

MIND & BODY

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NATURE'S MEDICINE

Why Being Outside Is a Natural Way to Control Infections

A mysterious phenomenon dubbed the 'open-air factor' refers to the germicidal properties of outdoor air



JOSEPH MERCOLA

The healing properties of fresh air have been appreciated since ancient times,¹ when Pliny the Elder (A.D. 23–79) recommended that people with tuberculosis breathe in the air of evergreen forests. We now know that air happens to be high in ozone, a known germicidal agent.

In more recent history, outdoor air was considered part of the standard treatment for tuberculosis and other infectious diseases. Ironically, the "high-tech" hospitals of modern day, with their enclosed, indoor close quarters, may be facilitating the

spread of disease far more so than open-air hospitals of yesteryear.

During the 1960s, scientists working on biodefense research coined the term "open-air factor," or OAF, to describe the germicidal component of outdoor air that was capable of killing pathogens and reducing their infectivity. Interest in the use of open air to promote health and reduce infectious disease fell away by the 1970s, however, and has remained largely ignored since.

In a review article published in *Cureus*, infectious disease expert Peter Collignon with the Australian National University is calling for urgent further investigation into OAF, particularly as it relates to COVID-19,

stating, "We need to act without delay, as there is already sufficient evidence to show that public health generally would improve if more emphasis was placed on increased exposure to outdoor air."

The History of Open-Air Healing

According to Collignon, the healing effects of outdoor air were "widely exploited" during the late 19th and early 20th centuries. "Firstly, in the treatment of tuberculosis patients who underwent 'open-air therapy' in sanatoria; and secondly by military surgeons during the First World War," he wrote.

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30-36

AIR CHANGES PER HOUR

► It takes 30 to 36 air changes per hour for an indoor room to preserve the 'open-air factor.'

Wellness Tourism: Retreat to Advance

Use your vacation, or mini vacation, as the ultimate opportunity to recharge and refocus



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AMY DENNEY

At the end of July, Kristen Campbell announced that she would be hosting her first beach yoga retreat in October. In a week, it was fully booked.

Campbell, owner of Cushing Yoga + Barre in Oklahoma, has attended dozens of wellness events and has regularly incorporated a specific schedule of retreating into her own lifestyle quarterly, weekly, and even daily. She has previously co-led retreats, but this will be the first one she hosts on her own.

At the retreat, Campbell will offer the types of activities that have been healing in her own life—yoga, relaxing in the sun, sunset meditations, high-energy workouts,

Wellness tourists are positioning themselves to learn more about what makes them function best.

loud game nights, and a sense of playfulness and joy.

"As an entrepreneur, I think it's super important to get out of our normal rhythms," Campbell said. "It's highly effective for me personally to remove myself and recharge."

There's a shift taking place in wellness right now, according to the Global Wellness Institute (GWI), a nonprofit that provides global insight into the industry. The barometer for self-care has been moving away from pampering and escapism and toward self-preservation and survival, which might explain why wellness tourism is predicted to grow at a rate faster than other segments of wellness through 2025.

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Chinese red dates have been cultivated for millennia and long treasured for their protective effects on the brain.

FOOD AS MEDICINE

Chinese Red Dates: An Ancient Cancer Fighter

This delicious superfood has a long history in Chinese medicine

EMMA SUTTIE

For 4,000 years, Chinese red dates, also known as jujubes, have been a staple in Chinese cuisine and a powerful tool in Chinese herbal medicine. Now research shows red dates help protect the brain and can make cancer cells self-destruct.

Chinese Red Dates Kill Cancer Cells
A lab study from 2018 in the journal Food and Function found that triterpenoids isolated from Chinese red dates induced apoptosis, or programmed cell death, in human lung, breast, and prostate cancer cells, especially causing them to self-destruct.

Triterpenoids are naturally occurring compounds that plants use to protect themselves against pathogenic organisms and plant-eating animals. People in many Asian countries use them for medicinal purposes and strengthening effect on the immune system.

Triterpenoids also contain anti-inflammatory properties, and can reduce fevers, prevent liver damage, improve heart function, decrease pain, and have sedative and restorative effects on the body.

The study found that four of the triterpenoid compounds reduced the cancer cells' survival rate, while three other compounds caused the cancerous cells to self-destruct.

Another study, published in the Avicenna Journal of Phytomedicine in 2016, investigated the anti-cancer effects of Chinese red dates on cervical and breast cancer. The researchers found that jujube extracts exhibited anti-cancer properties such as inhibiting cancer cell growth, reducing the spread of cancer cells, and causing apoptosis.

A study from 2011 in the Journal of Ethnopharmacology looked at the "cancer killing" effects of red dates on human breast cancer cells. The study concluded that extracts from Ziziphus jujube were effective in inhibiting the growth of breast cancer cells as well as causing apoptosis. Interestingly, in the lab, the extracts had no adverse effects on healthy tissue. Based on their findings, the researchers determined using Ziziphus jujube extracts showed promise in treating breast cancer in traditional Chinese medicine.

Protect the Brain

Scientific research has shown that red dates also benefit the brain and help to reduce stress. A study published in Evidence-Based Complementary and Alternative Medicine in 2017 found that red dates have brain-protecting properties. The researchers found that the jujube demonstrated neuroprotective activities, which included protecting neuronal cells against neurotoxin stress, increasing the growth of nervous tissue, and promoting memory and learning. The researchers concluded that the jujube is a potential candidate for developing supplements to prevent and treat neurological diseases.

These findings validate what Eastern medicine has known for millennia; that red dates can calm the mind, ease stress in the body, and benefit the brain.

Add Chinese Red Dates to Your Diet
So how can you add Chinese red dates to your diet to reap the health benefits? According to an ancient Chinese saying, just a few a day will keep you "forever young." Compared to Middle Eastern brown dates, red dates have more antioxidants and fewer calories, and contain 32 times

more vitamin C. They also contain half the sugar of brown dates, making them an excellent healthy snack and natural sweetener for cooking and baking. Red dates can be eaten fresh or dried. They taste similar to a sweet apple when fresh. They are more popular dried and easier to find. They taste like brown dates but with a more subtle flavor.

A serving of three brown dates has 54 calories and 12 grams of sugar, while three Chinese red dates have 28 calories and only 6 grams of sugar. Red dates also contain phosphorus, calcium, iron, manganese, and potassium.

You can add a handful to oatmeal, yogurt, smoothies, or pour boiling water over them to make tea. Add them to desserts as a natural sweetener. They are also traditionally added to soups and rice for their sweet flavor and health benefits.

Chinese Red Dates in Chinese Culture

Chinese red dates are the fruits of the Ziziphus jujuba plant and one of the most popular medicinal foods in China. They are native to China but now grow worldwide. They are eaten as a tonic to fortify health and promote youth. Red dates are so prized in China that they are often given as gifts to friends and family on special occasions.

Red dates also benefit the brain and help to reduce stress.

Red Dates in Eastern Medicine
In Chinese medicine, red dates are called "da zao" and have been used for thousands of years to calm the body and mind and improve sleep.

Because of their sweet flavor, red dates strengthen and harmonize the digestive system and are considered an overall body tonic. They increase energy and benefit the blood. They also have a calming effect on the nervous system, making them an excellent remedy for anxiety and sleep problems.

An herbal formula containing red dates called "suan zao ren tang," or sour jujube decoction, has long been used in Chinese medicine to treat insomnia, calm the mind, and improve cognitive function. A study published in Evidence-Based Complementary and Alternative Medicine in 2011 looked at insomnia in perimenopausal, menopausal, and postmenopausal women. After four weeks of taking suan zao ren tang, the researchers demonstrated a significant improvement in the women's sleep quality and duration, and in their ability to function during the day.

Final Thoughts

Chinese red dates are an excellent addition to your diet for their abundant vitamin C, low calories, low sugar content, and brain protecting and cancer-fighting abilities. They're also a good option for any problems with sleep, stress, or anxiety. You can find them dried at most Chinese grocery stores and health food stores, and online.

Emma Suttie is an acupuncturist and founder of Chinese Medicine Living—a website dedicated to sharing how to use traditional wisdom to live a healthy lifestyle in the modern world. She is a lover of the natural world, martial arts, and a good cup of tea.

FOOD AS MEDICINE

Reduce Back Pain With a Better Diet

Certain nutrients can have a major effect on inflammation and back pain

SANDRA CESCA

Millions of people are plagued by back problems. According to recent statistics, 80 percent of the American population will suffer back pain during their lifetime, especially as they age. Americans spend at least \$50 billion annually on treating back pain. In 2017, back pain was the main cause of disability worldwide and was the leading reason for workers' compensation claims and lost work hours and productivity.

What Causes Back Pain?

Risk factors for chronic spinal pain vary, including psychological factors such as stress, anxiety, and depression, and lifestyle factors such as decreased physical activity, obesity, chronic inflammation, poor sleep habits, and low vitamin D levels. Back pain can range from a muscle aching to a shooting, burning, or stabbing sensation. In addition, the pain may radiate down your leg or worsen with bending, twisting, lifting, standing, or walking.

Medical science believes back pain has several causes. These include a strain possibly due to poor posture or incorrect lifting; an injury such as a sprain, pinched nerve, or cracked vertebrae; and an infection or disease due to inflammation, such as arthritis and osteoporosis.

In addition to correcting your posture, watching what you eat can go a long way in helping you with your back pain.

Individuals with spinal pain consumed significantly less protein, fruit, whole grains, and dairy, and more sodium, saturated fat, and added sugars.

Inflammation and Your Back

Chronic inflammation develops over time. Exposure to pollution, chemicals, and allergens that cause allergies, as well as eating the wrong foods, can all lead to chronic inflammation. Adopting a healthy diet and active lifestyle can reduce and reverse the chronic inflammation that can cause back pain.

Numerous studies have indicated that chronic back pain can be helped through diet. Considerable back pain can be due to inflammation. Scientific research suggests foods rich in antioxidants can have an anti-inflammatory effect that helps to soothe and prevent painful flare-ups. According to Fred Tabung, a nutritionist at the Harvard School of Public Health, many of the micronutrients your immune system requires to function at a high level are found in a diet comprised of healthy whole foods.

Another study published in the journal Pain Reports examined the correlation between diet and spinal pain. It found that individuals with spinal pain consumed significantly less protein, fruit, whole grains, and dairy, and more sodium, saturated fat, and added sugars.

There's also emerging evidence indicating the importance of the gut-brain axis in developing chronic pain. Diet quality and added sugars are some of the most critical influencers of gut microbiota composition.

What to Eat for Back Pain

Creating an anti-inflammatory diet with foods that help you maintain good nutrition is essential in managing back pain. The types of food you eat can affect how much inflammation you have. An anti-inflammatory diet means a healthy mix of plant-based foods, including olive oil, green tea, and brightly colored fruits and vegetables.

So, what should you include in this anti-inflammatory diet?

Foods to Avoid

Some of the worst foods you can eat are processed products and fast foods. They contain many substances that lead to inflammation, such as saturated fats, salt, sugar, and preservatives.

Examples are white bread, pasta, rice, sugary drinks and snacks, fried foods, and anything with partially hydrogenated oil in the ingredients. This group also includes preservative-packed products with a long shelf life, such as chips, crackers, and pastries.

Limit your intake of saturated fats found in meats and whole-fat dairy products. Avoid caffeine and alcohol, although a daily glass of red wine may keep inflammation down.

Supplements May Help

Your daily diet and eating habits may not give you the nutrition you need to support a healthy body and keep inflammation at bay. Adding vital anti-inflammatory nutrients through supplementation can significantly reduce your back pain. Here are some of the more important ones.

Vitamin D

Vitamin D deficiency is widespread. "The high prevalence of vitamin D deficiency in many countries has led to the development and implementation of a variety of food fortification and supplementation policies and programs aimed at reducing the burden of vitamin D deficiency, and in particular the prevalence of childhood rickets," according to a paper published in the Annals of the New York Academy of Sciences.

Vitamin D, the "sunshine vitamin," helps maintain bone health by supporting calcium absorption. Vitamin D plays a significant role in calcium homeostasis and metabolism. It's present naturally only in a few foods, including fish liver oils, egg yolks, liver, fatty fish such as salmon, tuna, and sardines, and mushrooms, especially cremini and portobello.

Chronic low back pain has been linked to vitamin D deficiency. A study that looked at 68 patients who were both deficient in vitamin D and suffered from chronic low back pain found that treating them with vitamin D supplements significantly reduced low back pain and improved function.

Exposing your skin to sunlight for several minutes daily is the best way to get more vitamin D.

Calcium

Osteopenia and osteoporosis are diseases that can weaken the vertebrae in your spine. If you aren't getting enough calcium from eating leafy green vegetables and dairy products such as yogurt, milk, and cheese, then calcium supplements may help. However, according to Dr. Kenneth Hansraj, a spine surgeon at New York Spine Surgery and Rehabilitation Medicine in Poughkeepsie, high doses of calcium supplements can increase your risk for heart problems, atherosclerosis, and bone fractures, which can cause back pain. Your doctor should monitor this.

