Considering a gluten-free diet

It’s not just for people with celiac disease. But is it for you?

In the world of trendy diets, the latest catchphrase is gluten-free. That’s the eating style essential to people with celiac disease, which is an intolerance to the protein gluten—found in grains such as wheat, rye, and barley. Although only 300,000 Americans have been diagnosed with celiac disease, two million Americans are following a gluten-free diet. “Yes, it’s a popular diet of the moment, but it really does seem to provide some improvement in gastrointestinal problems for a segment of the population,” says Dr. Daniel Leffler, an international authority on celiac disease and an assistant professor of medicine at Harvard Medical School.

The gluten effect

Celiac disease is a condition that causes the immune system to attack the lining of the small intestine. A biopsy revealing this damage (along with certain blood tests) is how celiac disease is diagnosed. It’s triggered by gluten, and the damage that results causes not only gas, bloating, diarrhea, constipation, headache, trouble concentrating, and fatigue, but also weight loss and malnutrition (due to an inability to absorb vitamins and minerals).

Until very recently, it was believed that celiac disease was the only condition triggered by gluten. However, there is now good evidence for a condition called nonceliac gluten sensitivity. “It causes similar symptoms,” says Dr. Leffler, “but there’s no intestinal damage. We don’t know why this happens, but we do know gluten and related proteins in grains can draw water out of the intestines and feed bacteria in the intestines, causing gas, bloating, and indigestion.”

Diagnosis

If you suspect you might be reacting poorly to gluten products, the first step is to determine if you have celiac disease. A blood test looks for the presence of antibodies that attack the small intestine. To make sure the result is accurate, it’s important to take the test before beginning any type of gluten-free diet. If the result is positive, you’ll need to undergo a biopsy procedure to determine if there’s any damage to the lining of the small intestine.

If the test is negative, but you still have recurring symptoms after consuming gluten, you may have gluten sensitivity. How will you know? There’s no official test. Your doctor can make the determination based on your particular health conditions and symptoms, says Dr. Leffler, or you can attempt a gluten-free diet for a brief time on your own to see if you feel better.

Treatment: The diet

People who have celiac disease are so sensitive to gluten that even a crumb of food containing the protein can trigger severe indigestion and diarrhea so sudden and severe that it can continued on p. 7
**Supplements for age-related macular degeneration**

**Q** I’ve heard that age-related macular degeneration is a common cause of blindness. Do copper, zinc, or lutein help prevent it?

**A** There’s no clear and certain answer, but there are few large randomized studies of nutritional supplements in preventing age-related macular degeneration (AMD). A study called the Age-Related Eye Disease Study (AREDS) included 3,640 people ages 55 to 80. Some did not have AMD, but others already had mild to severe AMD. The people were assigned to one of four treatment groups: antioxidants (vitamin C, vitamin E, and beta carotene); zinc and copper; antioxidants plus zinc and copper; or placebo. The combination of antioxidants, zinc, and copper seemed to reduce the risk that people who had mild AMD would go on to more severe AMD. However, it didn’t protect people without AMD from getting AMD. Another large randomized trial called AREDS2 is underway to test if lutein, zeaxanthin, or omega-3 fatty acids slow the progression of the most common type of AMD, called dry AMD. It is possible that results will be known later this year. One large randomized trial including 5,205 women reported that B vitamin supplements might reduce the risk of developing AMD. The women were given either a placebo or a combination of vitamins B6 and B12 and folic acid. After more than seven years, the women given vitamins had about a 30% lower risk of developing AMD. The results of this study are encouraging, but they need to be confirmed by other studies before they are accepted as valid.

**What about diet?** There’s reasonable evidence that diets rich in green leafy vegetables, vitamin C, vitamin E, zinc, and lutein may protect against AMD—even though supplements of these nutrients are not proven to be protective.

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**What to take for shingles pain**

**Q** I’ve been diagnosed with shingles. Is there anything I can take for the pain?

**A** If you’re over age 50 and you’ve had the shingles pain for less than three days, the current recommendation is that you take a medicine that kills the virus that causes shingles—varicella-zoster virus. The two medicines recommended most often are famciclovir and valacyclovir.

