Blood vessel health

A whole-body concern

When you think of organs in the body, what first comes to mind? Of course, there are the biggies — heart, lungs, kidneys, liver, brain. Blood vessels probably didn’t make the cut.

Much of your health actually depends on the condition of your blood vessels, and in particular the condition of the thin layer of cells lining the inside of your blood vessels (endothelial cells). That layer is called the endothelium, and it functions as a unique organ throughout your body’s maze of blood vessels.

In recent decades, research has provided a clearer picture of the endothelium’s importance to overall health. An understanding of what helps shape blood vessel health — as well as what can spell trouble — increases the value of making healthy lifestyle choices.

Tubular wonders

Blood vessels vary dramatically in size and in the roles they play. Healthy arteries are elastic so that they can propel oxygen-rich blood away from your heart and out to the rest of your tissues. Veins have thinner walls and transport oxygen-depleted blood back to the heart. The tiniest blood vessels — capillaries — act as a bridge between arterial and venous blood vessels. Both arteries and veins are lined with endothelium. Capillaries...
A smooth, healthy endothelial lining, left, allows for unimpeded blood flow in the vessel. Damaged endothelium, right, can lead to plaque buildup and blockage from a blood clot.

They themselves consist of a single layer of endothelial cells and allow oxygen, nutrients and waste to be exchanged between blood and tissues.

The endothelium influences the actions of all of these vessels. It helps regulate vascular function and thereby affects all of your organs. It secretes a number of substances — including nitric oxide — that are necessary to balance blood vessel function. Among its known functions, the endothelium:

- Plays a role in regulating smooth muscle tension within the walls of blood vessels. As a result, blood vessels may be prompted to constrict and narrow or to relax and widen.
- Regulates the delivery and exchange of nutrients within tissues.
- Helps maintain smooth blood flow by influencing the fluidity of blood.
- Contributes to the balance that helps keep blood from clotting (coagulating) or allows it to clump when needed, such as when suffering a cut.
- Helps repair injured blood vessels and form new vessels that carry blood to growing tissues.

For study purposes, researchers typically measure endothelial function in the forearm (brachial) artery with the help of a blood pressure cuff and ultrasound imaging. The test — called brachial artery reactivity — involves taking measurements and images of the artery’s diameter and blood flow before, during and after a five-minute cuff inflation.

**Health interrupted**

Some changes in endothelial health appear to be inevitable. For instance, aging is associated with progressive impairment in the ability of the heart’s coronary arteries to relax and widen. Sometimes, genetic factors play a role, such as a family history of early coronary artery disease. But many of the factors affecting endothelium function are influenced by lifestyle choices, including:

- **Smoking** — Cigarette smoke impairs the release of nitric oxide, setting off a cascade of harmful changes. Smoking provokes a temporary rise in blood pressure and damages the endothelium. Low-density lipoprotein (LDL) — the “bad” cholesterol can then enter the arterial wall at the site of the damaged endothelium and lead to plaque buildup. Smoking also makes blood platelets stickier, which increases the risk of clotting.

- **Diabetes** — Abnormally high levels of blood sugar (glucose) are associated with damage to the endothelium and decreased production of nitric oxide in blood vessels.

- **High cholesterol** — High cholesterol levels are accompanied by a decrease in available nitric oxide in blood vessels and an overproduction of chemicals called free radicals — which can damage healthy cells. It’s also a setting conducive to inflammation.

- **High salt consumption** — Findings of a recent study indicate that a high-salt diet over several years may damage blood vessels and increase risk of high blood pressure. Researchers found that higher salt intake was associated with elevated markers in the blood that indicate blood vessel damage.

- **Excess weight and belly fat** — Carrying extra weight — especially if you have an “apple” shape and an excess of belly (visceral) fat — puts your health at greater risk from the effects of substances released by fat. Visceral fat produces hormones and other substances that negatively influence endothelial function. Downstream effects may include high blood pressure, high triglycerides and an impaired ability to use insulin.

- **High blood pressure** — This may stimulate endothelial cells to produce substances that decrease the availability of nitric oxide. Lack of nitric oxide impairs the ability of blood vessels to relax.

