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Alzheimer's and Heart Disease: What's the Connection?

These diseases of aging often coexist.

Alzheimer's disease. Dementia. Cognitive impairment. Memory loss. Fewer words strike greater terror in the heart than these neurological disorders and the symptoms that define them.

There are more than 5.8 million adults in the United States living with Alzheimer's, and thousands more suffer from Alzheimer's disease-related disorders (ADRD), a category that includes vascular dementia and Lewy body disease. The vast majority are seniors, the same population most likely to be diagnosed with heart disease or other form of vascular disease. Could there be a connection between dementia and cardiovascular disease? Or more specifically, between Alzheimer's disease and cardiovascular disease?

"As you age, dementia can develop from a variety of causes, and one of these may be vascular disease," says neurologist James Leverenz, MD, Director of the Cleveland Alzheimer's Disease Research Center and the Cleveland Clinic Lou Ruvo Center for Brain Health in Cleveland. "That being said, whether vascular disease contributes to Alzheimer's disease or interacts somehow to cause or promote Alzheimer's is still unclear."

Understanding These Diseases

In order to understand any potential relationship between dementia, vascular dementia and Alzheimer's disease, you need to know what these diseases are and how they differ from each other.

"Dementia" is an umbrella term that describes a progressive deterioration in thinking and reasoning skills and judgment or behavior that interferes with



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What's good for your heart is good for your brain. Managing your cardiovascular risk factors appears to reduce the risk of dementia. Staying active and enjoying the company of friends may help stave off both heart disease and Alzheimer's.

day-to-day functioning, ultimately resulting in loss of independence.

Vascular dementia occurs when blocked or damaged arteries in the brain cause a large stroke or multiple small strokes.

Alzheimer's disease is characterized by the development of amyloid plaques and tau protein tangles in the brain. The most common symptom is short-term memory loss. Alzheimer's patients have problems storing recent memories, but often remember things that happened long ago.

The Impact of Vascular Disease

The connection between Alzheimer's or ADRD and vascular disease is complicated by a simple fact: The dementia that develops at an older age often has more than one cause.

"A 60-year-old who develops changes in memory or cognition may have a single underlying cause, such as Alzheimer's or Lewy body disease. When memory or cognition problems develop at age 80, there are often multiple reasons," says Dr. Leverenz.

Pure vascular dementia is relatively uncommon. For reasons that are not fully

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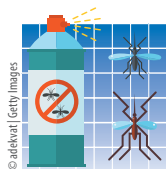
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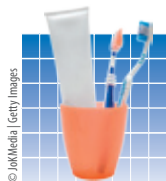


Exposure to Common Pesticides Connected to Cardiovascular Death

People exposed to high levels of a common household insecticide are three times more likely to die of cardiovascular disease than people with little or no exposure, found the authors of a study published Dec. 31, 2019, in *JAMA Internal Medicine*.

The researchers analyzed urine samples collected from 2,116 adult participants in the U.S. National Health and Nutrition Examination Surgery (NHANES) between 1999 and 2002. When death records were examined in 2015, they discovered that those with the highest levels of 3-phenoxybenzoic acid in their urine samples were 56% more likely to have died from any cause. Cardiovascular disease was the leading cause of death, with a rate three times normal.

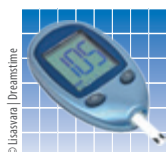
Although the study was observational, and did not investigate how exposure to pyrethroids occurred, previous studies found that most exposure comes from eating fruits and vegetables that had been sprayed with the insecticide. It is also commonly used in gardens and homes for pest control.



Good Oral Hygiene Appears to Reduce the Risk of Heart Disease

A study of more than 161,000 adults with no history of cardiovascular disease found those who brushed their teeth three times a day were 10% less likely to develop atrial fibrillation and 12% less likely to develop heart failure than those who brushed less often. Having teeth cleaned regularly lowered heart-failure risk by 7%. On the flip side, have 22 or more missing teeth increased the risk of heart failure by 32%. Frequent brushing likely reduces bacteria under the gum line, preventing it from seeping into the bloodstream, the authors postulated.