The reason that the recommendation is made only for people over age 50 is that this is the age group most often affected by shingles, and most of the studies of antiviral treatments have been conducted in that age group. Still, if a patient younger than 50 is having lots of discomfort from shingles that began in the last three days, I will often prescribe antiviral therapy. If the antiviral medicine is not giving enough pain relief, pain medicines can be added. Doctors start with nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen, and if necessary will then add more potent pain medicines.

Glucocorticoid medicines (often referred to as “steroids,” although not of the muscle-building kind) were used for many years. In my opinion, recent studies challenge their value.

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**ACKNOWLEDGMENTS**

The goal of the Harvard Health Letter is to interpret medical information for the general reader in a timely and accurate fashion. Its contents are not intended to provide personal medical advice, which should be obtained directly from a physician.
Physical activity and mental stimulation are both considered vital for protecting your mental skills and warding off dementia. But is one activity more effective than the other? “It is difficult at this point to say, because most studies have not addressed this specific question,” says Dr. Scott McGinnis, an instructor in neurology at Harvard Medical School.

In favor of physical activity
A recent study of people in their 70s published in *Neurology* found that those who exercised the most had the least brain shrinkage and fewer white matter brain lesions, which can be signs of dementia. People who engaged in intellectual activities didn’t have the same benefits. But the results came from the analysis of questionnaires followed by brain scans a few years later, and Dr. McGinnis says that’s not enough evidence to eliminate mental stimulation as a cognitive protector. It does, however, support exercise’s role in protecting brain health, as does another study published recently in *Stroke*, which found older adults who exercised regularly reduced their risk of vascular-related dementia by 40%.

Dr. McGinnis says many studies have shown consistently that regular exercise can increase the volume of brain regions important for memory and thinking. “There are a number of possible mechanisms for this,” he says, “such as stimulating production of growth factors, blood vessels, and new brain cells, which may provide a buffer against brain changes that cause dementia.”

In favor of mental activity
There is also abundant evidence that mental activity maintains cognitive health. Two studies in 2012 reaffirmed this. One study, published in *Neurology*, found a direct link between the amount of cognitive activity, such as reading the newspaper or playing chess, and the level of cognitive function in the following year. Another study, as we reported in the August 2012 *Harvard Health Letter*, found that engaging in meaningful activities such as volunteering or a treasured hobby promotes cognitive health in old age.

“Exercising a specific cognitive function will improve that function. If one engages in tasks requiring working memory, such as holding and manipulating material in mind for short periods of time, one will usually become stronger in that area,” says Dr. McGinnis.

Bypass better than stenting for diabetics?

*The surgery can be a better option for some with this condition.*

For people who have both diabetes and several blocked heart arteries, bypass surgery (rerouting blood flow around a clogged artery) may have a better result than stenting (widening a heart artery by inserting a wire mesh tube called a stent near the blockage). A study published in a recent issue of *The New England Journal of Medicine* found that bypass surgery resulted in fewer heart attacks and deaths than stenting. Bypass also reduced the likelihood of return trips to the hospital to fix new blockages.

So what is it about diabetes that can make the invasive surgery a better option than the less invasive stenting? “Diabetic patients—in particular, those with longstanding severe diabetes—are more likely to have diffuse coronary artery disease, meaning that large segments of the coronary artery are narrowed. That type of disease is less well suited for placement of a stent, and more amenable to bypassing the entire diseased segment,” says cardiologist Dr. Deepak Bhatt, a professor at Harvard Medical School.

Bypass didn’t beat stenting in every way, however. Bypass had a higher risk of stroke than stenting. So how do you know when bypass is the best option?

“It is important to individualize the approach to coronary artery disease,” says Dr. Bhatt. “Some patients are best treated with medications alone. For others, such as those with multiple blockages in their heart arteries, bypass surgery is the better choice. Even in such patients, if there is a very high risk of stroke from the surgery, stenting may be the better overall choice for the patient, even if surgery would be a more suitable treatment for the heart arteries. For other patients, such as those with one or two heart artery narrowings, stenting is the better choice. There is also a group of patients for whom either approach would be reasonable, and it is largely a matter of patient preference in that circumstance.”

What you can do
Take advantage of the cognitive protection from both mental and physical activities. To get physical benefits, start moving. “A modest amount of aerobic exercise is sufficient to produce positive cognitive results. Many studies have employed regimens of moderate-intensity walking three days a week,” says Dr. McGinnis.

