Ways to save your kidneys

What you can do

When it comes to your kidneys, what you don’t know may — in the long run — end up hurting you.

Healthy kidneys are amazing organs that filter waste and excess fluid from your blood. But, if you’re living with unrecognized chronic kidney disease, you may have no inkling that anything’s wrong until your kidney function is significantly impaired.

Kidney failure that’s detected early often can be significantly slowed or even halted by identifying and treating the underlying condition and making lifestyle changes.

A critical piece in detecting kidney trouble is being aware of factors that may put you at greater risk of kidney disease. Generally, with your doctor’s help, it’s possible to identify measures you can take that may help save your kidneys.

Faltering filters

Normally, about 50 gallons of blood are pumped through your kidneys on a daily basis. Each kid-
ney has about 1 million filtering units, called glomeruli (glo-MER-ul-i), which are each connected with a tubule to form nephrons. When all is well, some of the functions that your nephrons perform include:

- Removal of sodium and water to maintain fluid balance in your body
- Elimination of creatinine, a waste product from normal muscle function
- Elimination of urea, a waste product of protein breakdown
- Fine-tuning levels of minerals, such as calcium, phosphorus and potassium

Healthy kidneys also regulate the acid-base balance in your blood, release hormones that help regulate blood pressure, stimulate red blood cell production and promote bone health.

However, kidney health isn’t a given. Several factors may increase the risk of chronic kidney disease. Some are outside of your control. These include being 65 or older, having a family history of kidney disease, or being black, Native American or Asian-American. But other risk factors may be addressed and very possibly modified with treatment or lifestyle changes. These include:

- Diabetes
- High blood pressure (hypertension)
- Heart disease
- Smoking
- Obesity
- High cholesterol (hyperlipidemia)

Steps in the right direction

If you’re younger than 65 or have other risk factors for kidney disease, talk with your doctor about getting your kidney function checked. Simple testing — usually including blood pressure measurement and blood and urine tests — can indicate how well your kidneys are doing their job and whether there may be an underlying problem that needs to be addressed or explored further.

Steps you can take to help save your kidneys might include:

- Carefully monitoring and managing diabetes — The presence of diabetes is of particular interest because diabetes is the most common cause of chronic kidney disease. Uncontrolled high blood sugar levels due to diabetes damages many organs, including the kidneys (diabetic nephropathy), heart and blood vessels. It’s critically important to monitor and control blood sugar (glucose) levels. Careful monitoring provides valuable information about how exercise, food, medications, stress and many other factors affect your blood sugar. Work with your doctor to fine-tune medications or insulin as needed and to identify other tools that can help you reach your goals.

- Making every effort to control hypertension — When it comes to kidney health, the closer your blood pressure is to its target range, the better off your kidneys are. Hypertension damages the kidneys’ small blood vessels, so the kidneys don’t work as effectively. Hypertension can itself be a cause of chronic kidney disease, and it can also be caused by chronic kidney disease.

Lifestyle choices — such as eating a heart-healthy diet, including physical activity in your daily routine and losing excess weight — can play roles in helping reduce or control hypertension or in getting blood pressure readings down if they’re approaching the hypertension threshold.

Work with your doctor to create an action plan and decide what, if any, medications may help you reach your goals.

Two classes of drugs may be especially helpful in lowering blood pressure and preserving your kidney function when hypertension, diabetes or both are present. They are angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs).

ACE inhibitors and ARBs reduce the protein that leaks from kidneys that are under stress and in some people may slow the rate of chronic kidney disease. Proper monitoring by your health care provider is important.

Additional kidney-preserving steps may include:

- Avoiding use of large amounts of pain relievers — Kidney damage may be caused by long-term use of various pain relievers in large amounts. These include aspirin, acetaminophen (Tylenol, others), and nonsteroidal anti-inflammatory drugs (NSAIDs), which include among many others, drugs such as ibuprofen (Advil, Motrin, others), naproxen (Aleve,
Naprosyn, others) and the COX-2 inhibitor celecoxib (Celebrex).

- **Eating with kidney health in mind** — While it’s important to eat enough protein to meet your body’s needs, many people consume more protein than is actually needed. Reducing the amount of protein in your diet may be recommended to help slow progression of chronic kidney disease. Your doctor may recommend a low-protein diet and refer you to a dietitian, who can suggest ways to eat less protein while still enjoying a healthy diet.

Another dietary consideration is the amount of salt (sodium) in your diet. To help control hypertension and reduce fluid retention, be mindful of sodium levels in the foods you eat, and especially in convenience foods, which often have added salt.