Experts commenting on the findings, published online Dec. 1, 2019 in the *European Journal of Preventive Cardiology*, said it was too early to say that frequent tooth brushing could prevent atrial fibrillation or heart failure. However, the findings add to evidence linking poor oral hygiene with cardiovascular diseases.



Another Reason to Avoid Heavily Processed Foods

Studies have connected diets high in heavily processed (“ultraprocessed”) foods with increased risk of cancer, cardiovascular disease, depression, metabolic disorders and death. Thanks to a new study published online Dec. 16, 2019, in *JAMA Internal Medicine*, type 2 diabetes can be added to this list.

Researchers in France followed nearly 105,000 adults, mostly women, for six years. Those who consumed the highest amounts of ultraprocessed foods were found to be at significantly higher risk of developing type 2 diabetes, even if they did not gain weight.

Ultraprocessed foods typically have little nutritional value and contain higher levels of sugar, fat and sodium, along with preservatives and other chemicals that extend shelf life. Most are cosmetically enhanced with products of questionable value, and many are processed using harmful methods, such as frying in hydrogenated oil.



Medical Regimen May Blunt the Effects of Grief on the Heart

Intense grief can put enough stress on the heart to trigger a heart attack. Now it seems the combination of two common drugs may help prevent such an event from occurring.

Australian researchers randomized people mourning the loss of a spouse or child to a regimen that included a low-dose of a beta-blocker (metoprolol) plus aspirin or placebo. Those who followed the treatment for six weeks had lower morning blood pressure readings, a lower heart rate over 24 hours and suffered less anxiety and depression. The average time they started taking the medications was 12 days following the death of their loved one.

In their paper, published online Nov. 13, 2019, in the *American Heart Journal*, the researchers commented that the regimen is likely to be equally effective for other causes of grief, such as job loss, the end of a relationship or the death of a pet. ■

Alzheimer's ... from page 1

understood, vascular disease commonly coexists in patients with Alzheimer's and can add to the severity of symptoms. "A large stroke or multiple small strokes can contribute to a patient's level of impairment," says Dr. Leverenz.

Even if someone with cardiovascular disease does not develop full-blown Alzheimer's, their risk of mental decline rises. Recent research has pointed to several interesting connections:

- It's more common for people with heart disease to develop thinking and memory problems—or even dementia—than people without heart disease.
- Women who survive a heart attack are twice as likely to experience a decline in memory and cognitive ability than women who do not suffer a heart attack.
- Heart failure patients have a significantly increased risk of developing cognitive decline, leading to death.

However, these do not prove that cardiovascular disease causes dementia or a specific type of dementia.

The Heart-Brain Connection

Although the role of vascular disease in mental decline is not fully understood, researchers have found that measures taken to lower the risk of heart attack may, indeed, be beneficial to the brain.

Recent studies have shown taking medications for blood pressure, cholesterol or diabetes, or an antiplatelet drug or anticoagulant, may slow the rate of cognitive decline.

Just last year, a meta-analysis of six studies found that older adults who took antihypertension medication to treat high blood pressure had a 12% lower risk of dementia and a 16% lower risk of Alzheimer's.

Is Cholesterol Key?

A potential connection between elevated LDL cholesterol and Alzheimer's intrigues Dr. Leverenz. It hinges on two relatively common genetic variants that increase the risk of high LDL cholesterol and cardiovascular disease, as well as Alzheimer's. However, the connection continues to confound. "Some people who inherit these genes don't get Alzheimer's. We don't know why," he says.

And while high LDL levels contribute to the development of heart disease, and lowering LDL can help prevent heart attacks, the effect of lowering LDL on neurological diseases has now been shown.

"Retrospective studies indicate people who use lipid-lowering medications develop dementia at a lower rate than people who don't, but we don't know if these medications lower the risk of stroke or Alzheimer's disease. Both can cause dementia," says Dr. Leverenz.


There's also growing evidence that inflammation plays a role in dementia, just as it does in heart disease. "At worse, it accelerates it," he says. "We are still figuring out how these things interact."

