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SPECIAL HEALTH REPORT

# An Introduction to Yoga

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# AN INTRODUCTION TO YOGA

SPECIAL HEALTH REPORT

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Harvard Health Publications  
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*Trusted advice for a healthier life*

Dear Reader,

Yoga may be more than 2,000 years old, but it's had a major growth spurt in the United States in recent years. Between 2012 and 2016 alone, the number of Americans doing yoga jumped by 80%, from 20.4 million to 36.7 million. Even kids are rolling out yoga mats—1.7 million of them, according to the latest figures from the National Center for Health Statistics.

The growing popularity of yoga can be seen in the wide variety of places where classes are now available. Yoga studios, once found mainly in large cities, are popping up in small towns. Yoga is being offered in gyms, hospitals, schools, churches, parks, retirement homes, libraries, military bases, and corporate boardrooms. There are even practice rooms in major airports like Chicago O'Hare, Dallas–Fort Worth, and San Francisco. Perhaps most impressive, some doctors are prescribing yoga to certain patients. In fact, experimental programs that broadcast live classes are enabling people with severe conditions like heart failure to do yoga at home.

The government and major corporations are paying attention, too. Since 2009, yoga's been done on the White House lawn at the annual Easter Egg Roll. Federal agencies are funding research on the health benefits of yoga. In 2013, the Smithsonian Institution presented a yoga-themed art exhibition titled *Yoga: The Art of Transformation*. In the corporate world, companies are using yoga to sell their products. During the 2016 Super Bowl, advertisements for Michelob Ultra, Advil, and Toyota Prius featured or mentioned either yoga or meditation, a key component of yoga. Yoga pants are even starting to replace jeans as everyday wear.

Although New Agers and celebrities were among the first Westerners to adopt yoga, the practice is now accessible to all. That's welcome news, because there are many good reasons to do it. Yoga can ease pain, lower blood pressure, boost immunity, reduce anxiety, and protect you against stress—to name just a few of its many benefits.

But given so many different types of yoga, and so many classes, DVDs, and books on the subject, trying to choose a style of yoga and find an appropriate way to learn it can be overwhelming. You may also feel intimidated by many of the images that portray yoga as something for only the young, the slim, and the incredibly flexible. How do you know where to begin? What's right for you? This report answers those questions and presents an introductory program that anyone can do. You don't have to stand on your head or twist yourself into knots to reap the benefits of yoga. Here's all the information you need to get started—safely!

Sincerely,

Sat Bir Singh Khalsa, Ph.D.  
*Medical Editor*

Lauren E. Elson, M.D.  
*Medical Editor*

# Why practice yoga?

Yoga may be the antidote for what ails you. And we're not just talking about a single problem like back pain or insomnia. According to research, up to 90% of all doctor visits can be attributed to stress-related complaints. In our always-plugged-in, stressed-out lives, yoga provides the respite to make you feel better—not just physically, but mentally and emotionally, too. It is arguably the one tool that we have that simultaneously improves strength, balance, and flexibility, while helping to dial back negative self-talk and ruminations as well as stress from deadlines, financial issues, relationship struggles, and other problems. No pill has the power to improve so many areas of your life at once. Imagine what could happen if you used yoga like you use your toothbrush—for routine self-care, on a daily basis.

In contrast to the daily pressures and demands of modern life, yoga gives you an opportunity to step back and simply be present in the moment—and science is discovering a myriad of benefits to doing that. Here are some of the demonstrated ways that yoga can help you:

- **Improved health.** Yoga works on multiple systems of the body at once, so its effects are widespread. Among other things, it can reduce your risk of heart disease and boost your immunity, while easing back pain and helping to conquer stress eating.
- **Greater well-being.** Several studies show that the more frequently you practice yoga, the more you experience positive emotions, along with greater satisfaction in life, joy, energy, improved quality of life, and an enhanced sense of well-being.
- **Savings in health care costs.** According to a

2015 Harvard study in the journal *PLOS One*, when researchers compared medical costs for 4,400 people before and after relaxation training, which included meditation and yoga, they found that people used 43% fewer medical services and reaped estimated savings ranging from \$640 to \$25,500 per person each year.



Yoga is more than just a workout. It's a mind-body practice with so many benefits that it has become one of the top 10 complementary approaches to health in this country.

And yoga is easier to do than you might think. Photographs of advanced yogic practices may intimidate you, with their gravity-defying postures and pretzel-like contortions. However, basic yoga is accessible to almost everyone and can even be done in a chair. In fact, the more physical limitations you have, the more important it

may be for you to try yoga, with its many benefits.

## What is yoga?

Yoga means many things to many people. Literally, the Sanskrit term means “to yoke,” but other definitions include to hold, to join, to unite, and to cause divine union. According to some experts, the term yoga probably has more meanings than any other Sanskrit word. So it comes as no surprise that there is some confusion about what yoga really is.

Most Americans think of yoga as a workout, focusing primarily on the physical practice that is portrayed in media images. Four of the top five reasons that people start yoga are physical ones—flexibility, general fitness, health improvements, and physical fitness, according to the 2012 Yoga in America survey conducted by *Yoga Journal*. (The final one is stress relief.)

But yoga is more than just a workout. Yoga is a mind-body practice that has become one of the top 10 complementary approaches to health in this country, according to the National Institutes of Health. It's an integration of mind, body, and spirit. Its goals are to cultivate balance, calm, harmony, and awareness—and, in classic yoga traditions, to strive for the attainment of selflessness and spiritual enlightenment.

At the heart of it, yoga is about personal transformation. For those who focus mainly on the physical postures, the transformation may be about getting stronger or more flexible—and even gentle forms of yoga can help you with these goals. But the true practice of yoga goes beyond that, combining postures with breathing exercises, relaxation, and meditation. By reflecting inwardly, you connect with yourself and the world around you from a different perspective. This self-observation can help you to understand and better respond to or even resolve personal conflicts, anxieties, hopes, and fears. In this manner, yoga can bring more calmness, compassion, and peace to your everyday activities and interactions with others.

For some people, the transformation of yoga involves an entire lifestyle. Such a lifestyle is not about living in yoga pants and taking classes regularly, but about cultivating balance, mindfulness, and healthy behaviors such as eating a vegetarian or vegan diet, drinking little or no alcohol, and abstaining from tobacco.

However, while yoga has traditionally been associated with Hinduism and Buddhism, it is not a religion—although it has a philosophical basis that many consider spiritual. In one survey, about 37% of respondents listed “seeking a spiritual experience” as a reason for doing yoga. But the spirituality of yoga does not conflict with religious beliefs or affiliation. Yoga is accepting of all religions and can be combined with any of them. In fact, practicing yoga, which is built on the promotion of being kind and compassionate toward yourself and others, may enable you to better fulfill the tenets of your own religious faith, whatever that may be.

For all these reasons, it's not surprising to learn that yoga differs from a traditional workout in some important ways. For most workouts, the goal is to do

more and work harder. Yoga is more about undoing—relaxing, releasing, and letting go. You don't have to break a sweat or compete with other people. In fact, when you stop doing that, you're able to go deeper into your practice and reap more benefits. Instead of letting your mind wander or watching a TV monitor while you're on the treadmill at the gym, you will engage more fully in what you are doing in the present moment. When you're focusing in this manner, you are more likely to experience peace, calmness, and joy. Many people take up yoga as a workout, but they stick with it because it makes them happier.

## The four components of yoga

Part of the reason yoga has such broad-ranging benefits is that it has not just one component, but four: postures, breathing practices, deep relaxation, and meditation. Some styles of yoga and some instructors may put a greater emphasis on one component or another. For example, a gym class will likely emphasize the physical postures. But traditional practices include all of them, and you will receive greater benefits if you include more of these components.

### Postures (asanas)

These are the physical positions such as warrior, downward-facing dog, and tree pose that most people associate with a yoga practice. There are standing poses, seated postures, supine positions, forward folds, back bends, balance poses, hip-openers, twists, and inversions. Some of the postures and movements are large and overt, while others are small and subtle—and some are even purely internal or imagined motion. In different types of yoga, asanas are executed in a variety of ways. Some involve holding postures for several minutes. Others require you to move rapidly from one pose to another. No matter how the postures are being done, proper alignment is key to avoiding injuries and maximizing results.

The benefits from postures and movement include improved range of motion, strength, endurance, flexibility, and balance. In addition, they promote body awareness, both of internal sensations and, externally, of your body's orientation in the space around it.

## **Breathing practices (pranayama)**

In many modern yoga practices, the breath is linked to movement as you flow from one posture to the next. But yoga also includes a number of breathing techniques that may be practiced on their own without movement—ranging from very slow and deep breathing to rapid, shallower breaths. In meditation, the breath is often a focal point to help you develop awareness. The type of breathing you do usually depends upon the style of yoga you practice and the desired effect. Some breathing techniques can even be performed throughout the day—for example, while you’re driving or when you’re at work—as a way to calm down and release tension.

Your breath can have a direct physiological effect on your body. Slow, rhythmic breathing activates your parasympathetic nervous system, which promotes a more balanced, relaxed state. Your heart rate slows, and hormones that promote feelings of calm and social bonding increase. The opposite happens with fast, superficial patterns of breathing. Rapid, shallow breaths stimulate the sympathetic nervous system, which governs the fight-or-flight response. As a result, heart rate increases, and stress hormones are released.

The most common breathing patterns in yoga are slow and rhythmic and are generally safe for beginners. Before you try more intense or rapid breathing practices (such as the breath of fire), check with your doctor if you have cardiac or respiratory problems, high blood pressure, diabetes, dizziness, or digestive issues such as ulcers or colitis. It is also best to practice more vigorous breathing techniques under the instruction of a qualified yoga teacher.

## **Deep relaxation**

While you should feel more relaxed as a session of yoga progresses, specific relaxation techniques are often used at the end of a practice while you lie on your back in a posture called corpse pose (see page 41). A common technique is progressive muscle relaxation, which involves sequentially and completely relaxing various muscle groups throughout the body.

Yoga nidra is another relaxation technique that combines relaxation with meditation, breath awareness, or guided imagery. It has been referred to as the

ultimate relaxation, taking you all the way to a near-sleep-like state.

When you are able to relax your body fully, releasing tension from muscles that you didn’t even realize were tense, you release a certain amount of stress and anxiety from your mind as well. The result can be increased energy and mental focus.

## **Meditation**

Traditionally, the purpose of the preceding three components of yoga—postures, breathing, and deep relaxation—was to prepare a person for meditation, the final component. Postures, breathing, and relaxation can help rid you from external distractions and tension in your body, thus enabling better internal focus.

Many experts consider meditation to be the most important component of yoga, especially in our 24/7 culture, because it provides a much-needed breather for our overworked, overstimulated brains. Brain-imaging studies show that during meditation people can engage the frontal lobe connections that directly affect the limbic system, the part of the brain that controls emotions. The resulting changes in brain activity—and, over the long term, even in brain structure—enable you to better manage stress and to handle negative emotions like fear, anger, depression, and anxiety in more positive ways.

There are many different types of meditation, but a common way to meditate is to focus on a target such as a mantra, your breath, or a candle. It is common, especially when you are just learning to meditate, for your mind to wander and for thoughts like “I need to pay the electric bill” to pop into your head. That’s okay. Simply acknowledge the thought and bring your focus back to your target without being judgmental or trying to analyze it. Some instructors use guided meditations such as loving-kindness (see page 46), in which they talk you through a mental exercise of sending compassion and kindness to others. Or they may use guided imagery, describing a location such as a beach and sensations such as the warmth of the sun for you to imagine as you meditate.

If meditation is part of a yoga session, it is generally done at the end. However, you can also practice meditation throughout a session by focusing your

attention on either the movements you are doing or on your breath. You can meditate while sitting, lying, standing, or even moving, once you are experienced. Ultimately, the goal is to carry over this practice into daily living, so that you go about your day more mindfully. While eating dinner, for example, you're paying attention to the tastes and textures of your food, thus deriving deeper satisfaction from them, rather than working or surfing the Internet while you eat and largely ignoring the food you're putting in your mouth.

### The wisdom of combining all four components

Each of these four practices—postures, breathing exercises, deep relaxation, and meditation—affects you in a different way, but the effects are complementary. Combined, they can be quite powerful.

**Physical and mental fitness.** Your balance, flexibility, strength, coordination, and breathing capacity improve. These changes result primarily from the physical postures and breathing techniques.

#### Better management of emotions and stress.

Volatile emotions become more stable. You handle stress better. You're more resilient when faced with problems. Your self-efficacy—that is, your belief in your ability to function effectively—increases. Meditation and breath regulation play key roles in these changes, but all four components of yoga contribute.

**Mind-body awareness or mindfulness.** As you tune in to the subtle cues of your body, you become more aware of the consequences of your behaviors. For example, when you eat a lot of junk food, you notice that your body doesn't feel good. By contrast, when you do something positive like exercise, you're more aware of the physical and mental benefits that flow from it. As a result, you start to gravitate toward positive behaviors and away from negative ones. Meditation is the primary component that promotes mind-body awareness.

**Spirituality.** This deeper experience comes with more practice and creates a sense of unity, oneness, peace, harmony, flow, or even expanded consciousness. You gain more meaning and purpose in your life. Increased spirituality can be transformative, influencing your values, your relationships, your goals, and the way you live your life.

## A brief history of yoga

Scholars believe that yoga has been practiced in India since before recorded history. Early yogic teachings focused on understanding the world by promoting harmonious relationships with nature and appealing for peace in human interactions. It wasn't until about 2,000 years ago that Patanjali, an Indian sage, collected the existing practices and writings into the *Yoga Sutras*. This compilation provides the framework on which most yoga is based.

In earlier eras, yoga practices embodied a thoroughly integrated approach. Yoga was a contemplative practice that combined in one system the goals of improved health, self-discovery, and spiritual self-understanding, leading to a deeper life and spiritual experience. The meditative and philosophical dimensions of yoga were at the heart of the practice.

While postures were historically part of yoga, they became more central to many people's practice in the late 1800s and early 1900s, as yoga became more widely practiced in India. Additional postures were added and others were modified, influenced by British military calisthenics and regional gymnastic and wrestling traditions. At the same time, the physical benefits they provided were promoted more. It was also during this period that the United States got its first significant glimpse of this ancient practice, when Swami Vivekananda, an Indian teacher and yogi, visited America in the 1890s and delivered lectures across the country on yogic philosophy and practices. But yoga's image wasn't always favorable. It was viewed

**Part of the reason yoga has such broad-ranging benefits is that it has not just one component, but four—postures, breathing practices, deep relaxation, and meditation. Each of these has different effects. Combined, they are quite powerful.**

by many as a form of circus-like entertainment, associated with acrobatic feats and superhuman powers such as levitating or reading people's minds.

It wasn't until the late 1960s and 1970s that yoga started to gain a foothold in the United States. The influential yogi Swami Satchidananda gave the opening address at Woodstock in 1969. "Let us not fight for peace, but let us find peace within ourselves first," he said. "The future of the world is in your hands." He then led the crowd of approximately 500,000 in a chant followed by a minute of silence. His words have been said to have shaped an entire generation. However, yoga still remained on the fringe for another decade or so.

Yoga became more accepted and mainstream in the 1980s and 1990s, partially because of research by cardiologist Dean Ornish showing that, as part of a healthy lifestyle program, it could help to reverse heart disease. With this, more people sought out yoga as a workout or for its physical healing benefits. But more recently, the emotional and spiritual side of yoga has made a resurgence, as yoga has transitioned from purely a fitness activity to a holistic wellness practice, emphasizing the diversity of benefits it has to offer.

It's fair to say that yoga is now a worldwide phenomenon. In an address to the United Nations Gen-

eral Assembly in September 2014, India's Prime Minister Narendra Modi called yoga "India's gift to the world" and urged the organization to create an International Day of Yoga on June 21, the summer solstice. Less than three months later, the assembly did so, noting that yoga "provides a holistic approach to health and well-being" and that wider dissemination of information about its benefits would be beneficial for world health.