For mental activity, he suggests doing something you already enjoy. “It might be crossword puzzles, reading, participating in a club, building models, or any number of activities. The guiding principle is that activities require active engagement, not passive engagement such as watching television. I certainly recommend physical, mental, and social activity for nearly all of the patients I see in my cognitive neurology clinic.”
Arthroscopic shoulder surgery
When the minimally invasive procedure is warranted.

Arthroscopy is a popular technique for shoulder surgery because it involves a small incision. While it used to be the case that surgeons could see the shoulder tissues better with traditional open (large-incision) surgery, that has changed. “Our techniques have advanced to the point where sometimes we can see what’s happening better with the scope than with open surgery,” says Dr. Eric Berkson, director of the Sports Performance Center at Harvard-affiliated Massachusetts General Hospital. But when your surgeon will use arthroscopy depends on the particular condition that requires surgery.

The surgery
With arthroscopy, the surgeon makes a small incision and inserts long, thin surgical instruments—including one with a video camera that provides the inside view. “Because you can see better with arthroscopy, you can accomplish a repair without risking damage to the nearby deltoid muscle,” says Dr. Berkson. “That cuts down on complications.”

Traditional benefits of minimally invasive surgery are smaller incisions and faster recovery times than open surgery. But shoulder arthroscopy is different. The incisions may heal faster, but Dr. Berkson says there’s not much difference in the total time for recovery. “It’s the same as open surgery because the work being done on the inside is the same,” he explains.

In addition, he says that research has shown the strength of the repair is the same, whether you have open or arthroscopic surgery, and that there’s no difference in the rate of infection after surgery. Recovery lengths vary depending on the condition being treated. For example, a rotator cuff repair may take six months of recovery, including physical therapy.

What you should do
If your doctor recommends shoulder surgery, Dr. Berkson advises not to worry if it will be open or arthroscopic. “It’s more important to find a surgeon who can do the procedure the right way, no matter which approach it is,” he says. “That means going to see an orthopedic surgeon who is a specialist in the shoulder, who has experience doing that surgery on a daily basis.

Remember, too, that it’s not just how the surgery is performed that makes a difference. The rehabilitation program after surgery is also very important. “It’s the quality of the assessment and the ability to work in a coordinated rehabilitation program that lets a minimally invasive approach be truly successful,” says Dr. Berkson.

Watch out for the “salty six”
Quick tips when trying to cut sodium intake.

Certain foods, such as canned soup, are well-known sources of sodium. But soup is just one of the “salty six” foods you should watch out for, according to the American Heart Association. The others are breads and rolls, cold cuts and cured meats, pizza, poultry, and sandwiches (a combination of cold cuts and bread that can ramp up your salt intake).

<table>
<thead>
<tr>
<th>Food</th>
<th>Sodium Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 slice white bread</td>
<td>80 – 230 milligrams</td>
</tr>
<tr>
<td>3 oz turkey breast, deli or prepackaged</td>
<td>450-1,050 milligrams</td>
</tr>
<tr>
<td>4 oz slice restaurant pizza, plain cheese, regular crust</td>
<td>510–760 milligrams</td>
</tr>
<tr>
<td>4 oz boneless, skinless chicken breast, fresh</td>
<td>40 – 330 milligrams</td>
</tr>
<tr>
<td>1 cup chicken noodle soup, canned prepared</td>
<td>100 – 940 milligrams</td>
</tr>
</tbody>
</table>

Most Americans consume more than twice the daily recommendation of 1,500 milligrams of sodium per day for people ages 51 and older. Too much salt in your diet is linked to high blood pressure, heart disease, and stroke. So how do you cut back? “My best tip is to read food labels and compare sodium content;” says registered dietitian Stacey Nelson, clinical nutrition manager at Massachusetts General Hospital. “A food that can be officially labeled low-sodium must contain less than 140 milligrams of sodium per serving, as a reference point. Many restaurants, especially chains, have nutrition information available for their menus.”

Nelson also recommends that you eat more fresh foods and less packaged, processed, and take-out food, which is usually salt-heavy; skip salting your food at the table; and ask that salt be withheld from your meals at restaurants.
Prevent peripheral artery disease
Eliminating four risk factors can reduce PAD cases.

