Cleveland Clinic
HEART ADVISOR™
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ALSO IN THIS ISSUE

Heart Failure Patients: Do You Really Need That Elective Surgery?

You'll want to weigh the potential benefits against an elevated risk of complications.

If you have heart failure, you might want to give careful consideration as to whether the potential benefits of a surgical or interventional procedure are likely to outweigh the risks.

"Heart failure is a known risk factor for postoperative complications, including death," says Cleveland Clinic heart failure specialist David O. Taylor, MD. "Unfortunately, there are no medications or interventions that will decrease that risk. It's the nature of having heart failure."

Studies have shown that heart failure increases the likelihood of developing a problem such as atrial fibrillation, or worsening an existing problem or heart failure itself. It doesn't matter whether the procedure is done on an outpatient basis—for example, a colonoscopy or facelift—or is considered major surgery—a hip or knee replacement, for example.

The reasons for this elevated risk are unclear, although the stress of surgery on the body and changes in medications are possibilities.

"It's likely not one thing, but many things that put stress on an already weakened heart that may be unable to compensate," says Dr. Taylor.

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If you have heart failure, you are at elevated risk of complications after surgery. The risk is high enough that you should carefully consider whether any operation—from a minor facelift to a major knee replacement—is really necessary.

Elevated, Not High

Although the risk of postoperative complications or death is elevated for someone with heart failure, it is not high. In a recent study of more than 355,000 patients undergoing outpatient surgery, 5.7% of those with heart failure experienced complications within 30 days, and 2% died within 90 days. This was about double the rate for patients who did not have heart failure.

Not surprisingly, risk rose as heart failure worsened. The 30-day complication rate was only 1.8% in asymptomatic patients, but was 2.7 % in those who were experiencing heart failure symptoms.

Work with Your Doctor

A patient with heart failure is a red flag for anesthesiologists, who will do everything possible to reduce risk. But as a patient, there are steps you can take, too.

"Make sure your cardiologist is involved in planning for your procedure," says Dr. Taylor. "Your cardiologist should make sure you are in the best shape possible for surgery."

"Having heart failure should not deter you from having a necessary procedure. Just be aware that your risk of complications and mortality is higher than for someone without heart failure," he says."

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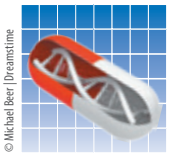
Early Discontinuation of Aspirin After Stenting May Be Okay

Following angioplasty and stenting, patients take aspirin plus clopidogrel (Plavix®), ticagrelor (Brilinta®) or prasugrel (Effient®) for up to 12 months to prevent a blood clot from forming inside the stent. This regimen, known as dual antiplatelet therapy (DAPT), can cause unwanted internal bleeding. A study reported at the American Heart Association Scientific Sessions in November 2019 showed that patients with unstable angina or the early stages of heart attack may be able to safely discontinue aspirin therapy three months after stenting. The study was conducted to evaluate the risk of internal bleeding in high-risk patients taking ticagrelor alone, compared with ticagrelor plus aspirin. At one year, significantly fewer bleeding events of any type were seen in the ticagrelor monotherapy group, compared with those who continued aspirin. No differences were seen in deaths, heart attacks, strokes or blood clots between the two groups, regardless of level of risk. It should be noted that the trial excluded patients with full-blown heart attacks, for whom DAPT remains standard of care.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Another Powerful LDL-Lowering Drug Identified

PCSK9 inhibitors lower LDL cholesterol levels further than statins by suppressing an enzyme that helps determine how much cholesterol the liver eliminates from the body. A novel class of drugs called small interfering RNA (siRNA) agents has the same potent effect by turning off the gene for PCSK9, which enables LDL to clear the body. Studies of inclisiran, the first drug in this class, were presented at the American Heart Association Scientific Sessions in November 2019. Researchers studied 1,561 patients with cardiovascular disease, who had already achieved a mean baseline LDL level of 105 milligrams per deciliter on statins or ezetimibe. Half were randomized to inclisiran and half to placebo given by injection under the skin at day 1 and day 30, and every six months thereafter. At 18 months, the patients taking inclisiran had LDL levels 58 percent lower than those in the placebo group.


