Meditation

Calming a restless mind

Meditation offers an efficient relaxation program that’s been practiced across the world in most cultures for thousands of years. Meditation has the potential to enhance your well-being, improve your focus and concentration, and improve your overall quality of life.

In research studies, meditation programs have been shown to enhance memory and learning, decrease feelings of stress and anxiety, improve sleep quality, help control blood pressure, improve back pain and fatigue, decrease anger, and improve overall well-being.

At the root of things

The concept behind meditation is to train your mind to decrease its restlessness and its tendency to generate many, often negative, thoughts. Just as aerobic exercise strengthens your heart, meditation is an exercise to strengthen your mind’s focus. Training involves concentration, relaxation and task-specific exercises.

An untrained mind’s attention tends to be superficial, often disengaged, and focused on the negative. Such attention increases stress and decreases efficiency and joy in life.

Training your mind allows you to deepen your attention, focus on the present moment and appreciate your situation, rather than worrying about the past or future. Brain wave studies have demonstrated that normal brain wave patterns

**Brain wave patterns**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
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<tbody>
<tr>
<td>Beta</td>
<td>Logical thinking, problem solving</td>
</tr>
<tr>
<td>Alpha</td>
<td>Relaxed, happy, focused</td>
</tr>
<tr>
<td>Theta</td>
<td>Dream-like</td>
</tr>
<tr>
<td>Delta</td>
<td>Bliss, unconscious</td>
</tr>
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</table>

The field of neuroscience has applied names to brain wave frequencies. These frequencies are grouped together and include beta, alpha, theta and delta. The presence of these brain wave frequencies corresponds with varying states of consciousness and meditation.
awake, alert, problem-solving functions of the brain result predominantly in one type of brain wave, called the beta wave.

With meditation practice, other patterns develop involving brain rhythms associated with deep relaxation, dreaming and altered states of consciousness. Sometimes, these patterns exist together while you're awake and meditating. People who regularly practice concentrative meditation often do so for 15 to 30 minutes once or twice a day.

Types of meditation
There are two basic meditative programs to train your mind:

- **Concentrative meditation** — In this type, you sit in a safe, quiet and comfortable place and focus on a particular thought, word, image, sound, or your breath.

  To start, make an effort to sustain your attention on your chosen object for a period of time — often five to 15 minutes. An instructor may direct you to simply watch your thoughts as they arrive, as you would watch a TV screen. Early in practice, many extraneous thoughts are likely to come into your mind and may not seem to offer much benefit. Try not to forcibly suppress or obsessively track these thoughts. Gently bring your attention back to the object of your contemplation.

  As you continue your practice, the tendency of these thoughts to take you away from your primary object of focus will gradually decrease. With continued practice, you’re likely to find it relaxing and pleasing, and may also notice some of the health benefits that have been shown to occur in people who meditate. Some of the common roadblocks toward meditation practice include sleepiness, lethargy, lack of time and body discomfort. In general, most of these difficulties tend to decrease in intensity over time.

- **Mindfulness meditation** — Mindfulness is staying focused and completely absorbed in the task at hand. It means staying in the moment and gently pushing away worries about the past or future.

  This type of meditation is based on developing a state of being mindful, or having an increased awareness and acceptance of living in the present moment. You cultivate an ability to observe your thoughts and emotions and let them pass at will without judgment. Training your attention and refining interpretations constitute two essential steps toward cultivating mindfulness.

  Deeper attention that’s flexible, balanced and under the control of your will is likely to enhance your experience. Awareness is coupled with interpretations based on higher principles such as acceptance, compassion and forgiveness, and mindfulness.

Finding a teacher
Look for a meditation program guided by an instructor with a long-standing practice and experience in teaching meditation.

In many cities you can find groups that regularly meet to practice meditation. Several DVDs and self-help books also are available that can teach meditation.

- **Log On: Two Steps to Mindful Awareness**, by Amit Sood, a Mayo Clinic physician
- **Coming to Our Senses: Healing Ourselves and the World Through Mindfulness**, by Jon Kabat-Zinn, Ph.D.