When it comes to peripheral artery disease (PAD) among men, common risk factors have a strong cumulative effect. That’s among the findings of a recent Harvard study published in The Journal of the American Medical Association. “The more risk factors one accumulates, the higher the risk, and the severity of risk factors increases risk,” says author Dr. Ken Mukamal, associate professor of medicine at Harvard Medical School.

PAD and its risks
PAD is caused by plaque buildup in the walls of the arteries in your limbs, especially your legs. These clogged arteries put you at risk for ulcers and even gangrene. In addition, people with PAD are at an increased risk for heart attack or stroke.

Researchers found that most PAD cases in men have four main risk factors: smoking, high cholesterol, high blood pressure, and type 2 diabetes. “These risk factors are even more powerful predictors of PAD than they are of coronary disease or stroke,” says Dr. Mukamal.

If you have even one of the risk factors, says Dr. Mukamal, it’s vital that you don’t get another, since “every additional risk factor doubles one’s risk of developing PAD.” Develop all four of the risk factors, and you’re putting yourself at a 15-fold greater risk for PAD than those with no risk factors, according to the study.

Symptoms and diagnosis
Unfortunately, PAD’s main symptoms—leg pain or cramping and leg fatigue with walking and stair climbing—are often chalked up to aging or being out of shape. As a result, the condition often goes undiagnosed. “Someone with PAD may blame it on arthritis in his knees,” says Dr. Mukamal. “And the slow, insidious nature of PAD means that individuals often adjust to the problem.” In contrast to other causes of leg pain, the pain of PAD typically occurs only when you start walking, and goes away promptly when you stop.

What you can do
Checking for PAD starts with a physical exam that includes feeling the pulse in your limbs. Your doctor may order a noninvasive test called an ankle-brachial index to compare the blood pressure in your arms and legs. You may also undergo an ultrasound to determine if a specific artery is blocked.

If you do have PAD, it’s very important to address the risk factors, which means quit smoking, and get high cholesterol, high blood pressure, and diabetes under control. Surgery or stenting to improve blood flow may be warranted if one of your limb arteries is severely narrowed.

But remember that prevention can help you dodge all of this. Researchers say that avoiding all four main risk factors can eliminate the vast majority of cases of PAD before they start.
Stop leg wounds that don’t heal
The easy fix that millions of people may be ignoring.

Each year millions of people struggle with painful, debilitating venous leg ulcers and the stages leading up to the condition. But prevention is simple. That’s why doctors are now campaigning to reduce venous ulcers by 50%. “This is a longstanding problem that needs our attention,” says Dr. Sherry Scovell, a vascular surgeon and instructor in surgery at Harvard Medical School.

Venous leg ulcers
Venous leg ulcers—open skin wounds that don’t go away—usually occur on the inner side of the leg between the ankle and mid-calf. It takes a long time for them to develop, because they are the final stage of venous disease.

It starts with a varicose vein, a vein with broken valves that causes blood to pool. The pooled blood may cause your ankles to swell, and the swelling can lead to skin changes characterized by a brown discoloration called hyperpigmentation. “The ulcer happens when the skin layer breaks down, and a tiny nick or scratch causes the skin to open,” says Dr. Scovell. “The open wound may leak fluid, due to the ankle swelling. The skin continues to break down, revealing a beefy red sore that’s very painful.”

Treatment
Venous leg ulcers typically don’t go away on their own. In fact, they may get bigger until you seek treatment. The first step is confirming venous disease. Doctors use ultrasound imaging to look at the deep and superficial veins and confirm the vein problem.

Once the problem is identified, the mainstay of ulcer treatment is reducing the swelling by using either bandages or compression stockings with dressings on top of the broken skin. “That compresses the fluid out of the leg, which makes it easier for oxygen and nutrients to get to the ulcer so it will heal,” says Dr. Scovell. Adding therapy with either aspirin or pentoxifylline may also be effective for treatment, as is elevation of the leg when you’re sitting. Dr. Scovell recommends periodic check-ups after treatment, as venous disease may recur.

Prevention
You can prevent venous leg ulcers at any stage. “The varicose veins, the swelling, the skin changes—at each step you have a chance to catch it for prevention. If you catch it, you still have time to make a difference and stop an ulcer from developing,” says Dr. Scovell. Rest and elevation are also helpful for prevention, especially if you have a job or do an activity that requires long periods of standing.