The body can't produce omega-3 fatty acids on its own. Eat one or two meals a week that consist of oily fatty fish (such as salmon or tuna), kale, vegetable or flaxseed oils, nuts, and eggs from flax-fed chickens. If that isn't possible, consider taking a daily supplement of fish oil.

Fish Oils

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Turmeric

Turmeric, one of the main ingredients in curry, con-



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Americans spend at least \$50 billion annually on treating back pain.

tains a powerful compound called curcumin that has been shown to help reduce harmful inflammation. Most studies recommend combining curcumin with black pepper, as this can enhance curcumin absorption by more than 2,000 percent, thus making it more available to the body.

Exposure to pollution, chemicals, and allergens that cause allergies, as well as eating the wrong foods can all lead to chronic inflammation.

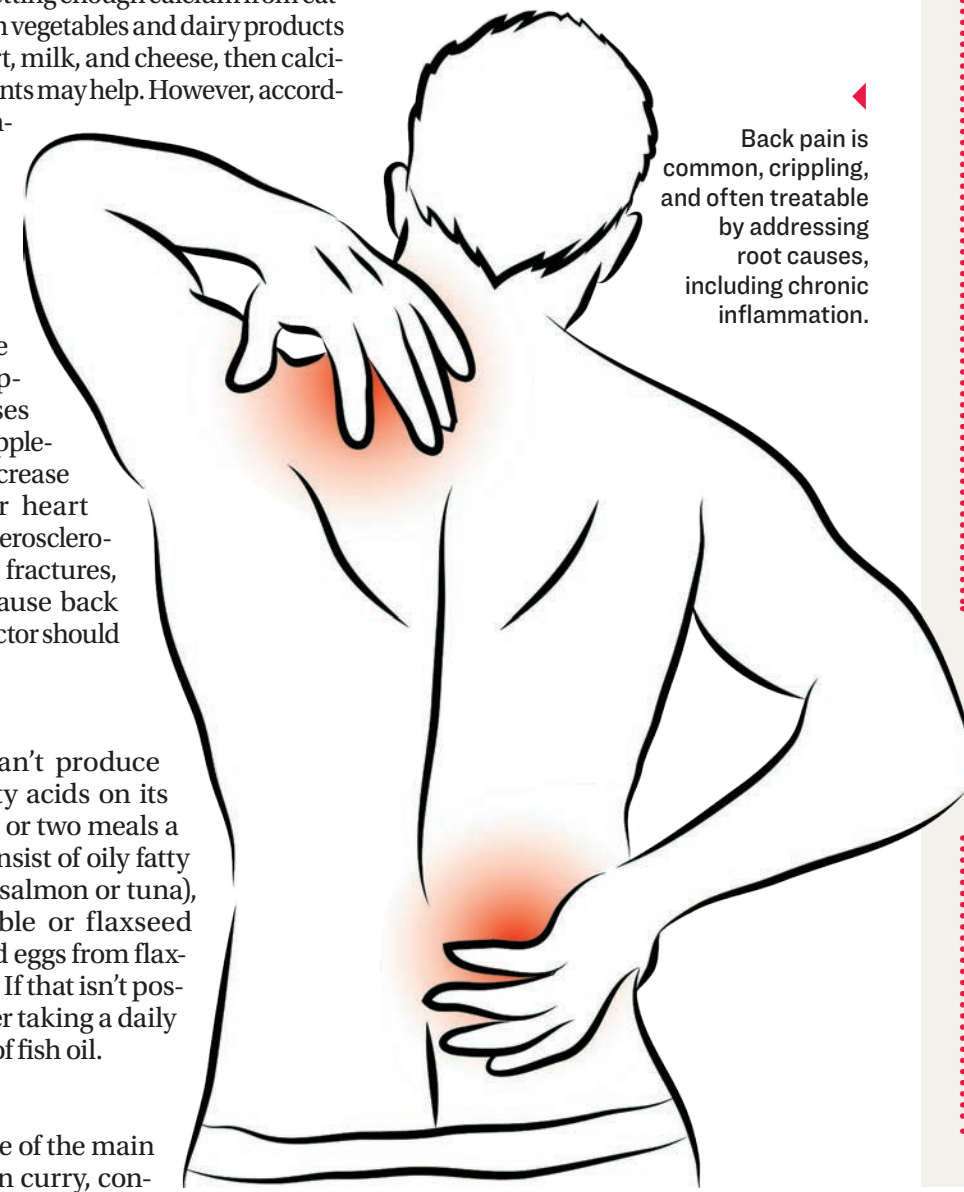
Resveratrol

This plant compound is a potent anti-inflammatory. It's found in red fruits such as cranberries and the skin of red grapes. You can also get resveratrol in capsule form.

Conclusion

Eating for back pain can be a satisfying approach with good results. However, determining if you are getting enough of the vitamins, minerals, oils, and other anti-inflammatory substances in your diet can be challenging. To evaluate your level of inflammation and figure out if you need supplements, you should check with your doctor, nutritionist, or health care provider.

Sandra Cesca is a freelance writer and photographer focusing on holistic health, wellness, organic foods, healthy lifestyle choices, and whole-person medical care. Her background includes allopathic medicine, naturopathy, homeopathy, organic and biodynamic farming, and yoga practices.



Back pain is common, crippling, and often treatable by addressing root causes, including chronic inflammation.

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So, what should you include in this anti-inflammatory diet?



Herbs and Spices

Basil, cinnamon, clove, ginger, rosemary, garlic, curcumin, onions, oregano, turmeric, cayenne pepper.



Fruits

Cherries, berries, grapes, pomegranates, and watermelons.



Beverages

Herbal teas, green teas, red wine.



Seeds

Flax, chia.



Vegetables

Carrots, beets, sweet potatoes, leafy greens.



Omega-3

Enriched cold-water fish (salmon, tuna, sardines, mackerel, herring, trout)
-Healthy oils (olive, avocado)
-Dairy products (milk, cheese)
-Probiotics (yogurt, kefir, sauerkraut).



Wellness Tourism: Retreat to Advance

COUNTER/GETTY IMAGES

Use your vacation, or mini vacation, as the ultimate opportunity to recharge and refocus

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“The multitude of stressors unleashed by the pandemic have brought a profound shift in how we view self-care,” according to a GWI report accompanying the data. “The pandemic has revealed the multidimensional and omnipresent nature of wellness. For our survival and for our sanity, wellness is no longer something that we do for an hour a day, a few times a month, or only when we are on vacation; it is an essential focus to be embedded in our daily lives and priorities.”

The nonprofit Give Hope, Fight Poverty (GHFP) is planning a women’s retreat later this year in Eswatini (formerly Swaziland) in southern Africa that will include yoga, meditation, dance parties, safaris, and play. It’s a departure from the group’s usual trips, which normally include a lot of labor—something that’s better done by locals seeking employment, the organization says.

This new experience will involve relationship-building between the orphaned children served by GHFP and the aging population that typically goes on the trips. Both groups will benefit from working on personal wellness in a small group setting.

“While some like to get their hands dirty, it’s really unnecessary,” Annie Todt, founder of GHFP, said. “The only thing we can’t hire locals for (which provides jobs) is us forming relationships with the kids, learning about them, gaining their trust.”

“So even though a retreat type luxury trip may seem selfish to some, it’s really beneficial for the kids and the organization as a whole.”

Living by Design

While not everyone can afford an overseas wellness experience, anyone can benefit from a lifestyle of wellness retreats—even with no budget at all.

Two definitions of retreat are “a place of peace, quiet, privacy, and security” and “a period of seclusion, retirement, or solitude.” In a way, wellness tourists are positioning themselves to learn more about what makes them function best. Many habits and routines can get you to this goal.

In a 2015 article in the American Journal of Lifestyle Medicine, experts gathered advice for health care providers to offer patients to orchestrate healthier environments in day-to-day living. Some of those tips include:

- Get outside and walk.
- Sit and relax in green space.
- Take a moment to reflect on highlights of your day.
- Practice gratitude for the events and people that bring joy and support to your life.
- Get to know resources in your community

- and workplace that help with wellness.
- Be the architect of your own environment.
- Surround yourself with positive relationships, information, and books that promote your own resilience, optimism, and healthy relationships.

Campbell describes wellness tourism as similar to weightlifting. It requires intention, discipline, and occasional soreness. Emotional health, she says, can be nurtured like a muscle that benefits from periods of exertion and recovery. In this part of her life, she’s leaning into recovery.

Over the past 18 months, Campbell has attended 16 funerals, including many for people very close to her. Through it all, she has continued to honor her need to retreat. “Faith isn’t a given to me. It’s a muscle. It’s something I had to work hard at,” she said. “I believe that’s a factor to my overall well-being.”

The foundation of wellness that Campbell has built up since the time her three children were very young has allowed her to weather the storms of life.

The sage advice to rest while her kids were napping, rather than to use those hours to tackle to-do lists, is a rhythm she’s maintained in the years since.

What Would Feed My Soul?

A high-energy fitness instructor, Campbell begins her day with classes at 5 a.m. By 1 p.m., she’s already worked a full day. She takes the time from 1 p.m. to 3 p.m. daily to do whatever she wants. That sets her up to be in the best state of mind for when her children get home from school.

These daily “retreats” are vital for appreciating life, Campbell says, explaining that she wants her traveling retreats to enhance her life but not cause her to dislike the day-to-day rhythm of life.

“I want to tour the world to enhance my well-being but not to escape life,” she said.

Not long ago, Campbell realized she had a habit of asking her yoga students to consider their needs during meditation. She’s since discovered that wants are just as important.



Wellness retreats offer a unique chance to unwind, reflect, focus, and recharge.

Two definitions of retreat are ‘a place of peace, quiet, privacy, and security’ and ‘a period of seclusion, retirement, or solitude.’



A wellness retreat is a great place to start new habits, like doing exercise you enjoy and drinking more water.

“I never asked what they want, never gave them permission. Need is survival mode. Want is thriving,” she said.

For the wellness tourist, the want question is vital. You must get honest about what you need and what you want, which could be the same thing but often aren’t.

Campbell knows that trips to the spa don’t revitalize her. She needs and desires time outdoors in nature, time in the community, experiences of local culture, and times of high energy.

When she co-led a retreat to Mexico, it helped her refine what she enjoys. Participants ate plant-based foods that were prepared for them. They also went snorkeling and kayaking, spent time on the beach, and attended cultural workshops. But there was also a lot of free time built into the schedule during which Campbell could spend in solitude.

“I’m constantly going to the next thing in my real life,” she said. “I think I need a break from having to be somewhere at a certain time.”

Use What You Already Have

Campbell tries to set up a series of mini-retreats each week in her schedule. It requires planning, discipline, and preparation.

These are practical tips she offers:

- Make sure you have two days off of work, preferably consecutively. Because Campbell teaches fitness on Saturday, she takes every Monday off. There’s no teaching, no phone calls, and no people unless she wants to be around them.
- Prepare your food or meals in advance to create more margin in your day.
- Once a month, retreat somewhere for 24 hours. For her, this is usually her mother-in-law’s house nearby.
- Once a quarter, get away for the weekend. She usually enjoys this sacred time with her husband.
- Plan these trips away with your calendar and pocketbook—and maybe a map if you’re planning to drive. Check out retreat centers around your home, national parks, and other free or affordable spaces.
- For daily retreating, turn off your phone and computer for two hours a day and do what you want to do—anything that restores joy and energy to your life.

Campbell, who is a Christian, points to Jesus as her example for retreats, as Jesus would often depart from large crowds to recharge, pray in solitude, and even sleep on a boat during a storm.

Putting it on your planner is the easy part, she said. “The hardest part is practicing it. Start small. Do a digital detox on a weekend.”

Amy Denney is an award-winning journalist, certified Holy Yoga instructor and light therapy specialist. She works with clients looking for natural, side-effect free solutions to pain and stress.

Wellness tourism puts the focus on health and self-renewal—and business is booming.



Take the time to consider what truly feeds your soul and then make the time to do it, even if it’s just for an afternoon.



Many wellness retreats take place in scenic places with opportunities to enjoy solitude and connect with nature.

NATURE’S MEDICINE

Why Being Outside Is a Natural Way to Control Infections

A mysterious phenomenon dubbed the ‘open-air factor’ refers to the germicidal properties of outdoor air

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“They used the same open-air regimen in specially designed hospital wards to disinfect and heal severe wounds among injured soldiers.”

English physician John Coakley Lettsom (1744–1815) was among the first advocates of what later became known as the “open-air method.” He exposed children who had tuberculosis to “sea air and sunshine at the Royal Sea Bathing Hospital in Kent, England, in 1791,” according to an article published in the American Journal of Public Health in 2009.

The germicidal effects of fresh air were further harnessed during the 1918 to 1919 influenza pandemic, when it was common to place the sick outdoors in tents or in open-air hospitals. Records from an open-air hospital in Boston during the Spanish flu outbreak suggested that patients and staff there were spared the worst of the outbreak.

Fresh air and sunlight are two things notably lacking in modern hospitals, but they were in abundance at the Camp Brooks Hospital, which treated hundreds of patients during the 1919 influenza pandemic. Treatments took place outdoors to maximize sunshine and fresh air.

