# Heart TALK

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

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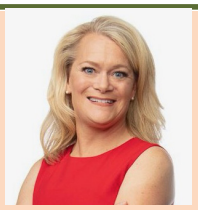
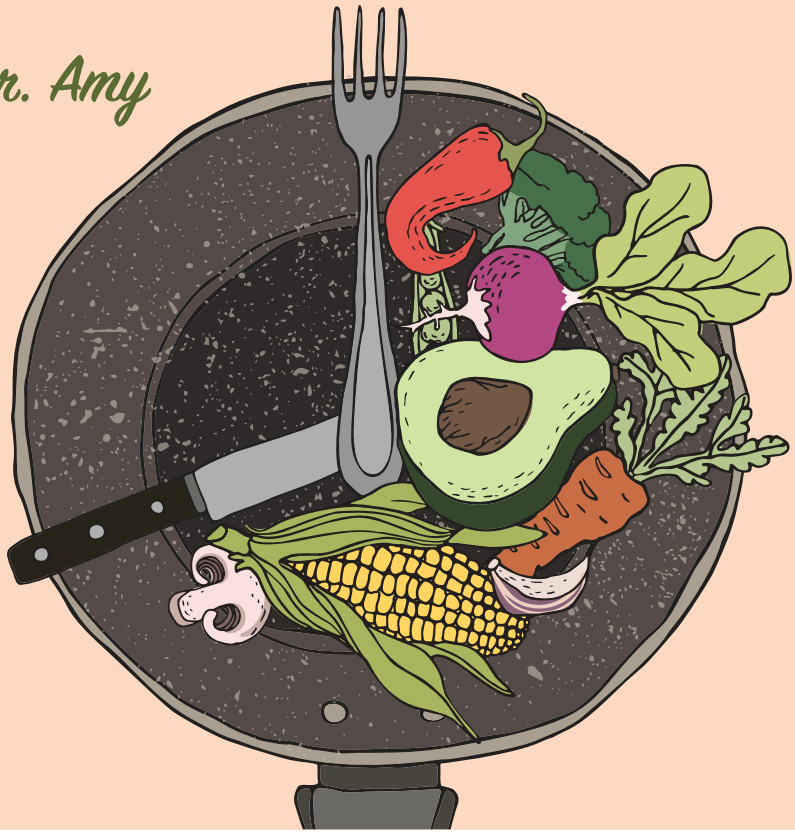


*Thoughts from Dr. Amy*



## Surprising Heart and Brain Health Perks of INTERMITTENT FASTING

Most people think of intermittent fasting (IF) as a weight-loss plan because it helps your body burn fat. That has turned out to be the case for many of our overweight patients, most of whom have tried numerous diets without success before we suggested they try IF. Some of them have lost 30 or more pounds and report that they are feeling healthier than they have for years.

However, intermittent fasting isn't just a way to get the pounds off. Even if you don't lose *any* weight with this eating plan, studies show that it's still the best anti-inflammatory diet around and can also help reduce or reverse insulin resistance, the root cause of 70 percent of heart attacks, many strokes and almost all cases of type 2 diabetes. IF may also help you avoid Alzheimer's disease, which is so common among people with insulin resistance that it's been called "type 3 diabetes." Here's a closer look at IF and its marvelous health benefits:

### WHAT IS INTERMITTENT FASTING?

Many diets focus on what to eat, but intermittent fasting is all about *when* to eat. There are a few variations of this popular eating plan, with the most common being the 16/8 approach, which involves fasting every day for about 16 hours and limiting your daily eating to about 8 hours. Within this window, you can have three small meals or two slightly bigger ones, such as lunch and dinner. Following this plan can be as easy as not eating anything after dinner and skipping breakfast the next morning. However, it's crucial to choose healthy foods in moderate portions since you won't get any health benefits if you load up on high-fat or processed foods, sweet treats and super-sized portions during the eating window.

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# A Delightful Way to Keep Your Brain and Body Fit

If you love to dance, here's some delightful news from the research front: Moving to the beat boosts brain health and helps keep your memory sharp. In an intriguing paper published in *Scientific American*, Columbia University neurologist John Krakauer reports that synchronizing music and movement offers "a pleasure double play:" Music lights up the brain's reward centers, while dance stimulates its sensory and motor circuitry.