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Gout Drug May Prevent Inflammatory Damage

Colchicine is a powerful, inexpensive anti-inflammatory drug used to treat gout and pericarditis (inflammation of the sac surrounding the heart). Researchers found that adding colchicine within 30 days following a heart attack reduced the composite of cardiovascular death, cardiac arrest, second heart attack, stroke and need for urgent revascularization by 23 percent. As reported at the American Heart Association Scientific Sessions in November 2019, researchers gave the drug daily to 2,366 patients starting approximately two weeks after a heart attack, when systemic inflammation is high. Another 2,379 patients were randomized to placebo. All participants received state-of-the-art medical therapy, and many underwent revascularization with percutaneous coronary intervention. At a median of 22 months, the colchicine group had a significantly lower rate of the composite endpoint. However, its effect on each category of adverse events measured individually was not significant.


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People with Heart Disease Tend to Live Longer If They Have a Dog

Maybe it's a desire for more puppy kisses or to be worshipped with adoring eyes, but dog owners in general—and those with heart disease in particular—tend to live longer than those without dogs, researchers reported Oct. 8, 2019, in *Circulation: Cardiovascular Quality and Outcomes.* A meta-analysis of 10 studies that included 340,000 adults found that dog owners had a 24% lower risk of dying during the 10-year study period than study participants who didn't own a dog. Among those who had experienced a heart attack, the risk of death was 65% lower. In a second study that followed heart-attack and stroke patients for 12 years, dog owners were 20% less likely to die than nonowners. The benefits of dog ownership were greatest among people who lived alone. Although the reasons for these benefits have not been identified, increased exercise from dog walking and the companionship that drives away loneliness may be responsible.

New Diabetes Drugs a Boon for Patients with Heart Failure

SGLT2 inhibitors go above and beyond lowering blood sugar to prevent heart failure-related deaths and hospitalizations.

SGLT2 inhibitors not only lower blood sugar, but reduce the risk of death, which is elevated in people with type 2 diabetes.

Patients with diabetes have numerous options for drugs to lower their blood sugar (glucose) levels. But a newer class of diabetes medications known as sodium glucose cotransporter 2 (SGLT2) inhibitors has benefits that far surpass those of blood sugar regulation. These agents directly lower the risk of death and hospitalization in patients with type 2 diabetes and heart failure.

"When a patient has heart failure, we immediately add an SGLT2 inhibitor to their metformin regimen," says Cleveland Clinic diabetes specialist Betul Hatipoglu, MD.

"These new drugs are now recommended as an add-on agent for diabetic patients with atherosclerotic cardiovascular disease or chronic kidney disease, as well."

Uncontrolled diabetes is a devastating disease. Over time, high levels of glucose circulating in the blood damage the arteries and nerves. Patients may lose their vision, kidney function, sensation in the legs and feet and develop cardiovascular (CV) disease. Ultimately, they are likely to lose their life to heart attack or stroke at an early age.

That's why a diabetes drug that directly reduces these risks in a subset of patients is creating so much excitement. "SGLT2 inhibitors are a big deal," says Dr. Hatipioglu.

Success Born of Tragedy

Diabetes is such a pervasive problem—affecting 26 to 36 million U.S. adults—that many resources have been spent developing drugs to fight the disease. After several were found to increase the risk of heart attack and/or CV death, the U.S. Food & Drug Administration forced all diabetes drugs to undergo testing for CV safety. At the same time, new glucose-lowering agents were required to prove they were safe on the heart.

It was during the testing of the first SGLT2 inhibitor, empagliflozin (Jardiance®), in 2015 that its remarkable CV benefits became apparent. In a high-risk population, patients with diabetes taking empagliflozin in addition to their regular diabetes medication had a lower rate of death than those who did not receive the study drug.

In addition, only about half the patients required hospitalization for heart failure at any given time in the study. "This was unexpected," says Dr. Hatipoglu.

Subsequent clinical trials of two other SGLT2 inhibitors, canagliflozin (Invokana®) and dapagliflozin (Farxiga®), showed similar benefits. Recently, dapagliflozin was shown to reduce the progression of heart failure and mortality in patients with reduced ejection fracation. In another study, canagliflozin produced a 40% lower rate of end-stage and fatal kidney disease and need for kidney transplantation.