The surgeon general of the Massachusetts State Guard, William A. Brooks, reported that in a typical general hospital with 76 influenza cases, 20 patients died in a three-day period, while 17 nurses became ill. “By contrast,” the researchers wrote, “according to one estimate, the regimen adopted at the camp reduced the fatality of hospital cases from 40 percent to about 13 percent.”

In the case of a future pandemic, they noted, improvements in air-handling units and portable filtration units may be warranted for hospitals and other buildings but, even better, “more might be gained by introducing high levels of natural ventilation or, indeed, by encouraging the public to spend as much time outdoors as possible.”

Later, in the 1950s, an open-air regimen was proposed as a mass treatment for burns in the event of nuclear war. “Under such disaster conditions, adequate numbers of dressings and the facilities for their use were unlikely to be available,” Collignon wrote. “The open-air regimen was considered the only viable treatment. Control of infection was considered to be the ‘outstanding feature’ of this approach.”

Open Air’s Germicidal Factor

There are multiple factors that reduce infection risk in outdoor spaces. Infectious particles are more rapidly diluted and dispersed, for starters, while temperature and humidity variations could inactivate viruses. Ultraviolet light from the sun is also known to inactivate viruses such as influenza and coronaviruses, not to mention that sunlight would have boosted patients’ vitamin D levels, a deficiency of which may increase susceptibility to influenza and other respiratory infections.

However, the direct germicidal properties of outdoor air are blatantly overlooked, despite a 1968 study published in the journal Nature that revealed a germicidal property in rural air. The experiments showed that outdoor air was more lethal to airborne pathogens than indoor air, and the scientists developed a technique to measure the effects of outdoor air on the survival of bacteria, viruses, and spores. Collignon explained:

“Tests were initially carried out during the hours of darkness as, in common with other bacteria and viruses, E. coli are rapidly killed by sunlight. The E. coli samples exposed to outside air usually died off rapidly, but not so indoors.”

“On some occasions, the E. coli samples in free air lost viability in 30 minutes, whereas those in enclosed air survived for several hours. The bactericidal effect varied from night to night, and it disappeared rapidly in any form of enclosure.”

In addition to E. coli bacteria, outside air was also effective against viruses and other bacteria, including Brucella suis, Francisella tularensis, Staphylococcus

epidermidis, Streptococcus group C, and Serratia marcescens.

The germicidal component of the air was dubbed OAF, but the researchers were unable to identify what, exactly, it was composed of at that time. In the 1970s, other researchers determined that OAF wasn’t a single compound but rather “a mixture of highly reactive chemical species which varied in composition.”

In 2021, experts in atmospheric science again revisited OAF, agreeing that no single molecule or class of molecules appear to be responsible for the high levels of bactericidal activity reported. They even concluded that hydroxyl radicals (HO), components of OAF known to kill airborne pathogens, aren’t responsible for the observed germicidal activity. They concluded:

“We identify other potential candidates, which are formed in ozone-alkene reactions and have known (and likely) germicidal properties, but the compounds responsible for the OAF remain a mystery.”

The ongoing mystery of how OAF works may be a key reason why it continues to be neglected in public health and infection control, Collignon stated, although the fact that fresh air is free and unpatentable is another likely factor.

Could Increased Ventilation Preserve OAF Indoors?

The research into OAF in the 1960s found that the germicidal effects of outdoor air could be preserved in indoor simulations if ventilation rates were high enough. Specifically, 30 to 36 air changes per hour were necessary to preserve OAF. In other words, the entire volume of air in the space would need to be replaced every two minutes or less. A typically sealed modern building replaces only about 63 percent of the total air volume each hour, relying on ducting and circulation fans, according to the book “Indoor Air Quality and HVAC Systems.”

Research into older, pre-1950s hospital wards used by tuberculosis patients—which had multiple large windows and tall ceilings—suggest they had ventilation rates of 40 air changes per hour—and lower tuberculosis infection rates compared to more modern hospitals. The reality is that modern-day hospitals are super spreaders of disease.

One rapid review and meta-analysis of 40 studies found a high rate of nosocomial (originating in a hospital) infections, noting, “As patients potentially infected by SARS-CoV-2 need to visit hospitals, the incidence of nosocomial infection can be expected to be high.”

The researchers searched for case reports on nosocomial infections of COVID-19, SARS (severe acute respiratory syndrome), and MERS (Middle East respiratory syndrome) and found that, among the confirmed patients, the proportions of nosocomial infections were 44 percent for COVID-19, 36 percent for SARS, and

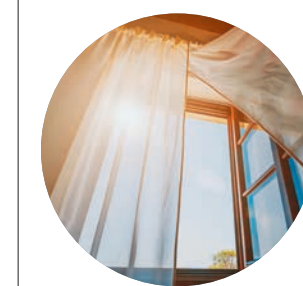


ALL PHOTOS BY SHUTTERSTOCK

Fresh air and sunlight are two things notably lacking in modern hospitals, but they were in abundance at the Camp Brooks Hospital, which treated hundreds of patients during the 1919 influenza pandemic.

“We need to act without delay, as there is already sufficient evidence to show that public health generally would improve if more emphasis was placed on increased exposure to outdoor air.”

Peter Collignon, infectious disease expert, Australian National University



Hospitals and healing spaces should be designed with lots of windows so patients get plenty of fresh air and sunlight.

56 percent for MERS. Medical staff were believed to have accounted for 33 percent of the nosocomial COVID-19 cases, with nurses and doctors the most commonly infected medical staff.

Meanwhile, the importance of proper ventilation continues to be largely ignored, even as a study by the Centers for Disease Control and Prevention found that improved ventilation, such as opening a window, reduced COVID-19 cases in Georgia schools more so than mask mandates for staff and teachers. According to Collignon:

“Decades ago, hospitals and other building types were designed to prevent infections from spreading. High levels of natural ventilation were an absolute requirement.”

“Today they are not. Fresh air is no longer considered to be germicidal or therapeutic for hospital patients or, for that matter, anyone else. Buildings are no longer designed for free access to it. For example, windows are smaller, ceilings are lower, cross-ventilation can be difficult if not impossible, and balconies and verandas are not as common as they once were.”

It’s Time to Rediscover the Power of Fresh Air

It was 1914 when Dr. Robert Saundby, professor of medicine at Birmingham University, stated, “Why have we been so slow to recognize that fresh air is the best tonic, the best antiseptic?” Collignon believes it’s time to again devote our attention to the importance of fresh air—in hospitals, schools, offices, and other buildings—and harness its healing effects in the prevention and treatment of infectious disease. He’s calling for:

- Testing to determine the effects of OAF on established and novel pathogens
- Research to determine how long OAF can be preserved indoors, and how to best preserve it
- A review of building design with a focus on increased exposure to outdoor air and OAF in order to improve infection control and patient recovery

On a personal level, it’s important to take advantage of the restorative powers of fresh air as much as possible by opening windows and spending time outdoors, particularly in natural areas.

Further, Collignon suggests that “rediscovering” open-air wards and the open-air regimen “may be beneficial for hospital patients, while harnessing OAF can also be useful for reducing disease transmission in the community, including in schools, homes, offices, and other large buildings.

Dr. Joseph Mercola is the founder of Mercola.com. An osteopathic physician, best-selling author, and recipient of multiple awards in the field of natural health, his primary vision is to change the modern health paradigm by providing people with a valuable resource to help them take control of their health.

Being outside can help healing and it can also help you stay healthy—in mind, body, and spirit.



INTENTIONAL LIVING

Elevating Our Lives by Pruning the Excess

Here are 15 areas you can apply minimalism besides your possessions

JOSHUA BECKER

The goal of minimalism isn't to own the fewest number of things possible. Rather, the goal is to own just the right number of things so we can focus our priorities on our greatest passions.

I don't want my possessions to be a burden to my life—whether in abundance or lack.

In this way, minimalism becomes more about what is added to my life than what's given up.

So the definition I most use when discussing minimalism is this: Minimalism is the intentional promotion of the things we most value and the removal of anything that distracts us from it.

With that broader understanding, we can begin to see how the principles of minimalism can apply to other areas of life besides possessions.

Other Places We Can Apply Minimalist Principles

1 Money Spent

It's important to note that minimalism and frugality aren't the same thing. In fact, you can still spend quite a bit of money owning less by buying higher quality items or spending money on other things (travel, food, experiences, and more).

But the principles of minimalism can also be applied to the amount of money that we spend by intentionally looking for unhelpful expenditures in our life.

2 Money Needed

It's also true: The less you need to own, the less money you need to live.

But I believe the principles of minimalism can apply to money in an even more life-giving way than simply spending less.

Once we realize that we can live with less, we become able to pay off debt, give more, or even choose work that pays less but results in more personal meaning.

3 Work

In "The One Thing: The Surprisingly Simple Truth Behind Extraordinary Results," Gary W. Keller and Jay Papasan make this very point: There's great value in simplifying our workload by focusing on the one most important task we must complete.

Minimize the extra; focus on the essential. Not just in your home, but in your work as well.

4 Social Media

Social media may be one of the greatest distractions in our lives today, keeping us from promoting our values.

Sure, there are advantages to social media, but there are also downsides. Minimize the distraction of social media in a way that it can help you accomplish your purposes in life, rather than distract you from them.

5 Schedule

Busy has become the default state for many of us. But is the state improving our lives? Certainly not. Being busy and being productive are two different things.

Once we realize that we can live with less, we become able to pay off debt, give more, or even choose work that pays less but results in more personal meaning.



Our lives are too full. We have too much to do, too many expectations of ourselves, and not enough time for what matters.

GORDENKOFF/SHUTTERSTOCK

A busy life is an unexamined life.

A busy life is an unexamined life. And an unexamined life is rarely worth living. As Soren Kierkegaard once said, "Of all ridiculous things the most ridiculous seems to me, to be busy."

You can apply the principles of minimalism to your schedule by aligning your commitments with your values.

6 Habits

Intentionality in one area of life often sparks intentionality in other areas. That was my experience when pursuing minimalism with my possessions.

As I began to own less and to experience taking back control of my home and life, I began to notice other habits that weren't serving me. So I began making changes in my life: exercising, eating better, waking earlier, tidying up our home each evening, and so on.

Our habits shape our lives—both daily and over a lifetime. Remove the unhealthy ones and promote those that benefit your one life.

7 Food

I wrote about how embracing the idea of eating less variety can benefit you and your family, in the article "You Eat Less Variety Than You Think. Embrace It."

Some people think I'm calling for a less healthy diet by embracing the idea of eating less variety. But I'm not. I'm merely pointing out that there are benefits to a meal routine that you may not have considered (including eating healthier foods).

Minimalist principles can be applied to the food we eat, just as they can be applied to the possessions we own.

8 Entertainment

Entertainment is a brilliant example of the life-giving nature of minimalism.

A healthy dose of entertainment is essential to living well—just like a healthy number of possessions. But when entertainment begins to dictate our lives, it begins to distract us from greater meaning and opportunity.

Keep the entertainment in your life that nourishes your soul and mind; minimize the rest.

9 Our Words

Just like minimalism in possessions, minimizing the words that we

and people can spend a lifetime trying to change the stories they tell themselves (with or without minimalism).

But we're too often our harshest critics, allowing fear, regret, blame, or negative outcomes to dominate our thinking. Often, the approach needed to minimize this self-talk is to choose our thoughts more intentionally.

By the way, many times, owning fewer possessions frees up the mental capacity to do this better.

11 Digital Clutter

When asked, I always encourage people to focus on decluttering physical possessions before decluttering digital clutter. Physical possessions are simply a greater burden and source of visual stress than digital clutter.

But there's still a time and place to minimize the digital clutter in our lives: email, apps, photos, icons, and even documents saved.

If the digital clutter on our devices is becoming a distraction from our best life and highest pursuits, it's time to apply minimalist principles to this area as well and remove the unneeded.

12 Goals

By reducing the number of goals that we're striving to accomplish, we improve our focus and success rate.

"If you chase two rabbits, you will lose them both" is how the old proverb puts it.

Rather than chasing too many things at one time, get clear on the most important goals in front of you, and prioritize them above all the others.

13 Notifications

Being available to others is a good thing. Being constantly distracted is not.

Not that long ago, being interrupted by someone trying to reach you happened only a few times each day (allowing us to focus better on deeper work).

But nowadays, our attention is attacked all day long by beeps, dings, and vibrations (email, phone, social media).

You can easily apply minimalist principles to these distractions by closing your inbox or removing all notifications from your phone (I only allow text and phone call notifications on mine).

14 Visual Clutter

It is one thing to minimize possessions. It is another thing to minimize the visual clutter and visual noise in your life. Visual noise is any random visual stimulus that draws our attention.

Minimizing visual clutter could be as simple as putting things away after we use them so they no longer beg for our attention. Or as complicated as keeping all the surfaces in our home clear of unneeded items.

15 Success

The world around us communicates constantly on how we should measure success: the money we have, the house we live in, the car we drive, the clothes we wear, or the number of followers we accrue.

But I'll let you in on an important secret: The world isn't conspiring for your good. Oftentimes, the very places we are encouraged to pursue success by society take us away from our highest pursuits of meaning and fulfillment.

Get clear on what personal success looks like in your life by minimizing outside descriptions.