Dr. Krakauer also reports that even watching others dance is intellectually stimulating because subconsciously, you are choreographing their next moves, and if they execute them with expert skill, your brain's reward centers activate. Here are some recent discoveries about the physical and mental benefits of busting some moves on the dance floor:

## DANCING DRAMATICALLY REDUCES RISK FOR ALZHEIMER'S DISEASE

A number of studies have linked participating in leisure activities to lower risk for dementia. However, researchers weren't sure if the activities themselves helped protect memory or if people with mild cognitive impairment (the precursor to dementia) were less likely to participate in these activities. To find out, one study examined the impact of 11 types of physical and mental activities on 469 adults aged 75 or older who were free of dementia at the start of the study and lived in the community (not in nursing homes).

The researchers examined the frequency at which the older adults engaged in the various activities at baseline and gave them memory tests, then tracked them for five years. During that time period, 124 of the volunteers developed dementia, with Alzheimer's disease being the most common form. The researchers found that of all of the physical activities studied — including golf, swimming, exercise classes and biking — only one of them, dancing, decreased risk for memory loss. People who danced frequently were 76 percent less likely to develop Alzheimer's disease or other forms of dementia, compared to those who danced rarely or never, even when a wide range of risk factors were taken into consideration.

## AN ABUNDANCE OF MENTAL, PHYSICAL & EMOTIONAL BENEFITS

Why is dancing so good for brain health? According to a recent report from Harvard Medical School, moving to the beat improves mood, reduces stress and helps the brain form new neural connections in regions involved in long-term memory, planning and executive function. Dancing also raises levels of the feel-good brain chemical serotonin and enhances psychological well-being. Busting some moves on the dance floor also provides an excellent cardiovascular workout, helps you maintain a healthy weight and improves balance, flexibility and coordination. Other proven health perks include improved muscle tone and aerobic fitness, stronger bones and lower risk of osteoporosis, increased physical confidence and reduced danger of falls. Dancing has also been linked to improved self-esteem, better social skills and improvements in mood and mental functioning.

Ready to give it a try? Always check with your provider before starting a new workout to make sure it's right for you. If you get a medical okay, consider taking a Zumba, hip-hop, salsa or jazz class or watching a YouTube video with some rock-and-roll moves you've always wanted to learn. Then grab a partner and start shimmying. Or invite some friends over, put on your favorite tunes and show them how to bust some moves!

## August Recipe • Garlic Grilled Shrimp Skewers

Easy and delicious, this recipe is perfect for a summer cookout or family dinner. Shrimp are low in calories but high in protein and contain more than 20 different vitamins and minerals. These include two types of disease-fighting antioxidants: selenium, a mineral that also plays a role in immune system function; and astaxanthin (the main color pigment in shrimp). Both of these substances have been shown to reduce chronic inflammation and thus support heart and arterial wellness. In addition, these tasty shellfish are also a good source of heart-healthy omega-3 and omega-6 fatty acids.

There are several delicious ways to vary this recipe, including using different fresh herbs, such as cilantro, oregano, or thyme, instead of basil and parsley. Try using the marinade with chicken breast, any mild, firm-fleshed fish, vegan fishless fillets or tofu, instead of shrimp. Another option is to skip the dipping sauce and serve with lemon or lime wedges. This recipe pairs perfectly with grilled corn on the cob and tomato salad. Or serve with grilled or steamed vegetables or your favorite salad for a mouthwatering meal that's sure to delight!

## PREPARATION

In a large bowl, combine garlic, olive oil, lemon or lime juice, black pepper and cayenne pepper. Stir in basil and ¼ cup parsley. Add shrimp and toss until well coated. Cover and refrigerate for 30 to 60 minutes, stirring once or twice. Meanwhile, place shrimp shells in a small pot with water to cover. Boil for five minutes, turn off heat and reserve broth until shrimp are ready to be cooked.

