

Heart TALK

Heart-healthy and Stroke-free Living with Dr. Amy L. Doneen, DNP, ARNP

Sept./Oct. 2022



Thoughts from Dr. Amy

Is the Flu Shot Also a Vaccine Against Alzheimer's Disease?



If you haven't gotten your annual flu shot yet, here's powerful motivation to do so: A new study of nearly 2 million older adults has linked influenza vaccination to a 40 percent drop in risk for developing Alzheimer's disease (AD), the most common form of dementia. Other studies report that flu shots, as well as the pneumonia vaccine, may also help protect against heart attacks, strokes and death from cardiovascular causes.

Here's a closer look at these potentially lifesaving discoveries, who should get these shots, and why they may help safeguard heart health and memory while also lowering your risk for debilitating or potentially lethal infections.

What did the researchers learn about Alzheimer's risk and flu shots?

In a study published in *Journal of Alzheimer's Disease* in August, 2022, a team from University of Texas Health Sciences Center in Houston used records from a large medical claims database to analyze rates of AD in patients with and without prior flu vaccination. Using a "lookback period" of six years, the team identified 935,887 flu-vaccinated patients.

The group of vaccinated patients was matched with 935,887 unvaccinated patients who had similar baseline demographics, medication use and medical conditions. Patients in both groups were initially free of dementia and were over

age 65 at the start of the study. Over the next four years, the team tracked the rates of AD in both groups.

During the follow-up period, 5.1 percent of the vaccinated patients and 8.5 percent of the unvaccinated group developed AD. That meant the rate of the memory-robbing disorder was 40 percent lower in those who had received at least one flu vaccine during the lookback period.

How do the findings compare with those from earlier studies?

A study presented at the Alzheimer's Association International Conference (AAIC) in July 2020 looked at links between annual flu shots and risk for AD in a

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propensity-matched set of 9,066 patients ages 60 and older. Key findings from the study by Albert Amran, a medical student at McGovern Medical School at The University of Texas Health Science Center at Houston, and a team of researchers include the following:

- Having at least one flu shot was associated with a 17 percent reduced risk for Alzheimer's disease.
- People who consistently got annual flu shots had 30 percent lower risk for AD.
- The protective effects of flu shots were strongest in those who received their first flu shot at a younger age. For example, those

who got their first documented flu shot at age 60 benefitted more than those who waited until age 70 to get their first flu shot.

"Our study suggests that regular use of a very accessible and relatively cheap intervention — the flu shot — may significantly reduce risk of Alzheimer's dementia," Amran stated in [a news release from the Alzheimer's Association](#). The CDC [recommends the annual influenza vaccination for everyone ages six months or older](#) but cautions that certain people should check with their healthcare provider before being immunized.

How do pneumonia shots affect risk for Alzheimer's disease?

Another study presented at the same conference found that vaccination against pneumococcal pneumonia reduced older adults' risk for AD by up to 40 percent, depending on their individual genetic profile. The study was conducted by Svetlana Ukraintseva, PhD, of Duke University and colleagues.

The team examined links between AD and pneumococcal pneumonia vaccination, with or without an accompanying seasonal influenza shot, in more than 5,100 men and women ages 65 and older who were participating in the Cardiovascular Health Study. The results were adjusted for age, race, birth cohort, education and smoking. The researchers also took into account a strong genetic risk factor for AD: carrying a variant called the G allele of



rs2075650 in the TOMM40 gene.

Dr. Ukraintseva's study also reported that people who received a higher number of flu and pneumonia vaccinations between ages 65 and 75 had a 12 percent lower risk for AD as compared to people who received fewer or no shots.

How might genes influence rates of Alzheimer's disease in people who get pneumonia shots?

"[This genetic variant is] linked to [the] NECTIN2 gene, which is involved in blood-brain barrier permeability and vulnerability to infection," Dr. Ukraintseva [told Medpage Today](#). Overall, in the entire group, those who were vaccinated against pneumonia between ages 65 and 75 had 30 percent lower risk for AD afterwards.

However, among noncarriers of the G allele of rs2075650, risk for AD dropped by 38 percent, the study found. "This means that adult vaccination against pneumonia may reduce Alzheimer's risk depending on individual genotype, which supports personalized prevention of Alzheimer's disease," Dr. Ukraintseva said.

Who should get the pneumonia vaccine?