On the first International Day of Yoga in 2015, millions of people took part in yoga classes around the world—in Beijing, Bangkok, Kuala Lumpur, even under the Eiffel Tower in Paris. Classes were also held across the United States in a variety of locations, including the National Mall in Washington, D.C., and the United Nations Plaza and Times Square in New York City. India itself held an outdoor class in front of the government buildings in New Delhi that achieved two records in the Guinness Book of World Records—one for the largest yoga class ever (35,985 participants) and the other for the most nationalities participating (a total of 84).

As science begins to document the wide-ranging benefits of yoga, it seems likely that the number of people engaging in this ancient practice will only grow. The next chapter delves into that evolving research. ♥

# The health benefits of yoga

The list of yoga's benefits is quite long and continually growing as more research is done. But studies don't tell the whole story.

When it comes to scientific research, yoga is a tricky topic. Many of the early studies were very small, were poorly designed, or didn't have control groups that would provide a basis for comparison. While the quantity and quality of research is improving, yoga presents a challenge for scientists. For example, there are many types of yoga (see "Which type of yoga is right for you?" on page 17). The findings of a study on one style of yoga may or may not apply to another one. Even within a specific type of yoga, classes can vary greatly. Some instructors spend more time on postures, while others devote a larger portion of the class to meditation or breathing practices. These variations may affect the outcome of a study.

In addition, science cannot readily quantify the emotional and spiritual benefits of yoga (see "The wisdom of combining all four components," page 5). A transformation of your worldview is not easily captured in statistics.

Although the science is still catching up with current practice, the bottom line is that yoga has a lot to offer, so don't put it off just because the evidence isn't all in yet. This chapter offers an overview of the research on yoga's physical and mental benefits. The scientific understanding of all these effects is still evolving; the sections below elaborate on what we know now.

## Reduced stress

The benefits of yoga can be either physical or mental—or in some cases, both. Stress management is a case in point. It is the most important and most robust benefit you can get from yoga, and it is the ultimate crossover benefit, affecting both your mind and your body in multiple ways.

On the most obvious level, chronic stress can have a negative impact on your state of mind. It is a risk factor for developing emotional problems like anxiety and depression, and in turn, anxiety and depression increase feelings of stress.

Less obviously, chronic stress is also associated with a host of physical problems. That's because the so-called fight-or-flight response—the classic stress response, which primes your body to deal with an immediate physical threat—can be damaging when it becomes a constant feature of daily life. Among other things, it increases heart rate and breathing; increases levels of blood sugar to fuel your muscles; constricts blood vessels, directing blood flow to your muscles and away from your other organs; and causes blood cells called platelets to become stickier, so clots can form more easily in the case of physical injuries. These effects play a role in some of the nation's leading causes of death and disability, including heart disease and type 2 diabetes.

Yoga appears to help diminish the harmful effects of both physical and mental stress. Perhaps even more intriguing, a regular yoga practice seems to have spill-over benefits that foster greater well-being in general. By enhancing your ability to cope with stress, for example, yoga reduces the likelihood that you'll turn to behaviors such as smoking, drinking, overeating, taking recreational drugs, or skimping on sleep, all of which wreak their own damage. In addition, the ability to deal better with stress can make you more productive, help you make better decisions, and help improve your interpersonal relationships. Instead of creating a vicious circle that leads to more problems, it sets up a virtuous circle, in which positive effects reinforce positive behaviors and vice versa.

Dialing back on stress might even help you live longer. That's because chronic stress has been linked in studies to shortened telomeres. Telomeres are repetitive stretches of DNA at the ends of chromosomes,

which serve as protective caps, much like the plastic tips on the ends of shoelaces. Shortened telomeres have been associated with disease and aging. But stress reduction has been shown to help lengthen telomeres. Early research suggests that intensive meditation in particular may have a beneficial effect on telomere length (see “Youthfulness,” page 16).

## Better physical health

Yoga appears to promote physical health in multiple ways. As discussed, some of them derive from better stress management (see “Why yoga has so many benefits,” page 9). Others come more directly from the physical movements and postures in yoga, which help promote flexibility and reduce joint pain.

Following are some of the physical benefits of yoga that have a growing body of research behind them. In addition to the conditions listed below, preliminary research also shows that yoga may help with migraines, osteoporosis, balance and mobility issues, multiple sclerosis, inflammatory bowel disease, fibromyalgia, and ADHD.

### Reduced risk of heart disease

Heart disease is the leading cause of death in the United States—and even if it doesn’t kill you, it can destroy your quality of life. Given what we know about the stress response, including its effects on blood pressure, it stands to reason that yoga would help the cardiovascular system. New research is bearing that out.

A 2016 review and meta-analysis of 37 randomized controlled trials, published in the *European Journal of Preventive Cardiology*, found that yoga can have a beneficial impact on numerous risk factors for heart disease, from high blood pressure and cholesterol levels to excess body weight and a large waist circumference. When compared with people who didn’t do yoga or exercise, participants averaged the following improvements after practicing yoga for an average of 12 weeks:

- 5-pound weight loss
- 5-point drop in systolic blood pressure
- 5-point drop in diastolic blood pressure
- 18-point drop in total cholesterol

- 12-point drop in LDL (bad) cholesterol
- 3-point gain in HDL (good) cholesterol
- 6-point drop in triglycerides
- 5-point drop in heart rate.

The yoga sessions lasted an average of 60 minutes, though some were as long as two hours, and they were performed an average of two or three times a week. More research is needed to determine the amount and frequency of yoga needed for optimal results.

Aside from reducing risk factors for heart disease, yoga appears to have a direct effect on the disease itself. In a study published in *Clinical Cardiology*, six weeks of yoga increased the flexibility of blood vessels by 69% in people with atherosclerosis. Moreover, studies of the Ornish program—which includes yoga as one of four key components, in addition to a low-fat vegetarian diet, moderate exercise, and the maintenance of loving, supportive relationships—have shown that adherence to the program can actually shrink blockages in arteries, without the use of medication. The evidence is so powerful that the approach is now covered by some insurance plans and is being included in cardiac rehabilitation programs.

Yoga may even help certain types of heart rhythm disturbances. Atrial fibrillation—a common disorder in which the heart beats irregularly and rapidly—affects two to three million people worldwide. The condition increases the risk of stroke and death, and treatments are costly and can have significant side effects. In a small 2013 study, published in the *Journal of the American College of Cardiology*, 49 participants attended 60-minute yoga classes twice a week and were encouraged to do yoga at home, too. After three months, the participants reported fewer symptoms and an improved quality of life, including less depression and anxiety, better physical functioning, and greater vitality. Heart rate and blood pressure also declined.

### Improved diabetes management

People with type 2 diabetes are at higher risk for developing heart disease, depression, and dementia. In addition, poorly controlled diabetes increases the risk of complications such as neuropathy, eye problems, and kidney disease. Research shows that yoga

## Why yoga has so many benefits

Researchers still have a long way to go before they will fully understand just why yoga has such a broad range of physical and mental benefits. Here's what is known at this point.

**It tamps down stress.** Your body's autonomic, or involuntary, nervous system is divided into two parts: the sympathetic and the parasympathetic. The sympathetic nervous system responds when you encounter danger or stress. It's responsible for the fight-or-flight response, which prepares your body to fight or flee whatever danger or stress you are facing. This response was key to survival for our ancestors when they faced predators. Its effects include higher blood pressure, blood sugar, and heart rate. The parasympathetic nervous system has the opposite set of effects—often referred to as the rest-and-digest response. This conserves and restores energy, slowing your heart rate and lowering your blood pressure. It's responsible for maintaining your body's functions, such as digestion, at the status quo. It's active when you're relaxed.

In today's 24/7 world, which nervous system do you think gets more play time? What with ongoing stress, information overload, noise, and electronic devices that demand constant attention, the sympathetic nervous system is turned on a lot more than it used to be. And the effects of this chronic stress are believed to be a culprit behind many of today's health problems.

Practicing yoga reduces the sympathetic response and all its damaging side effects and turns on the parasympathetic response, with its calming effects. Research has shown that a single 90-minute yoga session can lower levels of cortisol, a stress hormone.

**It reduces inflammation.** The body's inflammatory response can be both helpful and harmful. When you get a cut, acute (short-term) inflammation aids in fighting bacteria and healing a wound. But over the long term, low-grade chronic inflammation is associated with a range of harmful effects, including the development of heart disease, diabetes, and cancer. A 2014 meta-analysis of 34 studies looking at a variety of mind-body therapies, including yoga and meditation, found they reduce markers of inflammation.

**It tones the vagus nerve.** Part of the parasympathetic nervous system, the vagus nerve winds from the base of your skull throughout your body. It has been referred to as the body's "air traffic controller" because it regulates all major bodily functions, including your breathing, heart rate, digestion, and your ability to take in, process, and make sense of experiences.

Vagal tone—that is, the activity level of the vagus nerve—is a reflection of how well your parasympathetic

nervous system is functioning and of your body's ability to handle stress and be resilient. Vagal tone can't be measured directly. Instead, other biological processes—such as your heart rate during inhalations and exhalations—serve as indicators of vagal tone. When vagal tone is high, your heart is beating properly, your digestion is good, your moods are stable, and you're able to handle challenges or stress and recover from it quickly. If you have low vagal tone, you're more likely to have a high heart rate, sluggish digestion, a sense of being drained, and trouble controlling your moods and emotions. Conditions such as depression, chronic pain, and post-traumatic stress disorder are associated with low vagal tone. Yoga appears to increase vagal tone, providing a possible explanation for why these conditions respond well to yoga.

**It amps up immunity.** Yoga appears to boost your body's natural defenses. A 2015 pilot study found that 12 weeks of yoga, including a weekly 90-minute class and 40 minutes of daily yoga at home the rest of the week, strengthened the immune system and raised levels of natural antioxidants in the body. Antioxidants neutralize free radicals (byproducts of the body's energy production or of exposure to air pollution and ultraviolet rays), which can damage DNA, cells, and tissues and lead to disease. In addition, immune function markers increased in the group that did yoga compared with those who didn't.

**It changes your brain.** The brain is plastic, meaning that it can change. The latest research on yoga shows that it can alter the structure and function of the brain. For example, yoga practitioners have more activity in the left prefrontal cortex. This is considered the "happy side" of the brain, and people with more activity in this area are generally more joyful. Meditation also reduces activity in the limbic system—the part of the brain dedicated to emotions—modulating emotional reactivity and diminishing your stress response. As your emotional reactivity diminishes, you are less emotional when faced with stressful situations.

**It turns on genes that promote health.** In a 2013 study published in the journal *PLOS One*, scientists looked at the effect of a simple meditation practice on gene expression (whether genes are turned on or off) in both long-time practitioners and novices. While meditation had greater and more consistent effects on the genes of the experienced practitioners, the novices also saw beneficial changes after eight weeks of a daily practice. The result was an enhanced expression of genes associated with energy metabolism, mitochondrial function, insulin secretion, and telomere maintenance (all good things)—and reduced expression of genes linked to inflammatory response and stress-related pathways (bad things).

can help people with type 2 diabetes avoid some of these problems and lead happier lives.

A review of 33 studies, published in 2016 in the *Journal of Diabetes Research*, provides strong evidence of yoga's benefit. The average duration of the yoga programs that were examined was 12 weeks, with many of them encouraging daily practice. Most of the programs included all four components of yoga (postures, breathing, relaxation, and meditation). The results showed that people who practiced yoga had significant improvements in blood glucose levels and insulin resistance. They also had favorable changes in their cholesterol levels, blood pressure, and body weight or body composition. Yoga may even reduce the need for diabetes medications. In one of the studies in this review, people who practiced yoga for three months were able to decrease their diabetes medications by 26% to 40%. (But don't change any of your medications without consulting with your doctor first.)

Yoga has also been linked with another indicator of good diabetes management—lower levels of HbA1c. The HbA1c test measures glycated hemoglobin, which reflects your average blood sugar level over the preceding two to three months. It therefore is a better gauge of your long-term efforts to control your blood sugar than a fasting blood glucose test, which measures blood sugar at a single point in time. In a 2016 review published in *Diabetes Research and Clinical Practice*, researchers looked at the impact of a variety of leisure-time physical activities, including walking, tai chi, qigong, and yoga, on participants' HbA1c. All of the activities lowered HbA1c levels—and the more frequently people participated in the activities, the lower their levels were. However, the greatest reductions—more than double the average—were seen in those who did an hour of yoga three or four times a week for 24 weeks.

Researchers speculate that, in addition to causing physiological changes, yoga may encourage people with diabetes to take better care of themselves, leading to further benefits.

### **Back pain relief**

Back pain is one of the most common health problems in the United States. Four out of five Americans will

suffer from it at some point. But yoga appears to help. A 2013 meta-analysis of 10 randomized controlled trials found “strong evidence for short-term effectiveness and moderate evidence for long-term effectiveness of yoga for chronic low-back pain.” In fact, since 2007, the American Society of Pain guidelines have urged physicians to consider recommending yoga to patients with long-term pain in the lower back.

While it is tempting to stay in bed when your back hurts, doctors no longer recommend extended bed rest. Although lying in bed does minimize stress on the lumbar spine, it also causes muscles to lose conditioning, among other problems. The sooner you can get up and get moving, the faster you will generally recover. Yoga helps alleviate back pain by increasing flexibility and muscle strength. Relaxation, stress reduction, and better body awareness may also play a role.

In one study, published in the journal *Spine*, people with back pain who did two 90-minute sessions of yoga a week for 24 weeks reduced pain by 56%. They also had less disability and depression than people with back pain who received standard care, such as pain medication. The results also suggest a trend toward the use of less pain medication in those who did yoga. When the researchers followed up with participants six months after the study, 68% of the people in the yoga group were still practicing yoga an average of three days a week for 33 minutes per session. That's a good indicator that they found yoga to be helpful.

### **Less arthritis pain**

Exercise has been shown to help alleviate the pain and stiffness associated with osteoarthritis; however, these symptoms can make it difficult to be active. Yoga offers a gentle form of exercise that helps improve range of motion and strengthen the muscles around painful joints.

In a 2014 study of 36 women with knee osteoarthritis, those who did yoga experienced significant improvements in their symptoms compared with women who didn't do yoga. The yoga group had a 60-minute class one day a week and then practiced at home on several other days, averaging 112 minutes of yoga a week on their own. After eight weeks, they reported a 38% reduction in pain and a 35% reduction

## Yoga in schools

Adults aren't the only ones doing yoga. More kids are now being exposed to it in school—and not just in gym class. In some places, individual teachers are using breathing exercises in their classrooms. In others, there are districtwide programs that include postures, breathing, relaxation, and meditation.

The benefits are wide-ranging. Early research suggests that yoga programs for young people may help improve mood, reduce stress and anxiety, increase self-esteem and confidence, promote positive attitudes, improve concentration, enable better emotional regulation, raise levels of self-control, enhance social skills, and boost memory. In classes and schools where yoga is practiced, a handful of studies show improved grades and fewer behavioral problems. Some experts even believe that the coping skills children learn through yoga may help to reduce the number of students who drop out of school.



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Kids aren't the only ones benefiting from bringing yoga into schools. Some studies indicate that the practice of yoga can also help teachers improve their well-being, manage classroom behavior, and enhance relationships with students. The positive effects may even extend to parents and siblings as students bring home some of the skills that they learn.

in stiffness, while the no-yoga group reported worsening symptoms.

People with rheumatoid arthritis, an autoimmune disorder, may also benefit. In a 2015 study, women with rheumatoid arthritis reported improvements in their physical health, walking ability, pain levels, energy, and mood, and had significantly fewer swollen and tender joints, after doing two hour-long yoga classes a week for eight weeks.

## Better mental health

It's not just the body that benefits from yoga. There's a saying among neuroscientists—"what's good for the heart is good for the brain"—so perhaps it's not surprising that mood and brain function can improve, too.

### A sharper brain

When you lift weights, your muscles get stronger and bigger. When you meditate, your brain cells develop new connections, and changes occur in brain structure, resulting in improved cognitive skills, such as learning and memory. Meditation strengthens parts of the brain that play a key role in memory, attention, awareness, thought, and language. Think of it as weight lifting for the brain. And the longer you practice meditation, the more enduring the changes.