When we do, we almost always define it differently.

I should mention, in closing, that I cringe when I see anyone make sweeping generalities about minimalism.

Any sentence that starts with the phrase "Minimalism also means that you ..." is usually wrong and is most often an indication of something important to the author that they wish to be important to others.

I'm not offering this list above as "You can only become minimalist if you do X, Y, and Z."

I offer this list as simply an opportunity and invitation to begin applying minimalist principles to other areas in life besides physical possessions.

But the goal is always the same: to promote our greatest values and passions by reducing the number of distractions.

Joshua Becker is an author, public speaker, and the founder and editor of *Becoming Minimalist* where he inspires others to live more by owning less. Visit BecomingMinimalist.com

Why You Should Try Walking With Poles

Here are 7 reasons Nordic walking is better for you than the normal kind

LINDSAY BOTTOMS

Have you ever noticed people outside walking with poles, even on flat surfaces, and wondered why they're doing it? This is known as Nordic walking, and it's a little bit like cross-country skiing but without the snow.

Walking with poles was first developed in Scandinavia and came to central Europe about 20 years ago. For some reason, it hasn't become particularly popular, even though it has many health benefits.

Here are several good reasons to give Nordic walking a try.

1. Burns More Calories

As far back as 1995, researchers noticed that Nordic walking burned more calories than regular walking did. In fact, they found it burned up to 18 percent more calories than ordinary walking did.

Numerous studies have confirmed these findings since—which is why it's suggested that Nordic walking could be a great form of exercise for those looking to lose weight. One study from Italy even found that overweight people lost weight faster doing Nordic walking compared to ordinary walking.

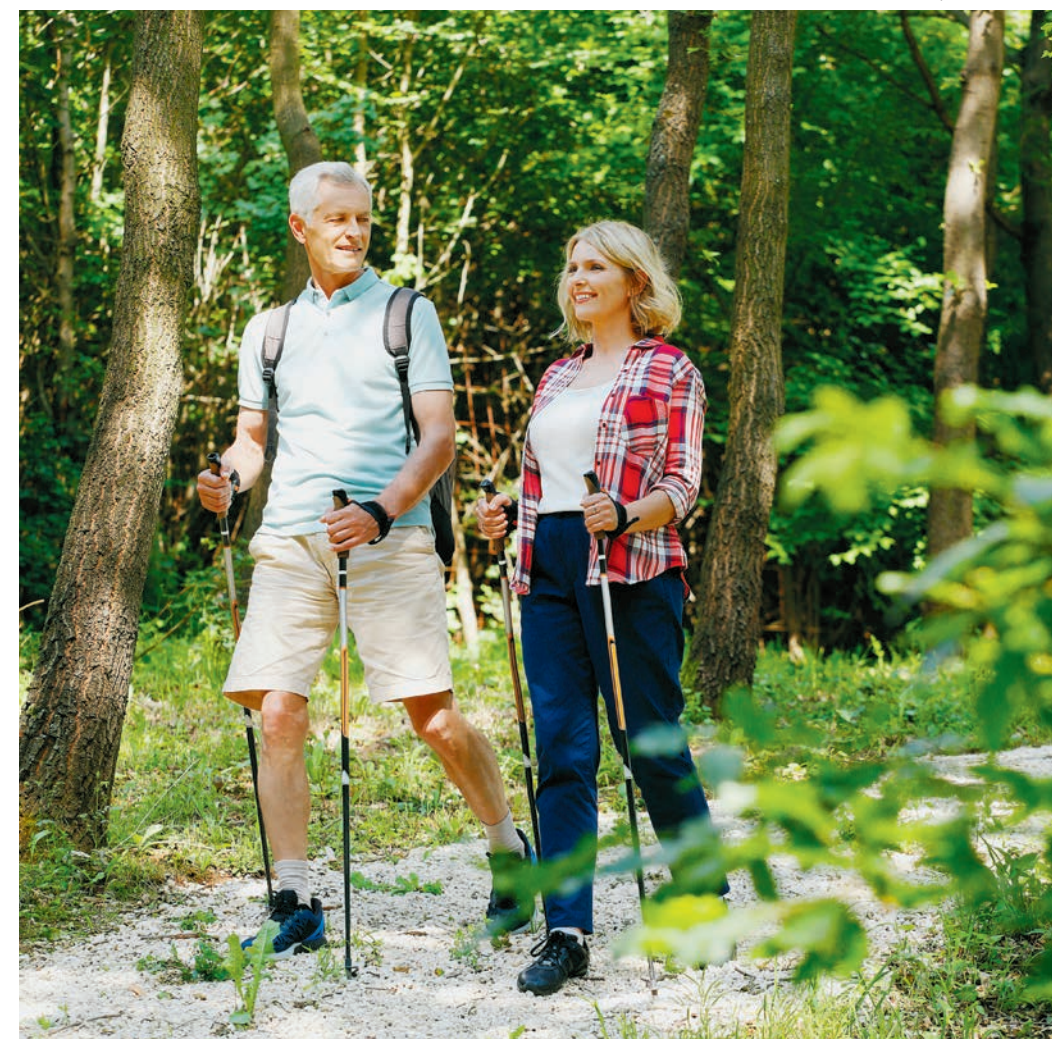
While Nordic walking doesn't burn more calories than other, more intense forms of exercise such as running, it can be a great low-impact exercise option, or a way to boost the benefits of your regular daily walks.

2. May Reduce Limb Pain

Using poles while you walk can distribute your weight through the arms and torso, placing less strain on your back, knees, and hips. In theory, this has the potential to improve back pain while walking.

However, research is mixed, with some studies showing Nordic walking can reduce lower back pain and impact on the knees, while others show it's no more helpful than ordinary walking.

If you're someone who suffers from lower back, hip, or knee pain, Nordic walking could be helpful to you since it redistributes your weight somewhat. But it's worth discussing with your doctor first before giving it a try and stopping if your pain still persists even while using the poles.



While it may be uncommon, Nordic walking is a great way to get more out of your walk.

3. Improves Upper Body Strength

Nordic walking engages your arms and shoulders more than regular walking does, and that could improve your strength. Research has shown that Nordic walking not only increases hand grip strength, but also increases muscle activity in the shoulders.

Upper body strength—including how strong your grip is—is important for many of the things we do everyday, from carrying our grocery bags to filling up the kettle. Increasing muscle strength is also important in preventing injury, as it helps to stabilize the joints and protects them when moving under pressure, such as carrying heavy shopping bags.

4. Increases Core Strength

Nordic walking also engages the core mus-

cles (including those in the abdomen and back) more than ordinary walking does.

Greater engagement of the core muscles will help to strengthen them, which may, in turn, improve posture. Better core strength can also improve your balance as well as your ability to move.

5. Reduces Risk of Falling

Unfortunately, as we get older we're more likely to trip and fall when walking. This is mainly because of a decrease in muscle strength, balance issues, and problems with the way we walk.

The benefit of Nordic walking is that you are placing the poles onto the ground at the same time as you're using your legs. This improves your balance and makes you less likely to fall.

Gray Hair Can Regain Its Color

Researchers find strong evidence that relieving stress can recolor graying hair

There's now definitive proof that hair graying is reversible in humans. What's more, stressful life events play a primary role in triggering your hair to turn gray, while relaxation—such as a two-week vacation—may help to give your roots back their original color.

The researchers believe that the graying process may be most reversible in its early stages, while hairs that have been gray for long periods are unlikely to regain their color. The effect is also temporary, as eventually the hairs will likely revert to gray. Still, the study "quantitatively defined" the reversibility of graying in humans" and showed that the process can occur rapidly—and in parallel with times of extreme stress or relaxation.

Stress Can Make Your Hair Go Gray—But Relaxation Brings Color Back

Stress has long been tied to graying hair, if not scientifically, then anecdotally. The night

before the execution of Marie Antoinette, it's said that her hair turned white.

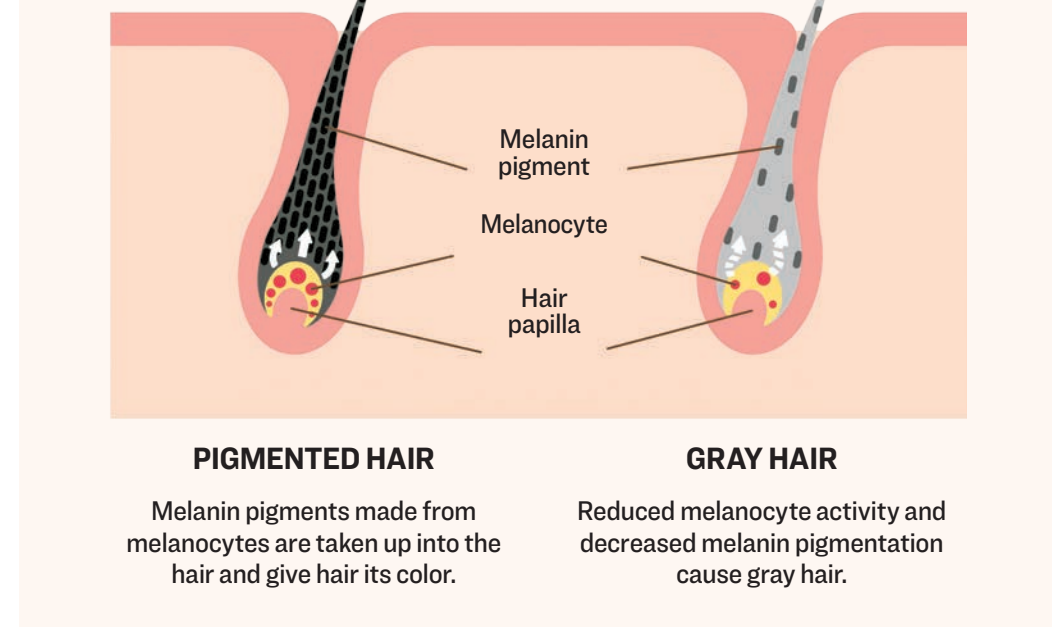
Picard also heard from a surprising number of people who said that their gray hair had turned dark again.

"It tells me that what we found in our small cohort and what we documented quantitatively for the first time in this study is probably much more prevalent than we think," he told the "Today" show.

The study participants identified periods of extreme stress over the previous year, and Picard and colleagues were able to pinpoint the segments of hair that grew during that time using the average growth rate of hair, which in humans is one centimeter per month.

They then compared life events to the strand's pigment, finding a remarkable correlation between graying and stress, as well as the reversal of graying and relaxation.

They described the case of a 30-year-old woman whose hair strands turned gray when she separated from her partner and moved: "Strikingly, the quantitative life stress assessment over the last year revealed a specific 2-month period associated with an objective life stressor (marital conflict and separation, concluded with relocation) where the participant rated her perceived stress as the highest (9–10 out of 10) over the past year. The increase in stress corresponded in time



BARKS/SHUTTERSTOCK

In fact, one study even showed that people who followed a Nordic walking training program for three weeks had improved balance—even when walking without poles. It's no wonder why Public Health England recommends Nordic walking for older people to improve their balance.

As far back as 1995, researchers noticed that Nordic walking burned more calories than regular walking did.

6. Boosts Cardiovascular Health

Research shows that Nordic walking can improve cardiovascular fitness in as little as four weeks.

Another study on obese women also showed Nordic walking was able to improve blood pressure, though only to a similar extent as ordinary walking. In addition, Nordic walking has been shown in postmenopausal women to improve resting blood sugar levels, which is important in preventing diabetes as well as improving cholesterol levels in the blood.

7. Speeds Up Your Walking Pace

Nordic walking can help you to get where you want to go faster than ordinary walking can. In fact, a review showed Nordic walking increased average walking speed by up to 25 percent as compared to ordinary walking. As a consequence of walking faster, you then burn more calories. So if you went for a 30-minute Nordic walk, you'd be able to walk farther and burn more calories than you might on a regular walk.

There seem to be clear advantages to Nordic walking. It may especially be good for people who don't like other types of exercise—such as running—but still want to do something of a higher intensity than brisk walking.

Lindsay Bottoms is a reader in exercise and health physiology at the University of Hertfordshire in the UK. This article was originally published on *The Conversation*.

with the complete but reversible hair greying."

In another case, five two-colored hairs were found on a 35-year-old man's scalp, and all of the hair had regained color after initially going gray. The reversal of graying occurred alongside a decline in stress and a one-month period that was the least stressful of the previous year—right after the man had taken a two-week vacation.

Given these findings, researchers believe that "life stress" is intricately involved in hair graying and reversal.

From a biological standpoint, they also found that gray hairs upregulate the proteins linked to energy metabolism, and mitochondrial and antioxidant defenses, providing a "plausible biological basis for the rapid reversibility of graying and its association with psychological factors."

The Aging Process Sometimes Moves in Reverse

The study provides even more evidence that aging isn't always a one-way street. In a commentary, Michael Philpott of the Centre for Cell Biology and Cutaneous Research at Queen Mary University of London explained, "The latest work suggests that human aging may not be a linear, fixed biological process but may, at least in part, be halted or even temporarily reversed."

Along those lines, there are at least six bodily tissues that can be regenerated through nutrition, while GreenMedInfo.com has a list of 48 therapeutic actions known for their anti-aging potential—many of which involve stress relief.