The CDC and the BaleDoneen Method [recommend the shot](#) for everyone ages 65 and older, as well as younger people with risk factors for pneumonia, such as heart failure, pulmonary disease, diabetes or smoking. The shot protects against infection by 23 types of pneu-

mococcal bacteria and has been FDA-approved since 2000. Rates of the types of pneumonia the shot protects against have dropped by 99 percent in the U.S. since it was introduced, the CDC reports. However, pneumonia remains a major public threat — particularly to those who are NOT vaccinated — killing about 50,000 Americans a year, most of whom are over 65 or older.

Along with protecting against a dangerous infection — and the risk of being hospitalized with pneumonia during the COVID-19 pandemic —

the pneumococcal immunization also another life-saving benefit: A study of more than 84,000 people found that those who have been vaccinated against this disease were at lower risk for heart attack and stroke. Given these benefits, we recommend being vaccinated at age 50 if you have cardiovascular disease.

Do seasonal flu shots help prevent heart attacks and strokes?

Adults who are immunized have a 46% lower risk for fatal or nonfatal heart attacks, strokes and other major cardiovascular (CV) events over the subsequent 12 months, compared to those who received a placebo shot or no shot, according to a recent Harvard analysis that pooled results from randomized clinical trials involving nearly 7,000 men and women.

Another recent study found that people who are vaccinated early in the flu season (such as September or October) have a greater reduction in heart attack risk than those who wait until mid-November to be immunized. Many studies have shown that acute influenza infection is a strong, independent risk factor for heart attacks and strokes. Researchers report that up to 91,000 Americans die each year from CV events triggered by flu. These grim statistics have prompted the American Heart Association and the American College of Cardiology to issue guidelines recommending flu shots for people with cardiovascular disease (CVD).

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• *September Recipe* • **Pepita-Crusted Chicken Cutlet Salad**

Ready in just 30 minutes, this South American-inspired salad is low in calories but rich in disease-fighting antioxidants and delectable flavors. Also known as pumpkin seeds, pepitas are one of the best natural sources of magnesium — a mineral that's often lacking in the typical Western diet. Indeed, only about 20 percent of U.S. adults consume the recommended daily amount! Magnesium plays a key role in controlling blood pressure, regulating blood sugar and supporting heart health. Studies suggest that eating pepitas may also boost fertility and help protect against certain cancers.

For a flavor variation, use fish filets instead of chicken cutlets or substitute pistachios for pepitas. For a vegetarian version, use meatless “chicken” tenders.



Adapted from food.com and food52.com.

INGREDIENTS

For the chicken

- 4 skinless, boneless chicken cutlets
- 3 tablespoons flour
- 1 teaspoon chili powder or smoked paprika
- ½ teaspoon cumin powder
- ½ teaspoon freshly ground black pepper
- 1 egg
- 1 tablespoon milk
- 1 cup coarsely chopped pepitas

For the salad

- 1 head Romaine lettuce, hand torn
- 1 mango, peeled and thinly sliced
- 1 ripe avocado, peeled and thinly sliced
- 1 cup jicama, peeled and thinly sliced
- ½ small red onion, thinly sliced
- ⅓ cup extra virgin olive oil
- 2 tablespoons red wine vinegar

PREPARATION

Preheat oven to 350 F. Line a rimmed baking sheet with parchment paper. Prepare three small bowls: one with a mixture of the flour, chili powder, cumin and black pepper; one with the egg and milk whisked together; and one with the chopped pepitas. Dip chicken in the flour mixture, then dip in egg-milk mixture, followed by the chopped pepitas. Place coated chicken on prepared baking sheet and bake for 25 minutes.

Meanwhile, prepare four salad plates, layering the lettuce, mango, avocado, jicama and onion. Whisk together the olive oil, wine vinegar and Dijon mustard. When the chicken is ready, cool for five minutes, then top each salad plate with a chicken cutlet. Drizzle with the vinaigrette dressing, garnish with cilantro (if using) and enjoy! **Serves four.**

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Why would flu and pneumonia shots have any effect on risk for Alzheimer's disease?

“The fact that very different pathogens — viral, bacterial, fungal — have been linked to Alzheimer’s disease suggests a possibility that a compromised host immunity may play a role in Alzheimer’s through increased overall brain’s vulnerability to microbes,” Dr. Ukraintseva said. “Some vaccines show beneficial off-target effects on health that span beyond

the protection against specific disease,” she told MedPage Today. “This could be because they may improve immunity on a broad scale.”

