

Two Little-Known Factors That Cause Arthritis

A leading source of pain and disability in the United States and other developed nations is osteoarthritis, otherwise known as “wear-and-tear arthritis.” It has been the general consensus in the medical community that, with age, joints simply wear out and there’s no

way to prevent this form of arthritis.



Dr. David Williams

Of course, when you compare our rising obesity rates and the increasing age of our population to

the number of joint replacement surgeries currently taking place, that might seem like a logical conclusion.

One of the most common sites of osteoarthritis is the knee, accounting for 80 percent of the disease’s total burden. In 2010, more than 600,000 knee replacement surgeries were performed in this country. This has been increasing dramatically every year and it is expected to grow to 3.5 million procedures by 2030.

Osteoarthritis is the underlying diagnosis in 87 percent of knee replacement surgeries. Rheumatoid arthritis accounts for less than 1 percent, and another 9 percent of

the surgeries involve replacing a worn-out prosthesis from an earlier knee replacement.

The fastest growing segment of the population requiring knee surgery is the 45-to-55 age group. Most knee replacement surgeries occur between the ages of about 55 to 80, and the average age for knee replacement is 66 years old, which is roughly what it is for hip replacements too.

Everyone has just assumed that this dramatic increase is a result of longer life span and extra body weight stressing the joints. To confirm this assumption, researchers recently flew around the country and analyzed skeletons that had been donated to medical schools for research or had ended up in museums. Some of these skeletons were from prehistoric Inuit hunter-gathers from Alaska and dated back as far as 4,000 BC. The most recent were individuals who died in 2015. It’s one of the most fascinating studies I’ve seen in a long time. And their findings were totally unexpected.

After the researchers corrected for the differences in age and body mass, they were shocked to learn that osteoarthritis of the knee is now more than twice as prevalent as it was anytime before the 1950s. But while osteoarthritis

is more common today than any time in history, age and obesity aren’t driving it.

This particular study didn’t pinpoint the cause, but if you take a closer look at what lifestyle changes have occurred over the past several decades, it seems rather obvious two factors come into play...

Sedentary Lifestyle

First, unlike our ancestors, most of us spend a great deal of our day sitting. Both as children and adults, we have become increasingly sedentary. This not only affects how our joints are formed, it also leads to deterioration of the cartilage and joint surfaces.

The cartilage in our joints is living tissue, yet unlike other tissues, it doesn’t have a blood supply to provide it nutrients and remove waste materials. The best way I’ve found to describe how joint cartilage stays “alive” is to compare it to a sponge.

Our joints are encapsulated by ligaments and other connective tissue. Inside this capsule is synovial fluid, which lubricates the cartilage and provides it with nutrients. Like a sponge, the cartilage will absorb synovial fluid, but it needs to be squeezed to release and keep the fluid moving

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NEWS TO USE *from around the world*

What’s Your “Fitness Age?”

TRONDHEIM, NORWAY— Researchers have found that older athletes can be physically younger than their chronological age. After extensive testing, they found an athlete’s “fitness age” is often 20 years younger than their actual age. They realized, however, that this research was pretty useless unless they could figure out a way for people to easily determine their own fitness age.

After using a mobile exercise laboratory and testing more than 5,000 Norwegian adults, they created a sophisticated algorithm that anyone can use to calculate their aerobic capacity and fitness age, just by honestly answering a few simple questions. Then they set up an online calculator.

It’s a great way get a starting point and monitor your progress as you begin exercising and improving your health. To take the test, go to worldfitnesslevel.org and answer the questions. It only takes about a minute and

you get results immediately. At the bottom of the results page, there’s a link you can click on to “improve your fitness level further.” It takes you to a free 7-week fitness program that practically anyone can follow. I highly recommend it. If nothing else, it’s interesting to learn your fitness age.

Salt and Nocturnal Urination

NAGASAKI, JAPAN—If you want to make fewer trips to the bathroom at night, try cutting back on salt intake during the day.