It's simply remarkable to now have proof that hair graying is reversible—albeit rare—and to know that reducing psychological stressors in your life could stave off that salt-and-pepper look, or, in some cases, even reverse it.

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Researchers Find Genetic Patterns of Longevity

New data suggests that healthy sleep cycle may be critical to lifespan

ERIN WILDERMUTH

The benefits of a good night's sleep can't be overstated. New perspectives, improved moods, and a slew of health benefits have all been linked to sleep hygiene. Now a new study has found powerful evidence that the quality of our sleep can affect the length of our lifespan.

We don't need science to understand the importance of sleep. We can feel the effect of poor sleep across every aspect of our lives. However, as science progresses, we're better able to understand why and how sleep is so essential. If you weren't already a sleep enthusiast, this new study from the University of Rochester provides yet another reason to prioritize sleep.

Dr. Vera Gorbunova is co-director of the Rochester Aging Research Center, where she and her team tackle one of biology's most compelling issues: Why do we age? Comparative genomics is one scientific approach to answering this question. Although the nuts and bolts are complicated, the general idea is simple.

In short, every animal shares the same basic building blocks of creation through the language of DNA. At the same time, Earth is a wonderland of variety. Our creatures are big and small, camouflaged and parading, silent and sonorous. They possess gills, hollow bones, poisons, and prickly points. Maximum lifespan is a particularly curious point of discrepancy. The Greenland shark can live for 500 years, while a Burmese mountain dog will survive for only six years. The maximum lifespan of a mammal can differ more than 100-fold. Even somewhat similar creatures can have dramatically different lifespans. The naked mole rat can live for up to 41 years, several times longer than rats of similar size that live for up to two years in the wild and seven years in captivity.

Gorbunova exploits this variety to help answer questions about aging using sophisticated methods of analysis to compare the genes from animals that exhibit different maximum lifespans. The result is a novel window into how genes influence longevity.

The Rochester study, published in June in Cell Metabolism, looks at transcriptomes from 26 mammals from the Rodentia and Eutloptophyla orders with maximum life spans ranging from three to 37 years. If our DNA is a cookbook where only some of the recipes can be used, the transcriptome is a collection of accessible instructions, many of which are earmarked to be built into proteins that help animals function properly. Gorbunova's approach centered on gene regulation. Not only did the team ask which genes were involved in maximal lifespan, but they also asked how they were being regulated.

The analysis led to two gene lists: one associated with an increased (positive) maximal lifespan (Pos-MLS) and the second associated with decreased (negative) maximal lifespan (Neg-MLS). They then compared patterns of genetic upregulation and downregulation during aging to human samples, finding many similarities.

The researchers found that the genes fell into two regulatory systems, those in circadian networks and those in pluripotency networks.

Genes controlled by circadian networks were associated with a shorter lifespan (Neg-MLS). The circadian network governs our internal clock and what aspects of our physiology get turned on and off throughout the day, such as energy metabolism and inflammation.



ALL PHOTOS BY SHUTTERSTOCK

A Tale of 2 Rodents

Naked mole rats live up to

41

YEARS

but rats live only up

to

7

YEARS

in captivity. New research says two systems and their genes explain the difference



Stay off devices at least an hour before bed to improve sleep.



Healthy sleep reduces inflammation and slows aging.

For instance, our body revs up energy metabolism during waking hours and slows it down when we're sleeping, and if we don't get enough sleep, our body releases signaling molecules that trigger inflammation.

Short-lived species tended to have a higher expression of these genes and a lower expression of the genes governed by the pluripotency networks (Pos-MLS), which handle DNA repair, RNA transport, and microtubule organization.

Previous research by Gorbunova and her team found that mammals with more efficient DNA repair and a weaker inflammatory response had longer lifespans, according to an article by the University of Rochester.

"To live longer, we have to maintain healthy sleep schedules and avoid exposure to light at night as it may increase the expression of the negative lifespan genes," Gorbunova said.

Pos-MLS genes involved in DNA repair were downregulated in roughly 50 percent of the human tissues surveyed, while inflammation-associated genes from the Neg-MLS gene list were upregulated in 31 of 45 human tissues.

To take these results from the theoretical to the interventional, the group looked at published datasets that incorporated various interventions that impact maximum lifespan-associated genes. They were able to pinpoint compound-based and gene-manipulation-based interventions that influence—and thus may directly or indirectly regulate—these genes.

Among the more interesting results, they found that calorie restriction (CR) upregulated both gene lists and suggested that "the development of treatments that separate the 'beneficial' effects from 'deleterious' effects of CR may further improve the CR effect on lifespan." In addition, the inhibition of Alzheimer's-disease-associated beta-amyloid was found to upregulate Pos-MLS genes.

Finally, the team used public data to evaluate which processes might regulate our maximal lifespan-associated gene lists, the Pos-MLS gene list. This list was largely regulated by pluripotency factors, a system that scientists are currently exploring in anti-aging research.

"Pluripotent stem cells are characterized by continuous self-renewal while maintaining the potential to differentiate into cells of all three germ layers," reads a research review published in Stem Cells International in 2016.

Because the Neg-MLS gene lists were regulated by the circadian system, the research supports how important it is to maintain a healthy circadian rhythm.

Long story short, there's every reason to protect the natural rhythms of your body.

"We propose that circadian control sets time limits on the activation of many genes related to metabolic processes, limiting their lifespan shortening effects," the authors wrote. "Based on this hypothesis, long-lived species might have a more robust circadian regulation system than short-lived species like mice."

This isn't the first-time circadian rhythms have been implicated in aging. Loss of circadian control is a well-documented component of age progression. Now, armed with genetically based research, we're beginning to understand why this may be the case.

Long story short, there's every reason to protect the natural rhythms of your body. Spending time outdoors during the day, prioritizing eye health so that light-dark cues are properly registered, limiting evening screen time, and maintaining a regular sleep schedule can all help to keep the circadian rhythm stronger for longer.

Erin Wildermuth is a writer turned MD/doctoral degree student studying molecular medicine and genome biology. She's passionate about using scientific knowledge and technology to improve the human condition, whether that be human health or social organizing. She holds a master's degree in international political economy from the London School of Economics.

Humans have many genes to manage cellular repair and growth, and many to manage when different systems get turned on and off. Both types affect lifespan.

Advanced Methods in Alternative Cancer Treatment

New treatments focus on supporting the body in its fight against cancer.



Research-backed treatments support the immune system rather than devastate it

JOSEPH MERCOLA

Dr. Nathan Goodyear started out as a gynecologist and pelvic floor surgeon. Once out of residency, however, he noticed that a lot of what he had been taught in medical school didn't work. Then, in 2006, he developed pheochromocytoma, a rare type of tumor that develops in the adrenal gland, causing it to excrete high amounts of norepinephrine, which, in turn, causes extremely high blood pressure and heart rate.

That experience pushed him to make the transition into the field of cancer research. For the past 5 1/2 years, he's been working

with Brio-Medical, a holistic cancer clinic in Scottsdale, Arizona, and for the past six months, he has served as its medical director. He works with four other physicians—two medical doctors and two naturopathic physicians.

Goodyear is a firm believer in the benefits of vitamin C in cancer treatment. Coincidentally, we're both scheduled speakers at the Vitamin C International Consortium Institute's annual conference in Tampa, Florida, on Sept. 9 and 10.

He says the current approach to cancer has some significant limitations. Places like Brio-Medical are working to find better approaches.

Continued on Page 12

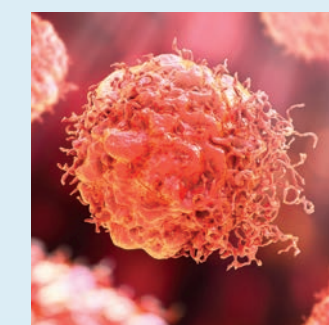


Curcumin has noteworthy anticancer effects.

Vitamin C is a safe but effective cancer fighter.

Melatonin has significant anticancer effects.

One key point to be made about holistic oncology is that the earlier you start this kind of treatment, the better.



Cancer cells need to feed to survive. High dose vitamin C undermines a tumor's ability to convert sugar to the energy it needs.

Grain-Free, Low-Carb Substitutes for Pasta

Use these healthy alternatives to cut the calories in your favorite noodle dishes

MELISSA DIANE SMITH

Do you feel heavy in the gut after eating pasta? Do you have a wheat sensitivity? Do you gain weight if you eat too much pasta?

If you answered yes to at least one of these questions, know that there are more options than ever for "pasta" that's lower in carbohydrates and calories than traditional wheat-based or gluten-free pasta. The key to automatically reducing the carbohydrates and calories is to ditch those made from high-carb grains and legumes and substitute grain-free, legume-free alternatives made from non-starchy vegetables.

As the name suggests, spaghetti squash is a great substitute for spaghetti.

Reasons to Eat Pasta Substitutes

Whether it's in the form of spaghetti, fettuccini, penne, or noodles, white pasta, which is made of refined wheat flour, is a high-carbohydrate, high-calorie food. In other words, it's energy-dense. Whole-grain pasta, which is made of mostly whole-grain flour and has more fiber, is also a high-carbohydrate, high-calorie food. By contrast, non-starchy vegetables are dramatically lower in carbohydrates and calories. Compare the amount of carbohydrates and calories in each of these food items:

- 1 cup white pasta: 43 grams of carbohydrates and 221 calories.
- 1 cup whole-wheat pasta: 48 grams of carbohydrates and 238 calories.
- 1 cup zucchini noodles: 3.7 grams of carbohydrates and 20 calories.

(Zucchini also provides much more certain micronutrients, including vitamin A, vitamin C, and potassium.)

Continued on Page 11



The common varieties of noodles are low in nutrients and high in calories. Thankfully, there are more healthy options.

A Book That Has Inspired The World



"I have indeed experienced all the miracles. No matter what your experience or what background you have or what country you are born in, you will benefit from Falun Dafa."

Martin Rubenis
OLYMPIC ATHLETE

Zhuangzi is the main text of Falun Gong (also called Falun Dafa). The book expounds upon profound principles of Truthfulness, Compassion and Tolerance. It addresses the long-forgotten term "cultivation," the origins of illnesses, karma, the role of moral character on a path to spiritual perfection, and more. The book was a national bestseller in China in the 1990s, and has been translated into over 40 languages. Find out why it has captured the hearts and minds of tens of millions of people in over 100 countries worldwide!

"What made Falun Gong stand out from other qigong exercises and meditation practices was a moral system—compassion, truthfulness, and forbearance—unmistakably Buddhist in origin."

Arthur Waldron
LAUDER PROFESSOR, UNIVERSITY OF PENNSYLVANIA

"Falun Gong has taught me how to be considerate of others and how to improve my relationships by handling conflicts constructively. [...] It has given me incredible relaxation, mental clarity, and freedom from stress."

Shiyu Zhou
PH.D., USA

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Doctors have too many patients to deliver proper care but not if they have a team supporting patient care.

Patients Suffer as Doctors Overworked

Primary care physicians would need 26.7 hours a day to properly treat patients: study

CASSANDRA BELEK

It would take a primary care physician 26.7 hours per day to follow nationally recommended guidelines for preventative, chronic disease, and acute care for an average number of patients, research has shown.

That breaks down to 14.1 hours per day for preventive care, 7.2 hours per day for chronic disease care, 2.2 hours per day for acute care, and 3.2 hours per day for documentation and inbox management.

The research used a simulation study to compute time per patient based on data from the National Health and Nutrition Examination Survey.

"There is this sort of disconnect between the care we've been trained to give and the constraints of a clinic workday," said Dr. Justin Porter, assistant professor of medicine at the University of Chicago and lead author of the paper.

"We have an ever-increasing set of guidelines, but clinic slots have not increased proportionately."

The study also looks at physician time as part of a team, where nurses, physician assistants, counselors, and others help to deliver recommended care.

It found that team-based care reduced the time a physician needed to deliver care to 9.3 hours per day, broken into 2 hours per day for preventive care, 3.6 hours per day for chronic disease care, 1.1 hours per day for acute care, and 2.6 hours per day for documentation and inbox management.

"Team-based care is a movement that has been around in medicine for a while and has gathered steam more recently," Porter said. "Doctors do not give care in a vacuum. There are other extremely important members of the health care team that are working together and often independent."

The study appears in the Journal of General Internal Medicine.

Real Patients and Hours in the Day This new study builds on others that have found a discrepancy between guidelines and a physician's time.

In 2003, a Duke University study estimated that it would take a primary care physician 7.4 hours per day to provide preventive care for an average-sized patient population, while a 2005 study from Mount Sinai Hospital found that it would take 8.6 hours per day. A complementary study from Duke in 2005 calculated an additional 10.6 hours per day to manage the top 10 chronic diseases. Together, that indicates that a doctor would need at least 18 hours per day to provide both preventive and chronic care.

The new study goes one step further by including all types of care that a primary care physician provides—preventive, acute, and chronic—as well as administrative tasks, and it account-

ed for changes to the guidelines that have occurred since the earlier studies were published. It also used a different methodology, employing real patient data from an annual national survey to calculate its results. The earlier studies used hypothetical patient populations based on the U.S. population.

