or process.” When describing today’s highly advanced stroke treatments, commonly known as interventions, this definition holds true in lifesaving ways.

An ischemic stroke occurs when a blood clot lodges in an artery leading to the brain. The process of brain damage and eventual death can begin because life-giving oxygen and nutrients found in the blood cannot reach the brain. Stroke interventions, in the form of intravenous medications and tiny devices, are now used at WakeMed and many other U.S. health systems to stop the life-limiting process stroke can bring about.

Thrombolytics

Thrombolytics, or lytics, are essentially clot-busting medications. “Lytics can break up the platelets, fibers and connections that make up a clot and reopen the artery to allow blood and oxygen to flow to the brain,” says Rhonda Gabr, MD, PhD, a neurologist with Raleigh Neurology. Dr. Gabr and her colleagues treat patients in their practice as well as emergent patients in the WakeMed Emergency Departments, located at the WakeMed Raleigh Campus, Cary Hospital, North Healthplex, Apex Healthplex and Brier Creek Healthplex.

Thrombolytic stroke interventions have been in use since the mid-1990s. The most common thrombolytic used is tissue plasminogen activator (tPA). TPA is a protein that actually exists in the cells that line our blood vessels. Its purpose as a naturally occurring protein in our bodies is to act as a thrombolytic to break down blood clots. When it is overwhelmed and cannot do its job on a large clot, a synthetic version of tPA can be intravenously administered to break it up and restore blood flow to the brain.

“We have seen stroke patients who meet the criteria for lytic administration make remarkable recoveries,” says Dr. Gabr. In fact, the use of tPA and other interventional stroke treatments has significantly reduced disability related to stroke. Still, thrombolytics can only be used for a small number of ischemic stroke patients. For a patient to qualify for tPA administration, the patient must:

• Be treated within three hours of symptom onset. “This is the most important factor for lytic interventions,” emphasizes Dr. Gabr. She explains that knowing when symptoms actually began can be difficult. “Stroke symptoms can come on slowly or even when you are sleeping,” she explains. “Getting to the hospital and having the appropriate tests within that three-hour window can be difficult.”
  • Have normal blood pressure and platelets
  • Not take blood thinners.
For Patients Who Do Not Qualify for tPA

“We have a second-line intervention for patients who do not qualify for lytics and do not respond to traditional stroke care,” said Dr. Gabr. This intervention comes in the form of highly advanced catheter technology.

“Clot retrieval devices can be used to facilitate restoration of blood flow in patients who are outside the three-hour window with the potential for good outcomes,” says Dr. Gabr. She noted that, when she is working in the WakeMed Emergency Departments, she often encounters stroke patients who may qualify for a catheter intervention and makes the suggestion to cardiologists. Interventional cardiologists ultimately perform these types of procedures and are readily available at the WakeMed Raleigh Campus Emergency Department to treat stroke patients.

There are two types of clot retrieval devices – the Merci® Retrieval System and the Penumbra System. The Merci retriever is a coil on a catheter that is threaded to the clot in the blood vessel of the brain. Once the coil reaches the clot, the interventionist pushes it forward so it wraps around the clot. The clot can then be pulled out of the artery restoring blood flow to the brain. A Penumbra device is also threaded into the artery via a catheter. Instead of pulling the clot out of the artery, the Penumbra device uses suction to remove the clot.

“The clot retrieval devices are most appropriate for patients who have large vessel blockages that are confirmed by specialized CT imaging,” says Dr. Gabr. “We have also seen very positive results in very young stroke patients with posterior circulation (back of the brain) strokes.”

Good Conventional Stroke Care

Interventional stroke treatments aside, Dr. Gabr stresses the importance of good conventional stroke care for every stroke patient before any interventions can take place.

“First and foremost, the stroke patient needs to get to the hospital as soon as possible,” says Dr. Gabr. In addition, patients need to have blood tests as well as a CT scan (computed tomography perfusion imaging) to determine if and where a clot exists. These necessary steps add to the time it takes for a patient to be treated, and time is brain. “The safest and best way to get to the hospital is to call 9-1-1,” says Dr. Gabr. “We have great EMS providers in our area who can stabilize the patient and help physicians and WakeMed prepare for the patient’s arrival.”

In addition to a safe and swift arrival at the hospital emergency department, patients should:

- Lie as flat as possible to encourage blood flow.
- Be given aspirin (in some cases) and intravenous fluids.
- Be kept stable to avoid sudden drops in blood pressure.

Will I Have Another Stroke?

It is unfortunate, but a stroke patient, particularly one who has uncontrolled risk factors, is at risk for another stroke.

“I never tell a stroke patient they won’t suffer another stroke,” says Dr. Gabr. “It is, unfortunately, always a possibility. But patients can take steps to lower their risk of a second stroke.”