Studies of a fourth SGLT2 inhibitor, ertugliflozin (Steglatro®), have not yet been reported.

What This Means for You

If you have type 2 diabetes and heart disease or heart failure, taking an SGLT2 inhibitor to lower your blood sugar has the potential to reduce your risk of heart attack by 11%, hospitalization for heart failure by 31%, death from heart disease by 16% and worsening kidney disease or kidney-related death by 38% to 45%.

"SGLT2 inhibitors are so effective in preventing the consequences of heart disease that, in fact, they may soon be approved for heart failure patients without diabetes," says Dr. Hatipoglu.

Potential Breakthrough

Several clinical trials of SGLT2 inhibitors are now underway in patients with heart failure with preserved ejection fraction (HFpEF). In HFpEF, the heart's pumping strength is preserved, but the ventricles become stiff and cannot expand properly to refill with blood between beats. If SGLT2 inhibitors can prevent HFpEF from worsening, or even reverse the stiffness, they will be the first drugs to be successful in treating this form of heart failure.

GLP-1 Agonists Are Heart-Friendly, Too

SGLT2 inhibitors may be the only diabetes drugs that can prevent or modify the impact of heart failure, but they aren't the only ones that benefit heart health. Another class of drugs, glucagon-like peptide-1 (GLP-1) agonists, lower the risk of CV death, heart attack and stroke in adults with type 2 diabetes and CV disease. The exact benefits vary from agent to agent. These drugs do not alter the course of heart failure; however, they do have the added benefit of increasing weight loss.

The GLP-1 agonists include:

- liraglutide (Victoza®, Saxenda®)
- semaglutide (Ozempic®)
- exenatide (Byetta®)
- albiglutide (Tanzeum®)
- dulaglutide (Trulicity®)

"Three Squares" Reimagined

Eating less food—and less often—is better for our metabolism.

Many of us were raised to believe that three square meals a day are necessary to be healthy. But recent discoveries about how our body produces and uses insulin suggest this might not be the best eating plan. The new thinking is that we should restrict the number of hours each day we spend eating.

"Current research is showing many positive benefits to fasting and time-restricted eating," says Cleveland Clinic dietitian Julia Zumpano, RD, LD.

The term "fasting" is used to describe a set number of hours within a 24-hour period in which no food is consumed. "Time-restricted eating" means you eat only within the remaining window of time.

Exactly which hours you eat or fast is not set in stone, but depends on your individual lifestyle and preference for eating breakfast upon awakening or waiting until you get hungry.

Moreover, it's not necessary to fast every day. "We recommend trying it three days a week to see if it works for you," Zumpano says.

Why This Plan Works

This new eating pattern works for two reasons.

"When we do not consume any food or drink, with the exception of water, tea or black coffee, our insulin levels, blood sugar levels and inflammation tend to drop," says Zumpano. "We may also eat less and consume fewer calories, which can be helpful in managing weight."

Studies have shown that consuming a day's supply of food within an eight- to 10-hour window is ideal. For most people, this means having their first meal between 10-11 a.m., a snack around 1-2 p.m. and dinner by 6 p.m.

If this schedule is not possible, follow these rules:

- Do not go longer than 4-5 hours without a meal or snack.
- Make your first meal the largest.
- Have a substantial snack (one that contains fiber and/or protein) 3-4 hours later.
- Make your last meal the lightest.

Advice for Diabetics

If you have diabetes, Zumpano recommends eating every four hours, since going too long without food can cause blood sugar levels to drop.

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"Your meals and snacks should be packed with protein and fiber, and you should avoid snack foods that are high in sugar, fat and salt," she recommends.

Good options include a piece of fruit and handful of nuts; a salad with beans, chicken and an oil-based dressing; hummus and veggies; or a shrimp and veggie stir-fry over brown rice.

It's also important to discuss fasting with your doctor before you start, since your diabetes medications may need to be adjusted.

Be Smart About Breakfast

Kick off your day by choosing the right breakfast foods.

Zumpano recommends your breakfast contain 2-3 ounces of lean protein; a serving of fruit, vegetable or grain; and a healthy fat.

"Whole grains are an important source of energy, but they should be paired with protein," she says.

She prefers fresh fruit to fruit juice, which can cause blood sugar to spike.