The first study to show these alterations was published in the journal *NeuroReport* in 2005. Researchers used MRI scans to compare the brains of experienced meditators who had practiced an average of nine years to those who didn't engage in yoga or meditation. The findings showed that people who meditated had a thicker cerebral cortex (the area of the brain responsible for information processing) than those who didn't. This area of the brain typically shrinks as you age, but the older participants showed less decline in this area compared with nonpractitioners. This suggests that meditation may counteract age-related declines in memory and other cognitive skills.

More good news: you don't have to wait nine years to reap the benefits. Follow-up research, published in *Psychiatry Research: Neuroimaging*, found increases in gray matter after just eight weeks of a mindfulness-based stress reduction program that involved meditation and some yoga. The areas of the brain that showed changes are involved in learning, memory, and regulation of emotions. Improvements, including decreases in the stress hormone cortisol, have even been seen after only five days of meditating for as little as 20 minutes each day.

Research also shows that yoga and meditation improve executive functions, such as decision-making, memory, reaction time, and accuracy. Researchers

tested 118 seniors, average age 62, after the participants had completed eight weeks of either yoga or strength and stretching workouts. Each group did three hour-long sessions of their respective activity each week. At the end of the study, which was published in 2014 in *The Journals of Gerontology Series A*, the yogis fared better on memory recall, reaction time, accuracy, and the ability to switch between mental tasks. Scientists suspect that yoga's efficacy in this area has to do with improving the ability to cope with stress and emotions. When you are able to remain focused and control your emotions, you'll perform at a higher level.

Yoga may even help delay the onset of Alzheimer's disease, although the evidence for this is largely speculative at this point. People with Alzheimer's have significantly reduced levels of nerve growth factor (NGF), a key nervous system protein that protects brain cells. Scientific trials are investigating the administration of NGF as a treatment option. But yoga may provide a natural way to raise NGF levels, according to a pilot study published in 2015 in *International Psychogeriatrics*. When 10 volunteers practiced 10 minutes of chanting and 10 minutes of yoga breathing in a single session with a yoga instructor, 60% of the group showed increases in NGF, while a group of volunteers who sat quietly reading had no changes. More research is needed, but if you're worried about developing Alzheimer's, it wouldn't hurt to give yoga breathing and chanting a try.

### **Less depression and anxiety**

Drugs and talk therapy have traditionally been the go-to remedies for depression and anxiety. But complementary approaches such as yoga are becoming more accepted, and some scientific research is supporting their effectiveness.

In a German study published in 2012 in *Evidence-Based Complementary and Alternative Medicine*, 72 women who described themselves as "emotionally distressed" took either one or two 90-minute yoga classes a week for three months, or did no yoga at all. The classes included postures associated with stress reduction, such as forward bends, downward-facing dog, and triangle pose. Each class ended with 15 minutes of meditation while in corpse pose. Though not formally

diagnosed with depression, the participants had high levels of perceived stress, anxiety, and depression. They also suffered from stress-related symptoms such as insomnia, disturbed appetite, back or neck pain, tension-type headache, decreasing daytime alertness, and digestive problems. At the end of three months, women in both yoga groups reported reductions in perceived stress of up to 27%. They also reported less depression, anxiety, and fatigue, plus improvements in energy and well-being. Initial complaints of headaches, back pain, and poor sleep were also resolved much more frequently in the yoga groups than in the control group. There were no significant differences in improvement between doing one or two classes a week—suggesting that even a little bit of yoga can help.

Yoga also appears to enhance the effects of antidepressants. While some people experience complete relief from depression or anxiety when they begin taking medications, others may experience some improvement but still feel depressed or anxious. In one small study, researchers found that yoga could help people with stubborn depression. At the end of the eight-week study, also published in *Evidence-Based Complementary and Alternative Medicine*, the 17 participants who completed the full course of 20 yoga classes showed less anxiety, and 65% were considered to be in remission from their depression.

Yoga may even trump drugs for some. In a 2013 study, when depressed men and women chose their own course of treatment, those participants who chose to do yoga either instead of medication or combined with medication showed significantly greater improvements in their symptoms—up to double in some cases—compared with participants who chose to take antidepressants alone, without adding yoga.

A 2014 pilot study suggests that, even if people with depression don't continue taking yoga classes, they tend to continue using some of the techniques. One year after participating in an eight-week yoga study, almost all of the women reported using some of the tools that they had learned, such as breathing, centering, relaxation techniques, stretching, or visualization, even if they didn't continue a formal practice.

Yoga stacks up well when compared with other complementary therapies, too. In 2015, a review of 15

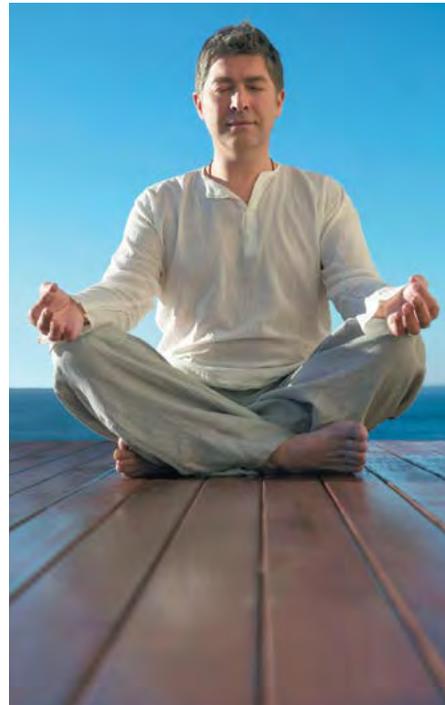
studies looked at the effect of a variety of relaxation techniques on depression and anxiety in older adults. In addition to yoga, interventions included massage therapy, progressive muscle relaxation, stress management, and listening to music. While all the techniques provided some benefit, yoga and music were the most effective for both depression and anxiety. And yoga appeared to provide the longest-lasting effect. Chair yoga was also shown to be effective for older adults in a small study published in the *International Journal of Yoga Therapy*. When compared with seniors doing walking or chair aerobics, the yoga group showed greater improvements in stress, anxiety, and depression.

Brain studies are starting to delve into how yoga acts on mood. During a 12-week study, published in *The Journal of Alternative and Complementary Medicine*, scientists used brain scans to monitor levels of a brain chemical called gamma-aminobutyric acid (GABA) as 34 physically and psychologically healthy young men and women either walked for an hour three times a week or did Iyengar yoga for the same amount of time. When elevated, GABA is associated with better mood and decreased anxiety. Those who did yoga reported bigger reductions in anxiety and greater improvements in mood than the walkers and showed corresponding increases of about 13% in GABA.

## Relief for PTSD

Post-traumatic stress disorder (PTSD) is a serious problem for military personnel and veterans. But even outside of war zones, people can experience PTSD after traumas such as domestic violence, rape, a terrorist attack, a car crash, a natural disaster, or another life-threatening situation. Yoga and meditation programs are increasingly being used to help address this problem, and research is showing benefits from adding yoga to standard treatment.

One such study examined 60 women with ongoing, treatment-resistant PTSD and associated mental health issues stemming from prolonged or multiple traumas. Ten sessions of yoga significantly reduced the severity of the women's symptoms, including depression and the use of negative coping strategies such as self-injury. However, the limitation of such a short-term study is that it sheds no light on whether



Scientific evidence is beginning to show that yoga and meditation can help alleviate problems such as depression and PTSD. The Department of Veterans Affairs sponsors many yoga-based programs. Participants have reported reductions in fear, anxiety, and insomnia and an increased sense of control over their lives.

the benefits will last. In a 2016 follow-up study, published in *The Journal of Alternative and Complementary Medicine*, researchers contacted the same women a year and a half later to find out. Of the 49 women who responded, those who had continued to practice yoga continued to show improvements, with the greatest improvements being seen among those who practiced more than once a week.

Yoga may be particularly helpful for people with severe cases. One randomized controlled trial, published in 2013, examined the effects of a yoga program on disabled Australian Vietnam veterans diagnosed with severe PTSD. The veterans were heavy daily drinkers, and all were taking at least one antidepressant. A five-day instructional course taught them breathing techniques, yoga postures, stress reduction, and guided meditation. They then participated in two-hour weekly group sessions for the next month and monthly sessions for the following five months. Six weeks after the initial five-day training, the severity of PTSD symptoms in the yoga and breathing group decreased from averages of 57 (moderate to severe symptoms) to 42 (mild to moderate) on an 80-point scale. These improvements persisted at a six-month follow-up. The control group, consisting of veterans on a waiting list, showed no improvement.

Stateside, similar yoga-based programs are being offered through many Department of Veterans Affairs facilities. Participants have reported reductions in insomnia, depression, anxiety, and fear; improvements in interpersonal relations; and an increased sense of control over their lives.

## Increased well-being

The ability of yoga to help dial back both physical and mental problems is reason enough to try it. But there's more. Even at this early stage of research, a regular yoga practice appears to correlate with increased well-being, including better sleep, better body awareness, weight loss, and greater happiness. By improving mindfulness, it simultaneously helps to boost compassion, gratitude, and "flow" states, all of which contribute to greater happiness. Early evidence suggests that yoga may even slow aging on the cellular level, perhaps through its stress-busting effects.

**A regular yoga practice appears to correlate with increased well-being, including better sleep, better body awareness, weight loss, and greater happiness. It may even slow aging on the cellular level.**

What makes these findings so exciting is that they suggest that a regular yoga practice can improve multiple areas of your life at once, creating positive feedback loops that can further promote health. For example, yoga can help improve your sleep, which in turn gives you more energy and focus during your day. When you feel better physically and mentally, you have the energy to adopt better habits, including a healthier diet and more physical activity. These changes in turn can lead to better weight control, which helps with a host of physical problems. More exercise—not to mention fewer aches and pains—can improve your sleep, and so the cycle continues.

### Better sleep

How do you feel when you wake up in the morning—refreshed and ready to go, or groggy and grumpy? As many as one in four Americans sleeps less than six hours a night. Insufficient sleep can make you too tired to work efficiently, to exercise, or to eat healthfully. Over time, sleep deprivation increases the risks for a

number of chronic health problems, including heart disease, stroke, and diabetes. But emerging research shows that yoga may help you fall asleep faster, sleep longer, and sleep more soundly—without the negative side effects of medication.

Yoga facilitates sleep by reducing stress, anxiety, and arousal—all known causes of poor sleep. One small study looked at a Kundalini meditation and breathing practice. Twenty people who had trouble sleeping did the 30-minute practice every night before going to bed. After eight weeks, researchers found that the participants were sleeping 36 minutes longer on average and waking up less during the night. Over all, the quality of their sleep improved by 11%.

Sleep problems tend to increase as you get older, but a study done on adults ages 60 and up offers some good news. When scientists surveyed 35 seniors who had been doing a daily yoga practice for at least two years,

they found that those who did yoga fell asleep 10 minutes faster, got an extra hour of sleep, and felt more rested when they woke up in the morning, compared with seniors who did not do yoga.

Yoga even helps with full-fledged insomnia. While following common advice on how to get a good night's sleep can reduce sleep problems, people in one study fell asleep 37% faster after eight weeks of yoga compared with 28% for those who received only the advice.

Research shows that there is a "dose-response" effect—meaning that the more you practice yoga, the fewer sleep disturbances you are likely to experience and the more restorative your sleep will be. Even if you don't have problems falling asleep, yoga can improve the quality of your slumber.

### Better body awareness

Yoga gets you in touch with your body. As you practice yoga, your proprioception (the sense of where your body is in space) improves. This can help you to move with more ease and may even reduce your risk of falling or help you recover if you stumble.

As your awareness becomes heightened, you'll also be more in touch with how your body is feeling. You'll be better able to sense when you're stressed, in pain, or tired, so you can take care of your body instead of continuing to push yourself. This may even facilitate the early detection of diseases. You may sense a new pain earlier than you would have when you were more disconnected from your body's sensations. Or you may notice subtle changes like difficulty during a breathing exercise and go to your doctor sooner. You become more like a highly trained musician who can sense when his or her instrument is out of tune.

## Weight loss

If you're trying to lose weight, you may think that activities like boot camp or Zumba would be most likely to help you shed pounds. But research suggests that yoga works, too. It won't help you drop 10 pounds in 10 days, but it may well help with the kind of slow, steady weight loss that is best for your health—and it may even help you *keep* the weight off.

For 10 years, researchers with the large Vitamin and Lifestyle (VITAL) study tracked the physical activity habits of more than 15,000 men and women in their 50s. When they reviewed their findings, they discovered that overweight individuals who practiced at least 30 minutes of yoga a week for four or more years lost five pounds over the course of the study. By contrast, overweight participants who didn't do yoga gained 13 pounds.

While the type of yoga that people did was not specified in that study, another one shows that you don't have to do the vigorous, calorie-burning types of yoga to see results. A 48-week program of restorative yoga—a type in which you barely move (see “Restorative yoga,” page 18)—resulted in more fat loss compared with a stretching program. The study of 171 obese women found that the yoga group lost nearly twice as much weight (2.9 vs. 1.5 pounds) and more than double the amount of fat as the stretching group after six months, according to findings presented at the 2013 American Diabetes Association conference. During that time, both groups attended classes twice a week, but for the remaining 22 weeks of the study, participants were expected to practice on their own

with classes only monthly. The results were telling: the women who did yoga continued to lose a little weight and body fat, but those who did the stretching exercises regained up to half of what they had lost in the first part of the study.

There are multiple reasons why yoga may help with weight loss. Here are just a few:

- Through a regular yoga practice, you'll cultivate a sense of mindfulness or awareness that you'll carry over into everyday activities like eating. When you eat mindfully, you're not checking your phone or reading at the same time, but paying attention to how food looks, tastes, and smells. You derive greater satisfaction from your meals, so you can be satisfied with less. And you notice when you are full and you stop eating. Both years of yoga practice and number of minutes of practice per week have been associated with more mindful eating. Researchers have not found this in people who do other types of exercise.
- The stress relief benefit of yoga may also play a role. If you're less stressed, it stands to reason that you'll be less likely to turn to chips or ice cream to help you calm down. You'll also release less of the stress hormone cortisol, which has been implicated in contributing to abdominal fat.
- The self-compassion that yoga has been shown to inspire may stop you from beating yourself up for missing a workout or eating a doughnut. Being kinder to yourself may prevent one slip from spiraling out of control into weeks of no exercise or a binge fest. And instead, you'll get over the mistake and get back on track the next meal or day. In one study of 42 older, overweight adults who started doing Iyengar yoga, 14% reported that the yoga helped them to improve their diets. Along with the awareness, yoga can also give you the confidence to know that you can make changes.

Yoga can even help with eating disorders. That's because the self-compassion that yoga produces can lead to a better body image. People who do yoga report being more satisfied with and less critical of their bodies. For these reasons, yoga has been incorporated into a number of programs for treating eating disorders and promoting positive body image and self-esteem.

## Greater happiness

Researchers in the field of positive psychology have identified the leading factors that contribute to a person's sense of happiness, fulfillment, and general contentedness. A number of these factors—gratitude, compassion, savoring the moment, finding meaning in life, and flow—are things that can be enhanced with yoga and the mindfulness it can inspire.

Simply being present in the moment—a practice engendered by yoga—can lead to increased happiness by helping you to savor pleasure, consciously enjoying an experience as it unfolds. Most people are primed to experience pleasure in special moments, such as a wedding day or a vacation. Everyday pleasures, on the other hand, can slip by without much notice unless you learn to savor them. If you're walking the dog on a beautiful path but mentally staring at your day's to-do list, you're missing the moment.