Examples include frozen dinners, canned soups and many fast foods. Other foods with added salt include canned vegetables, salty snack foods, and processed meats and cheeses.

Another consideration may be limiting potassium in your diet. Under normal circumstances, potassium in the foods you eat plays a role in preventing and controlling hypertension. Foods that contain a higher amount of potassium include oranges, potatoes, bananas, dried fruits and dried beans. As kidneys decline in function, they’re less able to eliminate potassium. The resulting abnormally high potassium levels in the blood can cause heart rhythm problems.

- **Not smoking** — If you smoke or use tobacco products, stop. Smoking makes kidney and heart disease worse.

- **Blood urea nitrogen (BUN) level in the blood** — As your body breaks down protein from foods, it produces urea as a normal waste product that’s removed from blood by your kidneys. When kidney function declines, the BUN level is higher than normal.

- **Albumin or other proteins** — Normally, kidneys remove waste products from blood to be excreted in urine while leaving proteins in the blood. A sensitive indicator of kidney decline is the appearance of a very small amount of the blood protein albumin in urine (microalbuminuria). As kidney function deteriorates, albumin levels along with other proteins increase in urine (macroalbuminuria, proteinuria).

If you’re at high risk of kidney disease — notably, if you have diabetes or hypertension — the ratio of albumin to creatinine in the urine can help your doctor detect kidney disease.

**Testing how your kidneys measure up**

Getting a read on how well your kidneys are functioning often starts with a few tests that measure aspects of your blood and what’s being excreted in your urine.

Typical blood and urine tests include:

- **Serum creatinine level in the blood** — With normal activity, muscle cells release a waste product called creatinine into the blood for removal by healthy kidneys. But when your kidneys aren’t working to their normal capacity, creatinine builds up in your blood. The serum creatinine level can be used to estimate your glomerular filtration rate (GFR), which is widely used to determine the level of kidney function in people with chronic kidney disease.

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- **Eating and drinking slowly** — Take your time and avoid gulping to reduce the amount of air you swallow. Poorly fitting dentures also can cause you to swallow excess air when you eat and drink.

- **Not drinking carbonated drinks** — Sparkling water, soda and beer release a large amount of carbon dioxide gas when warmed in the stomach.

- **Skipping gum, hard candy and cigarettes** — These all cause you to swallow more air than normal.

- **Not using a straw** — Drinking through a straw can cause you to swallow more air.

- **Addressing stress or anxiety** — People under stress or with anxiety often swallow large amounts of air.

- **Treating gastroesophageal reflux disease (GERD)** — You may swallow repeatedly to clear stomach acid that backs up into your esophagus, leading you to swallow more air. Some people with GERD develop a habit of frequent belching because it helps to relieve symptoms.

- **Talking to your doctor** — Frequent belching may sometimes be a sign of a stomach-related problem, such as infection of the stomach lining with Helicobacter pylori (H. pylori).
A racing heart

Gaining control

The first time that you had a racing heartbeat, it went away after several minutes and you chalked it up to that extra cup of coffee. But now your heart has been racing for 20 minutes and you feel light-headed. Only when a doctor at the emergency department gives you a medication does it stop.

Based on an electrocardiogram taken at the time, your doctor says that your fast heart rate originated in the upper chambers of your heart (atria). The technical name for the specific type of racing heart you have is supraventricular tachycardia (SVT). Supraventricular refers to the atria, which is above the heart’s two lower chambers, the ventricles. Tachycardia refers to a resting heart rate of more than 100 beats a minute.

Loop-de-loop

Normally, the heart’s four chambers contract and relax in coordination. This is controlled by electrical signals traveling through the heart’s conduction system and muscles.

A heartbeat starts with an electrical signal from the heart’s natural pacemaker, the sinus node. The signal passes through the atria, and the atria contract and fill the ventricles below with blood. A split-second later, an electrical signal passes through a connecting pathway — the atrioventricular (AV) node — between the upper and lower heart chambers. This causes the ventricles to contract and pump blood out to the body. That’s one heartbeat.

With SVT, the electrical impulse from a premature heartbeat in the atria begins to circle repeatedly. This causes a burst of rapid heartbeats that begin and end sud-
Often harmless, but not always

In a healthy heart, SVT is usually not life-threatening. However, that’s small comfort if it’s your heart that’s racing and you’re scared or panicked about what may be happening. In addition, it’s impossible to know exactly why your heart is racing based on feel alone. It’s very likely harmless, but sometimes may be of concern.