Another possibility is that by protecting against flu and pneumonia, these vaccines help people avoid the systemic inflammation that these diseases cause. As [we recently reported](#), targeting brain inflammation is one of the newest strategies to prevent AD and other forms of dementia. Recently, 24 of the world’s leading experts on dementia prevention published a landmark paper in *Lancet*

[outlining lifestyle steps that could reduce risk for memory loss by up to 35 percent.](#) These steps were designed to reduce brain inflammation and other factors that can set the stage for dementia.

Although vaccinations were not discussed in that paper, these new findings suggest yet another powerful reason to get your annual flu shot in September. Doing so could save your life, heart and brain! And if you are 65 or younger with risk factors for pneumonia, getting that vaccine could also be one of the easiest — and fastest — ways to protect your

“The BaleDoneen Method Saved My Life!”



Four years ago, Rick Merizon received a startling diagnosis: He had prediabetes.

“My doctor was as shocked as I was because I don’t have the typical risk factors, such as being overweight and sedentary,” recalls the then 45-year-old wildlife biologist from Chugiak, Alaska. “He said I was likely to become a type 2 diabetic in the next few years — and in his opinion, there wasn’t much I could do to prevent it. I already led a very active life that included long-distance running and sea kayaking, ate a low-fat diet, and was teased about being *underweight*.”

Along with prediabetes, he also had high blood pressure and high cholesterol. “I knew that these three things together put me at high risk for heart disease — and that terrified me,” recalls Rick. On Nov. 4, 2022, he’ll be sharing the remarkable story of how he avoided a lifetime of chronic illness at the BaleDoneen Annual Reunion in the Woodlands, Texas. Here’s a look at his journey to wellness and peace of mind, using our unique, precision-medicine approach to protect and enhance arterial health at every age: the BaleDoneen Method.

Seeking a Disease Detective

During Rick’s initial assessment at [The Prevention Center for Heart & Brain Health](#) in 2019, we posed a question we

always ask new patients: “What are your goals for optimal health — and which health threats might challenge your ability to achieve them?” He told us that as the father of three young children, his top priority was to remain an active participant in their lives — without any limitations.

Because his work often took him to remote locations in the Alaskan wilderness, his greatest fear was that he’d suffer a heart attack or stroke and be unable to get medical help. Along with seeking a treatment-and-prevention plan to help him avoid that scary scenario — and ward off diabetes — he also hoped that we could solve the medical mystery of WHY he had so many health problems, despite being a lifelong nonsmoker who followed an excellent lifestyle.

Fire in the Arteries

Our state-of-the-art imaging and laboratory tests confirmed that Rick has [insulin resistance](#) (IR), a prediabetic condition that is the root cause of 70 percent of heart attacks, many strokes and almost all cases of type 2 diabetes. In addition, there is such a strong link between abnormal blood sugar levels and Alzheimer’s disease (AD) that some experts have proposed that AD be renamed type 3

diabetes. In addition, Rick was shocked when a [15-minute, FDA-approved ultrasound test](#) showed that at age 45, he had the arteries of a man in his late 50s.

Most importantly, our testing revealed that Rick had atherosclerosis (plaque inside the artery wall) and high levels of inflammation — the one-two punch that can lead to potentially life-threatening cardiovascular events. Think of plaque as kindling. Inflammation, which we call fire, lights the match. The result can be a plaque rupture or erosion, followed by the formation of a blood clot. If the clot obstructs flow to the heart, the result can be a heart attack. If the blockage occurs in the brain, it can trigger a stroke.

Rising Rates of Cardiometabolic Disease in Younger Adults

Rick’s case is not unusual. It’s become increasingly common for younger adults (those under age 55) to be diagnosed with cardiovascular disease (CVD) AND metabolic disorders, such as IR, diabetes, obesity and metabolic syndrome: a cluster of heart attack and diabetes risk factors that’s been called “[the other deadly global pandemic](#),” because it now affects 1 billion people worldwide, including 66 million Americans, many of whom are undiagnosed.