- **Atherosclerosis** — Over time, a reduction in nitric oxide production by the endothelium or a decrease in its availability to blood vessels increases the likelihood of excessive vessel constriction and blood clots. Both of these changes play a role in the buildup of fats and cholesterol in the artery wall.

Stress also may be a factor in endothelial health. Researchers continue to
probe possible connections. For example, one small study involving older adult caregivers of spouses with Alzheimer’s disease found an association between the chronic stress of caregiving and impaired endothelial function. Another small study found that a brief period of mental stress in healthy young adults can disrupt normal endothelial function for as long as one to four hours.

Addressing the problem

Depending on your health, improving blood vessel function may be approached on a number of different levels. Lifestyle choices heavily influence endothelial health, including:

- **Not smoking** — If you’re a smoker, this is one of the most important changes you can make. Talk with your doctor if you’re having trouble stopping.
- **Getting regular exercise** — It’s never too late to give your blood vessels a boost from regular exercise. A study involving previously sedentary healthy men ages 50 to 76 found that regular aerobic exercise restored the ability of blood vessels to dilate.

Regular exercise is key to improving blood vessel flow. It can also help you maintain a healthy weight, control diabetes and high blood pressure, and increase levels of high-density lipoprotein (HDL) cholesterol, the “good” cholesterol. Aim for 30 minutes a day, five days a week.

- **Eating for heart and blood vessel health** — Beware the pitfalls of increased blood pressure and cholesterol from too much salt and trans and saturated fats. Aim for a low-fat diet that includes plenty of whole grains, fruits and vegetables, low-fat dairy products, and lean meats. The Dietary Approaches to Stop Hypertension (DASH) eating plan may be a guide. (See “Eating for your heart” in our June 2011 issue, Page 7).
- **Maintaining a healthy weight** — Excess weight can contribute to high cholesterol and triglycerides, high blood pressure, and diabetes.

If you have diabetes, high blood pressure, high cholesterol or high triglycerides — or a combination of any of these — work closely with your doctor. A management plan typically includes lifestyle changes and possibly medications.

Certain medications appear to influence the endothelium itself, including:

- **Statin** — These drugs affect the way your body uses cholesterol, which otherwise would contribute to the narrowing of arteries. They may also improve availability of endothelial nitric oxide.
- **Angiotensin-converting enzyme (ACE) inhibitors** — These blood pressure lowering drugs help relax blood vessels, making it easier for blood to flow through vessels. Angiotensin II receptor blockers also lower blood pressure and may confer similar benefits, but not all studies agree.

Tai chi and blood vessel health in older adults

A recent small study of older adults who practice tai chi indicates there may be a link between performing tai chi and improvement in both vascular health and muscle strength.

Participants were in their 60s and 70s and had practiced tai chi for at least three years. Evaluation of knee strength and measurements to determine arterial elasticity were done on the tai chi participants and on a similar group who walked, took leisure hikes or did household work. Results showed that those doing tai chi had greater arterial elasticity and better knee muscle strength than did those in the other group.

Tai chi incorporates many stretching movements along with prolonged periods where body weight is supported from a semisquatting stance. Based on these initial findings, study investigators say tai chi may offer older adults a training option that promotes both muscle strength and vascular health.

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**Health tips**

**Surgical wound healing**

Normal surgical wound healing takes time — and with aging, may take even longer. Here’s a general timeline:

- **The first few days** — Generally, the best wound care at this stage involves mild daily cleansing and a thick layer of petroleum jelly. Follow your surgeon’s advice regarding bandages or non-stick dressings. Topical antibiotics such as bacitracin or neomycin more often result in a rash than prevention of infection and are usually avoided. The goal is to maintain a relatively moist setting to avoid early scab development.
- **The first four to six weeks** — To protect the wound from reopening, follow your doctor’s advice concerning activity level and how much you may lift. Wounds in weight-bearing locations and over joints may be at particular risk of reopening. Protect the wound from sun exposure, which can darken a healing scar.

Contact your doctor if at any point you have increased pain or tenderness on or near the wound; there’s increased swelling, redness or warmth; you notice drainage; the wound reopens; or your temperature is 100.4 F or higher.

