

Vol. 23 / No. 5 • May 2020

ALSO IN THIS ISSUE

Heart Beat Newslines

- Going Home Shortly After Heart Surgery
- Eating a Big Breakfast Accelerates Weight Loss
- Shingles Vaccine Protects Against Stroke
- Lower LDL Better at Preventing Stroke
- Bempedoic Acid Receives FDA Approval

page 2

When to Get a Second Opinion

Listen to your gut.

page 3

Lower Your Blood Pressure with a Walk

Starting your day with a stroll has lasting benefits.

page 4

What It Means to Take a Drug “Off Label”

It’s a common practice, and a safe one.

page 4

A Pacemaker That Improves Heart Failure

You may feel and function better.

page 5

There’s a New App for Heart Disease Prevention

Make the right choices.

page 6

Ask the Doctors

Would testosterone replacement help my post-heart attack fatigue?... What can be done about a leaky mitral valve?

page 8

Arterial Disease In the Legs and Feet Should Be Taken Seriously

If you’re at risk for heart attack and stroke, you also may be at risk for losing a leg or foot. Here’s what you need to know.

Atherosclerosis is a systemic disease. Fats, cholesterol and white blood cells that form plaques in arteries that feed the heart muscle and brain also may accumulate in arteries elsewhere in the body. The arteries of the legs and feet are commonly affected, and many people at risk for heart attack and stroke develop peripheral arterial disease (PAD).

Just like coronary artery disease and cerebrovascular disease, PAD causes no symptoms in its early stages. As blood flow to the lower limb becomes increasingly difficult, however, symptoms such as pain, cramping, heaviness or fatigue in the legs will occur after walking a certain distance and disappear with rest. These are the symptoms of intermittent claudication that should be taken seriously.

“If this happens to you, tell your doctor right away,” says Cleveland Clinic vascular medicine specialist Joseph Campbell, MD. “The likelihood you have PAD is 95%.”

A Progressive Problem

Left untreated, PAD will progress. Over time, the distance you can walk before feeling discomfort gets shorter. Eventually, you may begin experiencing the discomfort at rest. You may find the pain gets worse when you lie down, because gravity is no longer drawing blood toward your legs and feet.

In the late stages of PAD, you may develop open sores on your legs and feet that will not heal. Unless blood flow is restored, critical limb ischemia (CLI) can develop, and your limb will become cold and pulseless. At this point, amputation may be necessary.



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The same disease responsible for causing heart attacks and strokes can affect the lower limbs. Pain when walking is usually the first sign. Unless measures are taken to stop the disease from progressing, damage may require the foot or leg to be amputated.

A Danger for Diabetics

People with diabetes are at increased risk for dangerous outcomes from PAD. That’s because they tend to develop atherosclerosis in their small arteries, in addition to the larger ones. The eyes and kidneys are often affected, leading to blindness and kidney failure. Patients with microvascular disease (MVD) are at increased risk of heart attack and stroke, as well.

In a recent study of veterans, patients with both PAD and MVD had nearly 23 times the risk of amputation. More than 40% of amputations occurred in patients with PAD plus MVD, although they accounted for only 4% of the study population.

Continued on page 7



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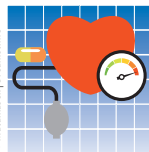
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HEART BEAT



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It's Safe to Go Home Shortly After Heart Surgery

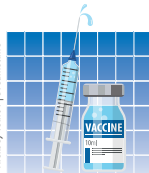
Say goodbye to six or seven days in the hospital after elective open-heart surgery. At the annual meeting of the Society of Thoracic Surgeons in January 2020, researchers presented evidence that a shorter hospital stay is safe. Compared with patients who stayed in hospital longer, those discharged after only three days were less likely to die in the hospital or develop postoperative atrial fibrillation, and they required fewer pacemakers. The risk of readmission within 30 days was slightly higher (8% vs. 6%), but their 30-day mortality rate was the same as those who stayed longer (0%). The researchers emphasized that the patients they studied were not being treated on an urgent or emergent basis, but had scheduled their surgery.