Prevention Is the Best Medicine

So while the connection between cardiovascular disease and brain deterioration remains unclear for now, there is encouraging news. Although Alzheimer's disease and ADRDs cannot be cured, there are steps you can take to reduce your risk of developing them and perhaps slow the course of the disease should you develop symptoms.

"Managing your cardiovascular risk factors seems to reduce the risk of dementia," says Dr. Leverenz. "It may not stop Alzheimer's, but it may slow the development and progression of symptoms."

In other words, maintaining cholesterol, blood sugar and blood pressure within normal limits; exercising; following a heart-healthy diet and not smoking may help prevent these feared brain diseases—if this prescription is adopted early enough and followed for life.

"We have learned that changes in the brain can start 10 to 20 years before you develop significant symptoms. That means there is plenty of time to take steps to impact the course of the disease," says Dr. Leverenz. "What's good for your heart is good for your brain. Take care of yourself." 

Help Make Progress Happen

Lack of clarity regarding the complicated relationship between cardiovascular disease and dementia highlights the difficulties of doing research in neurological disorders.



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In hopes of accelerating progress, the National Institute on Aging, one of the National Institutes of Health (NIH), has funded 31 research centers around the country. The Cleveland Alzheimer's Disease Research Center, which Dr. Leverenz directs, provides the infrastructure needed by clinicians and researchers from Cleveland Clinic and four other Northeast Ohio research and medical centers (Case Western Reserve University, Louis Stokes Cleveland VA Medical Center, MetroHealth and University Hospitals) to obtain the answers to pressing questions more quickly. They are focused on identifying biomarkers that will enable them to detect neurological diseases earlier and, eventually, customize treatment.

These centers are recruiting patients with and without Alzheimer's disease and ADRDs for clinical studies. For more information, please contact the NIH-funded Alzheimer's Disease Research Center nearest you by visiting www.nia.nih.gov/health/alzheimers-disease-research-centers.

This Year, Eat More Fiber!

It's a natural way to lower your risk of heart disease.

Most Americans are familiar with fiber as a substance used to prevent constipation.

But fiber also reduces the risk of heart disease, as well as cancers of the digestive tract. You don't have to buy fiber supplements to benefit: Fiber is found naturally in fruits, vegetables and whole grains.

Unless you're a vegetarian, however, there's a good chance you'll need to raise the amount of fiber you eat daily to benefit.

"Increasing your fiber intake is a relatively easy and inexpensive way to help ward off heart disease and many digestive disorders," says Cleveland Clinic dietitian Kate Patton, RD, LD.

What Fiber Does

Fiber is a component of plants that our bodies cannot digest.

Insoluble fiber—often called roughage—does not dissolve in water. Instead, it holds on to water to add bulk and softness to stools, preventing constipation. A meal high in insoluble fiber will help you feel full longer, so you don't get hungry and snack between meals. That's how a

high-fiber diet helps control weight.

Soluble fiber dissolves in water to form a gummy gel. It slows the passage of food through the digestive system, improving digestion and the absorption of nutrients. Soluble fiber binds with bile made in the gallbladder from cholesterol and removes it from the body. This lowers total cholesterol and LDL cholesterol levels. Slowing digestion also helps blood sugar levels remain steady.

How Fiber Helps

A massive review of 196 prospective studies and 58 clinical trials published in 2019 found that the lowest rates of fatal and nonfatal coronary artery disease and stroke were found in those who ate the highest amounts of dietary fiber. They also had lower total cholesterol levels and systolic blood pressure, less diabetes and more normal body weight.

A different study presented at the annual meeting of the Heart Failure Society in 2019 found that patients

with heart failure who ate more fiber had a lower risk of death or need for heart transplantation than those who ate less fiber. Higher-fiber diets also created a healthier diversity of beneficial bacteria in their gut. Cleveland Clinic researchers have connected a healthy "microbiome" to a lower risk of cardiovascular disease.

How Much Fiber You Need

The Academy of Nutrition and Dietetics recommends adults consume 25 to 35 grams (g) of fiber per day. Of this amount, 10 to 15 g should be soluble fiber.

After age 70, total fiber requirements drop to 21 g per day for women and 30 g per day for men.

Most of us don't meet those requirements. In fact, the average American consumes only 15 g of fiber per day.