- **Six months to a year** — For best results in scar appearance — including color — continue using sun-protective measures, such as sunscreens and clothing that covers the scar. Even minimal exposure to sunlight during the first year of scar formation can lead to long-standing darker pigmentation within the scar.
News and our views

Colonoscopy: New colon prep drink goes down easier
A new colon prep solution consisting of two 5-ounce servings of fluid may make colonoscopy prep less uncomfortable for many people.

Colonoscopy can be a lifesaving screening test that greatly reduces risk of developing colon cancer. However, it’s often ignored or avoided, in large part because of the colon prep process. Until now, the process typically involved drinking 2 to 4 liters of somewhat salty-tasting fluid over a short period.

The new colon prep — Prepopik — involves drinking 5-ounces of the solution the evening before your colonoscopy, and another 5-ounces two hours before the procedure. Because the solution can lead to electrolyte imbalances, each dose is followed by several 8-ounce servings of a clear liquid of your choosing. The most common — but still infrequent — side effects of Prepopik are nausea, vomiting and headache.

Due to the potential for electrolyte imbalances, if you have reduced kidney function, heart rhythm problems or susceptibility to seizures, work closely with your doctor to determine if this product is safe for you to use.

Mayo Clinic gastroenterologists are optimistic that this new preparation will offer an acceptable alternative for people who have had an unpleasant experience with large-volume colon preparations.

Hepatitis C treatment options improving
Recent drug approvals may be life altering for more than 2 million older adults who are infected with the potentially deadly hepatitis C virus — but don’t know it. With that in mind, the Centers for Disease Control and Prevention (CDC) is asking anyone born from 1945 through 1965 get screened for hepatitis C. Most of the more than 15,000 Americans who die each year of hepatitis C-related illness are baby boomers.

Most people who have hepatitis C don’t realize it until chronic, long-term liver damage — such as scarring of the liver, liver failure or liver cancer — shows up decades later. Today, most people who come in contact with the virus do so by sharing needles or other equipment to inject illegal drugs. Prior to 1992 — when blood supply screening began in the U.S. — hepatitis C was more commonly spread through blood transfusions and organ transplants.

The standard drug therapies — pegylated interferon (Peglntron, Pegasys, others) and ribavirin (Copegus, Rebetol, others) — prompt the immune system to kill the virus. They have a cure rate of less than 50 percent for the most commonly encountered type of hepatitis C virus. The newly approved drugs, telaprevir and boceprevir, are protease inhibitors, which means they prevent virus production. They have cure rates greater than 70 percent.

When standard therapy alone fails, treatment with the standard therapies, plus one of the new protease inhibitors, has demonstrated a cure rate of up to 75 percent. However, there are still drawbacks, including difficult side effects and the many months of required therapy.

Mayo Clinic doctors agree screening for baby boomers is important. If infection is identified, they recommend seeing a liver specialist to determine what — if any — treatment is immediately necessary. Some with early-stage infection may do well by waiting for the next generation of oral, shorter and safer therapies, which may be available in the near future.

Exercise and brain health

Preventing Alzheimer’s and more

Perhaps one of the most feared conditions associated with aging is dementia — an impaired ability to think or recall. The most common cause is Alzheimer’s disease. Aging also may be associated with lesser — but still disruptive — thinking and memory problems, which is called mild cognitive impairment. Mild cognitive impairment is a common precursor to Alzheimer’s.

Researchers, doctors, drug and biotech companies, and medical institutions worldwide are urgently seeking to better understand the intricacies of brain function — and particularly to develop therapies to prevent or treat diseases such as Alzheimer’s and other forms of dementia.

But despite this important effort, no drug or therapy can beat the powerful effect that regular physical exercise has in prevention of Alzheimer’s and on improving brain function — even in those with Alzheimer’s.

More brain, fewer strokes

One Mayo Clinic study showed that those who later in life regularly engaged in moderate exercise five or six times a week reduced their risk of mild cognitive impairment by 32 percent compared with more sedentary people. Those who began exercising at midlife saw a reduced risk of mild cognitive impairment by 39 percent. Numerous other studies have come to similar conclusions.