Dr. Gabr notes that the type of stroke a person has and where the blockage occurred can impact a person’s risk of suffering a second stroke. “Patients can’t do anything to alter the etiology of their original stroke, but they can reduce their risk by taking good care of themselves,” she adds.

continued on page 6
Stroke Prevention Guidelines

• Stay in control — If you have high blood pressure, diabetes, high cholesterol or atrial fibrillation, work with your doctor to get and keep them under control.
• Stop smoking.
• Limit or eliminate alcohol use.
• Exercise — at least 30 minutes a day.
• Blood circulation — Talk to your doctor to understand whether or not you have good circulation.
• Consume less salt.
• Stroke symptoms — Know what they are and listen to your body.

Dr. Gabr has special advice for her younger patients who have had strokes. “I tell them that they need to become really good friends with their primary care doctor who can track their vascular health throughout their life,” she says.

Above all, people who have survived a stroke need to focus on living happy, healthy lives. Because physicians now have the ability to intervene with advanced medication and technology when a stroke occurs, that happy, healthy life is an even greater possibility.

For more information about interventional stroke treatments, speak with your physician or visit www.wakemed.org.

"First and foremost, the stroke patient needs to get to the hospital as soon as possible."

— Rhonda Gabr, MD, Raleigh Neurology

Blood Pressure = Stroke Risk

It’s true. “If you have chronic, uncontrolled high blood pressure, you are seven times more likely to have a stroke than someone who has healthy blood pressure (less than 120/80),” says Dr. Bhavani Balaravi, MD, a cardiologist with WakeMed Faculty Physicians-Raleigh Cardiology in their Cary office. Also known as hypertension, chronic high blood pressure can cause cholesterol to build up on artery walls, a process known as “atherosclerosis.” This can cause the artery to narrow and harden, decreasing blood flow to the heart, brain and other vital organs. This progressive, slow build up of cholesterol plaque eventually blocks arteries, resulting in heart attacks, strokes and peripheral arterial disease. Sometimes, an unstable plaque in arteries can rupture (vulnerable plaque) suddenly leading to a heart attack. Hypertension is a silent disease. “It’s estimated that 1 in 3 Americans have high blood pressure, and many of them don’t know they even have it,” explains Dr. Balaravi. Have your blood pressure checked regularly by your doctor. If it’s high, be proactive! Work with your doctor and adopt a healthy lifestyle to get and keep your blood pressure under control.

STROKE RISK FACTS:
Men vs. Women

Stroke Rate — Overall, while more men have strokes than women, one in six women will have a stroke. In the age groups 35 to 44 and 85+, more women than men have strokes.

Death from Stroke — Of the Americans who die as a result of a stroke, 60 percent are women.

Migraine Headaches — It is important to note that more women than men suffer from migraine headaches. Chronic migraines are a risk factor for stroke.
Miracle after Massive Stroke

How a tiny device, a can-do attitude and strong faith led to one man’s amazing recovery

Steve Toth, an extension entomologist and IPM coordinator at North Carolina State University (NCSU) and associate director of the Southern Region Integrated Pest Management Center, travels a great deal for his work. On a trip to Savannah, Ga., in January 2011, Steve experienced chest pain but decided to wait until he returned to Raleigh for a diagnosis.

Once home, he sought medical treatment. Test results showed multiple clots in his lungs. Later, another appeared in his groin. Steve was prescribed blood thinners and by the middle of August, the blood clots were gone.

Still, Steve’s health worsened. Steve went to see his doctor who started him on antibiotics. Then, Steve had an odd complaint. “He had numbness and tingling in his right leg and foot,” said his wife, Libbie. “We read the pamphlet that came with the antibiotic and it said that tingling and numbness in the extremities was a possible side effect.”

Steve stopped taking the medication, and, until Sept. 1, 2011, he was feeling much better.

That day, things changed quickly. “Steve attempted to put his soda can on the counter,” said Libbie. “When he did, it tipped over and poured all over the floor. I looked up and Steve’s eyes were rolling back in his head and he was struggling to stand.”

Libbie knew what was happening. “I had read about stroke and heart attack symptoms; he could not smile, did not speak his name and could not stick out his tongue. I knew he was having a stroke, so I called 9-1-1 immediately.”

First responders took Steve and Libbie to the WakeMed Raleigh Campus Emergency Department. Steve had a massive stroke and Libbie’s actions helped Steve quickly get to the hospital, tested and into treatment – a critical factor to surviving stroke and successful recovery.