The Final Word

Once you've made the commitment to consume more fiber, go slow: Adding too much fiber all at once can cause cramping, bloating or gas. "Also, drink at least eight cups of water a day to prevent constipation," says Patton.

You might want to consider keeping a food journal to track how much fiber you are eating. If you can't meet the recommended amount, it's okay to consider using a fiber supplement. Just be sure to check with your doctor first. "A high-fiber diet can interfere with the absorption of certain medications," says Patton. 📌



Some top fiber sources include kidney and lima beans, lentils, barley, dried fruit, nuts, carrots, chia seeds, avocados, mushrooms, green beans, corn, and broccoli.

Tips for Getting More Fiber

- ▶ Eat raw fruits and vegetables instead of drinking juice, since the skins are high in fiber.
- ▶ Add dried fruit to yogurt, cereal and salads.
- ▶ Giving up sugar and refined flour is a healthy plan, but don't eliminate all carbohydrates from your diet. Whole grains; dried pea, beans and legumes; and vegetables and fruits are high-quality carbs and excellent sources of dietary fiber.
- ▶ Choose grain products with "whole" grain listed as the first ingredient—for example, "whole-wheat flour." Don't be misled by single-source grains lacking the word "whole." For example, "wheat flour" is not a whole grain.
- ▶ Steer clear of enriched flours. Their fiber has been removed, leaving them low in fiber. "Enriched" refers to their vitamin content.
- ▶ Read nutrition facts labels on boxes and packages. You will find the amount of dietary fiber per serving listed under "Total carbohydrate."

How Much Do You Know About Your “Ticker?”

Study reveals that most patients with a device that regulates their heart rhythm want to—and should—know more about it.

If your heart isn't beating normally, you may be one of millions who benefit from a cardiovascular implantable electronic device (CIED). These small, battery-powered devices implanted under the skin include pacemakers for speeding up slow hearts, implantable cardioverter-defibrillators (ICDs) for preventing sudden cardiac death and cardiac resynchronization therapy (CRT) devices, which help the heart contract properly.

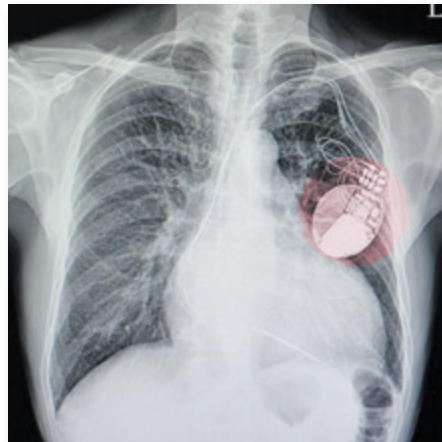
You may know the name of the company that made your device, and you likely know it runs on battery power. What else do you know about it? A study of 344 patients with CIEDs conducted at Cleveland Clinic found they actually didn't know as much as they thought they did and wanted to know more.

“We found a large gap between patients' desire for information and their understanding of the basics about their condition and the device being used to treat it,” says Cleveland Clinic electrophysiologist Khalid Tarakji, MD, principal author of the study.

What They Knew, and Didn't

The patients were asked seven basic questions about the type of device they had, the reason it was implanted, its function, the manufacturer, number of leads, battery life and number of shocks they had received since their last evaluation.

Most patients (85.5%) missed at least one question, 51.2% missed at least two, 23% missed three and 9.3% missed four of the seven questions. Almost all (91%) knew the name of their device manufacturer. Length of battery life was the most often answered incorrectly (59%).



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Cleveland Clinic researchers found only 14% of 344 patients with a pacemaker, implantable cardioverter-defibrillator or biventricular pacemaker could answer seven basic questions about their device. How much do you know about yours?

When asked what information they felt would be most useful to know, longevity/battery life and type of device were highest on the list.

Times Have Changed

Some individuals said they had had trouble getting information about their device from their physician. Dr. Tarakji says this is a holdover from the days when sharing information with patients was not part of the culture.

“Today's patients take an active role in their health care. They want to know about their device and what it is doing for them. The question is, what do they want to know? Instead of making the decision ourselves, we want them to tell us,” he says.