It’s not entirely clear how exercise protects the brain from Alzheimer’s, but research has pointed to several important possibilities, including:

- Increased brain volume and possibly the creation of new brain cells (neurogenesis) — Gray matter makes up the bulk of brain tissue, and it’s where many important brain functions occur,
including memory. Gray matter decreases in volume with age. In addition, an area of gray matter in the brain called the hippocampus — which is crucial for memory — progressively deteriorates in those with Alzheimer’s.

However, exercise appears to preserve gray matter, the benefits of which have been directly documented with brain imaging. In one study of older adults, significant enlargement of the hippocampus was observed in those who did moderately intense exercise (see “Defining exercise” on this page) over the course of one year when compared with people who did basic stretching and toning for one year. Moreover, this increased hippocampus volume was associated with improved cognition. Other studies have come to similar conclusions.

Functional magnetic resonance imaging (fMRI) — which provides images of the brain in real time — has revealed that ongoing exercise enhances the activity and connections in brain circuits. In fact, those who are physically fit have more robust brain activity and connections in such studies.

Limited laboratory evidence also suggests the possibility that new brain cells can be created within the critical parts of the hippocampus. Increased blood volume — suggestive of greater biological activity — has been observed in parts of the hippocampus in those who are physically fit. This indicates that exercise may have the potential to slow the decline of Alzheimer’s.

- **Improvement in levels of brain connections** — Substances such as brain-derived neurotrophic factor (BDNF) are like fertilizer for brain cells. They have been associated with a wide variety of biochemical changes in the brain consistent with making new brain connections (neuroplasticity). Levels of BDNF circulating in the blood are lower in those with Alzheimer’s than in those who don’t have the disease. BDNF levels also appear to be increased by exercise.

- **Improved blood vessel health** — Fitness is often a sign of good blood vessel health. That’s because fitness helps prevent — and is an effective therapy for — many conditions that contribute to damage and clogging of blood vessels, such as high blood pressure, diabetes, undesirable cholesterol and stress.

Aging brain arteries are highly susceptible to narrowing and closure, especially the smallest of these arteries. The result of narrowing of small vessels can be seen on routine magnetic resonance imaging (MRI) as white patches (leukoaraiosis) in the brain. Blockage of small brain arteries causes potentially unnoticeable ministrokes that damage tiny areas of the brain. Leukoaraiosis and blood vessel closure can cause or contribute to the development of cognitive impairment and Alzheimer’s.

### Improved cognition

In older adults with or without cognitive decline, numerous studies indicate that those who exercise have increased cognitive function over those who are more sedentary.

Studies of adults without cognitive decline consistently measure improvements in cognition using tests of memory, attention, processing speed and executive function. In addition, fMRI scans have found that older adults who are physically fit show enhanced brain activation and more neuron connections while performing mental tasks than do older adults who are not fit.

One large review of numerous studies of adults with mild cognitive impairment or Alzheimer’s found significant cognitive benefits in those who exercised compared with those who didn’t. In one study, the effect of exercise on those with memory problems was about as good as the documented effect of donepezil (Aricept), a drug that may modestly and temporarily improve symptoms of mild cognitive decline.

### Overall health

In people with mild cognitive impairment or Alzheimer’s, regular exercise can have a major impact on health, as it can with anyone. Research has shown that people with Alzheimer’s who exercise have less risk of potentially life-threatening problems such as falls, osteoporosis, cardiovascular disease and other age-related problems. Depression and anxiety are common problems in both diseases, and exercise can significantly improve these conditions. Regular exercise by those with Alzheimer’s can also improve behavior management for caregivers.

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**Defining exercise**

In the studies mentioned in this article, the definition of “moderate, regular exercise” varied to a certain degree. However, it appears that effective exercise levels consist of about 150 minutes a week — or 30 minutes a day, five days a week — of exercise that increases the heart rate and is roughly equivalent in intensity to brisk walking. The exercise that’s chosen can vary based on your interests and physical ability.