From Dr. Susan Glenn, a neurologist with Raleigh Neurology, and Dr. Matthew Hook, an interventional cardiologist with Wake Heart & Vascular, Libbie learned that Steve’s stroke was likely the result of undiagnosed atrial fibrillation – a heart rhythm disturbance that can lead to stroke. Dr. Hook had a frank conversation with Libbie. “He told me that he thought Steve would either die or would spend the rest of his life in a nursing home,” said Libbie. “But he also told me there was a risky procedure he could try. Dr. Glenn reassured me and my decision to consent to the procedure was made.”

The procedure Dr. Hook performed – a thrombus aspiration – involves advanced technology known as the Penumbra System aspiration catheter. “We thread the catheter through the impacted artery to the location of the blood clot,” explained Dr. Hook. “The Penumbra device at the end of the catheter uses suction to pull the clot into the device so we can remove it.”

“The procedure didn’t take long at all,” said Libbie. Still, Steve’s outcome was uncertain.

But a pleasant surprise awaited Libbie in Steve’s hospital room. “The morning after Steve’s procedure, I walked into his room and he said ‘Hi’,” said Libbie. Steve also knew who she was as well as their adult children, his parents and friends.

The day after his procedure, Steve could move a finger. In less than two days, he could stand and sit in a chair. A week later, he was walking with a walker. Less than nine months after his stroke, Steve is working 40 hours a week. He is cleared to drive, travel and play sports and he hopes to resume teaching next year. “He still has some aphasia, but is making amazing progress,” explained Libbie.

What does the future hold? Steve is determined and has a positive attitude. When he is told how well he is doing he replies, “I have a way to go, but I’m getting there.” There is no question in Steve’s or Libbie’s mind that he will make a complete recovery.

PATIENT | PROFILE

Miracle after Massive Stroke

How a tiny device, a can-do attitude and strong faith led to one man’s amazing recovery

Steve Toth now works 40 hours a week, thanks to his perseverance and the expertise of Dr. Susan Glenn and Dr. Matt Hook.
When the heart muscle is damaged due to a blocked artery, certain cardiac or heart enzymes slowly leak into the blood. Measuring their presence is one of the best ways to confirm a heart attack has occurred. A blood test coupled with other important tests can provide additional information that can guide treatment and determine the long-term outcome in someone who has suffered a heart attack.

The first blood sample is usually taken in the emergency room. Additional blood samples are obtained every six to eight hours for the first 24 hours after hospital admission.

**Troponin**

“The presence of troponin is the most accurate indicator that a heart attack has occurred because it is a heart-specific protein. When a piece of heart muscle dies, the cell breaks open and releases its contents in the bloodstream, including troponin,” said Dr. Ray Cheely, a cardiologist with WakeMed Faculty Physicians-Raleigh Cardiology.

Even slight elevations in troponin levels can indicate some heart damage. However, fluctuations in troponin levels as diagnosed in a series of blood tests done over several hours is a tell-tale sign that the patient has had a heart attack or some other damage to the heart.

Troponin levels can still be positive for several days in patients who experience heart-related chest pain, discomfort, or other symptoms who do not immediately seek medical attention.

**Thyroid**

The thyroid is a butterfly shaped gland found at the base of the throat below the Adam’s apple. It controls how the body uses energy, makes proteins, and interacts with other hormones. Fluctuations in the thyroid can precipitate heart problems.

“An overactive thyroid makes your heart go faster and can cause a different form of heart beat,” Dr. Cheely said. “It can cause sinus tachycardia or atrial fibrillation.”

Sinus tachycardia is a heart rate of 100 beats per minute or more. The normal heart rate in the average adult ranges from 60 to 100 beats per minute. Atrial fibrillation is a rapid, irregular heartbeat, which can lead to heart problems and possibly stroke.

Undiagnosed hypothyroidism (when the thyroid doesn’t produce enough hormones) can cause elevated levels of “bad” cholesterol. If left untreated, a fatty substance can build in the walls of your arteries and harden – a process known as atherosclerosis. Atherosclerosis causes the arteries to narrow and slows down or blocks blood flow to the heart. When this happens, you may experience chest pain. A heart attack occurs when the blood supply to a portion of the heart is completely cut off.

**C-reactive protein**

C-reactive protein (CRP) is a protein in the liver that is produced as part of your body’s response to injury or infection.

“The presence of C-reactive protein is a signal that there is inflammation in the body,” said Dr. John Kelley, a cardiologist with WakeMed Faculty Physicians-Carolina Cardiology. “That inflammation is related to high cholesterol and can be a blood marker for coronary artery disease.”

According to the American Heart Association, your CRP test can be interpreted as putting your heart disease risk at:

- Low risk (less than 1.0 milligrams per liter, or mg/L)
• Average risk (1.0 to 3.0 mg/L)
• High risk (above 3.0 mg/L)

Inflammation plays a central role in atherosclerosis. Measuring CRP alone won’t tell your doctor you have heart disease. But factoring CRP test results with other blood tests and risk factors for heart disease helps create an overall picture of your heart health.