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Eating a Big Breakfast Accelerates Weight Loss

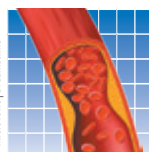
If you are trying to lose weight, make breakfast the biggest meal of your day. Researchers discovered that the body uses more than twice the amount of energy digesting breakfast than dinner. In the three-day study published in the *Journal of Clinical Endocrinology & Metabolism* on March 1, 2020, half the participants were given a low-calorie breakfast and a high-calorie dinner. The other half ate a high-calorie breakfast and a low-calorie dinner with the same number of calories. Those who consumed more calories in the morning had a more active metabolism, steadier blood sugar level, were less hungry during the day and craved fewer sweets.



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Live Shingles Vaccine Also Provides Stroke Protection

Vaccination with the zoster vaccine live (Zostavax) reduced the risk of recurrent stroke by 20% in people under age 80 and 10% in those over age 80, researchers said at the International Stroke Conference in February 2020. The vaccine was effective in reducing stroke risk only in people who had not developed this painful resurgence of the chickenpox virus. The study was done on 1.38 million Medicare patients who had received the Zostavax vaccine between 2008 and 2016. Since that time, a non-live vaccine, Shingrix, has been developed and is now preferred. It is 90% effective against shingles and may provide even better protection against stroke.



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Lower LDL Better at Preventing Strokes

The longer very low LDL cholesterol levels can be maintained, the greater the protection against a second stroke, found the international Treat Stroke to Target trial presented at the International Stroke Conference in February 2020. Participants who had suffered an ischemic stroke were given statins and ezetimibe to lower their LDL to 90 to 110 milligrams per deciliter (mg/dL), or less than 70 mg/dL. At a 5.3-year followup, patients who achieved and maintained an average LDL of 64 mg/dL had rates of ischemic stroke, intracranial hemorrhage, heart attack, need for urgent coronary or carotid revascularization and cardiovascular death that was 25% to 28% lower than in those who achieved an average LDL cholesterol reading of 96 mg/dL.



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Bempedoic Acid Receives FDA Approval

In the January 2020 *Heart Advisor*, we told you about bempedoic acid, a novel LDL-lowering agent that does not cause the muscle-related side effects that prompt some people to stop taking statins. In February 2020, the U.S. Food & Drug Administration approved bempedoic acid (Nexletol) for use in people with genetically elevated cholesterol and those with cardiovascular disease (CVD) who cannot achieve sufficiently low LDL levels on maximum statin therapy. Its effect on patients who are statin-intolerant is being assessed in a 12,600-patient trial, with results due in 2022. The FDA also approved a single-pill combination of bempedoic acid and ezetimibe (Nexlizet) for use in addition to maximally tolerated statins in adults with genetically elevated cholesterol or CVD who cannot reach their LDL target. Bempedoic acid alone is not as effective as statins, lowering LDL only about 15%. Bempedoic acid plus ezetimibe can lower LDL as much as 30%. 

When to Get a Second Opinion

Sometimes your gut tells you to consult another physician. Sometimes it just makes good sense.

At some point in life, many of us have had second thoughts about taking a new medication or undergoing a procedure our doctor recommends. How many times have we failed to pursue that opinion because we were too embarrassed or felt foolish questioning someone with so much medical training?

A leading physician says it's almost never wrong to seek a second opinion.

"Any time you have doubts about whether a recommended treatment is the best option, or is safe or right for you, a second opinion is a good idea," says Steven Nissen, MD, Chief Academic Officer of Cleveland Clinic's Heart & Vascular Institute.

Don't Be Embarrassed

If you are reluctant to raise the issue of a second opinion for fear of offending your doctor, you shouldn't be. Most doctors welcome second opinions, and even encourage them.

"Good physicians are not threatened by a request for a second opinion. If they are, they are not confident in their own abilities, and you need to get a new doctor," he says.

If you don't know how to find the right doctor to provide a second opinion, it's okay to ask your first doctor for advice.