But ultimately you must treat the underlying venous disease to prevent the ulcers from occurring and recurring. This is usually done in the doctor’s office, using a catheter procedure to collapse the faulty vein from the inside. Wearing compression stockings may also be an acceptable alternative to surgery. “The ulcers are completely preventable if you seek treatment for your varicose veins,” says Dr. Scovell.

Are painkillers also killing your hearing?
Frequent use may be a preventable contributor to hearing loss.

When you think of risk factors for hearing loss, over-the-counter painkillers probably aren’t among them. But a Harvard study published in a recent issue of the American Journal of Epidemiology suggests that frequent use of ibuprofen (Advil, Motrin) or acetaminophen (Tylenol) may be an important contributor. In the study, women who took the pain relievers at least twice a week were at a greater risk for hearing loss, and more frequent usage increased the risk by up to 24%. The findings are similar to a study of men and hearing loss, although aspirin was also found to contribute to risk in that study.

Researchers speculate that the pain relievers may be damaging the cochlea, the snail-shaped hearing mechanism in your inner ear. “Ibuprofen can reduce blood flow to the cochlea, which could result in cellular damage and cell death. Acetaminophen may deplete the antioxidant glutathione, which protects the cochlea from damage,” says study author Dr. Sharon Curhan, an instructor in medicine at Harvard Medical School.

Does this mean you should think twice before popping a pill for headache or back pain? “These drugs clearly have benefits with short-term use,” says Dr. Curhan. “However, frequent use of these medications and use over long periods of time may increase the risk of hearing loss and may cause other adverse health effects. Therefore, it is important to take these medications mindfully and to limit their use as much as possible.”

Talk to your doctor before making any changes in your medication use.
Many Americans take magnesium supplements, which are sometimes marketed as super pills that help a long list of ailments including muscle tension, low energy, and trouble sleeping. But think twice before you reach for this mineral in pill form. “The main reason to take this is a documented low body magnesium, usually identified by a low blood level,” says Dr. Bruce Bistrian, chief of clinical nutrition at Beth Israel Deaconess Medical Center and professor of medicine at Harvard Medical School.

**Function**
Magnesium is one of the body’s most abundant minerals and is an important part of hundreds of functions, including maintaining muscle and nerve function, as well as a steady heartbeat, healthy immune system, and strong bones.

The National Institutes of Health reports that most older adults in the United States don’t get the proper amount of magnesium in their diets. But Dr. Bistrian says magnesium deficiency is very rare.

**Candidates**
Supplements are helpful in people who are unable to absorb magnesium from food, such as people who have poorly controlled diabetes, kidney problems, alcoholism, or chronic digestive problems. Sometimes medicines—such as some diuretics, antibiotics, and cancer drugs—can interfere with magnesium absorption, making a supplement necessary.

But what about the claims that magnesium supplements can improve energy, sleep cycles, and body aches? Dr. Bistrian is skeptical. “There’s no evidence to my knowledge that it would be effective for these symptoms,” he says.

**What you should do**
If you’re concerned about low magnesium, ask your doctor for a blood test. A normal blood level range is 1.7 to 2.2 milligrams per deciliter (mg/dL).

To maintain a healthy magnesium level, Dr. Bistrian says it’s best to get the mineral from food, especially high-fiber foods including dark, leafy green vegetables, unrefined grains, and legumes. The recommended dietary allowance (RDA) of magnesium from food is 420 milligrams (mg) per day for men ages 50 and older and 320 mg per day for women ages 50 and older. The RDA for magnesium from a supplement is lower: 350 mg per day for men and women.

Too much magnesium from a supplement or from magnesium-containing drugs, such as antacids or laxatives, may cause diarrhea—but that’s often the desired effect. There are no known adverse effects of magnesium intake from food.

### Going gluten-free... continued from p1

cause life-threatening dehydration. The only fix for the condition is a lifelong avoidance of gluten, which allows the lining of the small intestine to heal and makes symptoms go away.