It’s not known if exercising more or exercising more intensely is more beneficial than moderate exercise. In addition, the evidence supporting resistance training — such as lifting weights — as exercise for cognitive improvement or protection is limited and conflicting, even if it’s beneficial for other areas of health.

If you’re an older adult who hasn’t exercised in a while, get clearance from your doctor before starting an exercise plan or before substantial increases in exercise. A heart condition may limit a few people, but once it’s adequately treated, most heart doctors advise a graduated exercise program.

Start with modest goals and increase gradually. Going too hard too quickly can sabotage the overall goal of making exercise a lifelong change.
Achilles tendon pain

New views on old problem

You walk most days and stay fit, but all of the walking and stair climbing you did on your vacation caused your Achilles tendon to start hurting — and it still hurts months later. You suspect it’s a case of Achilles tendinitis.

You may be right in that the pain you’re experiencing is often called Achilles tendinitis. Tendinitis means inflammation of a tendon. Often, when Achilles pain begins, inflammation is the primary component. However, when symptoms last for more than a few weeks, inflammation is less of a factor. Instead, degenerative changes and deterioration of the tendon can lead to what’s called Achilles tendinosis.

Tailoring your treatment to the cause of the problem is important in treating an Achilles tendon problem.

Repeated stress

Your Achilles tendon is a large, tough band of tissue connecting the muscles in the back of your lower leg to your heel bone. It’s used anytime you walk, run, jump or push up on your toes.

Achilles tendinitis typically isn’t related to a specific injury. Achilles tendinitis results from repetitive stress to the tendon, usually in conjunction with an increase in activity or a repeated activity that’s more intense than the body is prepared to handle. Although it’s often associated with an increase in sports activity, any increase in stress on the tendon can trigger symptoms.

It could be squatting down a lot while gardening or just an increase in walking — especially uphill — on a vacation. Being overweight or obese also can place more stress on the tendon, putting you at higher risk of developing Achilles tendon problems.

Early on, Achilles tendinitis may feel like a mild ache or pain at the back of the heel or an inch or two higher up the Achilles tendon. There may be more tenderness and stiffness after inactivity — such as in the morning — and the pain may be sharper after an aggravating activity.

If you feel a snap or like you’ve been hit or shot in the Achilles tendon, it’s more likely an Achilles tendon rupture.

If you have Achilles tendon pain, talk to your doctor to rule out other problems. If you’re diagnosed with tendinitis in its early stages, self-care may resolve the problem, including:

■ Activity modification — Avoid exercise or activity that strains or irritates the tendon, such as running, jumping or prolonged hill walking. Turn to non-aggravating exercises, such as swimming, bicycling and resistance training.

■ Ice massage — This can help decrease pain or swelling. Freeze water in a small paper cup and peel away the rim to expose the ice. Rub the exposed ice on the tendon for about five to 10 minutes three to five times a day, including after exercise.

■ Pain-relieving medications — Non-prescription pain relievers can help with pain or discomfort. Anti-inflammatory drugs such as ibuprofen (Advil, Motrin IB) may help reduce inflammation, but they haven’t been shown to lead to quicker healing than do other options such as acetaminophen (Tylenol).

■ Light stretching and strengthening — Once the irritation starts to diminish, calf stretching and toe raises can be gradually implemented in a way that doesn’t irritate the tendon.

■ Footwear adjustments — Worn-out or inappropriate shoes can be a contributing factor to Achilles tendinitis. Getting better shoes may help. Sometimes, orthotics may be helpful to optimize foot biomechanics and minimize Achilles tendon stress. If heel wedges are used, they should be used only temporarily, as they may cause shortening of the Achilles tendon.

When pain persists

Achilles tendon problems can get worse if not treated — and sometimes the pain persists despite appropriate self-care. After the initial inflammatory phase (tendinitis) the tendon may undergo changes (tendinosis) instead of healing. Over weeks or months, the tendon may develop microtears and swelling, frequently resulting in a visible nodule where the tendon is thickened. Weakened tendon tissues are at increased risk of partial tearing or complete rupture.