Hemoglobin A1c

Hemoglobin A1c is a blood test that indicates the average amount of sugar in your blood over a three-month period. Hemoglobin is a substance within red blood cells that carries oxygen throughout your body. When your blood sugar is too high, sugar builds up in your blood and combines with your hemoglobin, becoming “glycated.”

“As cardiologists, we use it to gauge how well-controlled someone’s diabetes is,” said Dr. Brian Go, a cardiologist with WakeMed Faculty Physicians – Raleigh Cardiology. “If someone has poorly controlled diabetes, then intuitively his or her risk for heart attack seems higher. It creates a bad metabolic environment for the heart vessels and makes the fatty cholesterol plaque buildup very aggressive.”

The higher the percentage of hemoglobin A1c in the blood, the higher the risks of developing complications related to diabetes. Research also indicates that some long-term damage, especially to the heart and circulatory system may already be occurring in patients who have pre-diabetes.

The normal range for the hemoglobin A1c test for people without diabetes is between 4 percent and 5.6 percent. An increased risk of diabetes is indicated between 5.7 percent and 6.4 percent while diabetes is indicated at hemoglobin A1c levels of 6.5 percent or more.

Patients with diabetes should be tested every three months to determine whether their blood sugars are below 7 percent or at least within the target level of control. Experts recommend that people who have their diabetes in check should get the blood test at least twice a year.

In May, Cary Cardiology joined the Wake Specialty Physicians network, which is an affiliate of WakeMed Health & Hospitals. The providers in Wake Specialty Physicians – Cary Cardiology include Drs. Priyavadan M Shah, Dhiren Shah, Rama Garmella, Pratik Desai, Sunil Desai, Joshua Macomber, and Pavlo Netrebko; and nurse practitioners Tina Jackson, Marianne Burger and Beverly Gregory.

“We are very excited to establish this partnership with Cary Cardiology as a result of their proven expertise in the area of cardiovascular services,” said Dr. Susan Weaver, executive vice president, WakeMed Medical Affairs. “The Cary Cardiology team has played an integral role in the delivery of cardiac care throughout the WakeMed system for years, and we are fortunate to now officially welcome them to our talented team of cardiology physicians.”

For nearly 30 years, Cary Cardiology has served the Triangle and its communities and is known as a pioneering force in innovative cardiovascular practices. The practice’s physicians perform a broad spectrum of cardiac services including: intravascular ultrasound, balloon angioplasty, intra coronary stent placement, rhythm disorders treatment, atrial fibrillation ablation, the diagnosis and management of peripheral artery disease (PAD), stress testing, nuclear scanning and echocardiograms, cardiac CT, implantation of pacemakers and defibrillators, and more.

Wake Specialty Physicians – Cary Cardiology operates from its existing offices in Cary, Dunn, Lillington and Benson, and all existing phone numbers, contact information and scheduling procedures remain unchanged for patients and referring physicians.

For more information about Wake Specialty Physicians – Cary Cardiology, visit www.wakemedphysicians.com
On January 1, gyms are often busy, filled with the faces of those who have made a renewed commitment to exercising and living an active lifestyle for the new year. But summer can also be an excellent time to get off the couch and get moving with warm sunny days beckoning.

But if the warm weather isn’t enough, you might want to consider what being sedentary means for your health.

“A sedentary lifestyle can worsen obesity and diabetes and increase lipids, which can lead to heart disease,” said Dr. Brian Go, a cardiologist with WakeMed Faculty Physicians – Raleigh Cardiology. “Physical inactivity can also make you more prone to depression, and sitting too much can affect your spine and weaken your muscle strength.”

On the flipside of the coin, exercise brings with it a host of health benefits, including a solution to one of the modern health complaints — stress.

“When you exercise, first and foremost, it’s the cheapest way to relax,” said Dr. Pratik Desai, a cardiologist with Wake Specialty Physicians – Cary Cardiology. “When you go for a walk or you exercise, your mind starts paying attention to what you are doing, and it relaxes you.”

In addition, Dr. Go noted that an active lifestyle can decrease your risk of cardiovascular disease, improve your energy level and mental outlook, help with sleep, and even improve your sexual health. And there are also some less obvious health benefits from exercise, including decreasing your risk of certain cancers, diabetes, osteoporosis and dementia.

But before changing your activity level, especially if you’re starting at zero, it’s important to check in with your doctor so he can evaluate your current health levels and determine how much exercise might be appropriate for you.

When determining a patient’s readiness for physical activity, a physician will take into account both that patient’s inherent ability to exercise — for example, a hip or knee injury might make exercise difficult or impossible — and their cardiovascular capacity and cardiovascular history.