Cutting out gluten is more than just a matter of buying gluten-free products in the grocery store and avoiding obvious foods with rye, barley, or wheat—such as bread, cereal, pasta, and pizza. “It takes a long time to learn how to live gluten-free,” says Dr. Leffler. You’ll have to become a gluten detective, scouring food labels and looking for hidden gluten. “It’s everywhere,” says Dr. Leffler, “in everything from frozen vegetables to soy sauces to medications. For example, a lot of ingredients that say ‘natural flavorings’ have barley as a base.”

The gluten-free diet also comes with malnutrition risks, since cutting out these products may mean you’re reducing your fiber intake from whole grains, or missing out on vitamins that you’d normally get from fortified foods.

### Tips for success
If you have celiac disease, you may already be malnourished, so Dr. Leffler recommends that you meet with a registered dietitian before beginning a gluten-free eating plan. If you believe you have nonceliac gluten sensitivity, Dr. Leffler says you can try the gluten-free diet just long enough to see if it makes you feel better, but you should then meet with a dietitian to work out a plan that ensures you’ll get enough fiber and vitamins for the long term.

He also recommends that you turn to support groups for help, either at your local hospital or on the Internet (through sites such as www.celiacnow.org). “They’ll have done a lot of the work already. They’ll know which restaurants are safe and which supermarkets have a lot of gluten-free products,” he says.

For people who do have nonceliac gluten sensitivity, it may be effective to eat a reduced-gluten diet. He says the majority of his nonceliac patients who follow the diet are not strict, and they don’t worry about hidden gluten. But he points out that gluten sensitivity levels vary, so it will be a matter of trial and error before you get it right.

“Most of all, remember to be patient. It takes time to adjust,” says Dr. Leffler.
New thinking on migraine triggers
For some people, migraine headaches are preceded by symptoms such as flashes of light or vision disturbances. This is called migraine with aura. People who have migraines with aura are generally told to avoid possible triggers, such as bright light and physical effort. But those can be difficult to avoid, and doing so may affect a person’s quality of life. Now a study published online Jan. 23, 2012, in Neurology finds that suspected triggers for migraine with aura may not be as strong as some people think. The study found only 11% of participants reported a migraine with aura after being exposed to their suspected triggers. Another 11% experienced migraines without auras after exposure to their suspected triggers. Study authors say the results suggest that a person who experiences migraines with aura can cross a trigger off the list if exposure to it for three months doesn’t cause a problem.

Smartphone applications not always reliable to assess skin cancer
Be careful if you use a smartphone application to monitor a suspicious mole for the deadly skin cancer melanoma. A new study finds the performance of these apps is not always reliable. The study, published online in JAMA Dermatology on Jan. 16, 2013, found that three of four applications incorrectly classified 30% or more of melanomas as unconcerning. The best results for melanoma diagnosis came from an app that sends the image directly to a board-certified dermatologist for analysis. The worst results came from apps that use computerized image interpretation to analyze images. Best bet: go to a doctor if you have a mole that’s 6 millimeters or larger in diameter, asymmetrical, with irregular borders and a mixture of colors.

Sugary beverages raise diabetes risk; coffee and tea don’t
Here’s another reason to cut out soda and other sugar-sweetened beverages from your diet. A Harvard study published in the January 2013 issue of The American Journal of Clinical Nutrition found that the sweetened beverages, whether caffeinated or decaffeinated, were associated with higher risks of developing type 2 diabetes in both men and women. So what’s an alternative? Coffee or tea, say researchers, which were found to reduce the risk of developing type 2 diabetes. It didn’t matter if the coffee or tea was caffeinated or decaf. “Coffee and tea contain several healthful compounds that lower insulin resistance and help our bodies use glucose more efficiently for fuel,” says Dr. JoAnn Manson, one of the study authors and chief of preventive medicine at Harvard-affiliated Brigham and Women’s Hospital.

Hearing loss may be related to cognitive decline
Older adults with hearing loss may be at risk for cognitive problems, according to a study published online Jan. 21, 2013, in JAMA Internal Medicine. People with hearing loss had a 24% increased risk for cognitive impairment compared with people who had normal hearing. That translates to a faster decline in mental skills, say researchers, by as much as 30% to 40% when hearing declines to 25 decibels. The authors conclude that more research is needed to determine why this occurs and whether hearing loss treatment would have an impact on the association with cognitive impairment. Prior research suggests that the communication problems that result from hearing loss lead to social isolation. Social isolation is a risk factor for dementia. ♥