Treatment strategies may be helpful, but they may not be enough to trigger the changes needed for healing. A special type of strengthening called eccentric strength training can help reverse Achilles degeneration. Eccentric strengthening for the Achilles involves doing a toe raise with a very slow let down back to the ground.

Perform this exercise in consultation with your doctor, and possibly a physical therapist. It’s important to make sure you’re doing the exercise correctly and not causing harm.

Continued pain

When Achilles pain doesn’t respond to conservative therapy, additional therapies may include topical medications (nitroglycerin, nonsteroidal anti-inflammatory drugs), injections (corticosteroids, platelet-rich plasma prolotherapy), shock wave therapy, needling the tendon to initiate a healing process (needle tenotomy) and rarely, surgery. Research has yet to determine which treatments are most effective.
ACE inhibitors
Good, bad and otherwise

If you’re one of the millions of Americans on blood pressure medication, you may have heard of angiotensin-converting enzyme inhibitors — better known as ACE inhibitors. You may even be taking one of them.

Although ACE inhibitors are commonly prescribed for blood pressure treatment, that’s not their only role. As a class of drugs, ACE inhibitors also help prevent potentially serious complications related to high blood pressure (hypertension), kidney disease and diabetes.

Interference called

ACE inhibitors make it possible for blood vessels to relax, which decreases blood pressure. This is achieved by preventing (inhibiting) an enzyme in your body from producing a substance (angiotensin II) that constricts blood vessels. Blood vessel constriction can cause hypertension, forcing your heart to work harder. Angiotensin II also releases hormones that promote retention of sodium and water, which can contribute to elevated blood pressure.

There are a number of ACE inhibitors on the market, including benazepril (Lotensin, others), captorpril (Capoten, others), enalapril (Vasotec, others), fosinopril, lisinopril (Zestril, others), moexipril (Univasc, others), perindopril (Aceon, others), quinapril (Accupril, others), ramipril (Altace, others) and trandolapril (Mavik, others). All are available in generic form.

For some with high blood pressure, an ACE inhibitor may be the only drug taken — about half the people with mild to moderate high blood pressure who take an ACE inhibitor alone can reduce their blood pressure to normal levels. Often, though, ACE inhibitors are combined with other types of blood pressure lowering medications — such as a diuretic or a calcium channel blocker — to manage hypertension.

Some of the best outcomes in terms of preventing complications of heart attack and stroke are seen when an ACE inhibitor is taken along with one of these types of medications. The decision to take one or more medications is made on an individual basis and based on your health and the condition being treated.

The case for ACE inhibitors

Besides improving blood pressure, ACE inhibitors also play a part in managing a number of cardiovascular concerns. They’re generally recommended at the first sign of impaired function in the heart’s main pumping chamber, the left ventricle. ACE inhibitors can prevent or delay progression to congestive heart failure and reduce the incidence of heart attack and sudden death. In the case of heart failure, ACE inhibitors can help reduce ventricular chamber enlargement and help restore the heart to its more normal shape.

ACE inhibitors are generally a first treatment option after a heart attack — their benefit can be especially valuable if you have hypertension and diabetes. Depending on your risk level of future cardiovascular problems, long-term use of an ACE inhibitor may be considered.

In addition, a 2012 review of studies by researchers in the Netherlands found that — when compared with other blood pressure lowering drugs taken by people with hypertension — ACE inhibitor use was associated with a 10 percent reduction in death over a four year period. If you contend with diabetes or vascular disease and another risk factor for cardiovascular disease, taking an ACE inhibitor significantly decreases chances of heart attack, stroke and early death.

The kidney factor

High blood pressure can damage blood vessels throughout the body, including blood vessels in the kidneys.

ACE inhibitors have a protective effect on kidney health. Clinical trials have found ACE inhibitor delay progression of diabetes-related kidney damage in people with type 1 diabetes. For type 2 diabetes, ACE inhibitors slow or decrease loss of protein in urine.

ACE side effects

One in 4 people taking an ACE inhibitor may develop a bothersome dry cough. If you encounter this, your doctor may switch you to another type of medication, such as an angiotensin receptor blocker (ARB). Once the ACE inhibitor is stopped, the cough typically disappears within a few days.