Nocturia, or excessive urinating at night, is a common complaint in both men and women over the age of 60. Researchers at Nagasaki University monitored 728 men and women for 12 weeks and compared their daily salt intake. They found that those consuming around 9 grams of salt averaged more than two trips to the bathroom at night. By reducing their salt intake by 2 grams a day (less than half a teaspoon), the same individuals made one fewer trip at night and fewer trips

during the day. ([Int J Urol 2017;24\(5\):384-9](http://IntJUrol.2017;24(5):384-9))

Solving the French Paradox

DENMARK—Researchers have finally solved the “French Paradox”—the mystery as to why the French have such low rates of heart disease, yet have a diet rich in cholesterol, saturated fat, and meat. Although the medical community has finally started to admit that cholesterol and saturated fat aren’t the causes of heart disease, it has also been thought that the wine consumption in France played a major protective roll. There’s another factor, however, that may be even more important... cheese. ([J Agric Food Chem 2015;63\(10\):2830-9](http://JAgricFoodChem.2015;63(10):2830-9))

In a crossover study, participants were fed one of three diets: high in milk, high in cheese, or a control diet. Fecal and urine samples were analyzed and only those on the high cheese diet were found to have significantly

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Dr. Williams works with Healthy Directions, LLC to develop his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

increased levels of the compound butyrate.

Butyrate is a short-chain fatty acid naturally created when beneficial bacteria in the lower intestines ferment dietary fiber. It is the primary energy source of cells in the colon, and an inadequate supply can lead to diarrhea, inflammatory bowel diseases like ulcerative colitis and Crohn's, and even colorectal cancer.

Butyrate also helps reduce inflammation and strengthens the barriers between cells in the colon, which helps protect against leaky gut syndrome. In a nutshell, leaky gut syndrome is where the barriers between the cells of the intestinal wall become too permeable or "leaky." Toxins and waste products from the intestines leak into the bloodstream and body, triggering constant inflammation and toxicity issues. Butyrate is instrumental in strengthening these cellular barriers so these leaks don't happen.

You might think it would be the natural probiotics in cheese

that improve the beneficial bacteria in the colon, leading to more butyrate production. But that doesn't seem to be the case, and additional research is still needed to explain this.

But this brings up another point I'd like to share. A lot of publications and websites are recommending cheese as a good source of probiotics. From my decades of research in this area, I think they are flat-out wrong. Cheese is a great food, and I encourage including it in your diet for the butyrate effect as well as many other reasons. Just don't count on it to provide probiotic benefits.

If you've eaten cheese in Europe, you've probably noticed a difference in the taste compared to cheese in this country. The Europeans make their cheese from raw, unpasteurized milk. It's the same process they've used for hundreds of years. In this country, the FDA feels it is necessary to protect us from raw milk and products made from it. In 1987, the FDA mandated pasteurization of all

milk and dairy products made for human consumption. This included cheese produced from raw milk, unless it has been aged a minimum of 60 days. (After 60 days, any harmful bacteria *and* beneficial bacteria involved in making the cheese will have died.)

Only a couple strains of bacteria that are considered probiotics are used regularly in making cheese. It's possible that some of these may remain even after heating or the addition of acids or enzymes. But as the cheese ages, the numbers become insignificant.

Since probiotics are so popular now, I have no doubt some manufacturers will probably start adding them to their cheese after production in an effort to increase sales.

But the bottom line is this: Cheese isn't a good source of probiotics. Keep taking your probiotic supplement and consuming fermented foods to increase the numbers of these beneficial bacteria in your body.

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in and out. Exercising the joint provides the squeeze, which allows for the exchange of nutrients and waste material. Moving our joints is what keeps the cartilage healthy. Proper weight-bearing exercises don't wear out our joints, they make them last longer. They also strengthen the muscles and connective tissues that support the

joints, making them more stable and less susceptible to injury.

It's also important that we move all of our joints through their complete range of motion every day. By doing so, we make sure the entire cartilage surface gets squeezed. Otherwise, the cartilage on the edges of the joint doesn't receive the necessary nutrients

and begins to deteriorate, calcify, and limit movement.