Another factor that contributes to a high degree of satisfaction is flow—a state of being deeply immersed and absorbed in what you are doing, even losing awareness of time. Flow experiences, researchers have found, occur when there is a balance between the challenge of an activity and the skill you have in performing it. Some people might experience flow while doing sports like running, swimming, or skiing; during creative activities like playing music, painting, or writing; or while playing a game like chess or learning a new skill like computer coding. But even if an activity isn't likely to be flow-inducing—say, dusting or waiting in line at the bank—you can still create your own opportunity for flow by fully experiencing the moment. What do you hear? Are the birds singing? What do you feel? Your breath? Or the breeze on your skin? Flow states are associated not only with happiness, but also with improved performance. Harvard researchers found that musicians experienced greater levels of flow while playing music if they did Kripalu yoga three times a week for six weeks.

Similarly, research has shown that yoga can increase your sense of gratitude—thankful appreciation for what you receive, whether tangible or intangible, large or small. With gratitude, you acknowledge

the goodness in your life. Gratitude helps you relish positive experiences, build stronger relationships, and be more resilient in the face of adversity. In positive psychology, it consistently correlates with greater happiness and contentedness. According to a 2014 study in the *Journal of Bodywork and Movement Therapies*, the longer you practice yoga, the greater your feelings of gratitude will be for everything you have.

Finally, according to the same study, more yoga practice also correlates with finding a greater sense of meaning in life. What gives your life meaning is highly individual. But whatever it is that gives your life purpose, it makes you feel connected to something beyond your own immediate pleasures and comforts. Philosophers and religious leaders through the ages have argued that this is what true happiness is about.

## Youthfulness

It may sound improbable, but research suggests that yoga could also help keep you young. The key is the length of your telomeres—a component of DNA that helps protect your chromosomes. Shorter telomeres are associated with disease and death, and chronic stress contributes to shortening them (see “Reduced stress,” page 7). But dialing back stress through yoga may help protect your telomeres. Researchers found that doing a daily 12-minute yoga meditation increased the activity of telomerase—the enzyme that helps maintain and even rebuild telomeres—by 43%. This pilot study was published in 2013 in the *International Journal of Geriatric Psychiatry*.

In another study, Harvard Medical School researchers compared the telomeres of 15 meditators to those of 22 nonmeditators. The meditators practiced a form of meditation called loving-kindness meditation (see page 46), which focuses on health, happiness, and well-being for all people. The researchers found that meditators had longer telomeres than those who did not meditate, according to the 2013 study, which was published in *Brain, Behavior, and Immunity*.

A great deal more research is needed. But given all of yoga's proven benefits, why wait? Why not start today to take advantage of all that yoga has to offer? ♥

# Which type of yoga is right for you?

There are dozens of types of yoga, and for the most part there are no standards or consistency for easy navigation. Many health clubs simply list “yoga” on their schedules, while yoga studios (and some larger fitness facilities) may offer a dozen or more yoga classes—enough to make your head spin!

So how do you know where to start? While you are using the program in this report, you do not need to worry about choosing a style, since we provide a good, basic program for beginners. But if you continue your practice, you will want to pick a style. The good news is that with most styles of yoga, you’ll release tension and relax. Additional benefits depend upon the type of yoga you select. No style is better or worse than another—it’s all about finding what’s right for you, taking into account your fitness level and goals.

Here is an overview of the most common styles, with an eye to the main focus, intent, and unique characteristics of each one.

## Hatha yoga

Hatha is a generic term, referring to the practice of physical postures. As such, most styles of yoga practiced in the West are technically Hatha. In the United States, however, gyms and community centers often use the term Hatha to describe a basic or gentle yoga. Hatha classes combine breathing exercises with simple postures done at a slow pace and often held for a few breaths. Most classes include some relaxation at the end. Hatha is meant to prepare the practitioner for meditation. It is also helpful

for stress reduction. In a 2013 study published in *The Journal of Nursing Research*, just one 90-minute Hatha class significantly reduced stress levels of participants. But even shorter classes can help you relax. The routines in this report would be considered Hatha yoga.

## Integral yoga

While gentle and noncompetitive, integral yoga is a comprehensive practice that includes chanting, postures, deep relaxation, breathing practices, and meditations. This type of yoga seeks to integrate the mind, body, and spirit and give students tools to live peaceful, healthy, joyful, useful lives. The yoga used in Dr. Dean Ornish’s heart disease reversal program is rooted in integral yoga.

## Iyengar yoga

This style emphasizes proper alignment in order to maximize benefits. Classes often focus on fewer poses, but explore the subtle effects that body position has on a particular posture—for example, turning your foot slightly out instead of straight ahead for a more effective stretch. Yoga blocks, straps, blankets, chairs, or other props are often used in Iyengar classes to allow you

to work in a comfortable range of motion. There’s no pressure in these types of classes to touch your toes if you can’t. You simply place your hands on a chair or yoga block at the point that provides a gentle stretch for you. The precision focus helps to strengthen key muscles that support joints, making it a good choice if you have injuries or pain issues.



There are dozens of types of yoga, each with a somewhat different focus. For example, some emphasize holding certain postures, while others combine them into yoga “flows.”

## Restorative yoga

Relaxation is the primary goal of restorative yoga classes. You do simple poses, most of them while lying down, and rest in each pose for several minutes, some even up to 10 minutes. To make the holding part easier, you use props such as blankets, pillows, or bolsters to support your body so you can fully relax. You'll also likely be led through a guided meditation. Several studies show that this type of yoga may help people with cancer cope better by reducing fatigue and physical discomfort, improving sleep, and enhancing emotional well-being. It's a great option for beginners, the elderly, or anyone with physical ailments or restrictions. However, anyone who needs to slow down and release tension can benefit. Restorative yoga is also a great recovery-day activity between harder workouts.

## Kripalu yoga

Kripalu yoga, which incorporates all the traditional components, is known as the yoga of consciousness. This introspective practice integrates body, mind,

and energy with an emphasis on inner psychological and spiritual development. As you do postures, breathing exercises, meditation, and relaxation techniques, you pay attention to the physical sensations in your body, emotions, and thoughts to increase mind-body awareness and mindfulness. Classes can be physically demanding or extremely gentle, such as chair yoga.

## Viniyoga

While most of the other types of yoga can be done in a group setting, Viniyoga involves private instruction and adaptation. With a therapeutic focus, an experienced instructor personalizes the yoga based on a person's health, age, interests, and physical condition, including past and current injuries or limitations. The one-on-one instruction provides more attention to proper alignment than is possible in a group setting. Poses tend to be held for a consistent number of breaths with rest in between. This style may be good for you if you have injuries, physical limitations, or

### More types of yoga

Did you know that there are yoga classes done on horseback or on paddleboards in the water? There are also growing numbers of hybrid classes, such as Koga (kickboxing + yoga), Yogilates (yoga + Pilates), and Doga (yoga with your dog). Not all of these meet with approval from purists. But some variations on traditional yoga may be worth considering. Here are some you may come across.

**Chair yoga.** All postures, breathing exercises, and meditations are done while sitting in a chair (see "Chair Yoga Practice," page 29). This is a great alternative to other beginner classes if you have difficulty getting down on the floor, or if balance or problems prevent you from standing for extended periods of time. One study, published in the *International Journal of Yoga*, found that chair yoga is safe even for people in their 80s and 90s, and it improved participants' mobility and reduced their fear of falling.

**Laughter yoga.** This is no joke! Laughter yoga consists of physical exercise, such as clapping, arm and leg movements, and gentle neck and shoulder stretches; relaxation techniques; and simulated smiling and vigorous laughter—although at some point it probably becomes involuntary. Not surprisingly, it's been found to make people feel better. Even those with serious medical conditions—for example, people



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awaiting organ transplants or undergoing dialysis—have been shown to benefit, and their nurses have noticed the improvements in them, too. To find a class or for more information, go to the website of Laughter Yoga International at [www.laughteryoga.org](http://www.laughteryoga.org).

**Aqua yoga.** As the name implies, this is yoga done in a pool. You don't do moves underwater, but you often use the pool wall as if it's the floor. Yoga is low-impact to begin with, but doing it in water reduces the pressure on your joints even more. That's why it's a good option for people with arthritis, joint replacements, multiple sclerosis, fibromyalgia, or other conditions that make moving difficult or painful. For healthy practitioners, it offers variety and a new experience. Check with pools in your area to find a class.

unique needs that may require more modifications; if you want extra personal attention to improve alignment; or if you want a customized practice.

### **Vinyasa yoga**

A Vinyasa practice links movement with breath. Each inhalation and exhalation is matched to a posture or a transition from one posture to the next. The most well-known Vinyasa sequence is the sun salutation, a flowing series of lunging, bending, and stretching poses. (Go to [www.health.harvard.edu/sun-salutation](http://www.health.harvard.edu/sun-salutation) to see the full sequence, followed by a simpler version for beginners. The modified sun salutation is also explained on page 43 of this report.) Some gentle Vinyasa classes may be called “flow yoga,” while more vigorous ones are often called “power yoga.” A Vinyasa class may be a good option if you have a hard time sitting still or if you are looking to get some cardio benefits from your practice.

### **Ashtanga yoga**

The goal of this vigorous, athletic practice is to produce internal heat, resulting in sweating and increased circulation. In an Ashtanga class, you flow through a specific series of postures that are synchronized with your breathing. The postures are always the same from class to class, and you use a unique breathing style called ujjayi (see page 45). This type of breathing is characterized by an ocean sound (some people refer to it as a Darth Vader sound), which resonates in the throat and provides a focal point as you practice. The vigorous nature of this style can help you to build stamina and may increase cardio fitness.

### **Bikram or hot yoga**

These styles of yoga are done in rooms that are heated to as much as 105° F. While the heat can help improve flexibility, the high temperature may be dangerous for people with certain conditions. If you have diabetes, heart disease, respiratory disease, or a history

of heat-related illness, or if you take any medications (some may interfere with your body’s ability to regulate heat), check with your doctor before taking a Bikram or hot yoga class. Traditional Bikram classes are 90 minutes long and feature a flowing series of 26 poses that is done twice, with breathing exercises in between. Other hot yoga classes usually follow a similar format, but the poses vary.

### **Jivamukti yoga**

This vigorous Vinyasa style of yoga is also intellectually stimulating, focusing on spiritual development and the interconnectedness of all beings. The five tenets of Jivamukti are scripture, devotion, music, meditation, and nonharming (also referred to as non-violence or kindness). Along with flowing posture sequences, breathing, and meditation, classes often emphasize the importance of animal rights, veganism, and political activism.

### **Kundalini yoga**

Through movement, chanting, breathing, and meditating, this type of yoga attempts to break through internal barriers and release energy to bring you to a higher level of self-awareness. Kundalini is a more spiritual practice emphasizing psychological and spiritual development along with physical health. Breathing exercises—some of them vigorous—are combined with a wide variety of posture and movement sequences. The practice is accessible to beginners and advanced practitioners alike.

### **Sivananda yoga**

Sivananda yoga is another spiritual style focused on elevating the human consciousness. The practice consists of five elements: specific poses to enhance flexibility and improve circulation; deep, conscious breathing to reduce stress; relaxation to ease worry and fatigue; a vegetarian diet; and positive thinking. Classes tend to be slower-paced, and some include chanting. ♥

# Before you start: Safety first

A 2012 *New York Times* article titled “How Yoga Can Wreck Your Body” reported on scary yoga injuries, including torn Achilles tendons, ruptured discs, degenerative joints, and even strokes. But the article wasn’t based on a systematic review of scientific evidence, and it didn’t look at relative risk, which takes into account the riskiness of one activity compared with another. While serious injuries can certainly occur in yoga, it is safer than most forms of exercise. A national survey of 2,230 people who had done yoga found that less than 1% of them had ever experienced an injury that caused them to stop practicing yoga—and less than one-third of those who sustained injuries required medical attention.

Still, it’s wise to know your limits and to consult a doctor first if you have any of the medical conditions listed in this chapter. You should also avoid certain poses that are associated with the highest rates of injury and should follow the safety tips in this report (see “Tips for a better, safer practice,” page 24, “Avoiding injuries in class,” page 49, and “Dangerous poses,” page 49). In the unlikely event that you should experience any of the problems listed in “Red flags” (page 21) during or after your practice, you need to contact a doctor immediately.

## When to get a doctor’s approval

The most common risk factor for injuries in yoga is having a pre-existing medical condition. You should consult your doctor before trying yoga if you have (or had) any of the following:

- heart disease or high blood pressure
- diabetes
- osteoporosis
- respiratory problems
- glaucoma
- balance problems
- recent surgery

- musculoskeletal problems such as back or joint problems, including a herniated disc
- stroke or neurological illness.

These conditions may not preclude you from practicing yoga, but you might need to avoid certain poses or modify others. (See the disease-specific recommendations in this chapter for more information.)

The Physical Activity Readiness Questionnaire (PAR-Q), a tool developed by the Canadian Society for Exercise Physiology, can also help you determine whether you should talk to your doctor before embarking on, or ramping up, any fitness or flexibility program. You can find it at [www.health.harvard.edu/PAR-Q](http://www.health.harvard.edu/PAR-Q). The basic form, “PAR-Q & You,” covers people ages 15 to 69.

If you do need to speak to a doctor, tell him or her about the type of yoga you plan to do and ask if he or she can recommend an instructor, class, or studio that would be appropriate for you. Even if your doctor can’t provide that type of information, he or she may be able to say whether specific poses would be either beneficial or harmful for you. Show this report to your doctor—or provide pictures of any other poses that you’re thinking of trying—and make sure these are all right for you to try.

## Advice for people with arthritis

Yoga can help ease arthritis by increasing your range of motion and improving flexibility. The feel-good hormones that yoga promotes can also help alleviate stress that often increases pain.

If you have arthritis, follow these recommendations.

**Go easy.** You should steer clear of vigorous practices that may aggravate already damaged joints.

**Keep moving.** A gentle Vinyasa or flow class may be preferable to a class where postures are held for longer periods of time. Holding static postures may be painful for some people with arthritis. If

this is a problem for you, gently move in and out of a posture even if the rest of the class is holding it. (It's best to let the instructor know ahead of time that you have arthritis and might need to do this.) For example, instead of holding a static warrior pose (a lunge with one leg bent and the other straight), gently bend and straighten your front knee in an easy rhythmic way.

**Delay your practice until later in the day.** With some types of arthritis (such as rheumatoid arthritis), joints tend to be stiffer in the morning. Waiting until later in the day allows your muscles and joints to loosen up. Only you can tell when yoga will feel the best for you. Pay attention to your body, and practice yoga at the time of day that feels most appropriate.

**Check with your doctor about flare-ups.** When your joints are hurting, you may still be able to do yoga, but for a shorter length of time or at a lower intensity than usual. This may help to keep your joints mobile. For people with rheumatoid arthritis, doing yoga despite a flare-up is empowering, but for others, the opposite is the case. So talk to your doctor and consider how you might react before making a decision on whether to take a day off. And remember, you could always do some breathing exercises and meditations instead of postures.

## Advice for people with high blood pressure

Research suggests that yoga can help to lower high blood pressure. But when you do any type of exercise, including yoga, your blood pressure tends to rise in the short term. Here's how to keep it under control when you're on the mat.

**Choose middle ground.** Vigorous practices, as well as more static ones in which you are holding poses for longer periods of time, can raise blood pressure. To minimize any spikes, move gently from one pose to the next, and move within a pose if it is being held for more than 10 seconds. (See "Keep moving," page 20, for an example.)

**Rest more.** Just because the class is still holding downward-facing dog doesn't mean you have to. Simply bring your knees down to the mat and rest in child

### Red flags

If you experience any of these symptoms during or after yoga, see a doctor immediately:

- piercing pain in the back of the neck
- pounding, one-sided headache
- loss of taste
- partial facial paralysis
- ringing in the ears
- chest pain, pressure, heaviness, or tightness
- faintness or loss of consciousness
- significant or persistent shortness of breath or dizziness.

Also, ask your doctor whether any other warning signs specific to your health history warrant a call.

Delayed muscle soreness that starts 12 to 48 hours after a session and gradually abates is a normal response to taxing your muscles. By contrast, persistent or intense muscle pain that starts during a session or right afterward, or muscle soreness that persists more than one to two weeks, merits a call to your doctor for advice. You should also call your doctor if a routine you've been doing for a while without discomfort starts to cause you pain.

pose (see page 38). Taking rest breaks between moves will help to keep your blood pressure lower.