Dr. Nissen often directs patients to colleagues in other institutions with whom he has no formal connection. This ensures the advice they receive is impartial. "Their opinions are almost always the same as mine," he says. "This gives the patient confidence."

When a colleague's opinion differs from his own, Dr. Nissen listens carefully. "None of us are infallible. I can agree with a different point of view," he says.

Building Trust

Only a few decades ago, patients let their doctors make decisions for them. Today, this passive role is neither desired nor expected. Instead, patients are empowered to be their own advocate.

"If your doctor doesn't tell you why he recommends a certain treatment, you should feel free to ask for the reason," says Dr. Nissen.

"The best medicine comes from shared decision-making tempered by humility. It's a system of checks and balances that builds trust."

When to Get a Second Opinion

- ➔ You are told you need an invasive procedure or surgery.
 - ➔ You have multiple medical issues that put you at risk for anesthesia or experience the stress of undergoing a serious procedure.
 - ➔ Your doctor has recommended a controversial or experimental treatment, perhaps one that isn't covered by insurance.
 - ➔ You have a rare or complex condition.
 - ➔ You are told there is only one way to treat your problem.
 - ➔ You are told there is only one doctor who can help you.
 - ➔ You don't like your physician's or surgeon's attitude.
- "During medical education, there is an emphasis on self-confidence that can translate into arrogance or overconfidence. This can make a doctor sound egotistical or condescending," says Dr. Nissen. "Humility is a good thing, but we are not often trained in that."
- ➔ You are guaranteed glowing results or told there is no risk involved in a procedure.
 - ➔ You don't have confidence your doctor or surgeon has treated enough cases like yours.



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There are many reasons why it may be prudent to get a second opinion, and it's never a bad idea. Just make sure you know when you have enough information to make a decision.

- ➔ You aren't comfortable proceeding with your doctor's recommendation.
- ➔ You've seen two doctors, and they disagree on the best approach for you.

"Some patients find it hard to understand that there might be more than one way to treat their medical condition. In reality, few medical options are black and white," says Dr. Nissen. "Finding a physician you can trust will help you weigh the risks and benefits of a treatment and make an informed decision you are comfortable with."

- ➔ The treatment you received isn't producing the results you or your physician expected.

When to Stop Getting Opinions

- ➔ When you have a medical emergency, and immediate treatment is advised.
 - ➔ When you have consulted several physicians or surgeons for a non-controversial problem, but are still not comfortable proceeding.
- "You might be looking for a doctor who will tell you what you want to hear, rather than the truth. If you look hard enough, you'll find that person," says Dr. Nissen.

"At some point, you have to tell yourself you have enough information to make a decision. You will not be doing yourself any good by continuing to doctor-shop." ■

Lower Your Blood Pressure With a Morning Walk

Starting your day with a brisk 30-minute walk can have lasting benefits.

Did you know there's a way to lower your blood pressure that is free, available everywhere and doesn't require swallowing pills? It's walking! Starting your day with a lively, 30-minute walk can lower your blood pressure right away.

"It's 100% true," says Michael Crawford, MS, Manager of the Cardiac Rehabilitation Program at Cleveland Clinic. "Exercise—even a little bit—can reduce blood pressure for several hours. Getting regular exercise provides the benefit of maintaining lower blood pressure."

How Walking Works

Exercise makes your heart pump faster, causing it to require more oxygenated blood. To meet the heart's needs, the body releases chemicals that relax blood vessels and allow them to expand (dilate).

Exercise helps the heart pump more efficiently, so it doesn't need to work as hard. It's the ideal antidote to sitting, a known risk factor for cardiovascular disease.

In one study of overweight adults in their 60s, those who sat for eight hours after walking for 30 minutes in the morning had blood pressure readings that were lower by 3.4/0.8 millimeters of mercury (mmHg) than on the days they did not walk. When they took several short walking breaks on normally sedentary days, their blood pressure readings were 5.1/1.1 mmHg lower.

Reap the Benefits

Crawford suggests you set a goal to walk 30 minutes a day on five days a week, or 150 minutes a week.