Dietary Factors

The second reason arthritis cases are rising has to do with nutrition. Our society has increasingly been turning to a more grain-based diet, which has led to

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Costochondritis

Question: A couple of months ago I started having pain in my chest, right next to my breastbone, when I twist or take a deep breath. After ruling out any kind of heart problem or infection, my doctor diagnosed me with costochondritis. As I understand it, it's inflammation in the cartilage between the ribs and breastbone. At first, I was told to take NSAIDs, which didn't work, so my doctor gave me a steroid shot. That helped for a little while, but the pain came back. Now he's saying that I may need surgery to remove the cartilage. Surely there's an alternative. Do you have any suggestions? — Claire M., Louisiana, MO

Answer: With costochondritis, rarely have I seen cases where steroid injections offer anything other than temporary relief, or where surgery is necessary to resolve the type of pain you are experiencing.

In the body, there's an actual joint where the ribs meet the sternum or breastbone. Although there's not much movement with this joint compared to other joints like the elbow, it does move slightly when you breath or twist your upper torso. Early in life, there's even a synovial membrane in these joints that produces the joint-lubricating synovial fluid. By about middle age, the joint surfaces start to roughen, and in old age, the joint cavity pretty much closes.

Just like other joints in the body, the bones at the rib/sternum junction can become subluxated or misaligned. The misalignment can occur following an accident or trauma, or it can be caused by something as simple as sleeping in an odd position, twisting, lifting, etc.

A misalignment is one of the most common reasons for the type of pain you're experiencing. In these cases, a chiropractor can provide almost instantaneous relief by gently adjusting the joint so everything goes back to its proper place.

I have also found that hypothyroidism is another reason people experience this type of pain. This

particular pain affects women more often than men. Additionally, the pain will often be at more than one rib/sternum joint, but particularly strong between the second and third ribs. There are numerous associated reflex points in this area. Osteopaths refer to them as Chapman reflex points, applied kinesiologists call them neurolymphatic points, and neurologists call them viscerosomatic points.

Correcting a hypothyroid condition will often alleviate the pain rather quickly. Two natural products I highly recommend for an underactive thyroid are the glandular supplement [Thytrophin PMG from Standard Process Laboratories](#) and the iodine supplement [Iosol from TPCS Products](#). It's not unusual to experience an immediate 50–75 percent reduction in pain after taking a few drops of Iosol.

(Keep in mind that many underactive thyroid issues are a result of estrogen dominance, which needs to be addressed. I've covered the dangers of estrogen dominance and how to deal with it in several past issues. You can also find information at [drwilliams.com](#).)

Postnasal Drip

Question: I have a decades-old problem with postnasal drip and almost-constant phlegm in my throat. Whenever I mention it to doctors, they always say I probably have chronic allergies and prescribe antihistamines or decongestants. Although they do provide temporary relief from the drip, the phlegm is always there, and I don't want to take these drugs on a regular basis. Is there anything else you can think of that might help? — A.F., Houston, TX

Answer: It's true that part of your problem may stem from either an airborne or food allergy, or a combination of the two. Those two issues definitely need to be ruled out.

You probably already know if airborne allergens are a problem for you. If you notice a change in your symptoms that occur during shifts in pollen count, when you travel to different areas, or when you're indoors versus outside, etc., you might find it beneficial to use an in-home air filter. In the May 2017 issue, I provided instructions on how you can make your own for as little as \$25.

If antihistamines are effective for you, then taking the bioflavonoid quercetin might also help. During a typical allergic attack, mast cells, which are part of the immune system, rupture and release histamine.

Histamine is responsible for allergy symptoms (swollen skin, eyes, lips; runny nose; and respiratory issues like sneezing, coughing, and shortness of breath).

Quercetin strengthens the walls of mast cells and lessens the allergic reaction. It works best when combined with bromelain. Unlike antihistamines, quercetin and bromelain can be taken regularly without having to worry about serious side effects. Taking this combination is often the key to totally eliminating seasonal allergies. NOW Foods makes a quercetin/bromelain combo product that I personally use and recommend.

Ruling Out Food Allergies

Ruling out food allergies can be more difficult. It takes time and can be a real pain. You can start by eliminating some of the more common foods linked to allergies, such as milk, eggs, wheat and other gluten-containing grains (barley, rye, oats), soy, nuts, peanuts, and citrus. After four weeks, you can then reintroduce them one by one, every three days, and determine which foods cause problems based on symptoms.