“Before signing off on a new exercise program, a doctor wants to know both that a patient’s body is physically ready for exercise and that his heart is in the shape to handle the increased heart rate that comes with exercise,” said Dr. Desai.

Once you’ve gotten the big sign-off from your doctor, it’s important to start slowly. According to Beth Drossman, coordinator of Cardiac Rehabilitation at WakeMed’s Healthworks, the guideline from the American College of Sports Medicine is to engage in moderate intensity aerobic exercise for at least 30 minutes, five or more days per week. In total, you want to exercise at least 150 minutes per week.

If finding 30 minutes per day to walk or be active seems impossible, keep in mind that your daily exercise can be broken down into smaller, more manageable chunks. Moving your body for just 10 minutes at a time, three times per day, still offers significant health benefits.
“Years ago, we thought that unless the exercise was done continuously, that there was no health benefit,” said Drossman. “We know now that even if it is spread throughout the day, it can still be beneficial.”

In fact, any movement during the day is vastly superior to no movement at all, said Dr. Go.

Don’t let the 30 minutes per day recommendation keep you from moving at all,” he said. “Even just a few minutes of movement is better than no exercise at all. Any dedicated exercise or activity, however small, will bring incremental benefits.”

Find a type of aerobic exercise that works for you and keeps you interested for your daily 30 minutes. Drossman, Dr. Go and Dr. Desai all recommend walking as an excellent entry-level form of exercise, but other options for getting in your physical activity would be riding a stationary bike, swimming or using a rowing machine.

For patients he has okayed for physical activity, Dr. Desai recommends they start off with a comfortable pace on the treadmill, but not pushing themselves generally around 2 or 3 miles per hour. Then, after several days, increase the speed by about a half-mile per hour. Continue increasing the speed up to about 3.5 miles per hour.

“I generally ask patients not to go beyond about 3.5 miles per hour unless they are an avid runner or otherwise very active,” said Desai. Instead, to increase the intensity of a workout, he recommends that his patients incorporate hills into their walks or increase the incline on the treadmill by about 1 percent. However, Desai cautions patients not to push themselves too hard.

With all of the health benefits that come with moderate exercise, it’s easy to see how important it is to lace up your shoes and get moving. Drossman said it’s equally important to know that the benefits of exercise largely depend on them becoming routine, since the benefits of a single exercise session last for just about 24 hours.

“I try to encourage people to think of exercise as a daily medication, and to maintain that therapeutic level in their bloodstream, they need to take their daily dose of exercise,” said Drossman.
Summer fruits and veggies come in a rainbow of brilliant hues that span the spectrum from red to purple. And each color represents not only the magnificent flavor inside, but also the host of phytochemicals and other compounds that make this cornucopia of color a true nutritional powerhouse.

According to Lori Stevens, clinical dietician at WakeMed Cary Hospital, experts are just beginning to uncover the health benefits provided by the multihued compounds and how they might be able to help prevent disease.

“Different colors correspond to different chemicals, but it is not necessarily true that brighter colored vegetables are more nutritious,” said Stevens. “We are discovering the beneficial nutrients in vegetables of all colors. This is why variety is so important; eating a rainbow ensures maximal benefit.”

However, according to a study conducted by the NC Department of Health and Human Services, fewer than one in four North Carolinians eat five or more servings a day of fruits and vegetables. The minimum recommendation is three to five servings per day.

Perhaps one of the most nutritious produce colors — green — might also be one of the most absent from our plates. According to Stevens, many people eschew Popeye’s advice and cast aside their leafy greens for sweeter, less stigmatized foods.

“Green vegetables can be a harder ‘sell’ to small children, especially if their parents are not fans. How many of us remember being told as children, ‘You can’t leave the table until you finish your broccoli?’”

Her advice is not just to choke down those veggies and fruits we find unpalatable, but instead, to be adventurous with the foods we try. Try new-to-us fruits and veggies that we happen upon at the farmers market. Look up new recipes that incorporate familiar flavors and ingredients, like garlic and olive oil, or pair green veggies with fruits and vegetables that you really love.

“Make an effort to go to the store and purchase a wide variety of fruits and vegetables,” said Stevens. “Don’t get stuck in the rut of buying the same old thing week after week.”

While there’s an abundance of fresh, local produce in North Carolina in the warmer months, don’t neglect your fruit and vegetable intake when the weather begins to cool. According to Stevens, fresh, frozen, and canned produce are all nutritious; what matters most is how it was processed, since heat, sunlight, and time since harvesting can destroy certain nutrients.

“For example, a vegetable that is frozen or canned shortly after picking may actually retain more nutrients than a fresh vegetable that has been exposed to heat or sunlight for several days before purchase and ultimate consumption,” noted Stevens.
BLUE/PURPLE

Top picks:
Blueberries, grapes, raisins, eggplant, red cabbage

Nutritional boost:
Like some red fruits and veggies, blue and purple produce contains anthocyanins, which act as powerful antioxidants that protect cells from damage. They may also help reduce the risk of cancer, stroke, and heart disease. Studies have also linked blueberry consumption to improved memory function and healthy aging.