**Don't hold your breath.** Lots of people do this when they are stretching, but it can cause your blood pressure to spike. Instead, remind yourself to keep breathing. This helps to keep your blood pressure down. Also, don't strain to lengthen your inhalations and exhalations or force your chest or abdomen to expand as you inhale.

**Keep your head up.** Inverted postures, like head or shoulder stands, should be avoided by beginners, but this precaution is especially important if you have high blood pressure. These postures cause significant rises in blood pressure.

**Make meditation mandatory.** This is done at the end of class, sometimes while lying in corpse pose. If your blood pressure has gone up during your practice, relaxing at the end kicks in your body's parasympathetic response, which slows your body down and lowers blood pressure and breathing rate.

## Advice for people with osteoporosis

There is emerging evidence that yoga postures may help keep bones strong. For one 2016 study, 30 postmenopausal women with osteoporosis took classes four days a week for six months. At the end, their bone density had increased somewhat. However, certain yoga moves may be risky if you have a severe case.

**Flex forward with caution.** When you do standing or seated forward bends, knees-to-chest, or cat-cow, you are performing forward spinal flexion. The front part of the spine is compressed during this type of movement, which may increase risk of fractures if you have severe osteoporosis. If you already have a compression fracture, you should avoid forward bends completely.

**Check with your doctor before doing side bends and twists.** These actions compress the spine and may increase the risk of a fracture, too.

## Advice for people with glaucoma

This eye condition results in damage to the optic nerve because of elevated pressure in the eye, so the last thing you want to do is increase pressure in your eyes, as certain yoga postures can do.

**Keep your head up.** Like high blood pressure, glaucoma may be made worse by doing postures in which your head is down, such as head and shoulder stands, downward-facing dog, and forward bends. These positions increase pressure inside the eye, which may raise the risk of glaucoma progression. In one study, even the legs-up-the-wall pose increased intraocular pressure.

**Don't hold your breath.** It may raise pressure inside your eyes.

**Stop a pose immediately if you experience sudden eye pain,** or if you develop a headache, blurred vision, or the appearance of halos around lights. ♥

# Yoga postures

In this chapter you will find four routines: the Loosening Yoga Practice (see page 26), Chair Yoga Practice (page 29), Standing Yoga Practice (page 32), and Floor Yoga Practice (page 36).

Start with the Loosening Yoga Practice to ease yourself into yoga. After a week or two, once you are comfortable with that routine, try the Chair Yoga Practice. If you like, you can continue to use the loosening practice as a warm-up. Next try the Standing Yoga Practice—or, if you have balance issues, the Floor Yoga Practice. It all depends on your needs and what you feel most comfortable with. You may combine all of the routines for a longer practice, mix or match a few, or do them individually if you want a shorter practice. Alternating between the practices ensures that you are working a variety of muscles for maximum results. Whatever mix you choose, aim to do some yoga every day.

## Equipment

One of the beauties of yoga is that you don't need a lot of expensive equipment or clothing. The following basics are considered standard and are helpful for these routines:

- **A flat space.** That means a space that's large enough for you to stretch out on the floor and high enough for you to reach your arms over your head.
- **A comfortable, nonskid surface.** Yoga mats have become the universally recognized symbol of a yoga practice. They help prevent you from slipping as you hold postures. However, if you're practicing on a carpet at home, the carpet will likely keep you from slipping—and provide cushioning as well—so you can skip the mat. If you need more cushioning, another option is to substitute a traditional gym mat for a yoga mat or to place a towel or blanket under a thinner mat. Comfort is key, so do what works best for you.
- **Loose, comfortable clothes.** That means loose or stretchy pants and a top that allows freedom of movement. You don't want anything restrictive. The Chair Yoga Practice also requires a sturdy chair without arms. For the Floor Yoga Practice, the following optional pieces will help you modify moves to meet your personal needs:
  - **Strap.** The strap gives your arms a bit more reach so you can more comfortably execute moves such as reaching your toes. There are cotton yoga straps available online, but the tie from your bathrobe or a belt will work, too.

## How does yoga fit in to your exercise regimen?

The Physical Activity Guidelines for Americans recommend 150 minutes of moderate-intensity aerobic physical activity (the kind that gets your heart rate up) in addition to twice-weekly strength-training sessions, plus balance exercises for those who need them. So where does yoga fit in?

While some forms of yoga can be vigorous enough to get your heart rate up, according to the guidelines and the American Heart Association, the routines in this report are unlikely to elicit such a change. So along with your yoga practice, remember to get out and walk, bike, or take a cardio exercise class to ensure that you are getting all the healthy benefits physical activity has to offer.

As for muscle strengthening, the postures in the Standing Yoga Practice and some of the ones in the Floor Yoga Practice, such as downward-facing dog, may help to make your muscles stronger, especially when you first begin a practice. Based on the Physical Activity Guidelines, it would be reasonable to count those two routines toward the muscle-strengthening recommendations. For maximum results, however, you may want to supplement with activities like lifting weights, especially as the yoga moves become easier to do.

Yoga can also help with balance. The Standing Yoga Practice (see page 32) is the best for that purpose.

- **Pillows, blankets, bolster, blocks, or towels.** These can provide support when you are holding certain positions such as a bridge or child pose.

In addition, you can use a chair to modify some of the moves in the Standing Yoga Practice, and you can use a strap to modify the shoulder stretch in the chair practice.

## Terminology used in the routines

As you'll see, our instructions include some specific terminology, as follows:

**Repetitions (reps).** Each rep is a single, complete performance of the given movement or posture. If you cannot do all the reps at first, do as many as you can manage. Gradually increase the number of reps as you improve.

**Hold.** This tells you the number of breaths to take while maintaining a posture. Start with a comfortable number of breaths, then work up.

**Starting position.** This describes how to position your body before starting the movement.

**Movement.** This explains how to perform one complete repetition correctly.

### Tips and techniques.

We offer a few pointers to help you maintain good form and avoid injury.

**Make it harder.** Once you've mastered a move, you can continue challenging yourself by trying this more difficult option.

## Tips for a better, safer practice

As you go through the poses in this report, there are a few points to keep in mind to help you reap the most benefit from the routines and avoid injuries. (Also see "Avoiding injuries in class," page 49, if you move on to organized classes or follow programs on DVDs.)

**Maintain proper form and alignment.** Good posture and alignment count for a lot when you're doing yoga and can help you avoid injuries. Good alignment generally means keeping your body in a straight line from head to toe except for the slight natural curves of the spine. However, proper alignment varies by pose. Try to maintain the same form as pictured for each of the poses, and carefully follow the instructions, especially the tips and techniques that are listed for each exercise. If you are unable to execute a posture with good form, don't go as deep into it. For example, place your hands on a chair or your leg instead of the floor, or don't bend your knees as much.

When instructions in our routines ask you to stand or sit up straight, that means

- chin parallel to the floor
- shoulders even (roll them up, back, and down to help achieve this)
  - arms at your sides, elbows relaxed and even
  - abdominal muscles pulled in
  - hips even
  - knees even and pointing straight ahead
  - feet pointing straight ahead
  - body weight evenly distributed on both feet when standing.

**Don't slouch.** If you can't sit erect, sit on the edge of a folded-up blanket, or sit in a chair. Slouching puts more load on your spine, which may aggravate conditions such as osteoporosis or back problems.

**Pay attention to your breathing.** In addition to the separate breathing practices listed later in this report (see "Breathing, relaxation, and meditation practices," page 44), it's important to coordinate your breath with the movements in these routines—while you're moving into and out of yoga postures or flowing through a series of postures. This coordination establishes a deeper, more regular breathing pattern that enhances relaxation. You will find specific directions in the instructions for each routine.



Blocks, straps, blankets, pillows, or pillow-like bolsters can help you execute poses even if you're not very flexible. Some styles of yoga, like Iyengar, make greater use of these props.

**Go for “aahh,” not “ouch.”** Yoga should never hurt. You should move into a posture to the point of where it feels like a pleasant stretch. Challenge yourself, but avoid strain. If a posture hurts, stop immediately. Reset your positioning and try again. If it still hurts, modify the move so it is comfortable for you.

**Keep the movements slow and controlled.** Move in and out of poses slowly and as smoothly as possible for a more meditative practice and to avoid injury. Avoid thrusting or jerking movements.

**Get up slowly.** Moving from lying down to sitting or from sitting to standing can cause blood pressure

to drop, resulting in lightheadedness and occasionally blackout episodes. The cause is a temporary reduction in blood flow inside the skull and thus a temporary shortage of oxygen to the brain. This problem becomes more common as you age. To prevent it from happening, take extra time to get up. When you are lying on the floor, roll onto your side and slowly come up. From a seated position, slowly rise, rolling up one vertebra at a time with your head coming up last.

**Keep it complementary.** Do not use yoga to replace conventional medical care or to postpone seeing a health care provider about pain or any other medical condition. ♥

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# Loosening Yoga Practice

This is a simple daily practice that can ease you into yoga. While these exercises may look like standard stretches, you will be linking the movement to your breath for a more mindful practice. You can do these moves while seated or standing. Do each move three times, repeating on the opposite side if appropriate. Remember to do the moves within a comfortable range of motion. Do not force any position. As you become more flexible, your range of motion will increase.

## ► Forward and backward neck bends

**Starting position:** Sit or stand with your feet a comfortable distance apart; arms should be relaxed at your sides.

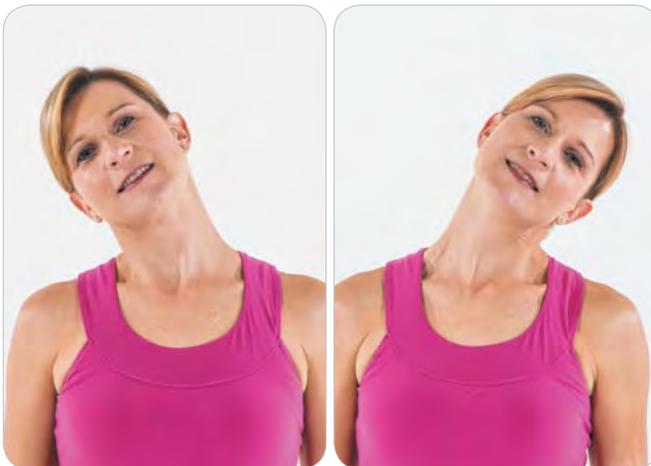
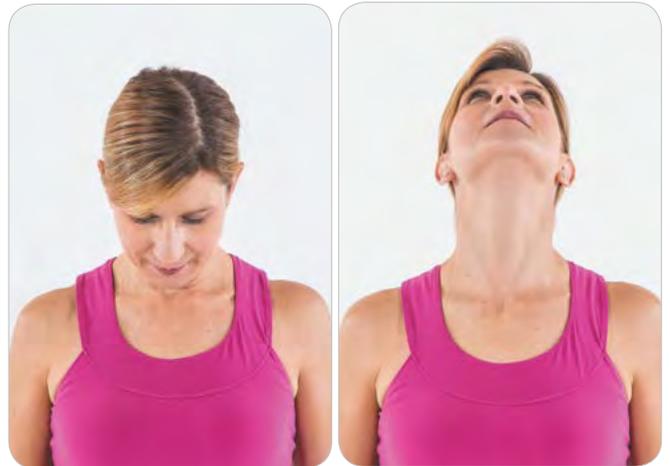
**Movement:** As you exhale, slowly lower your chin toward your chest so you feel a gentle stretch in the back of your neck. As you inhale, raise your head backward, looking up to the ceiling. Go only as far as comfortable, feeling a gentle stretch in the front of your neck. That's one rep.

**Where you'll feel it:** Back and front of neck

**Reps:** 3

### Tips and techniques:

- You can modify the move by not flexing and extending your neck as far.
- Keep your shoulders relaxed and down, away from your ears.
- If you are elderly, have any neck problems, or have high blood pressure, check with your doctor before doing this move.



## ◀ Side neck bends

**Starting position:** Sit or stand with your feet a comfortable distance apart; arms should be relaxed at your sides.

**Movement:** As you exhale, slowly lower your right ear toward your right shoulder as far as comfortable, feeling a stretch on the left side of your neck. Inhale as you bring your head back to center. Repeat, bending your head to the left and feeling a stretch on the right side of your neck. That's one rep.

**Where you'll feel it:** Sides of neck

**Reps:** 3

### Tips and techniques:

- You can modify the move by not bending your neck as far.
- Keep your shoulders relaxed and down, away from your ears.
- If you are elderly, have any neck problems, or have high blood pressure, check with your doctor before doing this move.



### ◀ Neck twisting

**Starting position:** Sit or stand with your feet a comfortable distance apart; arms should be relaxed at your sides.

**Movement:** As you exhale, gently turn your head to the right, looking toward your right shoulder. Go only as far as comfortable. Inhale as you bring your head back to center. Repeat turning your head to the left. That's one rep.

**Where you'll feel it:** Neck

**Reps:** 3

**Tips and techniques:**

- You can modify the move by not turning your head as far.
- Keep your shoulders relaxed and down, away from your ears.
- If you are elderly, have any neck problems, or have high blood pressure, check with your doctor before doing this move.

### ▶ Chair pose

**Starting position:** Stand with your feet about shoulder-width apart; arms should be down at your sides.

**Movement:** As you inhale, raise your arms overhead. As you exhale, bend your hips and knees and lower yourself into a squat position, keeping your back straight. Inhale as you stand back up. Lower your arms as you exhale. That's one rep.

**Where you'll feel it:** Buttocks, hips, legs, shoulders

**Reps:** 3

**Tips and techniques:**

- You can modify the move by not squatting as low. You can also raise your arms to chest height only or keep your hands on your thighs, focusing only on your lower body.
- Tighten your abdominal muscles to support your back.
- Keep your knees no farther forward than your toes as you sit back.



## ► Torso twist

**Starting position:** Stand with your feet about shoulder-width apart. Extend your arms out in front of you at chest height with your palms facing each other.

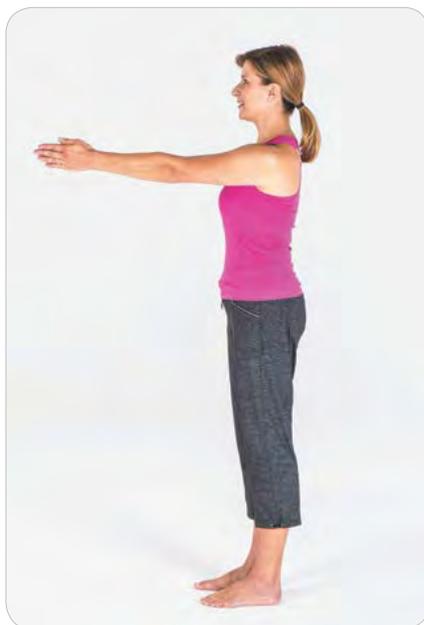
**Movement:** On an exhalation, rotate your torso to the left as you bend your left arm, bringing your left hand toward your left shoulder. Inhale as you return to start position. Repeat twisting to the right as you exhale. That's one rep.

**Where you'll feel it:** Chest, torso, shoulders, arms

**Reps:** 3

**Tips and techniques:**

- You can modify the move by not twisting as far.
- Keep your shoulders relaxed and down, away from your ears.
- If you have back problems or recently had abdominal surgery, check with your doctor before doing this move.



# Chair Yoga Practice

This routine is a perfect place to start if you are elderly or if you have balance issues or difficulty getting down on the floor. It is also good supplementary practice for anyone who is stuck sitting for long periods of time at work, in a car, or on a plane. Even practicing a few of the moves will help to get your blood flowing and stretch your muscles so you feel better.

## ► Seated crescent

**Starting position:** Sit up straight in a chair with your feet flat on the floor. Relax your arms at your sides.

**Movement:** As you inhale, raise your right arm overhead, drawing your fingertips and the crown of your head toward the ceiling. As you exhale, bend to the left. Hold. On an inhale, straighten your body. Lower your arm as you exhale. Repeat with your left arm, bending to the right. That's one rep.