"When you're dealing with real people, you have more complexity to the data. A person may have multi-morbidity or several chronic diseases at once," Porter said. "That patient would be treated differently than a hypothetical, average patient. This leads to more comprehensive and precise calculations."

The study's data on team-based care also expanded the information available on time constraints for primary care physicians.

The researchers used the Comprehensive Primary Care Plus (CPC-Plus) model to develop the estimates for team-based care. The model allows physicians to focus on advanced care and brings in specialized medical professionals to take over other areas. For instance, dietitians would handle nutritional counseling for patients with diabetes or obesity, a time-intensive task. Overall, the researchers determined that 65 percent of primary care services could be handled by other team members.

Time for More Team Care? Moving to a team-care model would require systemic changes to the way Americans pay for care. Currently, pay-

ment for many counseling services depends on patients having a qualifying disease. Yet the benefits of team-based care make the effort worth it, the researchers said.

The time pressure that physicians face has real consequences for the delivery of health care. According to the researchers, time

constraints are a key factor in physician burnout, one of the drivers pushing medical students from the field.

For patients, time pressure helps explain why improvements in outcomes haven't kept pace with advances made in the field, the researchers said. It plays a role in inequities in health care, with vulnerable populations typically receiving care at overburdened clinics. It also has an impact on patient satisfaction.

"If you do surveys with patients about what frustrates them about their medical care, you'll frequently hear, 'My doctor doesn't spend time with me' or 'My doctor doesn't follow up,'" Porter said. "I think a lot of times, this is interpreted as a lack of empathy or a lack of willingness to care for a patient. But the reality—for the majority of doctors—is simply a lack of time."

Additional coauthors for the study are from the University of Chicago; Johns Hopkins School of Medicine; and Imperial College Business School, London.

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Grain-Free, Low-Carb Substitutes for Pasta

Use these healthy alternatives to cut the calories in your favorite noodle dishes

Continued from Page 9

There's almost a complete lack of research on whether whole grains are better for weight loss than no grains and a lot of vegetables. Vegetables protect health and help prevent diseases in many ways, but vegetable intake in the United States is low. In 2019, only 1 in 10 U.S. adults met vegetable intake recommendations of 2-3 cups of vegetables daily.

A Centers for Disease Control and Prevention report concludes that replacing high-calorie foods with low-calorie foods, such as fruits and vegetables, can be an important part of a weight management

strategy. Yet all fruits and vegetables aren't created equal. In a 2015 study, Harvard School of Public Health researchers found that while eating more fruit and vegetables overall can promote weight loss, study participants who ate more starchy vegetables, such as potatoes, corn, and peas, tended to gain weight. Those who ate more fruits and non-starchy vegetables—which are higher in fiber and lower in carbohydrates—lost weight.

As I explained in my book, "Going Against the Grain," a basic nutrition rule for controlling or losing weight is to eat foods with more vitamins and minerals and fewer carbohydrates and calories.

If you replace grain products with non-starchy vegetables, you substantially and automatically reduce the carbohydrates and calories in your diet, and many people have found this to be an effective way to lose weight. A 2019 review article and analysis of studies shows that adopting the grain-free, vegetable-rich Paleolithic diet is positively associated with weight loss. The effect is significant on weight, body mass index, and waist circumference.

People who have the autoimmune disease celiac disease or who have nonceliac gluten sensitivity must eat a gluten-free diet in order to not experience uncomfortable symptoms. Those with a wheat

allergy must eat a wheat-free diet. Eating pasta substitutes that are made of non-starchy vegetables is an excellent way to not only avoid the foods that cause unpleasant symptoms but also to help control or lose weight for people with these conditions.

Melissa Diane Smith is a holistic nutrition counselor and journalist who has been writing about health topics for more than 25 years. She is the author of several nutrition books, including "Syndrome X," "Going Against the Grain," "Gluten Free Throughout the Year," and "Going Against GMOs."

Grain-Free Pasta Substitutes

The following list doesn't include grain-free or gluten-free pasta substitutes made with starches, such as cassava flour or rice flour, that are high in carbohydrates and calories. The lower-carb substitutes that follow are made from nonstarchy vegetables, which provide high amounts of essential vitamins and minerals relative to the carbs and calories they supply. Look for the products below in natural food stores, many grocery stores, and some national chains, such as Walmart.



Hearts of Palm Pasta

Hearts of palm pasta is sold as Palmiini by O.A. Foods and other brands, such as Trader Joe's. It's made out of a natural plant known as heart of palm, which is cut into linguini-shaped pieces or other common pasta shapes.

Hearts of palm noodles, which have a neutral taste, can be taken out of the package, rinsed with water, and heated as is with the sauce you desire. If you prefer a softer noodle, they can be boiled until your desired texture is achieved. The noodles supply minerals, such as potassium and calcium. Depending on the brand used, they contain 3-4 grams of carbs and 1-2 grams of fiber, which equal roughly two grams of net carbs and 15-20 calories per serving. Look for these shelf-stable products in the pasta section of grocery stores.

Spaghetti Squash

As the name suggests, spaghetti squash is a great substitute for spaghetti. However, preparing the vegetable from scratch is time-consuming.

The company Solely offers a solution: baked and oven-dried organic spaghetti squash, which you can prepare with little fuss in a fraction of the time. Simply boil this pasta substitute according to package instructions, rinse, and combine with a flavorful heated sauce, such as a spaghetti sauce with meatballs.

For a cold pasta salad, no cooking is required. Just soak the pasta in a large bowl of water.

The package supplies the noodles from one whole spaghetti squash. A serving of one-quarter of the squash or one-half cup cooked contains six grams of carbs and two grams of fiber for a total of four grams net carbs and just 30 calories.

Look for this product in the pasta section in the inner aisles of supermarkets. Solely Spaghetti Squash is shelf-stable, so you can keep it in your pantry or take it with you when you travel.



Shirataki Noodles

Made from the root of the konjac plant that's grown in parts of Asia, shirataki noodles are a handy food product for many dieters because they're very low calorie and low carbohydrate, with some fiber.

They contain glucomannan, a soluble fiber, meaning that the fiber turns into a gel-like substance once you eat it, leaving you feeling full longer. The fiber can slow down the rate at which the body absorbs carbohydrates, which can help people avoid blood sugar spikes, and the fiber also may act as a prebiotic, promoting the growth of healthy bacteria in the colon.

Shirataki noodles are actually about 3 percent fiber and 97 percent water, so it's easy to see why they're low in calories. However, unlike the other pasta alternatives already mentioned, shirataki noodles don't contain any vitamins or minerals unless the manufacturer adds them. So it's important to pair them with a nutritious sauce.

Shirataki noodles come in different shapes, such as angel hair and fettuccini. They're available either dry or in water and can be found in either the pasta section or the refrigerated case. Common brands found in stores include Miracle Noodles Spaghetti, Skinny Pasta, and House Foods Traditional Shirataki Noodles.

To use, follow the package directions. For the wet variety, this usually involves draining them and rinsing them well with fresh water. Then prepare the noodles by boiling them in water for a few minutes or, for some brands, briefly sautéing them.

Spiralized Vegetable Noodles

Spiralized varieties of vegetables are available in the produce section of many grocery stores and natural food stores and sometimes in the frozen foods departments. Zucchini noodles are the most common and easy to find. Kohlrabi noodles are now sold under a few brand names. Pre-cut veggie noodles are easy to prepare: You simply sauté them in oil for a few minutes and season.

For a nutritional comparison, Cece's Veggie Co., a nationally distributed brand, offers:

- Organic Noodle Zucchini with three grams of carbs and one gram of fiber for two grams of net carbs and only 10 calories per serving;
- Organic Noodle Butternut with nine grams of carbs and two grams of fiber for seven grams of net carbs and 35 calories;
- Organic Noodle Beets with seven grams of carbs and two grams of fiber for five grams of net carbs and 35 calories – still dramatically lower than the carbs and calories in pasta. The butternut spirals also provide 160 percent of the daily value of vitamin A and 25 percent of the daily value of vitamin C, and the beet spirals are a good source of iron.
- Zucchini Marinara and Zucchini Pesto Veggie Meals: they provide everything needed to quickly prepare vitamin-packed, tasty meals that have substantially lower carbs and calories than found in typical on-the-go meals.

Kohlrabi vegetable pasta from Trader Joe's has 2.5 grams of carbs and 1.5 grams of fiber for one gram of net carbs and 12.5 calories per one-cup serving.

If you replace grain products with non-starchy vegetables, you substantially and automatically reduce the carbohydrates and calories in your diet, and many people find this an effective way to lose weight.



Kelp Noodles

Produced by the Sea Tangle Noodle Company, kelp noodles are a combination of the sea vegetable kelp and sodium alginate, a sodium salt that's extracted from a brown seaweed. Despite what you might think from their name, kelp noodles, which you can find in the refrigerated case in some store chains, have a non-fishy, completely neutral taste, and they pick up the flavors of the foods they're combined with. They're rich in iodine, which is crucial for thyroid health, and they're almost completely carbohydrate- and calorie-free.

They're also easy to use: Just open the bag, drain, and add them at the last minute to soups or stir-fries. If you prefer the noodles to have a softer texture, wash them in cold water, then soak them in a large bowl of water and the juice of half a lemon for 24 hours in the refrigerator. Finish by tossing in a flavorful sauce, such as pesto, and let them sit for an hour or two combined with the sauce.

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Advanced Methods in Alternative Cancer Treatment

Research-backed treatments support the immune system rather than devastate it



Vitamin C does have drug-like effects, but it's still a natural biological molecule that cannot be patented, and hence cannot be a drug.

Continued from Page 9

“The conventional approach seems to follow the logic ‘destroy to heal,’ and I just don’t know where that really occurs in nature outside conventional cancer treatment. Healing has to be your focus and goal to achieve healing. You have to heal to heal. Our healing strategy focus in cancer is to tap into the body’s designed capacity to heal itself through the targeting of the root causes,” Goodyear said.

“When you look at holistic natural therapies, there’s this assumption by many, including conventional medicine, that we are just throwing darts up on the wall and hope they stick.

“But in actuality, we’re following the science of genomics, epigenomics, transcriptomics, metabolomics, and immunomodulators. This is the future of medicine that’s here now, and we’re being incredibly specific and targeted for the dysfunction within the cancer, but with natural holistic or integrated therapy.”

Examples of Holistic Therapies for Cancer

Examples of holistic therapies used for cancer include vitamin C in combination with artemisinin or artesunate (a primary malaria medication). This combo is very good for prostate and breast cancer in particular. Curcumin and melatonin both also have significant anticancer effects. Goodyear likes to combine hyperthermia with high-dose vitamin C and curcumin.

“Studies have shown that when you give vitamin C with whole-body hyperthermia, you actually achieve a higher plasma ascorbic acid concentration. So that’s going to impact the fight against cancer more,” he said.

Mistletoe is another excellent cancer treatment. One key point to be made about holistic oncology is that the earlier you start this kind of treatment, the better. Unfortunately, most patients who seek alternative strategies have

already done tremendous damage to their bodies, particularly the immune system, with one, two, or even three rounds of chemo, which really impairs your body’s ability to heal naturally.

“If we can get them earlier in the process ... before they get conventional chemo and/or radiation, the impact is huge,” Goodyear said.

“Before you destroy the immune system, one can actually heal with the immune system. I can’t tell you how many ladies with breast cancer have been able to preserve their breasts with this cancer healing strategy. You can actually heal the body, not destroy it. That is a novel concept because when you destroy the immune system through conventional therapy, you’re going to see cancer recur and spread.”

How Cancer Kills

Typically, it’s not the initial cancer that kills you. What kills is when the cancer spreads (metastasizes) to other areas of your body. This kind of cancer is typically treated with whole-body therapies, some of which, such as chemotherapy, can have devastating and fatal effects.

“The literature is very clear—especially in the last five to 10 years—that 90 percent of morbidity and mortality associated with cancer is when it spreads,” Goodyear said. “Thankfully, research has provided a good understanding of how this chemotherapy and radiation-induced metastasis process occurs.”

“Maximum tolerated chemotherapy actually induces the mechanisms to spread the cancer. In breast cancer, maximum tolerated chemotherapy will reduce the primary tumor, yet at the same time, cause it to spread to distant locations in the body.”

Other cancer therapies, such as radiation therapy, can also cause cancer. Sometimes even the surgeries to remove cancer and even biopsies to test for it can lead cancer to metastasize.

“A lot of people that come to us, they’re so surprised. They ask, ‘Why didn’t I know

“This is the future of medicine that’s here now, and we’re being incredibly specific and targeted for the dysfunction within the cancer, but with natural holistic or integrated therapy.”

Dr. Nathan Goodyear, holistic cancer treatment practitioner



Hyperthermia (overheating) is being used to treat cancers that can’t endure heat stress. This treatment works well with vitamin C.

about this? Why didn’t I know that surgery can cause metastasis? Why didn’t I know chemotherapy and radiation can cause metastasis?”