GREEN

Top picks: Spinach, green peppers, peas, cucumber, asparagus, celery, broccoli, cabbage

Nutritional boost:
Green fruits and veggies can generate a “yuck” factor, but nutritionally, they contain a variety of powerhouse vitamins and nutrients. Lutein works with other chemicals to keep eyes healthy, and the indoles in broccoli and cabbage may help protect against some types of cancer. Plus, leafy greens contain folate, a B vitamin that helps reduce the risk of birth defects.

Although canned and frozen vegetables are generally good choices, Stevens does recommend reading labels and avoiding brands that add anything—salt, sugar, coloring or preservatives. Also, check the expiration date, as older frozen foods can lose important nutrients like vitamin C or folate.

Ultimately, make the best choices you can, and try to make eating fruits and veggies fun! Stevens suggests creating a contest with family or coworkers where the person who eats the most variety wins. Or simply commit to trying one new fruit or vegetable each week. There are a number of local farms that offer a weekly produce box that you can either pick up or have delivered, which means built-in variety and, often, exposure to fruits and veggies you have never tried.

“A fruit bowl on the counter should always be full,” said Stevens. “Remember, fruits and vegetables are the original fast food.”

Packing a Colorful PUNCH

Eating the rainbow doesn’t have to be a chore. And you don’t have to radically change the way you eat to accomplish the goal of adding more fruits and veggies to your diet. Throw a few blueberries or strawberries into your morning cereal, whip up a quick smoothie with hidden leafy greens, or add an extra veggie to your dinner plate. If you want a few more ways to really pack in the colors (and flavors), here is a simple recipe that can help.

ROASTED VEGETABLES OVER PASTA

2 medium yellow squash, cubed (~1 inch pieces)
1 onion (sliced)
2 red peppers (cut into bite size strips)
2 med. zucchini, cubed (1 inch pieces)
1 1/8 c. olive oil
1 pound of pasta
1 Tbsp. olive oil (for brushing over vegetables)
1/2 c. mozzarella cheese, shredded
Parmesan cheese
Pepper to taste
1 tsp. basil
1/2 tsp. oregano

Toss vegetables in 1 Tbsp. olive oil and spices. Roast in oven (375 degrees for 10-15 minutes until softened) or grill vegetables outside until soft but not blackened.

In the meantime, prepare pasta according to package directions. Once pasta is finished, toss pasta in olive oil to keep it from sticking together. (Do not rinse in cold water as pasta needs to be hot.) Pour pasta into a large bowl or serving plate. Sprinkle mozzarella cheese and parmesan cheese over pasta. Top with roasted vegetables and serve.

Nutrition facts (per 1 cup serving):
Calories: 240  Fat: 3 grams

STRAWBERRY SALAD

3-4 cups dark greens (mesclun, spinach)
1 container strawberries, cleaned and halved
1 container blueberries
1/2 c. toasted almonds
1 cucumber, sliced
Raspberry vinaigrette or lemon poppy seed dressing

Toss all ingredients and serve immediately.
The height of summer’s heat in North Carolina brings with it the ripening of a wide variety of fresh, local produce. Strawberries and blueberries begin to deepen into delicious reds and blues, but you’ll have to wait until the real heat begins to find the sweetest corn, juiciest peaches, plumpest tomatoes and chin-drippiest watermelons.

Fortunately, by canning some of these delectable fruits and vegetables now, you can enjoy both the flavor and nutrition of summer all year long. According to Amy Bowen, clinical dietician at WakeMed Cary Hospital, canned and frozen produce is generally just as nutritious as its fresh counterpart and can even contain higher levels of vitamins and nutrients.

“Canning captures the nutrients of fresh fruits and vegetables when they are in season at their peak, and canned food typically retains its nutrients for up to two years,” said Bowen. “On the other hand, some ‘fresh’ fruits and vegetables may be picked very early in the ripening process, shipped long distances with exposure to heat and light, and stored for one to two weeks before they finally hit your refrigerator. All of these factors contribute to significant nutrient losses.”

Certain foods, like pumpkins and tomatoes, are sometimes a better choice canned than fresh. Bowen noted that canned pumpkin contains more than 20 times more vitamin A than fresh pumpkin, and when tomatoes are heated and canned it boosts the availability of the powerful antioxidant lycopene, which has been associated with a lower risk of prostate cancer and cardiovascular disease.

It’s important to choose high-quality, unblemished fruits and vegetables for canning, Bowen noted, since canning doesn’t improve the quality of the food canned. She suggests buying fresh from local farmer’s markets, roadside stands or pick-your-own farms.