Keep in mind, even problem foods can often be reintroduced into the diet if you take a digestive enzyme supplement with your meals. As we get older, our bodies produce fewer enzymes and digestive acids. As a result, proteins and fats that haven't been broken down completely can trigger allergic reactions.

A couple of inexpensive digestive enzymes that are particularly effective in breaking down protein are bromelain and papain.

Fresh pineapple contains bromelain. (But cooked or canned versions are devoid of this heat-sensitive enzyme.) Unfortunately, the highest concentration of bromelain is in the inedible parts of the plant, the stem and core. However, slowly chewing a few pieces of fresh pineapple releases enough of the enzyme to both improve your digestion and break down the protein components in mucus. (Bromelain capsules have also been effective for sufferers of gout.)

Papain is found in papaya and, like bromelain, it is heat sensitive. For the maximum enzymatic effect, it's better to eat it fresh and raw.

Bromelain and papain together are a great duo for digesting protein. Numerous supplement companies

sell the combo in tablets or capsules specifically for that purpose.

Mouth, Sinus, and Thyroid Health

It's also important to consider the health of the microbiome in your mouth. If you have an overabundance of pathogenic bacteria residing in your mouth, throat, and sinuses, they can create constant inflammation and mucus production.

Also make sure to address any dental and gum issues you might have. Bleeding and/or infected gum tissue is a very strong indication that you have an overabundance of pathogenic bacteria.

I suggest flushing your sinuses with a neti pot using a mild saline solution. Neti pots have been used for centuries by practitioners of Ayurvedic medicine. They look like a small Aladdin's lamp and you can find them in almost every drugstore. To make the saline solution, dissolve a teaspoon of regular table salt in two cups of warm water. Use the neti pot daily until symptoms begin to improve. After that, you may only need to use it two or three times a week.

I've also found that the saline and xylitol nasal spray called [Xlear](#) works well for clearing out harmful bacteria from the nose and sinuses. Pathogenic bacteria feed and thrive on sugar, but xylitol is a type of sugar that bacteria (and our body) can't digest. Bacteria that ingest xylitol eventually "starve" to death. When used on a regular basis, Xlear is also great for dealing with airborne allergens.

One of the very best ways to reestablish the beneficial bacteria in the oral cavity is to take an oral probiotic. I suggest chewing such a tablet right after brushing your teeth, before bedtime. Then in the morning, after brushing your teeth, place about 1/4 teaspoon of cinnamon powder in your mouth and let it dissolve. Cinnamon powder is relatively inexpensive and not only helps destroy harmful oral bacteria, it also makes a great breath freshener.

Finally, heavy, thick phlegm production can also be a result of an underactive thyroid gland. You can easily test thyroid function by measuring your basal metabolic rate. I have details on my website. And as I mentioned on page 4, two products I recommend for underactive thyroid are Thyrophin PMG and Iosol.

I hope this gives you more insight and a few more avenues to resolve this issue.

Flu Prevention

Question: I'm a single mother with two small children. I take your multivitamin and a few other supplements to stay healthy. I follow your suggestions and make sure my children eat right, but I'm worried about flu season. I can't get them to take vitamins. Is there anything inexpensive I can do to protect them?
— Margie J., Salt Lake City, UT

Answer: In 1990s, I closely followed the research of Dr. Mumcuoglu, a doctor in virology from Israel. We had numerous discussions regarding her work with elderberries. She eventually developed the elderberry extract product called Sambucol. For a short time, I also had created a modified version of that extract that included propolis. Both proved to be very effective in blocking the actions of the flu and other viral conditions.

[Sambucol](#) is still available; my version is not. You can find Sambucol online and in most health food stores. The original product was liquid elderberry extract, but now it comes in chewable tablets as well. It's convenient and easy to take, and it can be used by children and adults. It works great when taken at the first sign of the flu. It starts to lessen symptoms quickly and can shorten the term of the flu by half. More and more research also shows that it's effective against other viruses besides influenza.

To use Sambucol as a preventative, however, might be a little cost prohibitive. As an alternative, I suggest making your own elderberry liquid extract. It's something you can take every day during flu season, and you can make a batch for less than \$20.