Mindfulness-based stress reduction
Researchers at the University of Massachusetts Medical School have developed a program called mindfulness-based stress reduction (MBSR) in which students are taught a variety of meditation techniques to reduce stress.

Typically it takes about eight weeks to learn the techniques. Research studies suggest that this program is effective for reducing many problems that are considered stress related.

MBSR has been used to help people cope with problems including chronic pain, illnesses, anxiety, insomnia, fatigue, high blood pressure, headaches and depression.
not on excessive prejudices. Such attention and interpretation in combination is likely to help you cultivate a mindful awareness that helps you develop resilience.

Getting started

Seated-breath-work meditation is a key component of many types of meditation.

Start by comfortably sitting on the floor or a straight-backed chair. If you’re using a chair, if possible, don’t lean back. Level your chin and elongate the spine. Meditation with three-part breathing involves:

- Gradually deepening your breathing, allowing your breaths to flow smoothly one into the next.
- Begin abdominal breathing by relaxing your stomach and letting your diaphragm move freely. Build on this breathing with mid-chest breathing. Let your rib cage expand out to the sides, bringing additional air into the lungs in the most natural way.
- Add upper chest breathing to the first two. Let your breath flow all the way up to lift the collarbones. Repeat this three-part breathing process ten or more times to deeply relax your body.

While practicing this breathing method, concentrate on the natural flow of your breath, whether rhythmic or irregular, deep or shallow. Once three-part breathing is established, broaden your focus to include all the sensations of breathing. Then broaden your awareness further to include all your sensations.

In this type of meditation, you remain in the present by concentrating on your breath. Resist the temptation to cling to what’s pleasant and push away what’s painful. If your focus drifts, bring your attention back to your breathing to regain focus on the moment. Gradually allow awareness to broaden outward once again.

At the end of a session, drop all technique and stop any attempt to focus your mind. End your session with a prayer or affirmation of thankfulness for your experience, whatever it may have been.

Developing breath awareness

To develop awareness of your breathing, follow these steps:

- Sit in a comfortable, dimly lit, quiet and safe place with your eyes closed. Choose any posture you like other than lying on a bed, because you might fall asleep.
- Spend the first two minutes paying attention to all the sounds you hear in the environment. Allow your awareness to travel to the source of the sounds. Avoid making any judgments about the sounds.
- Gradually settle your awareness on your breath.
- Practice deep, slow, diaphragmatic breathing for the duration of the exercise.
- Adapt a comfortable breathing rate and depth.
- Visualize your breath at the tip of your nostrils. Feel the subtle, cool breath as it flows in and a warm breath out.
- Keep your attention at the tip of the nostrils for the next few minutes watching inward and outward flowing breath.
- Now allow your breath to become subtle until you reach a point when you just about don’t feel the flow.
- Keep your awareness rested on the tip of the nostrils with this subtle breath for the next few minutes.
- Continue as long as you like, but at least 10 minutes.

Health tips

Preventing bedsores

A pressure ulcer (bedsore) is an injury to tissues, such as skin and muscle, caused by constant pressure. The constant pressure decreases the amount of blood flow to tissues. Without enough blood flow, the affected tissues become starved for nutrients and oxygen. Anytime you or a loved one is confined to bed or a wheelchair, practice these tips:

- Change position frequently — Shift positions every 15 to 30 minutes while you’re in a chair or wheelchair and at least once every two hours if you’re in bed.
- Support your body correctly — On your side, lie propped up at a 30-degree angle and use pillows to keep your knees and ankles from touching. On your back, support your legs with a pillow under your calf muscles. Ask your doctor about mattresses or wheelchair pads that help distribute weight.
- Avoid raising the head of your bed more than 30 degrees — Any higher and you may slide down, putting you at risk of friction-type injuries.
- Inspect skin daily — Look for red or discolored, bruise-like spots, especially on the heels, buttocks, hips, back, elbows and shoulders. If you find one, keep it clean and keep pressure off the area.
- Pamper skin — Keep skin clean and moisturized and wear clean, comfortable clothes without thick seams or other protrusions.
Radiation from medical tests

Putting risk into perspective

One of the great advances of medical technology has been the advent of modern X-ray machines such as computerized tomography (CT) scanners that use radiation to generate images of the inside of your body.