"If you don't have diabetes or prediabetes, then fruit juice might be okay," she says. "Just make sure it's 100% fruit juice and limit the amount to 4 or 5 ounces."

Breakfast Not Required

If you're not hungry at breakfast time, don't feel obliged to eat. "Not everyone likes breakfast," she says. "Keep in mind that the goal is to eat your day's allotment of food within an eight- to 10-hour window. If you skip breakfast, it simply skews this schedule later in the day.

"Listen to your body and follow its cues. Your metabolism will tell you how it likes to work," she says.

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Select breakfast foods that are high in protein, such as:

- Cottage cheese
- Greek yogurt (unsweetened)
- Chia seed pudding
- Oatmeal with nuts
- Turkey bacon or sausage (occasionally, due to high sodium content)
- Kefir (plain, without sugar)
- Occasionally, two boiled eggs
- Protein smoothie with protein powder, veggies and fruit (fresh or frozen)

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Skip these breakfast bombs that are high in sugar, fat, and carbohydrates:

- Fast foods
- High-fat processed meats
- Bacon
- Waffles or pancakes with syrup
- Sugared cereals
- Sweet rolls, muffins, donuts and other foods made of bread and sugar

Heart Symptoms Can Mimic Those of Aging—Don't Be Fooled

Get a checkup if you start slowing down earlier than you think you should.

There are 90-year-olds who run marathons and 80-year-olds who happily work full time, but these individuals are exceptions: Most adults experience declining energy and endurance as they age. The question is, when is slowing down abnormal?

If you feel fatigued or depleted at a younger age than you expect, it could be a sign that something is amiss. Anyone who experiences decreased exercise tolerance, unusually low energy or shortness of breath on exertion when they should have plenty of pep in their step should see their doctor.

"Symptoms commonly mistaken for those of aging can signify a hidden heart defect," says Cleveland Clinic cardiologist Joanna Ghobrial, MD, MSc.

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Many heart defects that occur when a fetus is in utero become apparent before or immediately after birth. Other defects may not cause symptoms until the child reaches puberty. Some of the most difficult to diagnose are those that remain silent until the person is well into adulthood or has reached an advanced age. In these cases, a congenital defect is likely to cause symptoms that can easily be mistaken for those of aging, such as a decline in energy or exercise tolerance. Such symptoms are easily overlooked, explained away or misdiagnosed.

Unwelcome Surprises

As an adult congenital heart disease (ACHD) specialist, Dr. Ghobrial knows this scenario all too well. On any given day, she may see a dozen patients of various ages who are surprised to learn they were born with a heart defect.

"Congenital deformities may manifest as shortness of breath, fatigue or low energy. The underlying cause may be an atrial-septal defect (ASD, a hole between the upper chambers of the heart), bicuspid aortic valve (two leaves, instead of three), abnormal (anomalous) tricuspid valve or one of many other problems you can be born with," she explains.

Such conditions may interfere with the way the heart functions. Over time, blood circulation becomes inefficient, causing heart failure or pulmonary hypertension. "I have treated patients with end-stage liver disease resulting from congenital valve disease," says Dr. Ghobrial.

Although the symptoms may be a surprise to someone diagnosed at an older age, some patients know they had heart surgery as a child, but mistakenly thought the defect had been fixed when they reached adulthood and were discharged from a pediatric clinic. Others were diagnosed with a congenital defect at a young age, but believed the defect would disappear as they grew. This is not unusual, as some holes in the heart close on their own.

Don't Delay Care

With early diagnosis, 80% to 90% of congenital heart defects can be surgically corrected. The longer you delay, the greater the chance you can develop a chronic medical issue that cannot be reversed. That's why it is wise to speak up if you sense something is not right.

"Some of the signs and symptoms of a congential heart defect in adults can go undiagnosed for years. By the time the defect is diagnosed, the length or quality of their life is affected. At times it might even be too late for surgical correction," says Dr. Ghobrial.

Screening for congenital heart disease is done with a simple, noninvasive test called an echocardiogram. If a defect is found, the patient should consult an ACHD specialist, preferably one who participates in a comprehensive ACHD center. Such programs have subspecialized cardiologists and cardiac surgeons with training and experience in diagnosing and treating the full spectrum of congenital heart defects in adults.