You will need the following:

- **2/3 cup (3 ounces) dried whole black elderberries.** I recommend Frontier Organic Dried Elderberries, which sell online for less than \$15 a pound. If you're using fresh black elderberries, you only need 1/2 cup.
- **1 cup raw honey.** I personally have used 1/2 cup of xylitol instead of honey. If your children are younger than 12 months, you may want to use xylitol or maple syrup to avoid possible reactions to honey. You can also avoid a sweetener altogether, but instead of syrup you'll have more of a juice, and it won't last as long between batches.

- **3 1/2 cups cold water**
 - **1 teaspoon cinnamon powder**
 - **1 tablespoon organic ginger root powder** (or 2 tablespoons fresh grated ginger)
1. Combine everything except the honey, xylitol, or maple syrup in the cold water and bring to a boil.
 2. Lower the heat and let it simmer for about 40 minutes, or until the liquid is reduced by roughly half. Let it cool, but while still warm, mash the berries with a wooden spoon or other utensil into the liquid. Pour the liquid through a strainer into a glass jar and throw the elderberries into your compost or the trash.
 3. If you're using xylitol, add it to the liquid while it is still warm so that the xylitol can dissolve while you stir. If you're using honey or maple syrup, add them when the liquid is lukewarm and stir well.

Place a cap on the jar and store it in the refrigerator. That's all there is to it.

The benefit of the honey and/or maple syrup is that it acts as a preservative, which will help the syrup keep longer. It also makes it easier to get kids to take it. It should keep for several months, but if you're using it daily, you'll likely be making another batch before the end of the winter.

If the extract you make will be used strictly by adults, instead of adding sweetener you can mix an equal amount of food grade alcohol, like vodka, which acts as a preservative too.

For prevention, I suggest taking 1/2 to 1 teaspoon per day. At the sign of any flu symptoms, take 1 1/2 to 3 teaspoons a day in divided doses until you begin to feel better. If your children are reluctant to take it by the teaspoon, you can pour the syrup over pancakes, on a buttered muffin/biscuit, or add it to a small glass of club soda.

Vaccine Reaction Protection

Question: My son serves in the military and has been assigned to overseas duty. One of the requirements of being stationed outside the US is receiving several vaccinations. I have always been cautious and tried to limit the number of vaccinations he has had since childhood. I understand that military

regulations offer soldiers medical and religious exemptions, but apparently these are denied for those stationed overseas, particularly in high-risk areas rampant with infectious diseases. Are there any precautions he can take that might help prevent any adverse reactions? I know this is a touchy subject, but any ideas you share will be appreciated. — Jamie B., Los Angeles, CA

Answer: Since the mode of action of vaccinations is to elicit a response from the immune system, there's no way to completely ensure there won't be an adverse reaction. But I would make the following suggestions to anyone who decides to receive a vaccination, whether it's mandatory or voluntary.

1. The receiver should be as healthy as possible. I suggest getting plenty of rest, abstaining from excessive alcohol, and following a good diet and exercise program prior to getting the shot.
2. Carefully document any health complaints, issues, or symptoms prior to the vaccination.
3. Take probiotics regularly for as long as possible before receiving the vaccine. A week before getting the vaccine, double the daily dose of probiotics and load up on fermented foods such as sauerkraut, kimchi, Kombucha tea, live yogurt, and kefir. The greater the variety of beneficial bacteria you can consume, the better.
4. If given a choice, take the very minimum amount of injections possible in a single visit. If the vaccinations can be spread out over time, that's a better option. Multiple vaccines given at once tend to be associated with an increased risk of adverse events.
5. A day or two before receiving the vaccine, take one or more natural anti-inflammatory compounds, such as turmeric, ginger, and boswellia. They work by modulating many of the same pro-inflammatory enzymes as NSAIDs, but without the side effects.

With turmeric, if you're taking the dried powdered root, 3 grams a day is recommended. If you're taking the standardized extract (curcumin), then you could take half that amount (around 500 mg three times daily).

With ginger powder, the typical dose is 2–3 grams per day, taken in three divided doses.