Medical radiation doses are small. But as the volume of radiation-based tests and procedures has increased in the past 30 years, some have questioned whether repeated exposure of small doses is adding increasing risk for some.

The sources

Radiation is naturally present in the environment. It comes from cosmic sources such as the sun and from rocks and minerals. It’s even naturally present in air, water, food and the human body. The average annual exposure each person has from natural radiation from all sources is estimated to be about 3 millisieverts (mSv). However, depending on where you live, you may be exposed to more or less. For example, radon gas is the largest single source of natural radiation for most people, and home radon levels can vary widely.

In addition to natural radiation, a number of nonmedical, man-made radiation sources exist. These include such varied sources as weapons-testing fallout, industrial sources, smoke detectors, luminous watch dials, tobacco and fertilizers. All combined, these sources add less than 0.02 mSv of radiation to the average yearly dose.

Up until about the early 1980s, medical radiation didn’t amount to much in terms of average yearly exposure. Before then, the basic X-

Traffic exposure — Heart attack trigger?

People who have an elevated risk of heart attack may be at even higher risk shortly after driving or riding in heavy traffic. Those are findings from a German study reported at the American Heart Association’s annual conference in March 2009.

Researchers drew their data from a group of more than 1,400 people who had heart attacks during a period of nearly five years. Those who spent time in traffic — whether driving, taking public transportation or riding a bicycle — were more than three times as likely to have been in traffic within an hour of the start of their heart attack symptoms. Researchers speculate potential factors might be exhaust and air pollutants associated with traffic, the stress of being in traffic or a combination of the two. Earlier studies have linked chronic exposure to stress and noise as a risk factor for cardiovascular diseases.

Mayo Clinic cardiologists say the findings are of interest and add to the information already known of risks related to exposure to air pollution and high stress.

Active Amish walk away from obesity genes

A recent study of Pennsylvania Amish shows that no matter what your genetics, obesity doesn’t have to be your destiny.

The study, published in the Sept. 8, 2008, issue of Archives of Internal Medicine, involved 704 Old Order Amish adults. They were tested for gene variations that increase susceptibility to weight gain.

In general, the Amish in the study share similar dietary habits. They also generally live an agrarian lifestyle and reject modern conveniences, including cars. Still, some are quite sedentary and others are very active with manual labor, homemaking and other activities.

Predictably, those who were more sedentary and carried the obesity genes had a much higher average body mass index than did those in the low-activity group who didn’t carry the genes.

However, those in the high-activity group who did carry the obesity genes had an average body mass index similar to the highly active who didn’t carry obesity genes. In other words, physical activity — equivalent to 3 to 4 hours a day of moderate activity such as brisk walking, housecleaning or gardening — negated the effect of the genes.

Mayo Clinic experts say this study helps demonstrate the power of an active lifestyle. They also note that routine physical activity — and planned exercise — is critically important for everyone, regardless of your genetics, and is best coupled with a healthy, plant-based diet that emphasizes portion control.

When it comes to staying active, try learning from the Amish. Before you get in the car, ask yourself if you can walk or bicycle instead. Substitute an hour of walking for an hour of television. Take the stairs instead of an elevator. Use a push mower instead of a riding one. Put some hustle into your daily chores. In short, use your muscles and increase your heart rate every chance you get.
ray tests — such as dental X-rays, chest X-rays, mammograms and other tests — were the mainstay, and they exposed you to only a minuscule amount of radiation.

Since then, use of medical radiation has expanded substantially with the number of CT scans performed roughly doubling. More scans and procedures are performed because the more-sensitive images that can be produced with newer X-ray equipment provide so much useful information.