Back in the day when medical records were kept in paper charts, sharing information was difficult. Computerizing data allows the information to be stored in electronic medical records (EMRs), where it can be easily accessed by patients. This raises a larger issue:

How can the information be made meaningful?

Additionally, technological advances have made it possible for patients to access data from their CIEDs on an app downloaded on their smartphone or tablet. This allows them to see data from their device instantly.

“We believe patients have the right to access all their data. However, the language we currently use in device interrogation involves many unfamiliar medical and technical terms,” says Dr. Tarakji. “One of the challenges is to present the data in a language that is understandable to patients of different backgrounds, so it is useful and avoids raising unnecessary anxiety.”

What You Ought to Know

How much you want to know about your CIED is up to you. How much you learn tells your electrophysiologist that you are interested in more than simply gathering data.

“Knowing what device you have and why you have it, as well as some knowledge about battery life, tells me you are an engaged and active participant in your care,” says Dr. Tarakji. ■

Seven Facts You Should Know About Your CIED

- ◆ What type of device it is (permanent pacemaker, implantable cardioverter-defibrillator or biventricular device)
- ◆ Why it was implanted (heart failure, slow heart rate or sudden cardiac arrest)
- ◆ Its function (pace/stimulate, shock or synchronize)
- ◆ The manufacturer
- ◆ The number of leads it has
- ◆ Its battery life
- ◆ The number of shocks you have received since your last evaluation.

Diuretics: Little Pills With a Big Job

They help eliminate excess fluid, which allows your heart to function better and relieves uncomfortable symptoms.

Heat failure often causes the body to retain fluid. When this happens, you may gain several pounds in a day. Your feet and ankles may swell. Your belt may feel tighter. Maybe you become short of breath with daily activities or feel like you're going to suffocate when you lie down. Some people lose their appetite after only a bite or two of food.

That's why getting rid of extra fluid is a priority of heart failure treatment. Diuretics are often the first medication used to do the job. Diuretics help the kidneys excrete sodium, and when sodium is flushed out, water follows. You know diuretics are working when urine output increases and that extra fluid is flushed down the toilet.

"Patients can see on a daily basis how well diuretics work to keep swelling down," says Kathleen Faulkenberg, PharmD, BCPS, a Cleveland Clinic heart failure and heart transplant clinical pharmacist. "They go to work very quickly and are generally well tolerated."

Diuretics Used to Manage Heart Failure

Loop Diuretics

- furosemide (Lasix)
- bumetanide (Bumex)
- torsemide (Demadex)

Thiazide Diuretics

- hydrochlorothiazide (Hydrodiuril)
- chlorthalidone (Hygroton)
- indapamide (generic only)
- metolazone (Zaroxolyn)

Potassium-Sparing Diuretics

- spironolactone (Aldactone)
- eplerenone (Inspra)



Different Types, Different Uses

Three classes of diuretics are commonly used in the treatment of heart failure:

- ➔ **Loop diuretics** are the primary type used in heart failure. They block a sodium/chloride receptor in the kidneys' Loop of Henle to prevent the body from resorbing sodium.
- ➔ **Thiazide diuretics** work in a different area in the kidney, but have a similar effect. They are not as potent as loop diuretics and are more commonly used to lower high blood pressure.
- ➔ **Potassium-sparing diuretics** are the least effective in eliminating excess water at doses commonly used to treat heart failure. Their biggest advantage is not diuresis, but their potential to prolong life in patients with heart failure. By blocking some of the neuro-hormonal cycle that occurs in heart failure, these agents help remodel the heart and, potentially, reverse heart failure or slow its progression.

Potassium-sparing diuretics are typically combined with a loop or thiazide diuretic to prevent potassium loss and reduce the amount of replacement potassium needed.

Maintaining Balance

Diuretics can be challenging to use. If they cause you to urinate more

than expected, you can become dehydrated.

"There's a myth that diuretics are directly toxic to the kidneys, but that's wrong. What damages the kidneys is over-dehydration. Diuretics themselves are not toxic," says Faulkenberg.