"Treating congenital heart disease requires a certain level of knowledge and expertise. Although an estimated 2.4 million adults are living with congenital heart defects, general cardiologists may not see enough of them in their practice to know the specific implications associated with each type," Dr. Ghobrial explains.

"There are many nuances that can have a critical effect on outcome. If you have a congenital heart defect, you may need to be followed closely by knowledgeable physicians for life."

Learn the Terminology

- **Congenital defect:** A defect that occurs during the development of a fetus in utero
- **Genetic defect:** A defect caused by a flawed gene

Some congenital heart defects are genetic in origin. For example, there are at least eight genes that can cause a bicuspid aortic valve.

Other defects are simply errors that occur during development.

Clinical Trials Offer Potential Benefits with Few Risks

Here's what you need to know if you have the option of participating in a phase 3 trial of a new medication.

If you were offered a medication that might lower your risk of heart attack further than any drug that is currently available, would you be interested?

What if your doctor thought a drug developed for another disease might help in treating the type of heart disease you have? Would you be willing to try it?

If you answered "yes" to either question, you might be a good candidate for participation in a clinical trial.

"Medicine advances by studying new therapies and, sometimes, older therapies to find out what works best," says Steven Nissen, MD, former chairman of Cleveland Clinic's Department of Cardiovascular Medicine and a world leader in conducting clinical trials of drugs for heart disease.

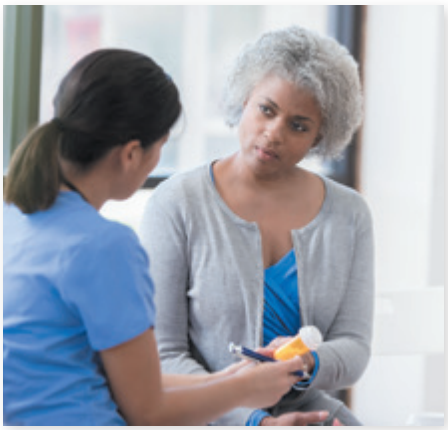
Patients, Not Guinea Pigs

Clinical trials are conducted in three phases.

In phases 1 and 2, the drug's safety profile and general effects are established, along with the optimal dosage(s).

At this point, the manufacturer may proceed to a phase 3 study, in which the effectiveness of the drug is evaluated in a large number of patients. Phase 3 clinical trials offer patients the potential to receive a better treatment than the best option currently available.

"We don't study drugs that are unlikely to be better than current therapy. It would be a waste of time and resources," Dr. Nissen says. "That's why when you participate in a phase 3 clinical trial, there is a good chance you may benefit and little chance you will be harmed."



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Drugs tested in clinical trials are suspected of being more effective than currently available medications. Patients who participate in clinical trials are often the first to reap the benefits. Should the drug not turn out to be as good as suspected, the clinical trial will be stopped and all patients taking the study drug put on other medications.

All known potential harms and benefits must be disclosed in advance, along with the types of tests you will undergo and the timetable for the study. Signing this document, known as "informed consent," indicates you understand the study and agree to abide by its rules.

"Placebo" Explained

Many drug trials are placebo-controlled—a term that is widely misunderstood.

"Placebo-controlled clinical trials do not compare a treatment to no treatment. That would be unethical," says Dr. Nissen. "All participants receive evidence-based, state-of-the-art medical therapy. The study drug or placebo is added to this medical regimen with hopes that the drug will produce incremental benefit."

Big Brother Is Watching

To prevent bias, no one directly involved in a clinical trial knows who is randomly selected to receive the placebo and who gets the study drug. However, every clinical trial is monitored by a committee with access to this information.

Should a study drug show overwhelming benefit, the committee may stop the trial. If the drug is still in development, the pharmaceutical company will file with the U.S. Food & Drug Administration for approval to market the drug.

The committee also may stop a trial when a drug has safety issues, or if it becomes obvious the drug will not be better than current therapy.

Most times, placebo-controlled trials last until their planned completion date. At the end, everyone learns whether or not they received the active medication.

"If the study drug turns out to be better than current therapy, patients in the placebo group are sometimes given the option of taking the study drug for free," says Dr. Nissen.