Chef Chad McIntyre, of Market Restaurant in downtown Raleigh, agrees that what goes into the can determines what comes out, making quality ingredients of the utmost importance.

“With canning, what you can is what you get,” he said. “Not too much is lost in the canning process, so if you start with fresh, local ingredients, that’s what you have when you finish.”

Getting Started and Learning the Lingo

There’s a lot of lingo that goes along with canning (see page 15 for a list of canning terms), but according McIntyre, the process is fairly straightforward as long as you educate yourself first and then follow the directions.

“The biggest and most common mistake is not following proper canning guidelines about temperatures and procedures,” he said. “Not canning properly can lead to food that spoils. That being said, canning is nothing to be scared of. The guidelines are simple and specific, so if you follow them, you’ll have no problems.”

McIntyre is one of the area’s biggest proponents of canning. Not only does he preserve food for himself and for use in the restaurant, he also teaches canning classes to help spread the canning knowledge to the community.

“I wanted to teach people how to utilize the wealth of vegetables and fruits that can be grown locally,” said McIntyre. “Too many people don’t understand the value of growing, buying and eating locally. The response from the community has been overwhelming. We’ve sold out every class and still had people asking.”

Because the first session of canning classes, which took place this past spring, was so popular, McIntyre said they plan to offer another round later this year. Updates and schedules will be posted to the Market Restaurant Facebook page and to www.eatatmarket.com.

If you aren’t able to take a class, Bowen recommends reading up on the subject before diving in, mainly because of food safety concerns. Try the Ball Blue Book, which is the book McIntyre uses in his canning classes, or the Blue Chair Jam Cookbook for recipes and procedures for canning different types of fruits and vegetables.
Chad McIntyre’s Pickled Onions

½ tsp pickling spice
½ tsp turmeric
1½ c sugar
1 c water
1 c apple cider vinegar
1 pinch salt
½ tsp whole brown mustard seed
½ tsp celery seed
6-7 cups onions, julienned (approximately 3 large onions)

1. Combine the ingredients, minus the onions, in a large pot and bring to a boil.
2. Pack the onions into hot jars and fill with the boiled liquid, leaving ¼ inch headspace.
3. Remove air bubbles.
4. Adjust two-piece caps.
5. Process for ten minutes in a boiling water canner.
6. Always be sure to follow manufacturer’s guidelines for the specific jars and lids you use.
7. Enjoy your pickled onions as a flavorful addition to salads, sandwiches and more!

NUTRITION FACTS (Per 1 ounce serving):
Calories: 31 Carbohydrates: total: 8 grams  Fat: 0 grams  Sodium: 4 milligrams

Chad McIntyre’s Pickled Onions

In addition, the North Carolina Cooperative Extension Service offers a free online bulletin that provides an excellent introduction to canning, available at www.ces.ncsu.edu/depts, key word search: canning. The resource includes basic procedures for canning more than 20 types of fruit and vegetables.

Make It Healthy

While canned fruits and vegetables are as nutritious, or even more so than their fresh counterparts, there are a few things to consider. Often, the liquids used to can fruits contain sugar, which adds extra calories but no nutrition. Bowen recommends canning fruit in water or juice instead of a sweet syrup. While the syrup helps the fruit hold its shape, color and flavor, it does not preserve the food.

“I would recommend experimenting,” said Bowen. “You may find that you prefer fruits canned in water, their own juices or a lighter syrup.”

Sodium can be another hazard when it comes to canned foods. According to Bowen, salt is added to canned foods only as a flavor enhancer, not as a preservative, so if you’re canning your own foods, you can just skip the salt, since a diet high in sodium increases your risk of heart disease and stroke.

When purchasing commercially canned produce, look for “low sodium” or “no salt added” versions of your favorite vegetables. And Bowen recommends rinsing canned vegetables in a strainer, which can remove up to 50 percent of the sodium.

Ultimately, if you’re willing to learn and carefully follow the process, canning can be a rewarding, healthy and delicious way to spend an afternoon.

“Home canning can be a great way for people to learn about their food, and it is a fun activity for the entire family,” noted Bowen.

Canning Lingo 101

Canning terms can get confusing. Check out our primer below to find out the definitions of a few of the most common terms and phrases.

Bubble remover: A utensil used to remove air bubbles trapped inside the jar.

Dial gauge: A type of pressure gauge whose needle moves along a numbered scale to indicate the pressure inside a canner.

Headspace tool: A tool, often combined with a bubble remover, that allows you to measure the amount of headspace, or the amount of unfilled space at the top of the jar.

Heat processing: Heating filled jars of food to destroy microorganisms and vent gases and air from the jar to create an airtight vacuum seal as the product cooks.