You will need to move at a pace that forces your heart to beat faster.

"Walk purposefully at a moderate pace. It does not have to be super fast, but it should be somewhat challenging," he says. "You should feel a little breathless."

If you aren't used to exercising, it's okay to exercise in 10-minute segments. "The key is maintaining a pace that keeps your heart rate elevated," he explains.



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If you take a beta-blocker or other drug that slows your heart rate, walk anyway. Your heart may not pump as fast, but walking can help control your weight, improve your mood and allow you to sleep better at night.

Don't Give Up Your Meds

It's not unusual to require several medications to normalize blood pressure. Daily exercise should be viewed as an additional treatment, not a substitute for medication.

"If walking helps you achieve your blood pressure goals, your doctor may discontinue one of your medications. However, you should never stop taking your blood pressure medication without your doctor's permission," says Crawford. 📌

Are You Taking a Drug "Off-Label?"

This common practice may be why you can't find any information on a drug prescribed for your medical condition.

Pharmaceutical companies spend countless millions conducting clinical trials to prove that a new drug is effective in treating a specific medical condition. When the U.S. Food & Drug Administration (FDA) approves the drug, it can be marketed only for use in patients with that condition. That's its "on-label" use.

Pharmaceutical companies have exclusive rights to market a drug they develop for a period of years. After

that, cheaper generic versions may enter the market, forcing down the price of the brand-name drug.

During this period of time, physicians may discover the drug is effective in treating a condition other than the one specified for which it was approved. When they prescribe the drug for this second condition, they are using it "off-label."

"Beta-blockers were FDA approved for the treatment of high blood

pressure. When we prescribe them for angina or heart failure, we are using them off-label," says Steven Nissen, MD, Chief Academic Officer of Cleveland Clinic's Heart and Vascular Institute.

The Buck Stops Here

After a drug goes generic, the pharmaceutical company owning the brand-name drug has no financial incentive to seek a new indication on the label. That's why drugs such as beta-blockers may be used off-label indefinitely.

"Physicians can prescribe a drug for any indication they deem appropriate," says Dr. Nissen. 📌

There's a Pacemaker That Can Improve Heart Failure Symptoms

Cardiac resynchronization therapy helps many patients with advanced heart failure feel and function better.

An efficient heartbeat relies on the walls of the heart's main pumping chamber (left ventricle) contracting and relaxing in sync. When a heart weakened by heart failure loses this ability, a treatment called cardiac resynchronization therapy (CRT) may be recommended.

In CRT, a biventricular pacing device is implanted and programmed to stimulate the walls of the left and right ventricles to contract at the same time. CRT boosts the heart's pumping power, reducing the symptoms of heart failure and improving survival and quality of life. When started early enough, the treatment improves heart failure in 60% to 70% of patients.

"CRT is designed to improve heart function or prevent it from worsening," says Cleveland Clinic electrophysiologist John Rickard, MD, MPH. "Most people feel better with the device."

What Causes "Heart Wobble?"

The heart contracts because electrical cells command the outside wall of the left ventricle and the wall dividing the left and right ventricles (septum) to squeeze toward each other.

When these signals follow the wrong path—either because the correct path is blocked by scar tissue, or the ventricle walls have become stretched out—the outside wall and

septum move out of sync. Instead of forcefully contracting, the heart wobbles. Because the heart cannot eject enough blood with each beat, heart failure worsens. CRT can restore the proper heartbeat and with it, the heart's pumping power.

When's the Right Time for CRT?

Not everyone with heart failure needs CRT. When the heart muscle remains chronically weak, despite three months on optimal medical therapy, and you have evidence of disease in your cardiac conduction system, that's the time to consider CRT.

When CRT Fails, What Next?

For reasons that are not always clear, about 30% of patients do not respond to CRT. Either their original symptoms fail to improve, or they develop new heart-failure symptoms.

A study spearheaded by Cleveland Clinic electrophysiologist Niraj Varma, MD, PhD, found that when CRT did not work, 44% of physicians took no further action. Understandably, this would lead patients to believe they had reached the end of the line. Not so, says Dr. Varma.