Benefits All Around

By enrolling in a clinical trial, you may be among the first to benefit from a new medication. Other advantages to participating, as well:

- You will receive excellent, attentive medical care. "Even those in the placebo-treatment group do better than the general population, because they receive frequent medical care and close attention by doctors and nurses," says Dr. Nissen.
- All care related to the clinical trial will be provided free.
- You will be taking an active role in a decision with the potential to positively affect your life and health.
- You will help advance medical science for the benefit of countless other patients with the same disease you have.

"I find it remarkable that when people understand the value of clinical trials to society, they are incredibly gracious about participating," says Dr. Nissen.

How to Tell Whether Bariatric Surgery Might Benefit You

New app helps individuals with diabetes understand how weight-loss surgery could improve their health.

There is solid evidence showing that weight-loss surgery—also known as metabolic or bariatric surgery—can improve cardiovascular risk in patients with type 2 diabetes and obesity. However, few eligible patients—only 1%—ever have the surgery. Failure to understand how they might benefit may be one reason why.

Now there's a calculator that reveals an individual's risk of developing major health complications over the next 10 years with and without bariatric surgery.

"Our calculator provides every patient with an estimate of their personal risk of dying or suffering a heart attack, stroke, diabetic kidney disease or heart failure over the next 10 years," says Cleveland Clinic bariatric surgeon Ali Aminian, MD, who led a team of researchers that developed the calculator. "It allows patients with type 2 diabetes to understand in a personal way how the risks and benefits of surgery compare to medical management, based on their current health status."

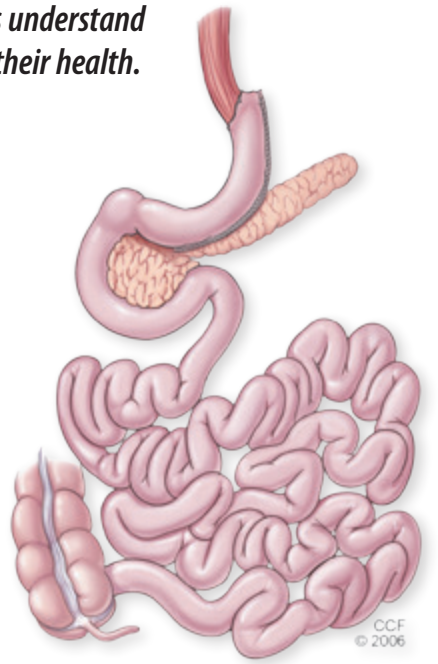

Image courtesy of Cleveland Clinic

Obese patients with type 2 diabetes who undergo bariatric surgical procedures like sleeve gastrectomy (shown above) can realize benefits as high as a 40% reduction in risk of death and major cardiovascular events, a Cleveland Clinic study has shown.

Individualizing Data

The calculator is very easy to use. Patients simply enter their age, sex, body-mass index (BMI, which must be 30 or higher), race and smoking status, along with their blood pressure, basic laboratory values, current medications and existing cardiovascular risk factors. Algorithms use these data to calculate the individual's current 10-year risk of death, heart failure, coronary artery disease, diabetic kidney disease and stroke, as well as what their 10-year risk would be after bariatric surgery.

"A patient can see, for example, that their risk of dying in 10 years would be 7% without the surgery, but with the surgery it would drop to 3%, or that their risk of heart failure is 8%, but would be 4% after the surgery," says Dr. Aminian. "This helps them understand how the risks and benefits apply to them personally."

Since bariatric surgery results in better health outcomes and longer lives for patients with type 2 diabetes, Dr. Aminian hopes the risk calculator will prompt more eligible patients to choose surgery.

"This tool has the power to change patients' perspectives," he says.

The Bariatric Surgery Calculator is available at no cost on the American Society for Metabolic and Bariatric Surgery (ASMBS) website: https://asmbs.org/escape-diabetes/risk-calculator. It can also be downloaded on a smartphone from the App Store, where it is called BariatricCalc.

Why We Use BMI

To qualify for bariatric surgery, you need to have a body-mass index (BMI) of 30 or higher. In medical terms, this makes you obese.

But what is BMI? Why don't we determine whether someone is obese by how much they weigh?