This makes diagnosis more accurate and can allow for far less arduous procedures, such as widening a narrowed heart artery using X-ray imaging to guide the use of small instruments, rather than having to undergo open-heart surgery. Still, to obtain these benefits, certain new technologies need to expose you to more radiation than did basic X-ray tests. Thus, the total amount of radiation from medical exams and procedures in the U.S. has increased almost six times since the 1980s.

Risk and benefit

It’s not known precisely at what levels radiation begins to significantly increase cancer risk. Some evidence shows that below about 100 mSv, there’s no increase in risk — or that the increased risk is so small that it’s not possible to give an accurate estimate of risk.

However, just to be on the safe side, radiation safety organizations assume that the risk increases whenever radiation dose increases. If that’s correct, it would mean even the smallest doses of radiation could cause cancer, even though the risk would be very low.

Using this assumption, it’s been estimated that the 10 mSv of radiation exposure that occurs with a basic CT scan of the abdomen and pelvis or a cardiac nuclear stress test would increase the lifetime risk of an adult dying of cancer by about 0.05 percent. That increase would be added to the 21 percent lifetime chance of dying from a cancer of natural cause, changing your risk of dying of cancer from 21 percent to 21.05 percent. To put this risk into better perspective, consider that your lifetime risk of dying of drowning is 0.09 percent, a pedestrian accident is 0.16 percent and a bicycling accident is 0.02 percent.

In addition, the risk of radiation exposure must be weighed against other risks to your health. For example, there’s the risk of having a life-threatening problem go undetected or untreated if you didn’t have the scan or procedure. There’s also risk of having a surgical procedure that was unneeded or more difficult than was necessary.

The bottom line is that there’s no reason to forgo a radiation-based medical test that could better your health or prolong your life. Scientists haven’t been able to satisfactorily prove that the low doses of radiation used in medical settings actually increase cancer risk. And if risk is increased, the risk is very small — especially when compared with the substantial benefit resulting from most radiation-based tests and procedures.
Prostatitis

The trouble with inflammation

A lot of men are familiar with certain prostate-related problems, such as the risk of prostate enlargement and prostate cancer. But prostatitis is a painful syndrome that men seldom hear about.

Prostatitis is a general term for infection or inflammation of the prostate gland. There are several forms of prostatitis. Although these disorders generally aren’t life-threatening, they’re less understood and tend to be somewhat difficult to diagnose and treat.

Inflammation issues

The risk of prostatitis increases if you’ve had a recent infection of the bladder or urethra, recently had a catheter inserted into your urethra, or tend to not empty your bladder completely or frequently enough. In a small number of men, vigorous activities such as jogging, bicycling, horseback riding or heavy lifting may promote prostatitis.

Although prostatitis is more often seen in men between 18 and 50, it can affect older men, too. As many as 12 percent of men in the United States see a doctor sometime during their lives due to prostatitis.

Prostatitis can be challenging to diagnose. A digital rectal exam (DRE) allows your doctor to determine if the gland is inflamed or infected. The gland may be massaged, and then you may be asked to void in order to collect fluid from the prostate to check for infection. Massage — and even an exam — aren’t recommended if you have a very acute infection.

Sorting it out

There are four forms of prostatitis, and the signs and symptoms vary:

- **Acute bacterial prostatitis** — The least common but most evident form of the disease is acute bacterial prostatitis. This is due to infection most often from bacteria normally found in the urinary tract or large intestine. It typically shows up with sudden signs and symptoms. These may include fever, chills, flu-like symptoms, lower back and genital-area pain, urinary urgency, frequent urination, blood-tinged urine, painful ejaculation, difficulty urinating due to pain, a burning sensation, or diminished flow. Immediate medical care is important, as serious problems may develop.

- **Chronic bacterial prostatitis** — This, too, is due to bacterial infection, although what causes it is less certain. It sometimes develops after acute prostatitis, possibly due to bacteria in the urinary tract or from a bloodstream infection. Signs and symptoms are very similar to the acute form, although often less severe and with more gradual onset.