If a racing heart is accompanied by chest pains or fainting — or if it doesn’t slow to a normal pace within about 20 minutes — seek emergency care. You’ll probably want to make a regular appointment with your doctor if you have a racing heart that returns to normal on its own, if it comes on with exercise or if it’s recurrent.

Your health history or symptoms of your problem may provide clues that suggest you may have experienced SVT. However, the only way to definitively diagnose SVT — and to distinguish it from other causes of a fast heartbeat such as atrial fibrillation — is to have an electrocardiogram (ECG) reading of your heart when the fast heartbeats are occurring.

If your heart is still racing when you visit the emergency department, doctors may be able to capture an ECG showing the arrhythmia. If not, a diagnosis will likely require use of one of several types of portable ECG monitors. If you have another episode at a later date, the device may capture a profile of the arrhythmia.

Stopping an SVT

If your racing heart doesn’t stop on its own and you’re in the emergency department, doctors may try to slow your heart with:

■ Vagal maneuvers — Your doctor may ask you to perform these maneuvers, which may include such things as coughing, putting an ice-pack on your face or bearing down as if you’re having a bowel movement. This stimulates your vagus nerve, which helps slow your heartbeat.

■ Medications — If vagal maneuvers aren’t successful, one of several intravenous medications may be administered to slow your heart.

■ Electrical cardioversion — This can be used to reset the heart’s rhythm by delivering a brief electrical shock to the heart. Done under light anesthesia, the shock is delivered through paddles or patches on your chest.

Preventing another episode

Generally, taking steps for long-term prevention or treatment of SVT becomes increasingly advisable if you have frequent episodes, longer lasting bouts of SVT — or episodes that cause bothersome or even dangerous signs and symptoms such as passing out, lightheadedness or shortness of breath. Options include:

■ Avoiding or limiting common SVT triggers — Potential triggers include caffeine, nicotine, alcohol, or any type of medication or supplement that acts as a stimulant, such as cough and cold medications that contain pseudoephedrine, certain asthma medications or diet pills, and drugs such as marijuana, cocaine and amphetamine.

■ At-home treatment — If you have a healthy heart — or milder, more short-lived and infrequent episodes of SVT — your doctor may teach you how to do various vagal maneuvers. This may be enough to stop SVT episodes. A “pill-in-the-pocket” approach may be recommended, as well. This means that your doctor prescribes an oral medication to stop an episode of SVT and instructs you on when to take it and when to seek emergency care.

■ Radiofrequency catheter ablation — This is generally the best option for stopping bothersome SVT. In this, one or more catheters are threaded through your blood vessels to your inner heart. Electrodes at the catheter tips are positioned along extra electrical pathways that have been identified as causing your arrhythmia. The catheter tips are heated to interrupt (ablate) the extra electrical pathways, preventing them from sending extra electric signals. Radiofrequency catheter ablation can generally be done as an outpatient procedure with local anesthesia and light sedation.

■ Medications — Regularly taking a drug or combination of drugs to prevent SVT can be an option for those who don’t want — or who aren’t candidates for — radiofrequency catheter ablation. Examples may include calcium channel blockers such as dil-tiazem (Cardizem, Dilacor, Tiazac) or verapamil (Calan, Covera, Verelan), a drug from the beta blocker class such as atenolol (Tenormin), metoprolol (Lopressor, Toprol XL), propranolol (Inderal LA, others), or other anti-arrhythmia drugs such as flecainide (Tam- bocor) or propafenone (Rythmol).
Lymphedema

Swelling not to be ignored

You had never heard of lymphedema until just before your breast cancer surgery. The doctor explained the risk of swelling in your arm as a result of the surgery. Swelling might develop shortly after surgery, months or even years later, or perhaps not at all.

And, your doctor stressed, the sooner care is sought, the better.

Lymphedema affects millions of Americans. Rarely, it occurs due to an inherited condition. More commonly, it occurs when a condition or procedure damages the lymphatic system.

Ebb and flow

Normally, your lymphatic system drains protein-rich lymph fluid formed in tissues toward the heart. Along the way, harmful substances and waste products are collected and transported through lymph vessels to your lymph nodes. There, infection-fighting cells filter out these substances so that they can be flushed from your body.

Damage to this system can result in lymphedema, a swelling usually affecting just one arm or leg due to lymph fluid buildup. Damage to the system is generally due to:

- Surgery that involves removing or cutting lymph nodes or vessels — This is especially true for surgical procedures related to cancer treatment. A common example is surgery for breast cancer, which may involve removal of lymph nodes in the armpit area.