Most of the time, ACE inhibitors protect the kidneys. However, if you already have a significant degree of kidney dysfunction, you may not be suited to taking an ACE inhibitor because it can elevate blood potassium to dangerous levels. On rare occasions, an ACE inhibitor can decrease kidney blood flow to a significant degree and cause serious problems. Possible side effects may include:

- Weakness or dizziness due to excessive blood pressure reduction
- Fatigue
- Rash
- Headaches
- Sleep problems
- Rapid heartbeat

Rapid swelling in the nose, throat, mouth, lips or tongue (angioedema) may occur in about 1 in 500 people who take ACE inhibitors. People who have hereditary angioedema — or perhaps any angioedema — shouldn’t take ACE inhibitors. If angioedema occurs, seek immediate medical care. There are mixed reports of ACE inhibitors increasing the risk of reactions to allergy shots. There’s less evidence that ACE inhibitors cause chronic hives, but sometimes ACE inhibitors aren’t recommended in these situations.
Heart failure occurs when your heart has become too weak or too stiff to efficiently pump enough blood to meet your needs. When this happens, pressure builds up in the heart chambers and blood flowing into the heart may back up into the veins in your lungs and elsewhere.

This causes fluid to seep from your veins, collect in tissues and thus "congest" them. A core aspect of heart failure treatment is to improve the efficiency of your circulatory system so that congestion doesn’t occur or is minimized.

The location of fluid accumulation is an indicator of which side of the heart is pumping inadequately. Blood that has received oxygen from the lungs flows into the left side of the heart, and the powerful left ventricle pumps that blood out to the body. If heart failure affects the left side of your heart, blood backs up into the blood vessels of the lungs. Fluids collect in the lungs, leading to shortness of breath and fatigue.

The right ventricle receives blood from the body and pumps it into the lungs. When the right ventricle is pumping inadequately, it causes blood to back up in the vessels of your abdomen, legs and feet. This most often causes fluids to accumulate in your legs and ankles, causing swelling. Less commonly, when fluids accumulate in the abdomen, symptoms may include nausea, pain, loss of appetite and bloating.

Heart failure involving the left ventricle is most common, and is often caused by a heart attack or heart arrhythmias. Heart failure involving the right ventricle can occasionally occur on its own, but most often it occurs as a consequence of left ventricle heart failure. When the left ventricle fails, it puts more strain on the right ventricle, which over time may begin to fail, as well.

However, not all heart failure is congestive. In some individuals, signs and symptoms of congestion don’t develop. Instead, ineffective pumping of the heart leads to fatigue, low blood pressure and shortness of breath without fluid seeping out into the lungs, legs or other tissues. Because not all heart failure is congestive, the general term of heart failure is now more commonly used.

I think I have an enlarged prostate. My urinary stream isn’t what it used to be, and I have to go to the bathroom several times a night. Should I have treatment or live with it?

Enlargement of the prostate gland is called benign prostatic hyperplasia (BPH), and it’s common as men get older. Because your prostate surrounds a portion of the tube (urethra) through which urine leaves your body, prostate enlargement can compress the urethra and interfere with normal urine passage. Think of your prostate as a donut — as the donut enlarges, the donut hole becomes smaller, squeezing the urethra.

If your symptoms aren’t too bothersome — meaning they’re mild with slightly more frequent urination during the day or getting up once or twice a night — you may not need treatment. If you’re urinating frequently during the day and getting up four or five times a night, treatment might be vital for your health and quality of life.

In either case, have your symptoms checked by a doctor to determine if they stem from another problem — such as urinary tract infection, bladder cancer or prostate cancer.

The course of BPH varies, although it tends to worsen over time. For some, the bladder becomes small and more muscular, unable to hold as much urine. For others, the bladder becomes stretched and loses muscle tone so it can’t drain completely. This presents a serious health threat for recurrent bladder infection and kidney damage. In extreme instances — where the bladder becomes large, floppy and unable to contract its muscle — treatment for an enlarged prostate may be too late to allow the bladder muscle to return to normal.

BPH management is highly individualized. Treatments include medications, lifestyle changes and surgery.