Vitamin C Basics

The story of vitamin C demonstrates that the devil is in the details. Roughly 50 years ago, Linus Pauling demonstrated that intravenous (IV) vitamin C (10 grams per day for 10 days) improved cancer survival. Later, researchers at the Mayo Clinic tried to reproduce the results but didn’t use IV vitamin C. They instead gave 10 grams orally and found no benefit.

In the academic battle that followed, Mayo won and for the next several decades, the conventional thought was that vitamin C doesn’t work. That began to change in about the year 2000, when Dr. Ping Chen, a conventional oncologist, started looking into vitamin C and publishing papers on its pharmacokinetics.

Since then, there has been a combination of pushback against the idea that vitamin C works on the one hand and, on the other, growing research that points to vitamin C’s effects being as powerful as any drug.

Vitamin C Is Natural but Has Drug-Like Effects

Vitamin C does have drug-like effects, and I like to refer to it as a pharmacologic-mimetic, but it’s still a natural biological molecule that can’t be patented and hence can’t be a drug. Also, to be clear, there are distinct differences between whole food vitamin C and ascorbic acid.

They really have two very different purposes. Whole food vitamin C isn’t suitable for the treatment of cancer, but does wonders for general health support, as it interacts favorably with copper and iron in your cells and mitochondria. I only recommend and use high-dose IV vitamin C in cases of acute infection or illness, as it does have very potent “drug-like” effects.

“It’s actually inducing metabolic changes and epigenetics,” Goodyear said. “That’s the

great thing about natural therapies. Conventional medicine will take an approach to kind of throw a monkey wrench into the body’s physiology to shut everything down ... without a holistic perspective of how that affects the whole body. It’s a very compartmentalized approach.

“A holistic approach is like a pebble thrown into a calm pool in the morning. Its effects ripple throughout the physiology of the body. That is the beauty of natural therapies.

“Now in cancer and sepsis ... when we’re dealing with the major dysfunction found in cancer, where things have metabolically, genetically, immunologically gone off the rails, we have to come in and really work to turn the tide. That’s where the intravenous vitamin C delivery is required. That’s where the sodium ascorbate comes in because that’s the only way we’re going to be able to change that tide.”

Oral Versus IV Vitamin C

When treating cancer, IV needs to be used because you simply can’t take the high dosages required orally. Doses of more than 10 to 20 grams of ascorbic acid will cause loose stools when taken orally, but IV administration bypasses the limitation of the gut. It also allows the vitamin C to get directly into the blood to the extracellular fluid, into the tumor microenvironment, to penetrate the tumor and saturate the entirety of the tumor.

If you feel like you’re coming down with an infection, such as a flu or cold, oral vitamin C is plenty adequate. Oral dosing of vitamin C, using a non-liposomal product, can double your blood level of vitamin C. Using liposomal vitamin C—which is what I’ve been recommending for years—can increase it threefold to fivefold—up to about 300 micromolar. So, liposomal vitamin C can make a big difference.

However, when you’re dealing with cancer, you need a minimum of 1,000 micromolar, or 1 millimolar, in the extracellular fluid to kill cancer cells, which is why you really need to use IV. In the case of large tumors or significant cancer spread, much higher plasma concentrations are required.

While the dosage is highly individual to each patient, as a general benchmark, Goodyear typically starts at 1.5 grams per kilogram, which for the average person would be somewhere between 100 and 200 grams per dose, three times a week.

So to be clear, I don’t advise taking ascorbic acid for daily vitamin C requirements. I strongly suggest that you use whole food vitamin C, which is far superior as a daily source.

Actions of Vitamin C

Vitamin C has a wide variety of effects, which can be generally classified into the following: genomic, epigenomic, transcriptomic, proteomic, metabolomic, and immunomodulatory.

“The point here is that vitamin C is not just directly killing cancer cells, what we would call cytotoxic effects. Vitamin C is actually working to change the metabolism of the cancer,” Goodyear said.

“What that means is, it creates an energy crisis. It actually depletes the body of certain intermediates that make it so this cancer, which is addicted to sugar, cannot use [the sugar] efficiently to make energy, so it ... dies. It also depletes [the cancer] of its ability to detoxify.

“So to be specific, research shows that vitamin C depletes the cancer of reduced glutathione. And getting rid of that glutathione in that cancer eliminates its ability to handle the high oxidative stress that this pro-oxidative vitamin C therapy induces, which kills the cancer cell.

“It also disrupts how cancer makes energy. And it’s fascinating because every body looks at this and they ask, ‘Well, how will this affect my healthy cells?’ This is the paradigm changer with vitamin C.

“The environment—as much as the dose, as much as the delivery, as much as the tumor saturation—the environment encountered by that vitamin C dictates the result as much as the dose itself. So you can induce a pro-oxidative effect, a detoxification crisis, an energy crisis, in cancer cells, and healthy cells do just fine.”

Using Pro-Oxidation to Kill Cancer Cells

When you think of vitamin C, you’re probably thinking it’s an antioxidant, which is true. But in high doses only available through IV, it actually becomes a pro-oxidant, and that’s what allows it to kill cancer cells and gives it its antiviral and antibacterial properties.

“And there’s plenty benefits of that. That’s why it’s so helpful in viral and bacterial infections. It’s countering that cytotoxic burst found in infection. It’s donating an electron and becomes oxidized [which neutralizes oxygen],” Goodyear said.

He noted that this is why vitamin C can help people with sepsis, including COVID-19 sepsis, and the cytokine storm that causes most of the fatal lung damage resulting from severe COVID.

“Its different effects are dictated by the different environments—it can become pro-oxidative,” Goodyear said.



When vitamin C is pro-oxidative, it has a helpful effect on cancer patients.

“It’s delivering the oxidative stress to the tumor and creating it through hydroxyl free radicals, hydrogen peroxide, superoxide anions,” he said.

Melatonin for Cancer

Goodyear also uses melatonin for cancer treatment and monitors patients’ melatonin levels to ensure proper dosage. Typically, patients will start off with IV melatonin at a dose of 10 to 20 milligrams daily for two weeks to get the level up as quickly as possible while simultaneously taking oral melatonin at a dose of about 60 milligrams per day. The oral dose is then adjusted based on body weight and other parameters.

“Ideally, your blood level is supposed to peak at around midnight. So with that in mind, if you’re going to do the oral dose, you want to take the highest dose right before bed, maybe 45 minutes before, and then right before bed,” he said.

“The other doses, if you’re going to do it three times a day, would be maybe 10 a.m. and 4 p.m. You really want to keep it away from solar noon. Otherwise, you’re going to [impair your] chronobiology.”

Goodyear said they try to adjust the dosing of melatonin so it harmonizes with the patient’s sleep cycle, but the first priority is the cancer.

“When patients come to us, so many of them are in an advanced stage, so in that acute setting, we have to use these therapies in combination and sequence, together, to really turn the tide against the cancer.”

What Kind of Results Can You Expect From Holistic Oncology?

Goodyear said his cancer clinic sees mostly patients with metastatic cancer who have already had treatment.

“In those patients, in a six-week or maybe eight-week cycle, we can see a significant reduction in tumor burden,” he said.

“Our goal is no evidence of disease, but we’re going to typically see—in most of our patients, well over 50 percent—a significant reduction in that tumor burden while they’re here with us. The after-care is very important to continue that process. What we’re talking about here is at least a 50 percent reduction in the tumor that you can see clinically, through labs and through imaging.

“Many of our patients will come in where the breast is a whole tumor, [or] their spine lights up like a Christmas tree. So it’s not like we have a patient coming in and they have a small little nodule, OK? These are patients that have failed chemotherapy twice or more, [have had] surgery, radiation [and the cancer] recurred, not just once, but often two or even more times.

“It’s a tough spot to be in, but if we can see a goal of ‘no evidence of disease’ and see a 50 percent reduction in these patients, hey, that’s something that we can work with because we’re not destroying the body; actually we’re working to heal the body.”

As mentioned earlier, most of the patients have destroyed much of their bodies’ innate healing ability through repeated toxic treatments, which makes holistic treatment far less effective. Once chemotherapy damages your immune system, it becomes extraordinarily difficult to treat it.

To treat cancer, vitamin C needs to be given by IV because high enough dosages cannot be delivered orally.

I know how panic-stricken one can get when given a cancer diagnosis, but if you’re in the early to mid stages, you have virtually nothing to lose by going holistic first. Your chances of total remission will be far greater than waiting until all other treatments fail, and you may be able to save your breasts and other parts of your body that would otherwise be cut out.

A Case History

To make his point, Goodyear offers the case history of a woman with bilateral breast cancer who had been told she needed a bilateral mastectomy, bilateral radiation with chemo, and lymph node dissection—six to 12 months of brutal and toxic treatments that would have left her disfigured.

“When I was talking to her before she came, I said, ‘Let me tell you my approach. Since you’ve not had any treatment, if we take this in a healing perspective and through a holistic integrative approach, you may just save your breasts, and you may negate the need for any of those other harmful therapies.’

“And in fact, now she’s over two years out—cancer-free, no breasts removed, no lymph nodes removed. So here is a person who was headed down that road that would be life-changing in a negative way. We hit the pause button.

“She took a chance to think; she took a chance to read. And then she said, ‘You know what? I want a different approach.’ We addressed it with a holistic evidence-based, integrative approach ... and now she has both breasts and she’s living cancer-free.

“She even had COVID and did great ... When the immune system is not destroyed, things work so much better, and full-dose chemo destroys the immune system.”

More Information

Goodyear and I cover a lot more ground in this interview than I’ve summarized here, so I encourage you to listen to the full interview online. You can also find more information at Brio-Medical.com.

Dr. Joseph Mercola is the founder of Mercola.com. An osteopathic physician, best-selling author, and recipient of multiple awards in the field of natural health, his primary vision is to change the modern health paradigm by providing people with a valuable resource to help them take control of their health.



Most patients who seek alternative strategies have already done tremendous damage to their bodies, particularly the immune system, with one, two, or even three rounds of chemo, which really impairs your body’s ability to heal naturally.

Absinthe: The Dangers of the Green Fairy

This almost mythologized drink has made a comeback, as have its side effects



FOOD IMPRESSIONS/SHUTTERSTOCK

Absinthe gains some of its problematic effects from terpene thujone found in wormwood leaves.

JOE D. HAINES JR.

The fall of communism in Eastern Europe resulted in dramatic gains in civil rights and liberties. But with the flood of new freedoms, a few evils have slipped in as well. The legalization of absinthe, a toxic liqueur fashionable in Europe at the turn of the 19th century, may well be one of the more insidious evils of recent times.

The Wall Street Journal reported that Czech distiller Radomill Hill began producing absinthe and selling it in bars in Prague in 1990. Czech officials were wary of restricting personal liberties in a way reminiscent of the old communist regime. Consequently, they didn't block the return of absinthe.

American visitors flooding into Prague have helped make absinthe a popular drink, as it was for Hemingway, Van Gogh, Oscar Wilde, and fin de siècle France. The fans of absinthe praise both its hallucinatory and stimulatory effects. A green liqueur, it's extremely bitter in taste, and, at 160 proof, has about twice the alcohol concentration of whiskey. Absinthe has been described as similar in taste to Nyquil and similar in appearance to the mouth-wash Scope.

However, the real kick in absinthe is not the alcohol, but one of its principal herbs, wormwood. It is from wormwood that the terpene thujone is obtained, which has been identified as the hallucinogenic compound in absinthe.

Wormwood is a shrub-like herb native to Europe and Asia. It was prescribed by Hippocrates for jaundice, anemia, rheumatism, and menstrual pains. Wormwood is mentioned 12 times in the Bible. The Russian translation for wormwood is Chernobyl, the name of the city that was the site of a nuclear meltdown in 1986.

In the Middle Ages, wormwood was used as a popular treatment for flatulence in dogs and was also known to kill intestinal worms. Wormwood had the reputation as a protection against the plague, and people slept with it in their pillows, hung it from the rafters, and burned it as a fumigant.

Modern absinthe was probably invented in 1792 by a French physician, Pierre Ordinaire, who fled to Switzerland during the French Revolution. Ordinaire settled in Couvet, a small village in western Switzerland.

He discovered the wormwood plant growing wild on his frequent horseback journeys in the countryside. Like many country doctors of the time, he prepared his own remedies and began experimenting with wormwood and other herbs. He eventually produced a 136-proof elixir, which became a popular tonic in the area. The concoction was known as La Fee Verte (the Green Fairy).

Upon Ordinaire's death, he left his secret recipe, which likely included wormwood, anise, dittany, sweet flag, melissa, coriander, veronica, chamomile, parsley, and spinach to the Henriod sisters of Couvet. The sisters then passed it on to a Frenchman, Major Dubied, in 1797. The major's daughter married a Swiss man named Pernod, who began producing absinthe based on Ordinaire's recipe. By 1805, Pernod opened a large factory, Pernod Fils, the first distillery of an anise-based liqueur in France.

The distillery got a major boost during the French-Algerian War, when French troops fighting in Algeria from 1844-47 were issued rations of absinthe as a fever preventative. It was also thought to act as a health-preserving tonic when mixed with wine and water.

The troops quickly acquired a taste for this high-octane drink. When they returned to France after the war, they brought their taste for absinthe with them. The popularity of the drink grew rapidly, resulting in the Pernods producing 20,000 liters daily by the mid-century.