Prepare a grill and heat to medium. Thread shrimp onto skewers and brush with garlic and herbs from marinade. Grill 2 to 3 minutes per side or until opaque. Meanwhile, remove shrimp shells from broth and discard. Add leftover marinade to pot with broth and bring to a simmer to make dipping sauce. Garnish shrimp with remaining ¼ cup of parsley. Serve with dipping sauce and enjoy!

Adapted from allrecipes.com and downshiftology.com.

## INGREDIENTS

2 cloves garlic, minced
1/3 cup olive oil
2 tablespoons lemon or lime juice
¼ teaspoon freshly ground black pepper
¼ teaspoon cayenne pepper
¼ cup fresh basil, minced
½ cup fresh parsley, minced, divided
Two pounds large or jumbo shrimp, peeled and deveined, with shells reserved
6 skewers

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Another popular IF regimen is the 5:2 plan, in which you eat normally five days a week and limit yourself to 500-600 calories a day on the other two days. You can choose whichever days of the week you want for the fasting days, as long as they are separated by at least one non-fasting day. Again, "eating normally" means eating a healthy diet with moderate portions, not bingeing on junk food and sweets.

### How does the 16/8 plan work?

Here's an example of the 16/8 plan in action: If you finish your evening meal at 8 p.m., you'd wait until noon the next day to eat again, thus completing a 16 hour fast. During the fasting window, it's important to stay hydrated by drinking plenty of water, which helps quell hunger pangs.

It's also fine to drink coffee or tea during the fasting window as long as these beverages are unsweetened and don't contain anything with calories, such as milk or cream. *Before starting intermittent fasting, it is essential to check with your healthcare provider. This eating approach is not appropriate for everyone and may be harmful for people with certain medical conditions, particularly those who are taking certain diabetes medications.*

### What are the latest study findings about the effects of intermittent fasting?

Numerous studies have shown impressive health benefits. One of the latest is a 2021 randomized clinical trial (RCT), in which participants who practiced IF for eight weeks had significant decreases in body fat, oxidative stress and inflammatory markers. The group following this eating plan also had significant improvements in blood vessel function, food metabolism and gut health, as compared to a control group of participants who ate their usual normal diet without any fasting.

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A number of other studies have had similar findings. For example, in a 2018 RCT, people who practiced calorie restriction for two years, achieved through IF, lost nearly 20 pounds and dramatically reduced levels of F2 isoprostanes, a biomarker of oxidative stress (an imbalance between the formation of free radicals and protective antioxidant defenses). F2 isoprostanes, which are measured with a urine test, reveal how fast the body is oxidizing, or breaking down.

A 2019 study found that the benefits of intermittent fasting exceed those of simply cutting calories. Published in *New England Journal of Medicine*, the study found that IF improves obesity, waist circumference (independent of weight loss), insulin resistance, high cholesterol, high blood pressure and chronic inflammation. The researchers also reported the following physical and cognitive health perks:

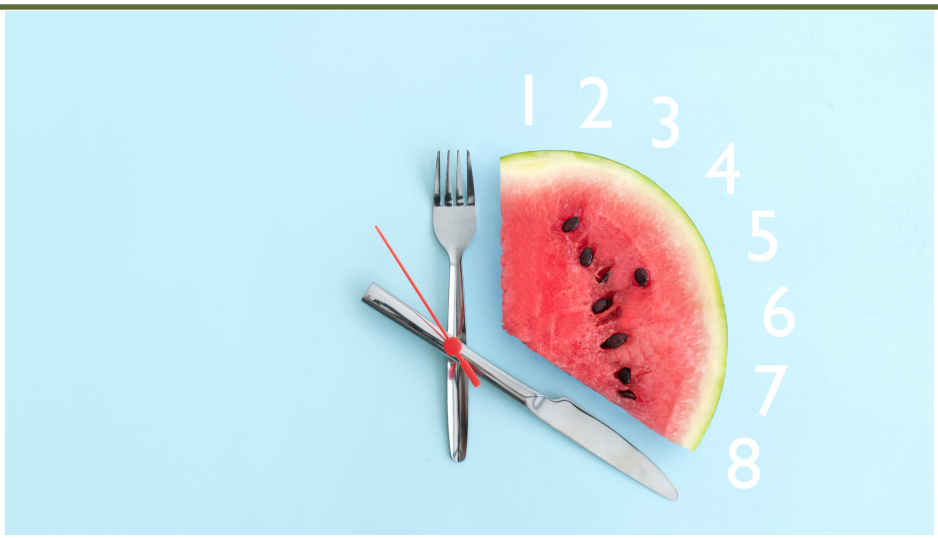
- Maintaining muscle mass while losing fat during resistance training
- Better performance in endurance sports
- Reduced belly fat
- Improved verbal and working memory in older adults
- Improved memory in people with mild cognitive impairment