In the process of eliminating water and sodium, diuretics also wash out potassium and magnesium, two electrolytes that help the heart maintain a normal rhythm. These important electrolytes—as well as sodium—must be maintained at a certain level to avoid problems.

Balancing electrolytes can be tricky and often requires frequent monitoring to ensure they are maintaining within normal ranges. There are agents that can be used to help replace these electrolytes; for example over-the-counter supplements may be used to raise them safely.

"Finding the right diuretic, dose and dosing schedule for any patient is really an art," says Faulkenberg.

Adopting a Low-Salt Diet

It's important to take your medications as prescribed to limit the amount of sodium in your diet. Although getting rid of excess water will make you feel better, it will take some adjusting. In an effort to increase blood volume, your body will urge you to eat salt and drink more water.

"Initially, you will get cotton mouth and feel thirsty," says Faulkenberg. "Sucking on hard, sugar-free candy or adding lemon to your water and food can help stimulate the flow of saliva."

Many people on a low-sodium diet are tempted to use salt substitutes, which use potassium to provide a salty taste. If you're on a potassium-sparing diuretic, this may cause your potassium levels to soar, triggering arrhythmias. "It's better to stick to other herbs and spices to enhance the flavor of food," she says.

Continued on the bottom of page 7

6 Ways to Lower Your Cholesterol Without Using Medications

Certain diet and lifestyle changes will cause cholesterol levels to drop.

Adding fiber to your diet is a great way to lower your cholesterol naturally, but it's not the only way. There are changes you can make to your diet and exercise habits that will go a long way toward lowering high cholesterol, and with it, reducing your risk of heart disease.



Eating more plant-based foods, losing weight and increasing your exercise may lower your cholesterol enough to avoid taking cholesterol-lowering drugs.

1 Limit your consumption of animal products. Cutting back on animal products in your diet will benefit your heart. Most animal products contain saturated fat and cholesterol, both of which contribute to the formation of artery-clogging plaque. Limit your daily intake of saturated fat to 5% to 6% of total calories.

“We recommend skipping whole milk, cream, sour cream, cream cheese, cheese and butter and substituting low-fat dairy products or plant-based alternatives,” says Cleveland Clinic dietitian Kate Patton, RD, LD. “If you can’t give up red meat—including pork and veal, as well as beef and lamb—eat them rarely and in small amounts. Same for lunchmeats, hot dogs and other processed meats, which are not only loaded with fat and cholesterol, but sodium, as well.”

If you eat poultry, be sure it’s skinless and not fried.

2 Eat more vegetables and beans. Eat at least one meatless meal per week, ideally one containing a plant-based protein such as beans, lentils or quinoa. As your taste buds adjust, increase the number of meatless meals per week.

3 Lose weight. If you are overweight, losing as little as 5% to 10% of your body weight can lower your cholesterol. Try cutting back on portions and filling half your plate with vegetables.

Alternatively, try time-restricted eating, in which you eat your entire day’s allotment of food within an eight-hour window.

4 Cut back on carbs. Reducing your intake of carbohydrates will help you lose weight and increase your fiber consumption. Give up the so-called “white foods,” which are primarily sugar, white flour and refined grains. Instead, choose high-fiber, whole-grain carbs, such as oatmeal, whole grains, beans, lentils and whole fruit. They will give you energy and keep you from getting hungry.

5 Move more. A minimum of 150 minutes of moderate-intensity cardiovascular exercise per week will improve your heart health. The more you exercise—at least up to 300 minutes a week—the more your heart will improve without risking overtraining injuries.

Choose an activity that increases your heart rate. Walking, swimming and bicycling are good choices.

“It’s fine to start with 30 minutes a day, even if you have to break it into 10-minute segments,” says Cleveland Clinic exercise physiologist Michael Crawford, MS. “Do as much as you can as often as you can. The key is to exercise regularly and consistently.”

6 Exercise safely. If you have heart disease, particularly if you’ve not exercised regularly, consider joining a cardiac rehabilitation program. It’s a great way to jump-start a diet and exercise program. “You will learn which exercises are the best and safest for you, and if you experience any symptoms of heart disease, someone will be right there to help,” says Crawford. 🏠

Diuretics ... cont from page 6

Two Pieces of Advice

The time of day you take your diuretic can make a difference in how your body responds.