The answer is: You can't. Weight alone isn't useful, because taller people tend to weigh more than shorter people: 200 pounds on a 6-foot man is very different from 200 pounds on a 5-foot-3-inch woman.

That's why doctors use BMI. It's a formula that factors in height, as well as weight.

"Knowing your BMI is important, because studies have shown that cardiovascular (CV) risk rises along with BMI," says Cleveland Clinic preventive cardiologist Luke J. Laffin, MD.

BMI is not perfect. Due to the density of muscle tissue, very fit individuals with little body fat may have a high BMI. Also, women may have more fat than men who have the same BMI. But BMI is widely accepted and is the method used by the National Institutes of Health and World Health Organization to classify body weight according to height.

"For most people, BMI is a pretty good indicator of cardiovascular risk," says Dr. Laffin.

How to Calculate BMI

To determine your BMI, divide your weight in pounds by your height in inches squared, and then multiply this figure by 703.

For a 280-pound adult who is 5 feet, 10 inches (70 inches) tall, the formula would look like this: 280 ÷ 4900 [70 x 70] = 0.0571428 x 703 = 40.17.

- **Below 18.5:** underweight
- **18.5 to 24.9:** normal weight
- **25 to 29.9:** overweight
- **30 and above:** obese

The BMI calculator also is available on the ASMBS website and the BariatricCalc app.

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I take medications for blood pressure control. My friend read that it is best to take them at bedtime. Is this true? If so, why?

Adequate control of high blood pressure (BP) is important to protect against heart attack and stroke. Many BP meds are long-acting for ease of use and once-daily dosing, which is traditionally done in the morning. However, a recent study from Spain conducted in more than 19,000 patients found that those who took meds at night instead had better BP control and an overall 45% reduction in risk of heart attack, stroke and heart failure.

Why might this be? BP varies during the day, normally dropping as we fall asleep and rising as we awaken. Studies have shown that those who do not experience a drop in BP during sleep are at higher risk for heart attack and stroke, and that the average BP when asleep is the most significant indicator of CV risk. In this study, 48-hour BP monitoring showed significantly lower BP both at night and during the day, with greater dips during sleep in those taking their meds at night. A decrease in nighttime BP during follow-up was the most significant predictor of a lower CV risk. Many once-daily BP meds are designed to release the medications slowly, with peak action often four to 15 hours after ingestion. When taken after rising, this approach may miss the morning peak and wear off later before sleep. Perhaps this explains the results.

Timing of BP medicine is very patient-specific. Factors to consider are the meds themselves, your age, risk of falling, side effects and interactions with other drugs. If you take your BP pills at night and tolerate them, there's no reason to stop. If you want to switch from morning to evening, talk to your doctor first. Regardless of when you take your pills, the key is not to miss any doses. Worse than an elevated BP may be the swings in BP due to periodic noncompliance or simply forgetting.

I'm scheduled for a cardiac catheterization. The cardiologist says it will be done from the arm. Is this better than using the groin?

There are similarities between using the femoral artery approach from the groin or the radial artery approach from the wrist for a cardiac catheterization. Both require sedation. In both cases, a local anesthetic will be used to numb the site where a needle is inserted into the artery, and a thin catheter will be threaded through that artery to your heart. The femoral approach is the traditional method, but more and more catheterizations are now being performed from the arm, which has some advantages. Since the radial artery in the wrist is closer to the surface than the femoral artery, which is deep in the thigh, the risk of bleeding is lower and easier to identify. You will be up and about sooner. After a leg catheterization you must lie flat for two to five hours to prevent bleeding: With the radial approach, you can sit up immediately and only need to wear a pressure bandage on the wrist for a few hours. A clinical study in 2015 showed that individuals with acute heart attack undergoing catheterization had a lower risk of bleeding and death if the procedure was performed via the arm. The lower death rate was mostly due to fewer bleeding complications.

However, the radial approach may not be an option if the artery in the arm is too small, tortuous or prone to spasm, or if the blood supply to the hands is not adequate. The femoral approach is still appropriate for procedures like transcatheter aortic valve replacement, which require larger arteries to handle larger equipment. Since the radial approach is technically more difficult due to the smaller artery size, make sure your cardiologist has plenty of experience and regularly does a large number of his cases using this approach.

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Myths about cardiac rehab

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