## What's the link between oxidative stress and risk for chronic diseases?

Your body generates energy by burning fuel (nutrients from digested food) with oxygen. One byproduct of normal metabolism — as well as smoking and other unhealthy habits — is formation of free radicals, highly unstable atoms or molecules that are missing one of their electrons. To achieve stability, they steal an electron from nearby molecules, leading to a chain reaction in which the attacked molecules become free radicals and then rob their neighbors.

As a free radical chain rips through cells like a firestorm, it can cause extensive injury to crucial components. If DNA, the cell's blueprint, is damaged, mutations that might lead to cancer could result, while damage to proteins, the cell's workhorses, can make the cells dysfunctional and more susceptible to disease.

However, the body also has antioxidant defenses to protect against free radical damage, including physical barriers to cage free radicals, enzymes to neutralize




dangerously reactive forms of oxygen and antioxidants in our diet (found in fruits and vegetables, among other foods) — all of which donate electrons and defuse free radical chain reactions. Therefore, the key to slowing down aging and protecting your cardiovascular health is achieving a balance between destructive oxidation and antioxidant defenses.

## How does intermittent fasting affect insulin levels?

Many studies have shown that IF can significantly improve insulin resistance (IR), the precursor to type 2 diabetes. Unlike people with type 1 diabetes — an autoimmune disorder in antibodies that attack and destroy the pancreas' insulin-producing beta cells, irrevocably halting insulin production — people with type 2 do produce insulin, but their bodies don't use it properly. Normally, this hormone helps cells in the body use glucose (blood sugar) for energy.

When people develop IR, their cells become insensitive to insulin, forcing the pancreas to crank out higher and higher amounts, trying to keep up with demand. Very often, people with IR have both high levels of insulin and glucose circulating in their bodies. Think of this scenario as similar to a factory in which the workers are forced to toil longer and longer hours on the assembly line to meet ever increasing production quotas. Eventually, the workers will grow so exhausted that they either collapse or go on strike, forcing the assembly line to grind to a halt.

Similarly, as insulin resistance progresses, the beta cells eventually become fatigued and blood sugar rises. By the time someone crosses the line into type 2 diabetes, arterial damage has typically been happening for at least 10 years and in some cases, 20 or more. This explains why people with diabetes are at greatly increased risk for cardiovascular events.

Although the pancreas' beta cells produce small amounts of insulin throughout the day, levels spike after eating. On average, including meals and snacks, most people eat six or seven times a day, creating a heavy workload for the beta cells. By decreasing eating, IF reduces insulin spikes, demands on the 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.

## Does intermittent fasting have anti-aging benefits?

IF helps keep your cells young and healthy by enhancing "autophagy," the process cells use to clear out debris (such as broken-down cellular components) and recycle it as fuel. Without this housekeeping process, which literally means "self-eating," cells would become overloaded with trash and die. Reduced autophagy has been linked to a range of diseases and is also thought to play a major role in aging.

As a recent BaleDoneen study reported, augmentation of autophagy is a critical step in maintaining arterial health by supporting the ability of cells to isolate harmful substances, such as environmental toxins and infectious agents, and break them down into harmless biological components. When autophagy is impaired, inflammation develops, which raises risk for both developing arterial plaque (disease) and suffering cardiovascular events if you already have it. Therefore enhancing autophagy is pivotal to living long and preserving fit arteries.