- **Chronic pelvic pain syndrome (formerly called chronic prostatitis)** — The most common type of prostatitis is also the most difficult to diagnose and treat because the cause isn’t fully known. The spectrum of signs and symptoms is very similar to the chronic bacterial form except that no bacteria are detectable in urine or prostate fluid, and it’s unlikely a fever will develop. Treatment focuses on breaking the cycle of recurrent and persistent signs and symptoms due to inflammation or pelvic floor pain.

- **Asymptomatic inflammatory prostatitis** — There are no symptoms with this type. It may be discovered while looking for the cause of elevated prostate-specific antigen (PSA).

Treatment options

Treatment is geared to the form of prostatitis. Antibiotics are used to treat all forms of symptomatic prostatitis. For the acute bacterial form, a few weeks of antibiotics may be all that’s needed, depending on how well you respond.

The duration of antibiotic treatment for the chronic bacterial form usually takes longer — from weeks to months — and may need repeating if the infection returns.

The prostate gland is made up of a network of glands. When it has been infected, calcium deposits also may occur, which can make it difficult to get effective levels of antibiotics to prostate tissue. In some men, a regimen of daily dosing of antibiotics may be needed for an extended period to control infection and reduce recurrent episodes.

Other medications that may provide symptom relief include:

- **Alpha blockers**, which can help improve urine flow.

- **Nonprescription pain relievers**, which may ease discomfort and possibly help break the pain cycle brought on by sensitized nerves.

- **Muscle relaxants**, which may help relieve pelvic muscle spasms that can accompany the pain.

In addition, a trained therapist can teach you specific exercises and relaxation techniques to relieve lower pelvic muscle tension. Stress-reduction techniques, such as biofeedback, may help. Applying warm compresses or soaking in warm water also may help.
Iron overload

Subtle signs, easy treatment

Joint pain, fatigue, weakness and loss of interest in sex — is this just aging and being out of shape, or is it something else?

A huge array of problems could cause symptoms such as these. But one of the possible causes that can be overlooked is hemochromatosis (he-mo-kro-mah-TOE-sis). This is a genetic disorder that causes your body to absorb and store too much iron — potentially leading to serious health problems over time.

Once suspected, detecting hemochromatosis is fairly easy, and so is treatment. If it’s caught early enough — and it usually is — iron stores can usually be brought back to normal levels easily without lasting health problems.

Pumping iron

Hemochromatosis is the most common genetic disorder in the United States, most frequently occurring in those of Northern European descent. The disease is typically caused by a mutation of the HFE gene — one of the genes that control how much iron you absorb from food. Hemochromatosis occurs in those who inherit two copies of a mutated HFE gene, one from each parent. Carriers of one mutated gene don’t develop the disease.

If you have hemochromatosis, your body may absorb more iron from your diet than would be absorbed by someone without the disease. Women tend to lose iron in the first few decades of adulthood from pregnancy, breast-feeding and menstrual bleeding. Still, the loss usually isn’t enough to offset the additional gain. Over time, the excess iron will be stored in various organs, mainly the liver and heart.

Without treatment, you may gradually accumulate up to 20 times the normal amount of iron over several decades. When iron stores begin to reach these levels, they can cause problems including irreversible scarring of the liver (cirrhosis), liver cancer, diabetes, heart failure, heart rhythm problems, arthritis, impotence or darkening of the skin.

First stages

Fortunately, many fewer people are reaching advanced stages of iron overload than in the past. Thanks to routine blood tests, genetic testing and heightened awareness, 75 percent of those with hemochromatosis are diagnosed before symptoms even begin. Still, sometimes it goes undetected. It may cause no symptoms in the early stages, and only vague signs and symptoms as iron accumulates, including:

- Joint pain or arthritis
- Fatigue
- Loss of sex drive or, in men, erectile dysfunction

Blood removal as treatment

Bringing iron levels back down to normal levels can be done by removing blood on a regular basis, just as if you were donating it. At first, about 1 pint of blood is removed every one to two weeks until the iron markers in your blood reach normal levels. This can take anywhere from several weeks to a year or more. Once a normal iron level is established, you’ll need to have a pint of blood drawn periodically, usually two to four times a year.