- Radiation therapy for cancer — Inflammation and scarring of lymph nodes or vessels may increase lymphedema risk.

- Cancer — Tumors may obstruct flow of lymph fluid if they grow near a lymph node or vessel.

Fluid and waste products move through lymph vessels to lymph nodes, where these substances are filtered out so that they can be flushed from the body.

Obesity, infection, trauma and other inflammatory conditions, such as rheumatoid arthritis, also may increase lymphedema risk.

Know what to look for

Early recognition of lymphedema improves the chances of getting the swelling under control before more serious tissue damage occurs. Complications may arise if there’s an infection in the area of the lymphedema.

You may have a feeling of heaviness or tightness in the affected limb, aching or discomfort in your arm or leg, or restricted range of motion with the affected limb. Hardening and thickening of skin may occur on the affected limb.

There’s no cure for lymphedema. Once the lymph system is damaged, it can’t be repaired. Surgery is rarely used. Therefore, the goal of treatment is to reduce the swelling. Treatments include:

- Compression garments — Also called lymphedema stockings or sleeves, these garments are designed to provide compression that encourages the flow of lymph fluid out of the affected limb. These garments may be especially helpful in maintaining reduced swelling when worn on a daily basis. A correct fit is important, and often may require custom-made garments.

- Exercises to help get lymph fluid moving — Your doctor or physical therapist can teach you exercises that focus on gentle contraction of the muscles in your arm or leg. Joint motion also can encourage circulation.

- Regular use of wraps or bandages — A therapist specializing in lymphedema treatment can teach you how to wrap a bandage to encourage lymph fluid to move out of your arm or leg and back toward your body’s trunk. Doing light exercises with a wrap applied can be beneficial as well.

- Specialized light massage — The technique is called manual lymph drainage and involves gently moving lymph fluids to healthy lymph nodes using special, light hand strokes. A specially trained therapist can teach you the technique for long-term use at home. However, it isn’t for everyone. Massage shouldn’t be done in areas with open wounds or blood clots or when an acute infection is present.

- Pneumatic compression — Under the supervision of a trained professional, a specialized sleeve connected to a pump is worn over the affected arm or leg. The pump intermittently applies pressure on a timed cycle designed to help move lymph fluid away from fingers or toes to reduce swelling in the limb.

A combination of several of these treatments may be referred to as complete decongestive therapy.
Nonhealing fractures

Promoting growth

When the cast was removed from your broken wrist, the pain was mostly gone. But after several months of doctor visits, your X-rays are still showing that your fracture isn’t yet properly healed.

If this happens, extra steps are usually required to facilitate healing.

Hampered healing

It’s easy to take for granted that a broken bone will heal. But that doesn’t always happen. Delayed healing is defined as a fracture that takes longer than expected to heal. It generally crosses over to what’s called a nonunion fracture if six to nine months have passed and the fracture is still totally separated, or connected only by fibrous, callus-like tissues. Factors that make nonunion more likely include:

■ Inadequate stabilization — Stabilization may involve casting or surgical stabilization with plates, screws or nails. If inadequate stabilization allows the fracture to move, bonds of tissues that hold the fracture together may not have a chance to solidify and strengthen.

■ Poor blood supply — Your blood carries the elements of bodily healing — such as oxygen, infection-fighting immune cells and body chemicals such as growth factors — to the site of the fracture. Some bones, such as the upper thighbone (femoral head and neck) and the small wrist bone (scaphoid), naturally have a less robust blood supply. Blood supply can also be diminished if trauma near the fracture site causes blood vessel damage.

■ Infection at the fracture site — Infection can increase the risk of nonhealing fractures.

For some nonunion fractures that show signs of healing, a small device that pulses ultrasound or electromagnetic waves to stimulate healing can be strapped over the fracture site.

■ Use of nicotine — Nicotine taken in any form can significantly inhibit bone healing.

■ Certain medications — These include pain-relieving non-steroidal anti-inflammatory drugs (NSAIDs) — such as ibuprofen (Advil, Motrin, others) and naproxen (Aleve, Naprosyn) — use of corticosteroids such as prednisone, or use of colchicine, often used for gout.

■ Certain health problems — These may include low vitamin D levels, thyroid problems, severe anemia and diabetes.

■ Inadequate nutrition — Healing of fractured bone requires consuming a healthy diet that includes adequate intake of protein, calcium, vitamin C and vitamin D. Talk to your doctor about appropriate levels of nutritional intake and whether supplementation may be beneficial to you.