Absinthe made its way to North America, probably first appearing in New Orleans in the 1830s. A popular bar at the corner of Bourbon Street and Bienville became known as the "Old Absinthe House." The history of absinthe in the New World was brief, however, since by 1907, Harper's Weekly reported that the "green curse of France" was under investigation by the U.S. Department of Agriculture. Five years later, on July 25, 1912, absinthe was banned in America. It has the distinction of being the only alcoholic drink singled out for prohibition.

In 1905, a sensational quadruple murder in Switzerland was blamed on the perpetrator's supposed addiction to absinthe. The notoriety of the crime and another absinthe-related murder a few days later incited public opinion against the liqueur. A petition quickly circulated resulting in the Swiss government banning absinthe in 1908. Belgium outlawed absinthe in 1905 and Holland followed suit in 1910.

However, in France, absinthe remained legal and popular up until World War I. In 1912, the French consumed 221,897,000 liters per year.

As early as 1864, scientists began studying the effects of absinthe on health. The initial work was performed by Dr. Valentin Magnan, a physician at the asylum of Sainte-Anne in Paris. Magnan conducted animal experiments and concluded that thujone, the essence of wormwood, was responsible in man for such diverse symptoms as amnesia, violent behavior, epileptic seizures, visual and auditory hallucinations, and brain damage.

Thujone was determined to be an isomer of camphor, which has been used for centuries in aromatherapy, treatment of asthma, muscular aches, and cardiac insufficiency, to name a few. In 1872, the British medical journal "The Lancet" stated that the principal effects of thujone were epileptiform attacks, that is, they looked like epileptic attacks.

Absinthism victims were noted to appear dazed and intellectually enfeebled. According to Scientific American, absinthe was said to "evoke new views, different experiences, and unique feelings," making it very popular with creative artists, including writers and painters. A sensation of heightened perception was reported by some users.

In order to overcome the extremely bitter taste of absinthe, a ritual evolved in which the liqueur was sweetened and diluted. A popular routine involved placing a sugar cube on a slotted spoon which was then placed across the top of a glass containing a small amount of absinthe. Cold water was then slowly poured over the sugar cube into the glass. As the clear green liqueur becomes diluted, it turns an opalescent yellow color. Many Parisienne bars and cafes became dedicated to l'heure verte (the green hour) as a daily ritual.

The Dutch painter Vincent Van Gogh was a devotee of absinthe. During the last two years of his life (before he committed suicide in 1890), Van Gogh experienced fits with hallucinations that have been historically attributed to psychosis. However, Van Gogh was an alcoholic and also abused absinthe, which likely resulted in his death.

Van Gogh's letters and the observations of friends indicate that he had an affinity for substances chemically related to thujone. His use of camphor for insomnia and

Absinthe's potential for havoc remains great, with its double threat of 160 proof alcohol plus a hallucinogenic.

at least one documented attempt to drink turpentine (which contains the terpene pinene) are examples of cravings for terpenes chemically related to thujone. Some have also suggested that the craving for terpenes was a variant of pica, an eating disorder that involves eating or craving to eat things that aren't food. This may explain the bizarre behavior of Van Gogh eating his paints.

Today, La Fee Verte appears to be making a modest comeback, although it has largely gone underground. Clandestine Swiss distillers still produce thousands of gallons of bootlegged absinthe for local consumption. Absinthe never became illegal in Spain, which was the only country where it was legally sold until the Czech Republic began production.

The revival of absinthe in Prague may in part represent experimentalism and faddism by many partakers. Many users may recall literary descriptions of the revelatory effects of absinthe, like Hemingway's hero in "For Whom the Bell Tolls," "One cap of it took the place of the evening papers, of all the old evenings in the cafes, of all the chestnut trees that would be in bloom ..."

Perhaps the fascination with absinthe is merely a passing fancy for most. In today's drug-ridden society absinthe seems almost quaint, compared to the lethality of drugs such as fentanyl. However, absinthe's potential for havoc remains great, with its double threat of 160 proof alcohol plus a hallucinogenic. The green fairy is truly a devil in disguise.

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Some think Vincent Van Gogh's hallucinations weren't psychosis but side effects absinthe, which may have contributed to his mental illness and death.



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What Are Muscle Knots?

An exercise physiologist explains what those tight little lumps are and how to get rid of them

When our muscles suffer unusual stress, knots can form. Stretches can help relieve them and help us recover from other muscle issues.



ZACHARY GILLEN

Imagine you've just completed a tough upper-body workout. Your muscles feel a bit tired, but, all in all, you're able to go about the rest of your day just fine.

The next morning, you wake up and realize the back of your shoulder blade feels stiff. When you rub your shoulder muscles, it feels like you're prodding a little gumball under your skin. Every time you try to move it around, the area feels tight, with slight pangs of pain.

Over the course of the next few days, your back slowly loosens up and eventually your shoulder returns to feeling normal. It's probably something you'd like to avoid or minimize in the future if possible, though. So what was going on with that muscle knot?

I'm an exercise physiologist. The goal of much of my research is to understand how different movements and forms of exercise place stress on the muscles. Figuring out programs to maximize performance, regardless of the training goal, goes beyond what to do during the workout—it's also about how best to prepare for and recover from the stress exercise places on the body.

Some of the most common questions I've heard during my years as a personal trainer and researcher in this field involve muscle knots. What are they and how can you get rid of them when they happen?

What Are Muscle Knots?

The knots you detect in your muscle, which may feel as small as a marble or even as large as a golf ball, are called myofascial trigger points. The fascia is the thin layer of connective tissue that surrounds the muscle.

When your muscle gets damaged—even just a little—it can cause inflammation in the bands of muscle and the fascial layer above. And that clump of inflamed tissue is a myofascial trigger point. The little lumps are typically tender to the touch and can limit your range of motion or lead to pain during various movements.

Muscle knots don't show up on medical imaging scans, and researchers are still trying to figure out the exact physiological mechanisms within the muscle that cause this reaction.

Myofascial trigger points tend to develop when a muscle is irritated by a new or more strenuous than usual repetitive motion. For example, you may develop knots in the muscles you stressed the most during a particularly intense day of exercise.

Knots can also crop up if you introduce a new movement pattern to your daily workout. Imagine adding a couple days of running to your typical weekly routine of just lifting weights. Since running is a new movement, you may notice some knots in your calves, which you've asked to do a lot of new work.

You don't need to be a gym rat, though, to be familiar with muscle knots. For instance, if you're consistently hunched over a computer all day, you may notice knots developing in your upper back and shoulders. Most people wouldn't consider sitting at a desk strenuous, but holding one position for hours at a time places stress on your muscles. Enter muscle knots.

How Do You Get Rid of Muscle Knots?

One of the simplest solutions to the problem of muscle knots is to just wait. It takes time for the muscles to adapt to a new motion or recover from stress. Usually within a week or two a muscle knot will resolve on its own.

You can also help speed the process of recovery. Some options include massage; dry needling, which involves injecting a very thin needle into the trigger point to attempt to break up some of the tissue and increase blood flow to the area; and even electrical nerve stimulation. The goal of each technique is to decrease the tautness of the fascia and muscle in the area and increase blood flow. More blood passing through provides nutrients and oxygen to the damaged tissue, enhancing recovery.

While these techniques are worth considering, there are other more cost-effective things you can do yourself at home. A fairly simple way to help to alleviate muscle knots is stretching.

Stretching may be particularly valuable if you typically sit in an awkward position all day long. Muscles held that way under consistent stress for several hours benefit from being put through different ranges of motion. For example, after sitting for a while, some simple shoulder rolls

It takes time for the muscles to adapt to a new motion or recover from stress.

and neck rotations can alleviate some of the tension in those muscles, helping to avoid or reduce the accumulation of muscle knots.

Another method you can try at home is called self-myofascial release. The idea behind it is the same as massaging, except this method can be done in the comfort of your own home using a foam roller, rolling device, a hard ball such as a lacrosse ball or softball, or even a small piece of PVC pipe.

For example, if you have knots in the quadriceps muscle group on the front of your thigh, you can lie face down on a foam roller and gently roll your leg back and forth on it. Alternatively, you can roll the device up and down the muscle group, keeping the pressure within your comfort range. Because you apply as much pressure as you like, you're able to work within your own pain tolerance—a benefit, since it can be uncomfortable to alleviate myofascial trigger points. You can use this technique across the body anywhere you have muscle knots.

While they can be annoying, muscle knots are nothing to worry about. Remember, being consistent with exercise habits and moving throughout the day can help keep knots from developing in your muscles in the first place.

If you do notice muscle knots popping up, simply stretching at the end of the day or doing some self-myofascial release techniques are simple, effective ways to help alleviate this issue and avoid future problems.

Zachary Gillen is an assistant professor of exercise physiology at Mississippi State University. This article was originally published on The Conversation.

A massage is one way to help speed up your recovery from stubborn muscle knots.



Self-myofascial release is like a massage that can be done to yourself with a foam roller, or another hard rolling device like a hard ball, or even a small piece of PVC pipe.



A fairly simple way to help alleviate muscle knots is stretching.

WISE HABITS

A Guide to Practicing Trust

Practicing trust in yourself can lead to calm, focus, and easier decision making

LEO BABAUTA

At the core of a lot of our difficulties is a lack of trust—especially trust in ourselves.

Think about these common difficulties that most of us face:

- What to focus on: We don't trust our hearts to choose what we would like to work on right now.
- Indecision: We get stuck on indecision because we don't trust ourselves to choose what we really want, and we don't trust ourselves to land on our feet if things turn out differently than we had hoped.
- Procrastination or resistance: We feel resistance to a difficult (scary) task and then avoid it, resulting in procrastination because we don't trust ourselves to be with the discomfort or trust ourselves to handle whatever comes after doing the task (handle criticism, judgment, or any other potential consequences).
- Fear or stress amid uncertainty or chaos: When things are uncertain, we'll often feel stress or fear. This is from (and understandably so) a lack of trust in ourselves to navigate that uncertainty and deal with whatever comes up.
- Finding focus: Often when we try to focus on something, we feel pulled in a thousand directions by things we need to take care of because we don't trust ourselves to take care of those things later.

If you don't face any of these problems—congratulations. You probably have a ton of trust. But most of us struggle with these on a daily basis. That means there's an incredible opportunity to practice trust.

In this guide, I'll share why we don't have trust in ourselves or others and how we might practice.

Why We Don't Have Trust

If we lack trust, we might be tempted to blame ourselves or feel there's something wrong with us. But what if we trusted that there are good reasons that we don't trust?

For example, what if we were often criticized by others when we were growing up and made to feel bad about it? It would make sense that we don't trust ourselves if other people taught us to not trust ourselves.

What if other people hurt us, betrayed us, or teased us when we were growing up? It would make sense that we don't trust others.

What if we had experiences of failure and embarrassment that felt really intense, and we learned to try to avoid those feelings? It would make sense that we wouldn't trust ourselves to be able to handle those feelings since it felt like we couldn't in the past.

Our lack of trust makes sense if we look at all the reasons we were taught to not trust. We don't have to analyze those reasons—just trust that we have good ones.

So what can we do about it?

Ways to Practice

Every difficulty is an opportunity to practice trust.

When you face any of the difficulties listed above—or any other struggle—these are amazing opportunities to practice trust.

At any moment, we can practice trust or non-trust. We're constantly making this choice.

What's the practice of trust?

It's trusting that our heart wants what it wants and that it's OK to listen to that.

It's a practice of letting go of needing things to go a certain way—of needing to be in safety or comfort.

It's trusting that we can handle whatever comes up.

It's trusting that we can be with whatever emotions come up for us.

It's trusting that others can have their emotions and be how they are, and we can be with all of that as well.

So how can we practice trust in the moment?

- When you notice an opportunity to practice (any of the difficulties listed above, for example), pause and think, "Trust."
- Take a breath. Become present.



You will gain trust if you take action despite shaky trust and learn that you'll land on your feet or deal with falling on your face.

- Feel your heart—what does it want? Can you trust what it wants?
- Can you trust yourself to navigate whatever uncertainty that comes up?
- Can you trust yourself to be with your emotions? To be with the emotions of others?

You might answer "no" to some of these, which is perfectly alright. Allow yourself to say "no" for now, if the no is very strong. But you might consider what it would be like if you did trust. What would you do if you trusted yourself? How would you view the situation differently? Could you give that a try?

This takes practice. You'll gain trust if you take action despite having shaky trust, and you'll learn that you'll land on your feet or deal with falling on your face. You'll learn to trust in yourself to be with whatever shows up, including difficult emotions in yourself or others. You'll start to trust more if you act with trust. That means a small leap of faith, to start with.

If you can start to trust, something powerful shifts. You start to make decisions more easily, and you can go through your day with more focus and calm. Things that happen aren't such a big deal and aren't so stressful. You start to flow.

Could you trust yourself to practice trust?

Leo Babauta is the author of six books and the writer of Zen Habits, a blog with over 2 million subscribers. Visit ZenHabits.net

Life experiences can leave us unable to trust ourselves and go beyond our comfort zones. Fortunately, self-trust can be cultivated.



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