"Make an appointment to visit a cardiologist specializing in heart failure," he says. "Heart-failure specialists can offer CRT patients many advanced treatment options."

Adding a heart-failure specialist to your care team does not mean you

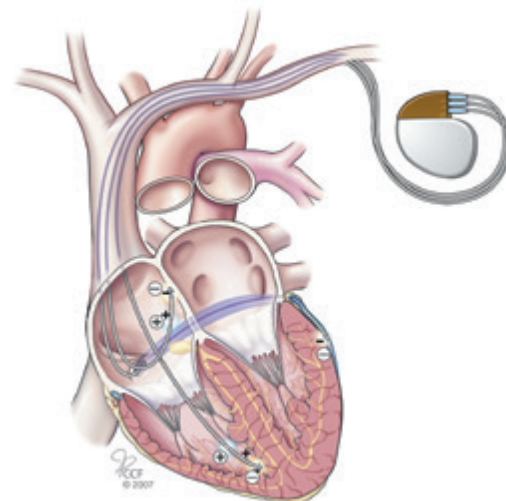


Image courtesy of Cleveland Clinic

A biventricular pacemaker is usually implanted under the collarbone. Three electrodes are threaded into the heart through a vein and programmed to stimulate both sides of the heart to contract at the same time.

should stop seeing your electrophysiologist, however.

"Biventricular pacing devices are some of the most complex devices we have. They require ongoing programming for optimal functioning, so you should continue seeing the electrophysiologist who implanted the device, as well," adds Dr. Rickard.

When to Take Action

The sooner aggressive treatment for heart failure begins after CRT fails, the more effective it is likely to be. That's why all patients with CRT should be evaluated six months after implantation.

At Cleveland Clinic, all CRT patients have their six-month checkup at the Cardiac Resynchronization Therapy-Heart Failure (CRT-HF) Follow-Up Clinic, where they are seen simultaneously by an electrophysiologist and a heart-failure specialist. Together, they discuss what steps to take next.

Any patient can obtain a consult from CRT-HF Follow-Up Clinic, regardless of where their biventricular device was implanted. But if this is not feasible, you would be wise to take Dr. Varma's advice.

"Don't feel defeated. Simply add a heart-failure specialist to the team of physicians looking after you," he says. ■

Preventing Sudden Death

When the heart's pumping function is severely limited, the risk of sudden cardiac death increases. When the amount of blood pumped out with each beat falls below 35%, a defibrillator may be added to a biventricular pacemaker (CRT-D). In addition to helping the heart contract faster and more strongly, the device will supply a jolt of electricity if needed to bring the patient back to life.

If You Are Perplexed About Prevention, Try This New App

Informative at a glance, ClevelandClinic.org/HealthyHeart can help you make the right decisions to improve your heart health.

It doesn't take a medical degree to understand the value of preventing a heart attack. And if you've already survived one, you are likely on the lookout for ways to prevent a second one.

Prevention advice is everywhere—and that can be a problem. Some people find the sheer volume of information to be overwhelming and confusing, or even out of date. Is moderate exercise beneficial, or do you need to run a marathon to prevent heart disease? Should you follow a low-calorie diet, a low-fat diet, become a vegetarian or fast from time to time? Are you harming your heart if you are only 10 pounds overweight or “fit but fat?”

Now there's a web-based app that individualizes heart-disease prevention in a manner that is useful and fun.

“Our goal was to make the app informative, but approachable and interactive,” says Erik Van Iterson, PhD, MS, Program Director of Cardiac Rehabilitation at Cleveland Clinic. “You don't need to be a doctor to understand it.”

What's Your Risk?

Preventing heart disease involves identifying the risk factors you have and taking steps to modify them.