Drugs are available to treat hemochromatosis, but they’re seldom used because drawing blood is simpler and equally effective.

Lasting effects

Normalizing iron levels can drastically improve or resolve weakness, fatigue, darkening of the skin — and possibly even early-stage liver and heart disease. Unfortunately, if heavy scarring of the liver (cirrhosis) has developed, it may be permanent — and the increased risk of liver cancer associated with cirrhosis will remain.

When to screen

Detailed screening for hemochromatosis isn’t typically done.

However, iron-related blood tests and HFE gene testing are recommended for siblings of someone who has hemochromatosis. It’s also recommended that parents, children and other close relatives of someone with hemochromatosis have iron-related blood tests (transferrin saturation and ferritin).

Talk to your doctor about having a blood test if you have one of the rarer signs of iron overload, such as arthritis, heart disease, elevated liver enzymes, impotence or diabetes.

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Second opinion

Questions and our answers

Q: What are the benefits of colon cleansing? I’ve seen a number of advertisements promoting it for good health and as a way to clear toxins from your body.

A: If you’re preparing for a medical test that requires a clear view of your intestinal lining, then proper colon cleansing in preparation for that test — and under the direction of your doctor — is beneficial. Otherwise, there’s generally no need for colon cleansing because:

■ It’s unnecessary — The colon is a master eliminator. It’s a lengthy, muscular tube that’s constantly moving contents along using a pattern of progressive muscle contraction and relaxation called peristalsis (per ih-STAWL-sis). Your colon doesn’t require enemas, special diets, liquid concoctions or pills to eliminate waste material and bacteria.

■ It may be harmful — Normally, your colon absorbs water and sodium to maintain your fluid and electrolyte balance. This may be disrupted by some colon-cleansing regimens, resulting in dehydration and salt depletion. For example, sodium phosphate bowel preparations can lead to kidney problems. In addition, problems such as anemia and colon perforation are possible with long-term or excessive colon-cleansing programs.

Q: I enjoy a 20-minute nap after lunch most days, and it doesn’t interfere with my sleep at night. However, I have friends who say they don’t sleep well at night if they nap. Are there guidelines when it comes to daytime napping?

A: To nap or not to nap is highly individualized. Studies go back and forth on the correct answer. As long as you’re not finding it difficult to get the sleep you need at night, your short nap in the early afternoon is probably just fine. As a general rule, the American Academy of Sleep Medicine suggests that older adults who feel the need for a nap limit the time to less than one hour and nap no later than 3 p.m.

The issue of daytime napping can be even more complex for older adults who may be managing various health conditions, both known and unknown. Excessive daytime sleepiness, waking up tired every day or a change from your normal pattern to feeling fatigued throughout the day may indicate an underlying health condition that needs to be addressed with your doctor.

Common problems related to excessive fatigue include sleep apnea, depression, an underactive thyroid (hypothyroidism), diabetes, anemia, autoimmune illnesses and even some cancers.

Q: I recently got the pneumonia vaccine. Do I need another each year, as I do with the flu vaccine?

A: No. For most people, a one-time pneumonia (pneumococcal) vaccination is recommended at age 65 or older. That’s all you’ll ever need.

However, certain people may benefit from vaccination at an earlier age. This includes those with a chronic illness such as heart, lung or kidney disease, diabetes, people with a weakened immune system, and those who smoke.

In certain situations, a second “booster” dose of the vaccine may be recommended. You may need a booster dose if it has been five years since you received the first dose of the pneumococcal vaccine and you:

■ Received your first dose before age 65
■ Have a weakened immune system, have had your spleen removed or have a blood disorder called sickle cell disease

More than two doses of the pneumococcal vaccine as an adult doesn’t help protect against pneumonia and can cause side effects such as a swollen arm or a fever. The rare exception might be if you’ve had a bone marrow transplant.

Have a question or comment?
We appreciate every letter sent to Second Opinion but cannot publish an answer to each question or respond to requests on individual medical conditions. Editorial comments can be directed to:

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