A more perfect union

Some nonunion fractures show signs of healing and may need only an additional nudge to enhance the healing process.

For some, a small device that pulses ultrasound or electromagnetic waves to stimulate healing can be strapped over the fracture site often for 20 minutes or more, one to two times a day. This may be used for a few months while your doctor periodically uses X-ray imaging to assess whether healing is taking place.

Another treatment method is surgical modification of fixation devices to better stabilize the fracture, to compress fracture ends together or to change the mechanics of how the bone is fixed together.

Surgery to modify the fixation of the bones may be necessary, and surgery may also involve a bone-grafting procedure. This is when small pieces of healthy bone and marrow are taken from elsewhere in your body, usually the upper pelvis. This healthy bone material is placed at the fracture ends. Doing so puts the biologically active healing factors of healthy bone right at the fracture site and may help stimulate the bone-healing process.

When it comes to results at the fracture site, bone grafting is the gold standard for treatment of nonunion fractures. However, removing healthy bone from the pelvis is painful, takes time to recover from and may result in complications.

In recent years, researchers have identified a bone graft alternative — a naturally occurring chemical called bone morphogenic protein (BMP). BMP is a growth factor that the body produces to stimulate bone healing and may also help improve blood supply.

As a drug, BMP is placed on a piece of collagen mesh that is implanted over the fracture ends, just as would be a bone graft. Although BMP products are in use clinically, more study is needed to get the full picture of their effectiveness compared with bone grafting.

Finding a drug to stimulate healing that can be injected, rather than surgically implanted, is an area of ongoing research.

Additionally, a promising preliminary study found the osteoporosis drug teriparatide (Forteo) to be an effective agent at stimulating bone healing. More advanced research is under way to verify these results. □
Second opinion

Questions and answers

Q: I’m hearing a lot about Dead Sea salts. Are they safe to use for cooking?

A: Dead Sea salts are trendy, but including them in your diet isn’t a good idea.

Depending on the minerals that naturally occur in a body of sea water, the content of salt from evaporated sea water varies. The water in the Dead Sea has the highest concentration of bromide of any large body of water in the world. Thus, the salt extracted from its waters has a high amount of bromide, which may be toxic if consumed.

A case in point appeared in the March 2010 issue of The American Journal of Medicine. Reportedly, a man purchased Dead Sea salt and — based on claims of health benefits — consumed 3 to 4 tablespoons daily over several months. He sought medical care after becoming confused over several months. He sought medical care after becoming confused and having disjointed thoughts and slurred speech. The cause was bromide poisoning.

Q: My husband has been having some memory troubles. He also has cataracts that affect his vision. Should he have the cataracts removed? Or could the surgery just create undue stress for him?

A: Unless your doctor feels there’s some reason to avoid a procedure such as cataract removal, improving his vision is likely to be of benefit.

A study published in the March 2010 issue of the American Journal of Epidemiology found that people with very good to excellent vision were much less likely to experience cognitive decline or Alzheimer’s disease than were people with poorer vision and untreated vision problems. The study also suggests that lack of treatment of visual problems may contribute to cognitive decline.

More research will be needed to prove a clear link between vision and cognitive decline or Alzheimer’s. However, it’s clear how diminished vision could make cognitive decline seem worse. For someone already experiencing memory loss, poor vision makes daily tasks harder. Poor vision also may make more difficult the activities that are recommended for maintaining your brain, such as exercise, reading and being socially active.

Q: I understand the Food and Drug Administration doesn’t regulate dietary supplements as it does prescription drugs. What do I look for when shopping for vitamins and supplements?

A: It can be daunting to know what’s a good choice and whether a product contains what it says it does. With that in mind, the Food and Drug Administration (FDA) has set up regulations that require good manufacturing practices (GMPs) for dietary supplements.

These GMPs have been phased in over the last three years, and require companies that manufacture dietary supplements to meet consistent standards in the identity, purity, strength and composition of their products. The GMPs apply to all companies involved in manufacturing, packaging and labeling supplements for sale in the U.S. GMPs address the quality of supplement manufacturing processes and the accurate listing of ingredients, but not the safety of the ingredients or their effectiveness.

Until all products not manufactured under the GMP rules have been sold from store shelves, you may find it helpful to look for a third party verification seal such as those below on standardized supplements from the U.S. Pharmacopeia (USP), ConsumerLab.com or NSF International.

Remember, these seals don’t mean that a product has been evaluated for safety and effectiveness.