**Where you'll feel it:** Sides of torso

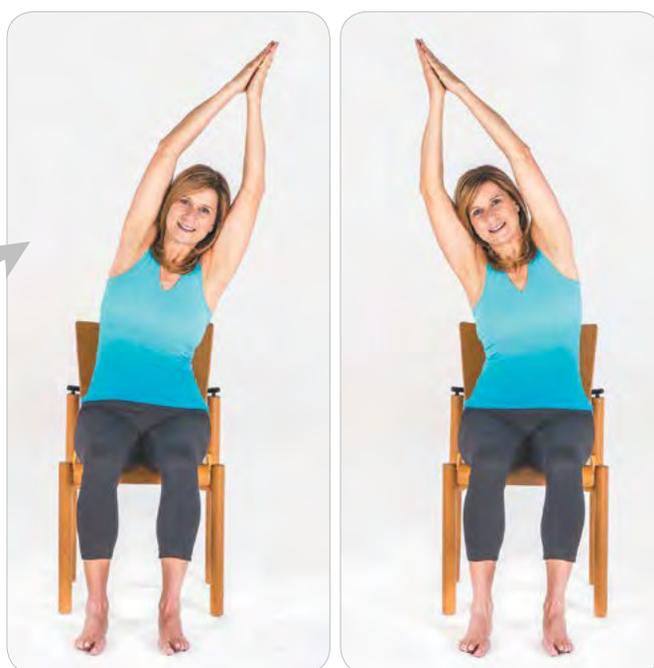
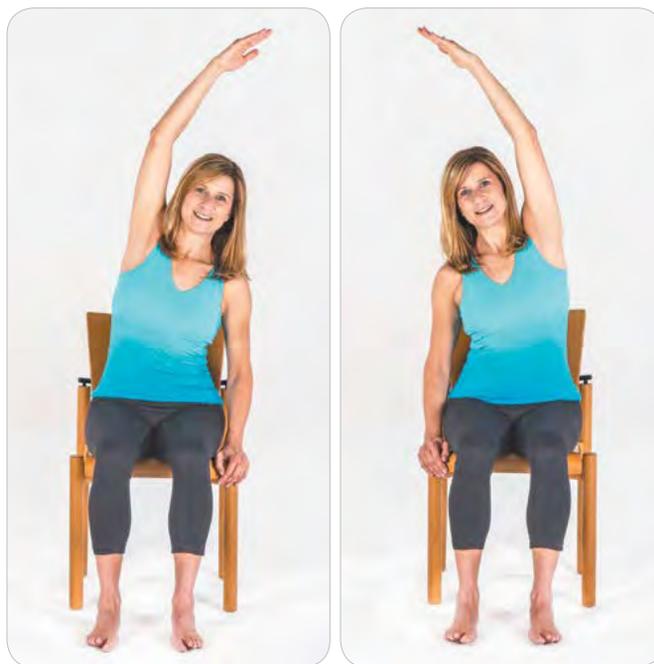
**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Keep your shoulders relaxed and down, away from your ears.
- Tighten your abdominal muscles to support your back.
- If you have back problems or recently had abdominal surgery, check with your doctor before doing this move.

**MAKE IT HARDER:** Raise both arms overhead. You'll need to engage your core muscles more since you won't have a hand down to support you.



## ► Back bend

**Starting position:** Sit up straight on the edge of a chair with your feet flat on the floor. Place your hands on the seat of the chair with your fingertips pointing toward you.

**Movement:** As you inhale, roll your shoulders back. Gently lift your chest toward the ceiling, arching your back. You should be gazing up at the ceiling in front of you. Hold. Release on an exhalation.

**Where you'll feel it:** Chest, shoulders, abdomen

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Keep your shoulders relaxed and down, away from your ears.
- Don't excessively arch your back.
- Don't hyperextend your neck by looking directly above you.
- Tighten your abdominal muscles to support your back.
- If you have back problems or recently had abdominal surgery, check with your doctor before doing this move.



## ◀ Spinal twist

**Starting position:** Sit sideways on an armless chair. Sit up straight with your feet flat on the floor. Place your hands on either side of the chair back.

**Movement:** Inhale. As you exhale, gently rotate your torso to the right, toward the back of the chair, looking over your right shoulder. Hold. As you inhale, return to center. Do all reps to the right, then sit the opposite way and repeat, twisting to the left.

**Where you'll feel it:** Torso, neck

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5 on each side

### Tips and techniques:

- Keep your shoulders relaxed and down, away from your ears.
- Move within a comfortable range of motion. Do not strain or force any position.
- If you have back problems or recently had abdominal surgery, check with your doctor before doing this move.

## ► Pigeon

**Starting position:** Sit up straight toward the edge of a chair with your feet flat on the floor. Place your left ankle across your right thigh.

**Movement:** As you inhale, sit up tall. If you feel a stretch in your left hip, then hold here. If not, gently press down on your left knee with your left hand, and on an exhale, lean forward slightly until you feel a stretch. Hold. Release on an exhale. Do all reps on that side, then repeat with your right ankle across your left thigh.

**Where you'll feel it:** Hips, buttocks

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5 on each side

**Tips and techniques:**

- Don't round your back; keep your spine elongated.
- Keep your chest lifted as you lean forward.
- If you have hip problems or recently had hip surgery, check with your doctor before doing this move.



## ► Shoulder stretch

**Starting position:** Sit up straight toward the edge of a chair with your feet flat on the floor. Hold a strap in your right hand.

**Movement:** Inhale while raising your right arm over your head. Bend your right elbow so your right hand is behind your head and the strap is hanging down your back. On an inhale, extend your left arm down at your side, and then bend your left elbow so your left hand is behind your back. Grasp the strap with your left hand. If you feel a stretch in your shoulders and arms, hold here. If not, walk your hands toward each other until you feel a stretch. Hold. Release on an exhale. Repeat in the other direction, with the strap starting in your left hand. That's one rep.

**Where you'll feel it:** Shoulders, arms

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Keep your shoulders relaxed and down, away from your ears.
- Tighten your abdominal muscles to support your back.
- If you have shoulder problems or recently had shoulder surgery, check with your doctor before doing this move.



# Standing Yoga Practice

This routine can help you get stronger, balance better, and become more flexible. Practice it solo for a quick yoga session, or combine it with the floor routine for a longer yoga workout.

## ► Mountain pose

**Starting position:** Stand tall with your feet together and touching. Relax your arms at your sides with your shoulders back and down.

**Movement:** There is no actual movement in this pose, but your body is active. Imagine your feet are firmly planted on the ground, and draw your fingertips down toward the ground. At the same time, draw your head toward the ceiling, elongating your body.

**Where you'll feel it:** Entire body

**Hold:** 5 to 10 breaths

**Reps:** 1

**Tips and techniques:**

- Don't arch or round your back.
- Don't hold your breath.
- Tighten your abdominal muscles to support your back.



## ◀ Tree pose

**Starting position:** Stand tall with your feet together and touching. Relax your arms at your sides with your shoulders back and down.

**Movement:** As you inhale, raise your left heel off the floor, so only your left toes are touching it, and turn your leg outward. Bring your palms together in front of your chest. Hold. Release on an exhale. Repeat on the opposite leg.

**Where you'll feel it:** Entire body

**Hold:** 5 to 10 breaths

**Reps:** 1

**Tips and techniques:**

- Don't arch or round your back.
- Don't hold your breath.
- Keep your shoulders relaxed and down, away from your ears.
- Tighten your abdominal muscles to support your back.



**MAKE IT HARDER:** Balance on one foot, placing your opposite foot on the calf of your standing leg. You can also increase the challenge by extending your arms overhead, keeping your hands together or opening them, whichever is more comfortable.



### ◀ Back bend

**Starting position:** Stand up straight with your feet slightly apart. Place your hands on your lower back with your fingertips pointing down.

**Movement:** As you inhale, roll your shoulders back and gently lift your chest toward the ceiling, arching your back. You should be gazing up at the ceiling in front of you. Hold. Release on an exhalation.

**Where you'll feel it:** Chest, shoulders, abdomen

**Hold:** 3 to 5 breaths

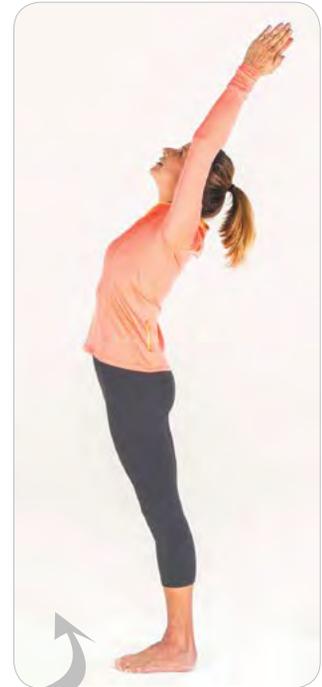
**Reps:** 3 to 5

**Tips and techniques:**

- Keep your shoulders relaxed and down, away from your ears.
- Don't excessively arch your back.

- Don't hyperextend your neck by looking directly above you.
- Tighten your abdominal muscles to support your back.
- If you have back problems or recently had abdominal surgery, check with your doctor before doing this move.

**MAKE IT HARDER:** Raise your arms overhead as you arch your back.



### ▶ Crescent lunge

**Starting position:** Stand tall in front of a chair with your feet apart slightly. Place your right hand on the back of the chair and relax your left arm at your side.

**Movement:** As you inhale, step back with your right foot, with your heel off the floor. Bend your left knee, lowering into a lunge and raising your left arm overhead. Hold. Inhale as you bring your feet together and exhale as you lower your arm. Repeat on the opposite side. That's one rep.

**Where you'll feel it:** Tops of thighs, fronts of hips

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Keep the movement slow and controlled.
- Keep your front knee over your ankle.
- Tighten your abdominal muscles to support your back.

**MAKE IT HARDER:** As you become stronger and more flexible, you can try the crescent lunge without a chair, raising both arms overhead.



### ► Forward bend

**Starting position:** Stand tall in front of a chair with your feet apart slightly. Relax your arms at your sides with your shoulders back and down.

**Movement:** As you inhale, raise your arms overhead. As you exhale, fold forward from your hips, bringing your hands to the seat of the chair. Keep your back straight. Hold. Inhale as you stand back up, bringing your arms overhead. Exhale as you lower your arms.

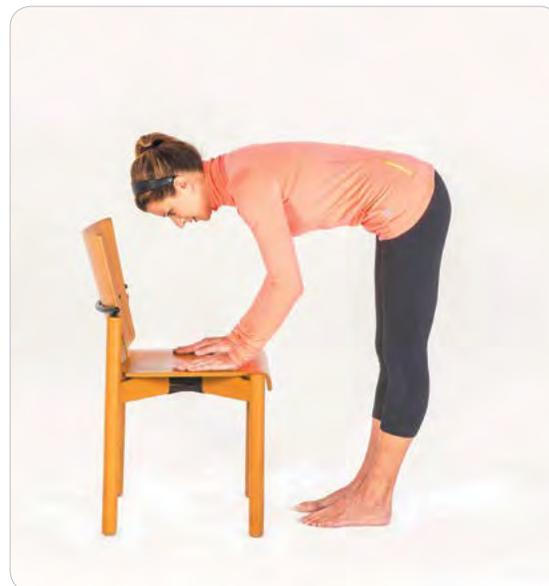
**Where you'll feel it:** Back, hamstrings

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Keep the movement slow and controlled.
- Keep your shoulders relaxed and down, away from your ears.
- Move within a comfortable range of motion. Do not strain or force any position.
- Tighten your abdominal muscles to support your back.
- If you have back problems or osteoporosis, check with your doctor before doing this move.



**MAKE IT HARDER:** As you become more flexible, you'll be able to place your forearms on the seat of the chair. For a greater challenge, you can try the forward bend without a chair, placing your hands on your legs for support.



## ► Triangle pose

**Starting position:** Stand tall with a chair to your right and spread your legs wide. Relax your arms down at your sides. Turn your right foot so it points out to the side (toward the chair), while keeping your left foot pointing forward. Your hips and shoulders should also be facing forward.

**Movement:** As you inhale, raise your arms to shoulder height. As you exhale, reach your right arm and torso to the right as far as possible, then bend to the right and place your right hand on the chair seat. Raise your left arm toward the ceiling and look up at it. Hold. Imagine that your fingertips are reaching toward the ceiling. Inhale as you come up, and exhale as you lower your arms. Repeat on the opposite side. That's one rep.

**Where you'll feel it:** Legs, sides of torso

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Don't let your top hip or shoulder roll forward.



- Tighten your abdominal muscles to support your back.
- Place your hand on your hip if holding your arm up becomes tiring.

**MAKE IT HARDER:** As you become stronger, you can try triangle pose without a chair, placing your hand on your leg wherever comfortable.

## ► Warrior II

**Starting position:** Stand tall in front of a chair and spread your legs wide. Relax your arms down at your sides. Turn your right foot so it points out to the side and angle your left foot inward. Keep your hips and shoulders facing front.

**Movement:** As you inhale, raise your arms to shoulder height. As you exhale, bend your right knee, lowering onto the chair in a lunge position. Hold. Inhale as you straighten your legs, rising up, and exhale as you lower your arms. Repeat on the opposite side. That's one rep.

**Where you'll feel it:** Legs, buttocks, back, shoulders, arms

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Keep your front knee over your ankle.
- Imagine that your fingertips are reaching to opposite walls.
- Tighten your abdominal muscles to support your back.
- Place your hands on your hips if holding your arms up becomes tiring.

**MAKE IT HARDER:** As you become stronger, you can try warrior II without a chair.



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# Floor Yoga Practice

This routine will really stretch you out, improving flexibility and helping you to relax. You'll also get some muscle-strengthening benefits, especially as you try some of the "make it harder" poses like downward-facing dog and cobra. If you have balance problems, it's a good progression from the Chair Yoga Practice.

## ► Cat-cow

**Starting position:** Get down on all fours (tabletop position) with your hands directly beneath your shoulders and your knees beneath your hips. Keep your back flat.

**Movement:** As you inhale, lift your chest and tailbone toward the ceiling like a cow. As you exhale, round your back, bringing your chin toward your chest and tucking your tailbone under like a cat. That's one rep. Continue moving with your breath; do not hold.

**Where you'll feel it:** Chest, back, hamstrings

**Hold:** None

**Reps:** 3 to 5

**Tips and techniques:**

- Keep the movement slow and controlled.
- Don't overarch your back.
- If you have back problems or osteoporosis, check with your doctor before doing this move.



## ► Puppy pose

**Starting position:** Get down on all fours (tabletop position) with your hands directly beneath your shoulders and your knees beneath your hips. Keep your back flat.

**Movement:** Exhale as you slowly walk your hands out in front of you, lowering your head and chest toward the floor. Keep your hips over your knees and your arms shoulder-distance apart. Hold. On an inhale, walk your hands back in and come up onto all fours.

**Where you'll feel it:** Back, arms

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Draw your shoulder blades down your back, away from your ears.
- Relax your neck.
- Come out of the pose slowly.
- If you need support, place a rolled-up blanket or bolster lengthwise underneath you and rest your forehead on it.
- If you have back problems or glaucoma, check with your doctor before doing this move.

**MAKE IT HARDER:** In the tabletop position, flex your feet to bring your toes forward, then press into your hands and the balls of your feet and lift your hips toward the ceiling, forming an inverted V. This pose is called downward-facing dog.



## ◀ Sphinx

**Starting position:** Lie facedown on the floor with your legs extended behind you and toes pointed. Bend your arms and rest your elbows under your shoulders with your forearms on the floor.

**Movement:** As you inhale, press your hands and forearms into the floor and lift your head and chest off the floor. Press your pubic bone into the floor as your chest draws forward and your tailbone extends toward your heels. Hold. Release on an exhale, lowering your chest and head to the floor. Turn your head to the side as you rest.

**Where you'll feel it:** Chest, shoulders, abdomen, back

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

**Tips and techniques:**

- Keep your elbows close to your sides.
- Don't let your chin jut forward.
- Draw your shoulder blades down your back, away from your ears.
- If you have back or shoulder problems or recently had surgery, check with your doctor before doing this move.