High-acid food: Include all fruits except unacidified figs, as well as food mixtures such as pickles, relishes, salsas and chutneys that contain added vinegar or citric acid. These foods can be processed in a water bath canner because microorganisms on these foods are easily killed at 212 degrees.

Hot-pack method: A method in which prepared food is heated to boiling or partially cooked before being packed into jars and processed. It generally results in higher quality canned foods.

Low-acid food: Foods including vegetables and tomatoes and figs that are not acidified, as well as meat, poultry and seafood. Because the bacteria that produces botulinum toxin can grow in low-acid foods, they must be processed at 240 degrees in a pressure canner to destroy the bacteria’s spores.

Pressure canner: A type of canner consisting of a deep pot with a rack to hold jars. It is used to process only high-acid foods.

Two-piece closure: A metal closure for vacuum-sealing jars. The set consists of a metal screw band and a flat metal lid with a flanged edge lined with sealing compound.

Water bath canner: A type of canner consisting of a deep, covered pot and a rack to hold jars. It is used to process only high-acid foods.

Weighted gauge: A type of pressure gauge that allows the pressure in a canner to rise to a desired point and then releases excess steam.

For further reference:
www.ces.ncsu.edu/depts/foodsci/ext/pubs/canning.html
Congratulations, Dr. Foster!

WakeMed Heart & Vascular Services wishes Dr. James R. Foster a fond farewell as he retires after a career spanning more than 40 years.

Dr. Foster joined his practice, Wake Heart and Vascular (WHV), and the WakeMed Medical Staff in 1990, and brought cardiac electrophysiology (EP) to Wake County. Dr. Foster's fascination with heart rhythm mechanisms led him to EP. Since he joined WHV, he has performed approximately 7,500 EP procedures.

Dr. Foster's career began during the EP field's infancy, and he has seen amazing breakthroughs. “When I began, there were few effective treatments for patients with rhythm problems, which was frustrating. Over the past 25 years, several techniques and technologies have been developed, revolutionizing arrhythmia treatment — especially catheter ablation, implanted defibrillators and biventricular pacing to treat heart failure. Today, they are widely accepted and not only extend life, but also transform the quality of patients' lives in a way that has satisfied and motivated me throughout my life in medicine. I am fortunate to have had the opportunity to make such a difference in the lives of our patients.”

Dr. Foster credits his WHV colleagues and partners for the opportunity to start an EP service and their support of his practice. He also thanks former WakeMed administrators Ray Champ and Doug Vinsel and current WakeMed Heart Center VP Betsy Gaskins-McClaine for establishing EP at WakeMed.

Chest pain is often the first warning sign of a heart attack, especially when accompanied by shortness of breath, weakness, nausea, or sweating. But heart attack symptoms can also be sneaky, presenting in uncommon ways. Heart to Heart asked several cardiologists to share the most uncommon heart attack symptom they have seen. If you or someone experiences any heart attack symptoms, please call 9-1-1 immediately.

**COMMON VS. UNCOMMON Heart Attack Symptoms**

- **Dr. George Hamrick, WakeMed Faculty Physicians-Carolina Cardiology:** “Sharp or electric pain in the chest or back is commonly related to muscular or esophageal problems, but it can be a symptom of a heart attack. It's important to find out the cause of the pain.”

- **Dr. J. Tift Mann, Wake Heart & Vascular Associates:** “One patient presented with tooth pain. It is not well-known that heart pain can also radiate into the jaw and teeth. There are nerve endings that extend into the neck and jaw. If patients come in and say they have severe jaw pain and shortness of breath, we pay a lot of attention to that.”

- **Dr. Richard Daw, WakeMed Faculty Physicians-Raleigh Cardiology:** “An older patient came into the emergency department with pain in her third, fourth and fifth fingers on her right hand. It was only in those three fingers – not in the arm or chest. From that, they decided to do an EKG and discovered she was having a myocardial infarction (heart attack).”

- **Dr. Jim Locklear, WakeMed Faculty Physicians-Raleigh Cardiology:** “A patient went to her dentist complaining of a toothache. The pain was in the left lower teeth. He examined her and could not find anything wrong and sent her home with pain medication. The pain got so severe that she went to the emergency room and was diagnosed with a heart attack.”

- **Dr. John Kelley, WakeMed Faculty Physicians-Carolina Cardiology:** “A patient complained of heart fluttering. Typically, a heart flutter is the least common symptom of a heart attack. However, it can lead to a loss of consciousness.”

- **Dr. J. Tift Mann, Wake Heart & Vascular Associates:** “One patient presented with tooth pain. It is not well-known that heart pain can also radiate into the jaw and teeth. There are nerve endings that extend into the neck and jaw. If patients come in and say they have severe jaw pain and shortness of breath, we pay a lot of attention to that.”