The daily dosage of boswellia resin is 2,000–2,400 mg taken in three divided doses. Products containing extracts of boswellia will be standardized to contain varying amounts of boswellic acids. Since the strengths vary considerably among the extract products, I suggest following the recommended dosage on the label.
6. If there is swelling, redness, or discomfort after the vaccination, apply cold packs to the injection site.
7. Carefully observe and document any changes, symptoms, or concerns for several days following the vaccination.

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an imbalance of amino acids. Many of these amino acids that we are lacking form the building blocks of proteins needed for joint health.

Over the past 100 years or so, we've eliminated most of the collagen from our diet. Collagen is the primary protein in connective tissue that is present in tendons, ligaments, bone, cartilage, and skin. Before the turn of the century, our ancestors readily consumed the collagen-rich portions of animals (offal, oxtail, joints, skin, gizzards, etc.). Our ancestors also

experienced far fewer bone and joint problems.

Fortunately, there's been a slight resurgence in the popularity of collagen-rich foods like bone broth, bone marrow, and some organ meats. But if you're someone who still has no intention of adding tripe, pig snout, pork trotter, oxtail, or beef tongue to your menu, there's a way to increase your collagen intake, rejuvenate connective tissue, and improve joint health—gelatin.

Gelatin is the cooked form of collagen. It's the semi-clear, jelly-like

component that accumulates in the bottom of the container your rotisserie chicken came in. It forms when you cool the liquid after making bone broth or boiling a chicken.

Studies that bear out the many benefits of gelatin have typically used around 10 grams per day. Personally, I add roughly two tablespoons (25 grams) of gelatin to my morning protein shake.

Some of the latest research further supports the idea that arthritis isn't from wear and tear, but instead poor dietary habits that trigger changes

in our metabolism, resulting in joint destruction. (*Nat Rev Rheumatol* 2017;13(5):302-11) (*Curr Opin Rheumatol* 2015;27(3):289-94)

Cellular metabolism (how energy is produced) is critical for cartilage and synovial joint function. Researchers have shown that with a poor diet, joint cells aren't able to produce enough energy. To compensate, they become highly metabolically active and start to produce a large amount of glucose in an attempt to remedy the energy shortfall. The unused glucose turns into lactic acid, which can't be removed quickly enough. The high lactic acid causes inflammation and damage to joint cartilage.

Research in just the last seven years indicates that osteoarthritis should be classified as a systemic disease and not a condition limited to a single joint. The inflammation connection is that strong.

I've referred to chronic inflammation in the past as a silent killer. Now we know that, in addition to prematurely aging the body and being the root cause of major diseases, it destroys joints. Controlling chronic inflammation isn't as simple as taking a single pill. I have written a great deal on this topic, and you can access a lot of that information on my website, drwilliams.com.

Repair Is Possible

While preventing and reversing arthritis requires that we address several areas, it's nice to know that the condition is not caused just by wear and tear and that there is something we can do about it.

As fate would have it, in the middle of writing this article, a friend emailed me and wanted to talk about a joint problem he was

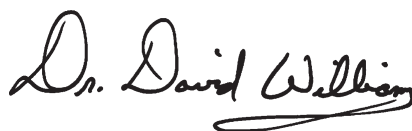
having. He's in his late 40s and had been having pain in his hip joint for the past year or so. He was trying to tough it out, but finally went to the doctor. He was diagnosed with arthritis and told he needed a hip replacement...to the tune of \$80,000. He has always been in good health and not overweight, so the diagnosis caught him off guard.

After our discussion, he has decided to stabilize his hip joint with a hip belt, strengthen the supporting muscles with exercise, incorporate full range-of-motion movements daily, and change his diet and supplement program to provide the raw materials necessary for joint health and repair. If he stays with this program, I think he'll be able to avoid a hip replacement for years, if not forever.

Tissue engineers have been successfully making cartilage in the lab for years. Being able to integrate this new tissue into defects in joint cartilage has been a challenge. I'm sure it will eventually happen, but even then, the new cartilage will require the same factors (exercise, full range of motion, collagen) to remain healthy.

Although joint cartilage is not readily repaired by the body, it does happen. It just takes more time than most other tissues. If you've started to experience the signs of arthritis (and even if you haven't), I urge you to follow the suggestions I've outlined. The short-term benefits may not be apparent, but long-term benefits will be.

Until next month,



This Month Online

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