**MAKE IT HARDER:** Slide your hands in closer to your body and then straighten your arms, lifting your upper body up off the floor. Your palms and lower body should remain on the floor. This is called the cobra pose.

## ► Child pose

**Starting position:** Get down on all fours (tabletop position) with your hands directly beneath your shoulders and your knees beneath your hips. Keep your back flat.

**Movement:** On an exhale, sit back onto your heels, lower your forehead to the floor, and extend your arms in front of you. Hold. Inhale as you come back up.

**Where you'll feel it:** Shoulders, arms, back, buttocks

**Hold:** 5 to 10 breaths

**Reps:** 1

### Tips and techniques:

- You can separate your knees if you prefer.
- If you can't sit on your heels, place a rolled-up towel or blanket or a pillow between your thighs and calves.
- You can place your forehead on a folded towel, if needed.



- Draw your shoulder blades down your back, away from your ears.
- If you have shoulder problems, you can keep your arms alongside your body.
- If you have back, knee, or shoulder problems or have recently had surgery, check with your doctor before doing this move.

## ► Staff pose

**Starting position:** Sit up straight on the floor with your legs together and extended in front of you, feet flexed. Place your hands on the floor next to your hips, fingers pointing toward your feet.

**Movement:** Press your legs into the floor and push your heels away from you. At the same time, lengthen your spine, drawing the crown of your head toward the ceiling and your tailbone into the floor. Hold.

**Where you'll feel it:** Entire body

**Hold:** 5 to 10 breaths

**Reps:** 1

### Tips and techniques:

- Don't lean back. If you can't sit up straight, sit on the edge of a rolled-up towel or pillow.
- Draw your shoulder blades down your back, away from your ears.
- Don't let your chin jut forward.
- Don't hold your breath.



## ► Seated forward fold with strap

**Starting position:** From the staff pose, loop your strap around the balls of your feet and grasp an end with each hand. Sit up straight with your arms relaxed.

**Movement:** As you exhale, lean forward from your hips, keeping your chest lifted and your back straight. Walk your hands down the strap as far as is comfortable. Hold. On an inhale, release.

**Where you'll feel it:** Back, hamstrings

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Don't lean back. If you can't sit up straight, sit on the edge of a rolled-up towel or pillow.
- Draw your shoulder blades down your back, away from your ears.
- Don't let your chin jut forward.
- Keep your chest lifted.
- Don't hold your breath.

**MAKE IT HARDER:** As you become more flexible, you can try this posture without the strap. Grasp your shins or feet, whichever is more comfortable.



## ◀ Butterfly

**Starting position:** Sit up straight on the floor with the soles of your feet together and your knees pointing out to the sides. Hold your feet or your ankles.

**Movement:** As you exhale, gently lean forward keeping your chest lifted and your back straight. Press your knees toward the floor. Hold. Release as you inhale.

**Where you'll feel it:** Inner thighs, hips

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Don't lean back. If you can't sit up straight, sit on the edge of a rolled-up towel or pillow.
- Draw your shoulder blades down your back, away from your ears.
- Don't let your chin jut forward.
- You can place pillows or rolled-up blankets under your knees for comfort.
- Keep your chest lifted.
- Don't hold your breath.

## ► Bridge pose

**Starting position:** Lie faceup on the floor with your knees bent and feet flat. Relax your arms at your sides.

**Movement:** As you inhale, raise your back and buttocks off the floor, placing a pillow or rolled-up blanket underneath your back for support. Hold. Exhale as you slowly lower, removing the pillow or blanket.

**Where you'll feel it:** Abdomen, back, buttocks, legs

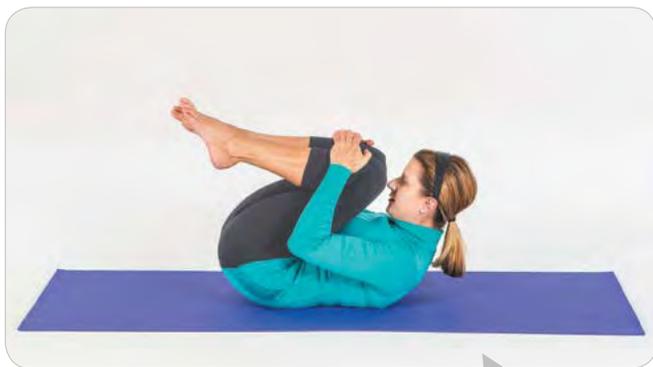
**Hold:** 5 to 10 breaths

**Reps:** 1

### Tips and techniques:

- Keep your knees in line with your hips and feet, not rolling in or out.
- Lift only to the point where your torso is in line with your knees and shoulders.
- Keep the muscles in your buttocks engaged.
- Don't hold your breath.

**MAKE IT HARDER:** As you become stronger and more flexible, try the bridge without using a pillow to support your back.



## ◀ Knees-to-chest

**Starting position:** Lie faceup on the floor with your legs extended and your arms at your sides.

**Movement:** On an exhale, bend your legs and bring your knees toward your chest, grasping your shins. Keep your head on the floor. Hold. Release your legs on an inhale.

**Where you'll feel it:** Back, hips

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Keep the movement slow and controlled.
- Move within a comfortable range of motion. Do not strain or force any position. If you have back problems or osteoporosis, or have had surgery recently, check with your doctor before doing this.
- Keep your shoulders down, away from your ears.
- Don't hold your breath.

**MAKE IT HARDER:** As you become more flexible, you can lift your head off the floor as you exhale, and hold this position.

## ► Lying spinal twist

**Starting position:** Lie faceup on the floor with your knees bent and feet flat. Extend your arms out to your sides.

**Movement:** As you exhale, gently lower your knees to the left as you turn your head and look toward your right hand. Hold. Return to the center on an inhalation. Repeat on the opposite side. That's one rep.

**Where you'll feel it:** Back, buttocks, neck

**Hold:** 3 to 5 breaths

**Reps:** 3 to 5

### Tips and techniques:

- Keep the movement slow and controlled.
- Move within a comfortable range of motion. Do not strain or force any position. If you have back problems or osteoporosis, or have had surgery recently, check with your doctor before doing this.
- Keep your shoulders down, away from your ears.
- Don't hold your breath.



## ◀ Corpse pose

**Starting position:** Lie faceup on the floor with your arms and legs comfortably apart. Palms should be facing up, and your eyes closed. For comfort, you may want to cover yourself with a light blanket. You may also want to cover your eyes with an eye pillow, mask, or towel.

**Movement:** Relax your whole body and pay attention to your breath.

**Where you'll feel it:** Entire body

**Hold:** As long as you'd like

**Reps:** 1

### Tips and techniques:

- If your back bothers you, place a bolster or rolled-up towel or blanket under your knees.
- When you are finished, move various parts of your body one at a time as follows: wiggle your fingers and toes, rotate your wrists and ankles, stretch your arms up overhead, and drop your knees to each side to twist the spine. Then roll to one side and sit up slowly to avoid a drop in blood pressure.

# Yoga flows

In many yoga routines, you hold individual poses. However, postures can also be linked together into sequences called yoga flows, so that you move from one posture to another—for example, inhaling as you raise your arms overhead and then folding into a forward bend as you exhale. Compared with yoga practices in which you hold poses (like the other routines in this report), yoga flows will get your heart rate up, possibly providing some cardio benefits, depending upon the intensity of your practice.

We've created three yoga flows for you to try—one sitting, one on the floor, and a third that's a modified (simpler) version of a sun salutation. You can repeat each as needed or as you desire.

## ► Chair sequence

This flow will limber up your spine and get your blood moving after you've been sitting. See how to do it in this video: [www.health.harvard.edu/yoga-flow-chair](http://www.health.harvard.edu/yoga-flow-chair).

**Starting position:** Sit on the edge of a chair with your feet flat on the floor, hands on your thighs.

**Movement:** Inhale deeply and circle your arms out to the sides and up, reaching overhead. Exhale as you fold forward, lowering your arms out to the sides and bringing your chest toward your thighs. Inhale as you round your back and roll upward, one vertebra at a time, returning to the starting position with your hands on your thighs. Exhale. Repeat.



## ► Mat sequence

This flow combines the cow, cat, and child poses (see "Cat-cow," page 36, and "Child pose," page 38). It is a great way to wake up your body in the morning. You can also perform it more slowly as a way to release tension at night before you go to bed. You can view a video of this sequence at [www.health.harvard.edu/yoga-flow-mat](http://www.health.harvard.edu/yoga-flow-mat).

**Starting position:** Begin on all fours with your wrists below your shoulders and your knees below your hips.

**Movement:** As you inhale, lift your head and tailbone

up toward the ceiling, dropping your belly toward the floor and arching your back (cow pose).

As you exhale, round your back, dropping your chin toward your chest, tucking your tailbone under, and pulling your navel toward your spine (cat pose).

Inhale back into cow pose.

Then exhale as you sit back onto your heels, lowering your head and chest toward the floor (child pose). Come back up onto all fours and repeat the sequence.

## ► Modified sun salutation

The sun salutation is probably the best-known yoga flow. Historically, it was meant to honor the sun. Today, yoga styles and classes that do the sun salutation often perform it at the beginning of a class as a warm-up. The classic sun salutation is an iconic, but difficult, yoga flow. You can perform a simpler version of it using a chair. A video is available at [www.health.harvard.edu/sun-salutation](http://www.health.harvard.edu/sun-salutation).

**Starting position:** Stand in front of a sturdy armless chair, placed on a mat or against the wall so that it cannot slide. Bring your feet together and put your hands together in prayer position in front of your chest. Stand tall, lifting the crown of your head toward the ceiling and grounding your feet into the floor.

**Movement:** Take a deep breath in and circle your arms out to the sides and up, reaching overhead.

Exhale as you fold forward, placing your hands on the seat of the chair. Inhale as you look up, flattening your back.

Exhale as you fold forward, lowering your head.

Inhale as you step back, one foot at a time, into a plank position, with your shoulders over your wrists.

Exhale as you push your hips back into a modified downward-facing dog with your hands on the chair instead of the floor. Hold here for 3 to 5 breaths.

One foot at a time, step forward toward the chair. Inhale as you look up, flattening your back.

Exhale as you fold forward, lowering your head. Inhale as you stand up, circling your arms up overhead, bringing your palms together.

Exhale as you lower your hands to your chest. Take a few deep breaths, and then repeat.

# Breathing, relaxation, and meditation practices

Although gyms tend to treat yoga as strictly a form of exercise—usually including some relaxation while in corpse pose at the end—a well-rounded practice should also include breathing and meditation. The reason is simple: these components of yoga affect different systems of the body. Physical postures primarily affect the musculoskeletal system. Breathing affects your heart and lung functioning. Meditation affects cognitive and emotional functioning. By combining them, you get the benefits of each, making the practice of yoga that much more powerful.

A practice that includes breathing and meditation will also help to focus your mind on the present. Instead of thinking about your endless to-do list or an argument with your spouse, you will be better equipped to concentrate on what you are doing in the present moment. Instead of mindlessly going through the motions, as people often do when exercising, you can pay more attention to how you are executing the postures, reducing your risk of injury.

This chapter describes some common forms of breathing, relaxation, and meditation. You can practice them before or after the postures, though after is more common.

## Breathing practices

There are separate breathing practices above and beyond the coordinated breathing you do during the yoga routines (breathing in on certain moves and out on others). Following are a variety of yogic breathing techniques that can help relax you and release ten-

sion. Many of them can be done to reduce stress anytime, anywhere—not just during yoga practice, but also sitting at your desk or waiting at the bus stop.

Start with the abdominal breathing technique. You can then try others, based on the benefits you desire and your environment. For example, ujjayi breathing, which is audible, isn't practical when you're in a meeting.



Gyms tend to treat yoga as pure exercise and skimp on the practice of meditation. Try to include it in your own practice to reduce stress and enhance mental focus.

## Abdominal breathing

Also called belly breathing, this is a basic yoga breath that all beginners should start with. The technique emphasizes breathing deeply to create abdominal movement. Typically, people take shallow breaths that involve only chest movement. Your belly should expand and rise as you inhale, then contract and lower as you exhale.

Abdominal breathing is best learned while lying on your back, with one or both of your hands on your abdomen. Breathe slowly and deeply, drawing air into the lowest part of your lungs so your hand rises. One way to think of this is to imagine your lungs as two glasses of water—you fill them from the bottom up, but empty them from the top down. (To see a video, go to [www.health.harvard.edu/breathing-practice](http://www.health.harvard.edu/breathing-practice).)

Once you're comfortable doing abdominal breathing in a reclining position, you can try it while sitting or standing. You can use this technique as you practice a posture or while meditating. It is also useful any time of the day when you need to calm down. Once you've mastered this breathing technique, you can try others.

## 1:2 breathing practice

This technique offers a good follow-up after abdomi-

nal breathing to enhance relaxation. You focus on lengthening your exhalations so they are double the length of your inhalations. The longer exhalations can tamp down nervous energy, reducing anxiety and helping with sleep problems.

Begin by taking a few relaxed abdominal breaths. Then mentally count the length of each inhalation and exhalation, without changing your breathing pattern. If your inhalation is longer than your exhalation, gradually lengthen your exhalation so it is of equal length. Once you are comfortable with that, prolong your exhalation by one to two seconds. Work up to making your exhalation twice as long as your inhalation; for example, if you inhale for three seconds, exhale for six. Don't go any higher than that. Keep the breath smooth and relaxed. If you notice any strain, back off a bit. Any increase in your exhalation will have a calming effect even if you can't double the duration of the inhalation. Repeat for eight to 12 breaths, and then finish with six to eight normal, relaxed breaths.

### **Alternate nostril breathing**

Try this technique when you need to be mentally sharp. As the name implies, you breathe in and out through alternating nostrils—breathing in through one nostril and out through the opposite one. This breathing technique offers benefits similar to those of abdominal breathing, but it may also be helpful if you have a hard time focusing. Alternate nostril breathing necessitates that you pay more attention to your practice so your mind has less time to wander. Some practitioners also claim that it helps to balance the right and left hemispheres of the brain, but there's no evidence to support that.

To try alternate nostril breathing, sit in a comfortable position. You'll be using your right thumb and right ring finger to alternately block your nostrils. (If you are left-handed, it may be more comfortable for you to use your left hand.) Start by gently using your thumb to close your right nostril. Inhale deeply through your left nostril. Hold your breath as you use your ring finger to close your left nostril. Release your right nostril and exhale through it. Now, leaving the ring finger in place, inhale deeply through your right nostril. Then release your left nostril to exhale. Aim

for 15 to 20 repetitions, though doing a few cycles can have a calming effect. Aim to match the length of your inhalations and exhalations. You may find that they will lengthen as you practice this technique.

### **Ujjayi breathing**

This technique is more challenging but may enable you to further slow and deepen your breathing. Also referred to as victorious breath, this technique is audible. The sound that it makes has been described as sounding like the ocean—or Darth Vader. It is a deep, slow, rhythmic breath following from the abdomen to the rib cage to the chest, and then to the throat, where the sound is generated. Inhale and exhale through your nose, directing each inhalation and exhalation across the back of your throat to make a soft “aahh” sound on each inhalation and a soft “hhaa” sound on each exhalation. Try to keep each an equal length, gradually lengthening them with practice. Practice this technique for up to five minutes at a time. This technique is often used in Ashtanga yoga as you move through postures.

## **Deep relaxation**

There are multiple techniques for achieving deep relaxation while you lie in corpse pose (see page 41). One approach is called body scanning.

As you lie on the mat, with your eyes closed, relax each muscle group in turn, starting with your toes and working your way up to the top of your head. Take slow, deep breaths, allowing your stomach to rise and fall as you inhale and exhale. Concentrate on your right big toe and imagine the atoms in it; try to picture the space between the atoms. Imagine your toe feeling warm and relaxed. Next, shift your focus to the rest of your toes, then the ball of your foot and the arch. Work your way up your right leg, turning your attention to your ankle, calf, knee, thigh, and hip. Picture each muscle feeling open, warm, and relaxed. Allow your right leg to relax, sinking into the support of the floor. Repeat on the left side. Then continue working up. Is your back feeling tight? Pay attention to the muscles around each vertebra. Think about your neck and jaw. Yawn. Allow each part of your face to relax. Let your whole body sink into your chair or bed.