Faulkenberg suggests taking the medication first thing in the morning, when the extra fluid is distributed throughout your body. If you take two

doses, take the second pill in the late afternoon. “It’s not necessary to take them exactly 12 hours apart,” she says.

Don’t take your diuretic too close to bedtime. Since it makes you urinate, you may find it difficult to get a good night’s sleep. Even worse, it could be dangerous. “Your blood pressure may be lower at night, which increases your risk of falling

when you get up to go to the bathroom,” she says.

The important thing is to let your doctor know if you develop any sense of weakness, confusion, leg cramps, excessive urination or other symptoms you haven’t experienced before, or if you gain more than three pounds in a couple days. Your dose of diuretic may need to be adjusted. 🏠



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I got a stent after a heart attack. Now I hear that medical therapy is just as good. Was the stent unnecessary?

In the ISCHEMIA study, more than 5,000 patients with stable coronary artery disease (CAD), at least moderate ischemia on stress testing and mild symptoms were randomized to catheterization followed by stenting or bypass surgery or to optimal medical therapy (OMT), with catheterization only if OMT failed. After an average of 3.3 years, no major differences were seen in the primary endpoint of cardiovascular (CV) death, heart attack, cardiac arrest and hospitalization for unstable angina or heart failure. In patients with angina at baseline, the invasive strategy led to improvements in quality of life and symptom control.

Overall, when it came to death and heart attack, patients did just as well with OMT as with invasive treatment. However, those who underwent stenting or bypass surgery felt better and enjoyed a better quality of life.

It is important to note this was a selected population of lower-risk patients with stable CAD, so the results cannot be applied to individuals with poor kidney function, heart attack or unstable angina, poor heart muscle function, poorly controlled angina symptoms or left main coronary artery disease. Also, about 25% of patients in the OMT group crossed over to stenting or bypass surgery when their symptoms worsened.

The results of ISCHEMIA do not mean that stents and surgery have no role. Rather, they indicate a reasonable approach in lower-risk patients with a low symptom burden is to treat first with proven medical therapies and lifestyle modifications. Early intervention is reasonable for patients with limited tolerance to medications, progressive symptoms despite medications, acute coronary syndromes (pending or full-blown heart attack), left main artery disease or reduced left-ventricular function (heart

failure). In your case, stenting at the time of a heart attack was appropriate. This emphasizes the need for shared decision-making between patients and physicians about the risks and benefits of either treatment strategy and the need for compliance with OMT, regardless of the strategy chosen.

I have heart disease and stents and am ready to quit smoking. Are E-cigarettes a safe alternative for me?

Electronic cigarettes (E-cigarettes) are often touted as a less-risky alternative to conventional cigarettes and a safe tool to quit smoking. There is a growing body of data indicating the chemicals in E-cigarettes have a substantial adverse effect on the cardiovascular (CV) system. Observational studies highlight these concerns. One 2019 study with more than 96,000 participants found E-cigarette users were 56% and 30% more likely to have a heart attack or stroke, respectively, than nonusers. Even after adjusting for known CV risk factors, E-cigarette users were still 34% more likely to have a heart attack.

Although observational studies do not prove causation, the strong association raises concerns about E-cigarette use and CV health. In one study, levels of total cholesterol and harmful LDL cholesterol were higher in E-cigarette users than in nonsmokers. Other studies have shown that vaping (the term used for smoking E-cigarettes) and the liquids in E-cigarettes can stiffen blood vessels, reduce blood flow in the heart's arteries and alter the performance of endothelial cells lining the arteries—all factors that adversely affect CV health. Harm to the heart and lungs from E-cigarettes comes not only from nicotine, but also from the many additional substances and flavorings that are vaporized during use.

My recommendation is to use smoking-cessation aids that are FDA-approved and been proven safe and effective. 📌

IN COMING ISSUES

The difference between heart attack and cardiac arrest.

What to do if you miss a dose of medication.

Things you may not know about cardiac rehab.

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