It sounds simple enough. However, there's no one-size-fits-all prescription for prevention. There are major modifiable risk factors and a host of “other” risk factors that impact the likelihood you will develop heart disease or are able to prevent it. These may play a role in your individual risk to various degrees, depending on



The home screen of Cleveland Clinic.org/HealthyHeart invites you to access information, videos and quizzes that will help you decide which prevention strategies are most likely to be beneficial for you personally.

your age, gender, race, family and personal history of heart disease and the presence of certain other diseases—rheumatoid arthritis, for example.

For some people, figuring out their risk and how to lower it is confusing enough to throw in the towel. This is why ClevelandClinic.org/HealthyHeart was developed.

“It will guide you into making manageable, beneficial decisions about diet, exercise and weight management,” says Dr. Van Iterson.

Five Pillars of Prevention

The app has five main sections representing what Dr. Van Iterson calls “the five pillars of prevention.”



Home page

The home page is about cardiac rehabilitation. A short video explains what to expect from cardiac rehab, who benefits from the program and why it's important to participate.



Health

Click on the heart icon, and you'll be directed to information about basic modifiable risk factors. Even better, there's a quiz for each one that encourages you to fill in your own information. The information you enter will not be saved, but the answers will tell you which—if any—risk factors you should be concerned about.



Exercise

Click on the icon with a running shoe, and you'll read about what constitutes exercise. Use the Heart Activity Calculator that appears on this page and the first page of every section to learn what type of exercise would benefit you, and how often and intense you will need to do it, to achieve your goals. “There are more than 700 different activities that count as exercise. You can make one of them work for you,” says Dr. Van Iterson.



Weight Management

The scale icon directs you to loads of information on weight management, which you can customize to meet your weight-loss goals.



Nutrition

The nutrition icon discusses various components of a heart-healthy diet, and even provides heart-healthy recipes. Take the quizzes to see how closely your diet follows the DASH diet or Mediterranean diet, two eating patterns proven to lower heart risk.

Prevention for Life

As evidence-based information supporting prevention recommendations changes, the app will be updated. You might want to

Continued on the bottom of page 7

PAD ... continued from page 1

Preventing PAD

The best way to lower the risk of PAD and MVD is to keep your blood pressure, blood lipid levels, blood sugar and weight within normal levels.

You might not think about these risk factors, because they don't hurt. You may feel fine, but damage to the arteries goes on," says Dr. Campbell. "Even if PAD has not reached a critical level, you have a one-in-four chance of having of heart attack or stroke within five years."

Treating PAD

There are many medications used to prevent the increased risk of heart attack and stroke that also improve

PAD. Depending on underlying risk factors, these include blood pressure medications, blood sugar medications and antiplatelet agents.

All PAD patients are advised to take statins, get a yearly flu shot and stop smoking.

"Smoking cessation is extremely important, since it can make the difference between saving or losing life or limb," says Dr. Campbell.

In some patients, blockages in the legs can be bypassed surgically.

However, one of the most beneficial treatments for PAD does not involve medication or surgery. It's exercise, says Dr. Campbell.

"We found supervised exercise therapy to be one of the most important ways to improve function and quality of life," he says. 🏠



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Amputation May Not Be Necessary After All

If you are told amputation is your only option, get a second opinion from a physician who treats critical limb ischemia (CLI) on a daily basis.

"Every week we see patients with disease in their smaller arteries, but their larger vessels are open. This allows us to perform deep-vein arterialization," says Dr. Campbell.

In this limb-sparing procedure, an artery that carries oxygenated blood from the heart down the leg to the feet is sewn to a leg vein, which carries deoxygenated blood back to the heart. The procedure turns the vein into an artery, thus restoring blood flow to oxygen-starved tissue.

At Cleveland Clinic, patients with CLI are seen jointly by a vascular medical specialist, vascular surgeon and podiatric surgeon. "We try not to amputate unless all three specialists agree it's the only option," he says.

Don't be embarrassed to tell your doctor you'd like to get a second opinion before proceeding with amputation.

"It empowers you to make an informed decision about a potentially life-changing surgery," says Dr. Campbell.