Soaring rates of metabolic disorders — and [CVD fatalities](#) — among younger Americans [have prompted experts from the Johns Hopkins Ciccarone Center for](#)

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[the Prevention of Heart Disease](#) to call for a new medical specialty to address this alarming trend. Indeed, only one in eight US adults is metabolically healthy, a recent study found. The researchers defined optimal cardiometabolic health as meeting guideline-recommended targets for five factors — blood pressure, blood sugar, triglycerides, HDL (good) cholesterol and waist circumference — and not taking any medications related to these factors.

A Plan That's Guaranteed to Prevent Heart Attacks and Strokes

To help save lives, hearts and brains, the BaleDoneen Method has pioneered a new evidence-based medical specialty called "[Arteriology](#)," which is designed to optimize the health of the more than 60,000 miles of blood vessels in our bodies and help people avoid heart attacks, strokes, diabetes, kidney disease, erectile dysfunction, heart failure, cancer, Alzheimer's disease and many other chronic conditions.

Two [recent peer-reviewed studies](#) have shown that our arteriology-based approach is highly effective at halting CVD — and shrinking arterial plaque, helping our patients avoid heart attacks and strokes. Since 2008, we have offered all our patients a written guarantee stating that if they experience one of these events, we will refund 100 percent of all fees paid during that year. To date, we have had to give only three refunds, despite treating hundreds of high-risk patients, including people who have survived heart attacks and strokes while under the care of different providers, past and current smokers, and people weighing up to 400 pounds.

Harnessing Genetic Insights to Optimize Arterial Health

Although the increasingly unhealthy Western lifestyle and the U.S. obesity epidemic are the major culprits in rising rates of cardiometabolic disease in younger adults, genes can also play a role, as turned out to be the case for Rick. Not only does he have a family history of di-



abetes, which affected his father, but our testing revealed that he was also at high genetic risk for CVD. He's a carrier of the 9P21 "heart attack gene," which more than doubles risk for suffering a heart attack or developing CVD at an early age, compared to noncarriers.

The good news, however, is that our genetically guided approach to treatment offers a proven strategy to combat these health threats. As described more fully in [the new BaleDoneen book, *Healthy Heart, Healthy Brain: The Personalized Path to Protect Your Memory, Prevent Heart Attacks and Strokes, and Avoid Chronic Illness*](#), our method uses comprehensive, individualized therapies to optimize arterial wellness, ranging from lifestyle changes to medications, supplements and [a diet based on the patient's DNA](#). We also [use a genetic test to identify the most effective medications and supplements](#) — at the optimal dose — for people who need them.

The Habit that Helps Beat the Heart Attack Gene

Along with prescribing medications and supplements to help stabilize and reverse Rick's atherosclerosis, reduce his inflammation and manage his blood pressure and cholesterol issues, we also recommended that he add high-intensity interval training (HIIT) to his already vigorous workout. Research suggests that HIIT — alternating bursts of high-intensity exercise with intervals of lighter activity

— is one of the most effective ways to reduce heart attack risk in people with IR or metabolic syndrome.

In addition, [a very large study](#) recently found that among carriers of high-risk genes, such as 9P21, those who got the most cardiovascular exercise (such as jogging, biking, running, brisk walking or other aerobic workouts) had a 50 percent lower risk for heart attacks and strokes, as compared to those who got the least exercise! Always check with your health provider before starting a new workout routine to make sure it's right for you.

Living Well — Without Fear of a Heart Attack, Stroke or Dementia

Rick's genetic test results also indicated that he'd benefit from following a [gluten-free diet](#) as part of his heart attack and stroke prevention plan. We also recommended [intermittent fasting](#) (IF) — not for weight loss, but because it's one of the best anti-inflammatory diets. Moreover, many studies have shown that IF can significantly improve — or even reverse — insulin resistance.

By narrowing the window in which one consumes his or her daily calories, IF reduces insulin spikes, demands on the pancreas' insulin-producing beta cells and the body's overall insulin levels. In effect, this eating plan helps reprogram our metabolism by resetting how our bodies respond to insulin, which in turn improves insulin resistance and helps us use this hormone more efficiently.

"Over the past three years, I feel so much better with this treatment plan," says Rick. "My stamina has increased, I'm mentally sharper, and in the morning, I wake up right away, instead of struggling to get out of bed. What's been fascinating to me as my treatment has progressed is that I feel better now, at age 49, than I did in my 20s and 30s. For years, I constantly had the nagging feeling that something was very wrong — and now I feel very positive about my future. Unquestionably, the BaleDoneen Method has saved my life — and has also greatly enhanced it!"