Screening for PAD

Your doctor can easily evaluate you for PAD by taking a blood pressure reading in your ankles and comparing it to the blood pressure in your arms. The resulting ratio, called an ankle-brachial index (ABI), can determine the likelihood atherosclerosis is affecting your feet or legs.



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Anyone with symptoms of intermittent claudication should be screened with ABI.

If you don't have symptoms, you are at increased risk for PAD and should be screened if you:

- ➔ Are older than 65
- ➔ Younger than 65 with risk factors or family history of cardiovascular disease
- ➔ Have hypertension, high cholesterol, diabetes or smoke
- ➔ Are under age 50 with diabetes and one other risk factor
- ➔ Have another form of cardiovascular disease

HealthyHeart app ... continued from page 6

check in from time to time to see whether the prevention strategies you adopt are making a difference in your heart health.

"We hope the app will test the

limits of your curiosity and give you a better understanding of your heart and what you can do to be in control of your heart health," says Dr. Van Iterson. "You might find answers to questions you didn't know you had." 🏠



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I am 67 and had a heart attack. I am beginning to experience fatigue and sexual problems. Would you advise testosterone replacement?

The prevalence of age-related low testosterone (T) ranges from 20% in men over age 60 to 50% in those over age 80. Symptoms may include low sex drive, erectile dysfunction, low energy level and cognitive difficulties. But these same symptoms may also be caused by aging, obesity, poor diet and certain other medical conditions or drugs.

Clinical studies regarding T replacement and cardiovascular disease (CVD) produced conflicting results. A 2014 study found a link between T replacement and heart attack in men over age 65 and younger men with CVD. A recent review of 20 observational studies did not show an increase in CVD events or mortality. The true benefits and risks are unknown, since many studies were poorly designed, too small and had short follow-up. In 2015 the U.S. Food & Drug Administration alerted consumers to a possible CVD risk despite these conflicting results. T therapy may also contribute to sleep apnea, elevated blood pressure, prostate enlargement, prostate cancer cell growth, breast enlargement and blood clots.

The American College of Physicians advises low T replacement therapy only for men with sexual dysfunction and recommends it be stopped if no improvement is noted upon annual assessment. T replacement is not recommended merely to improve energy levels, physical functioning or cognition.

A study of men with CVD and low T is currently underway and is powered to better assess the impact of this therapy on CVD. Until we know more about long-term effects of T replacement, it is best to avoid taking extra T. Instead, consider natural ways to boost T levels: Get quality sleep, maintain a healthy weight, stay active, and eat a diet

low in refined carbs and high in protein and good fats from fish. Make sure your vitamin D and magnesium levels are normal, and review your meds and medical conditions with your doctor to determine if they are contributing to symptoms.

A recent echocardiogram showed heart muscle dysfunction and a leaky mitral valve. What can be done about it?

Mitral regurgitation (MR) is the most common type of moderate-to-severe heart valve disease in adults. It is essential to determine whether the cause is secondary (resulting from changes in heart muscle function or size) or primary (due to anatomic problems with the valve leaflets or supporting structures). Severity is then carefully assessed with an imaging test such as echocardiography. Next, symptoms, heart muscle function, other medical conditions and surgical risks need to be evaluated.

Treatment options include aggressive medical treatment and specialized pacemaker therapy for contributing factors such as heart failure, hypertension or rapid atrial fibrillation. Valve surgery may be offered if you have severe primary MR, are symptomatic and have an ejection fraction (EF) greater than 30%. It may also be an option if you are asymptomatic, have an EF of 30% to 60%, an enlarging left ventricle, new-onset atrial fibrillation or progressive changes seen on serial echocardiograms.

If you have moderate-to-severe secondary MR, valve surgery may be an option at the time of bypass surgery, if you have heart failure with an EF less than 50% at the time of other cardiac surgery, or if you have heart failure and are not responding to aggressive medical management.

In general, valve repair is preferred over replacement. Transcatheter MV repair is now an option when surgery is deemed too risky. ❏

IN COMING ISSUES

What you need to know about weight-loss drugs.

When to consult a genetic counselor.

How sleep apnea can impact heart failure.

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