Focusing attention on each muscle can make you aware of the tension you're holding in your body—and give you a tool for relaxation anytime you become tense or stressed. Whereas mind-body medicine has popularized the idea that a person's state of mind can affect his or her physical health, the process actually works both ways—the body affects the mind as well. Think of deep relaxation as body-mind medicine.

## Meditation

Following are some simple meditation practices you can do at home. Start with the basic one to get comfortable with meditating. Then you can try the others, which offer their own benefits.

Note that in many meditation practices, people use hand positions called mudras to help focus attention. The most common one, gyan mudra, simply involves lightly touching the tips of your thumb and forefinger, with the remaining fingers relaxed but gently extended. Your hands rest in your lap, with your palms facing up.

### Basic breathing meditation

Practice this meditation anytime you are feeling stressed. Sit with a straight spine, with your head erect and your chin slightly tucked in. Close your eyes. Begin long, slow deep breathing through your nose. As you inhale, your abdomen should extend as though it is being filled with air. As you continue to inhale, your chest will expand and your shoulders lift up slightly. As you start to exhale, your chest contracts first, followed by your abdomen, which pulls in as though it is being emptied of air. Your breath should be steady and smooth at four breaths per minute or slower (15 seconds or longer for each breath), if possible. Focus your attention on the flow of the breath, such as the sound, the temperature of the air in your nostrils, or the movement of your chest and abdomen. Keep your attention on the breath in a relaxed manner. If your attention wanders—which can happen frequently, especially when you're just starting out—patiently and calmly bring your attention back to the breath. Continue for three minutes or longer.

### Guided imagery meditation

If you are a visually oriented person, using mental images may make meditation easier. Sit or lie comfortably. Clear your mind while taking deep, even breaths for several minutes. Then conjure up an image of a safe or special haven (perhaps a lake cabin, a beach house, your grandmother's kitchen, or a garden) and imagine yourself there. Allow all of your senses to be present. What do you smell—pine needles, rain steaming off hot pavement, vanilla in the kitchen? What do you hear and see? Are clouds or birds passing by? Bask in the surrounding colors. Concentrate on sensory pleasures: a cool breeze on your cheek, gravel crunching underfoot, or the scent of flowering trees. When intrusive thoughts pop into your head, simply observe them without reacting to them. Then return to your focus. Practice for 10 to 20 minutes.

### Loving-kindness meditation

The loving-kindness meditation, also called metta, encourages compassion and may actually help keep you younger longer by increasing levels of the enzyme telomerase (see “Youthfulness,” page 16).

Sit in a position that is comfortable for you—perhaps cross-legged on the floor, or in a chair with your spine straight and feet flat on the floor. Your hands can rest on your knees or lie relaxed in your lap. Relax your whole body and close your eyes. Then imagine what you wish for your life and come up with three or four phrases that describe your desires—for example, “May I be healthy. May I be happy. May I be loved.” As you breathe deeply, repeat these phrases to yourself several times, sending love and warmth to yourself.

Next, direct the phrases toward someone you feel thankful for or who has helped you, such as a mentor: “May you be healthy. May you be happy. May you be loved.”

Continue this practice, visualizing and directing the phrases toward the following people in turn:

- a dear friend
- an acquaintance you feel neutral about—someone you neither like nor dislike
- someone you dislike or with whom you are having a difficult time
- everyone in the world. ♥

# Taking it to the next level— finding the right class

The program presented in this report is a good basic program for beginners. But at some point, you may want to engage in additional practices with greater diversity, depth, and challenge. Group classes and DVDs can both provide new routines. You will find a listing of DVDs for beginners and people with various physical limitations in the “Resources” section of this report (see page 50). Finding an appropriate class and instructor will take a little more effort and care.

## Choosing a class

Your first step in searching for a class is simply to choose a style of yoga that you would like to practice. However, there are so many types of yoga that choosing a style can feel a little intimidating at first. For help in picking a style, refer back to the chapter “Which type of yoga is right for you?” beginning on page 17. It will help you decide whether you want one that allows you to use blocks and other props (Iyengar), one with flows (gentle Vinyasa), one that is more athletic (Ashtanga or Jivamukti), or perhaps one that is mainly done lying down (restorative yoga).

Once you have settled on a style (or styles) of yoga that would suit you, your next step is to find an actual class. Complicating the process, there are so many spin-offs from more traditional practices that it can be hard to tell the difference between them just by looking at the name of the class. For example, hot yoga is similar to Bikram in that they’re both done in a hot room, but the moves them-



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With so many styles of yoga to choose from, it can take some work to find a style and class that are right for you. Do not attempt an advanced class if you’re a beginner. Tell your instructor if you have any physical limitations. And realize that this is not a competition. Go only as far into a pose as your body will comfortably allow.

selves are different. And there are hybrids such as Yogilates (a combination of yoga and Pilates) that don't give you a traditional practice of either one. Here are some clues to help you find a class that's appropriate for your level:

- If you go to a facility that offers only one type of yoga class, it's usually open to all levels. This means that the instructor should be offering modifications to make poses either easier or more challenging to accommodate all participants.
- Facilities that offer multiple classes may make it easier to choose by listing classes as level 1, 2, or 3 or by using descriptors like Extra Gentle Yoga, Gentle Yoga, Moderate Yoga, Challenging Yoga. Most yoga studios offer special beginners' classes.
- The facility you choose will often influence the type of yoga class you'll get. For example, a class at a senior center will likely be geared toward beginners, with more modifications for physical limitations. Classes at gyms and health clubs tend to lean more toward the physical fitness side of yoga. Specialty studios are likely to honor more traditional comprehensive practices.

After you've winnowed down the options, here are some questions you can ask to help ensure that the class you are considering is right for you.

**What is the class like?** Most facilities list class descriptions

on their website. If you can't find enough detail, call. Describe your level of experience and ask which class would be best.

**How quickly will you be moving from pose to pose?** Generally, the faster the flow, the higher the intensity and level of challenge. If you're just starting out, stick to a slower-paced class in the beginning.

**Are there tools to help modify poses?** Straps, blocks, blankets, pillows, or pillow-like bolsters can help you to execute poses even if you're inflexible. While there are many good beginner classes that don't use props, if a class offers them, it's a sign that it should be good for beginners.

**Who is the instructor?** It's the instructor who really sets the tone of the class, so finding the right teacher is important. (See "Finding a yoga teacher," below.)

If a class doesn't sound right to you, ask if you could simply observe it instead of participating your first time. Or skip it entirely. There are lots of yoga classes to choose from, and you want your first class to be a good experience.

### Finding a yoga teacher

The National Center for Complementary and Integrative Health, a division of the National Institutes of Health, notes that yoga "is generally low-impact and safe for healthy people." But it immediately adds this qualifier—"when practiced appropriately under the guid-

ance of a well-trained instructor." The following tips will help you find a good teacher.

**Get references.** Ask trusted sources to recommend a yoga teacher or studio. Some health practitioners are referring patients for yoga and may be good sources. Friends, family, and co-workers may be another source for recommendations, but ask people with levels of experience and fitness similar to yours in order to get the best recommendation for you. A yoga instructor who is right for your cousin who runs 5K races may not be right for you if you're currently not exercising and have diabetes, for example.

**Check qualifications.** The Yoga Alliance, an independent nonprofit organization, maintains a registry of yoga instructors from various schools and yogic traditions who have received training that meets minimum standards in safety, anatomy, and yoga techniques and principles (see "Resources," page 50). Depending upon their training, instructors will be designated as a registered yoga teacher (RYT) or experienced registered yoga teacher (E-RYT). Both of these designations are usually followed by 200 or 500, indicating the number of hours of training the person received for credentials at that level. In addition, the Yoga Alliance has designations for teachers trained in child yoga (RCYT) and prenatal yoga (RPYT). These are not certifications by the Yoga

Alliance, but a verification that the instructor has completed approved training. Specific schools of yoga like Bikram, Ashtanga, or Iyengar have their own training requirements and programs.

**Skip performers.** These are instructors who stay at the front of the room and lead the class, sometimes showing off what they can do. A high-quality instructor will be paying close attention to students and probably walking around and helping students make adjustments or modify poses to meet their individual needs.

**Look for a welcoming environment.** Instructors set the tone for the class. Look for one who is welcoming to all and makes you feel safe and comfortable, allowing you to proceed at your own pace. Competitive environments can encourage you to push yourself too far, risking an injury.

**Ask about experience.** This is key if you have any health or medical issues or limitations. Ideally, you should select an instructor who has experience working with your particular condition. If that's not possible, look for an instructor who will be attentive to your needs.

## Avoiding injuries in class

The program in this report is not likely to result in any injuries. However, no type of exercise—or any kind of activity, even climbing in and out of the bathtub—is 100%

## Dangerous poses

Certain poses have been associated with serious risks, including nerve damage and strokes. Beginners and people with neck problems or circulatory issues should avoid the following poses:

- headstand
- shoulder stand
- plow
- wheel
- fish

safe. When you start taking classes, make sure that you're not pushing yourself beyond your limits. Following the guidelines listed here—in addition to the “Tips for a better, safer practice” on page 24—will help you avoid problems.

**Talk to the instructor.** Arrive early so you can introduce yourself to the teacher if you haven't already met. You should inform him or her that this is your first class or that you are a beginner. Mention any medical conditions or problems you have that may affect your ability. He or she should be able to suggest ways you can modify poses—for example, using blocks to help support you in certain positions. The teacher may also be able to show you alternate poses that are equally effective.

**Do not attempt advanced classes if you're a beginner.** At advanced levels, yoga can be quite difficult. You will be more likely to

injure yourself if you jump right into advanced classes without building up through more basic levels first and developing needed skills as you go.

**Realize that this is not a competition.** If you're taking a class or watching a DVD, the instructor will be more flexible (not to mention more experienced) than you are. He or she will be able to stretch much farther than you likely can and enter more deeply into poses. Other members of the class may also be more advanced and more limber. Do not feel that you have to rival them. Instead, go only as far into a stretch or pose as your body will comfortably allow. If you push yourself too far, it can cause injuries.

**Protect your neck.** Avoid any pose that puts excessive pressure on your neck, such as the fish, plow, or shoulder stand poses, if you are a beginner or have any neck or circulatory issues. These poses may increase your risk for certain types of injuries, including nerve damage and even strokes (see “Dangerous poses,” above left).

**Don't stress over yoga.** Some research hints at a connection between mental strain and risk of injury. If yoga is feeling more stressful than positive, start more slowly, take it easier than usual, and bring more awareness to your practice. This will help to ease stress and protect you against injury. ♥

# Resources

## Organizations

### International Association of Yoga Therapists (IAYT)

P.O. Box 251563  
Little Rock, AR 72225  
928-541-0004  
[www.iayt.org](http://www.iayt.org)

The IAYT supports research and education in yoga and yoga therapy and serves as a membership-based, professional organization for yoga teachers and therapists worldwide. A directory of members is available on the website and can help you find teachers in your area.

### National Center for Complementary and Integrative Health (NCCIH)

National Institutes of Health  
9000 Rockville Pike  
Bethesda, MD 20892  
888-644-6226 (toll-free)  
<https://nccih.nih.gov/health/yoga>

This branch of the National Institutes of Health sponsors research on complementary health products and practices, including yoga. The website includes information for physicians and consumers.

### Yoga Alliance

1560 Wilson Blvd., Suite 700  
Arlington, VA 22209  
888-921-9642 (toll-free)  
[www.yogaalliance.org](http://www.yogaalliance.org)

This nonprofit association promotes and supports the integrity and diversity of the teaching of yoga through education and advocacy. The Yoga Alliance Registry, which is available to the public, lists certified yoga instructors who have met minimum standards of training.

## Websites

### About Health: Yoga

[www.yoga.about.com](http://www.yoga.about.com)

This large online resource can direct you to articles, routines, and product reviews.

### Yoga as Medicine: The Art & Science of Yoga Therapy

[www.drmccall.com](http://www.drmccall.com)

Timothy McCall, M.D., is a yogi and internal medicine physician. His website features a wealth of information on yoga therapy.

### Yoga Finder

[www.YogaFinder.com](http://www.YogaFinder.com)

This directory offers an easy way to find studios and instructors in your area. However, the site does not verify instructors' credentials.

### Yoga Journal

[www.YogaJournal.com](http://www.YogaJournal.com)

The online presence for the magazine *Yoga Journal*, this site offers hundreds of online resources, including articles and instructions on poses.

## Books

### Cool Yoga Tricks

Miriam Austin  
(Ballantine Books, 2003)

You can modify just about any pose with props, and this book shows you how. You'll also learn what common yoga instructions like "roll your thighs outward" mean and how to follow them.

### How to Know God: The Yoga Aphorisms of Patanjali

Swami Prabhavananda and Christopher Isherwood  
(Vedanta Press, 2007)

This translation of the classic work by Patanjali, who also wrote *The Yoga Sutras*, is easy to understand. These ancient aphorisms give instruction in controlling your mind and achieving inner peace and freedom.

### Light on Yoga

B.K.S. Iyengar  
(Schocken, 1979)

The classic 1966 book is a definitive guide to the philosophy and practice of yoga by one of its greatest teachers. You'll also find encyclopedic illustrations of hundreds of yoga poses and many breathing techniques.

### The Science of Yoga

William J. Broad  
(Simon & Schuster, 2012)

A science writer for *The New York Times*—and lifelong yoga practitioner—examines centuries of history and research to scrutinize the claims made about yoga.

### Yoga

Linda Sparrowe  
(Universe, 2008)

The coffee-table book features beautiful photos of some of the leading yoga teachers of the 1990s as they strike poses—most of them very advanced. This isn't a book to teach you yoga; it's a book to inspire.

### Yoga and the Quest for the True Self

Stephen Cope  
(Bantam, 2000)

The author demystifies the philosophy, psychology, and practice of yoga and teaches how it applies to our most human dilemmas. You'll discover how yoga can help heal the suffering from loss, disappointment, and addiction.

*continued on page 51*

## Resources *continued*

### Yoga as Medicine

Timothy McCall, M.D.  
(Bantam, 2007)

A comprehensive guide looks at the benefits of yoga and its therapeutic uses. It also provides illustrated and detailed instructions on starting a yoga practice geared to your fitness level and your health status.

### Yoga Sparks

Carol Krucoff  
(New Harbinger, 2013)

No time to do yoga? Here are 108 quick, practical, and accessible yoga exercises you can practice anytime, anywhere to start to develop a yoga habit.

### Your Brain on Yoga

Sat Bir Khalsa, Ph.D., and Jodie Gould  
(Rosetta Books, 2012)

One of the medical editors of this Special Health Report summarizes cutting-edge research on how yoga can change your brain and help with conditions such as anxiety, depression, and insomnia. Along with the science, you get personal experiences and practical advice.

### DVDs

#### Gentle Yoga: 7 Practices for Your Day

These routines are each designed to offer specific benefits, such as balance, lower-body flexibility, and core strength. Jane Adams has other DVDs also geared to beginners, available from [www.janeadamsyoga.com](http://www.janeadamsyoga.com).

#### Lilias! Yoga Gets Better with Age

Lilias has taught yoga to many generations through her PBS show, and she offers a variety of gentle online classes at [www.liliasyoga.com](http://www.liliasyoga.com). The DVD is available at [www.amazon.com](http://www.amazon.com).

#### Relax into Yoga

The DVD presents seven routines designed for different levels of mobility, including a bed sequence. Available from [www.healingmoves.com](http://www.healingmoves.com).

#### Yoga for the Rest of Us

This series of DVDs includes specific ones for arthritis, pain, and back care. Available from [www.peggycappy.net](http://www.peggycappy.net).

#### Yoga over 50

The DVD offers eight routines, including chair yoga and specific routines for osteoporosis and osteoarthritis. Available from [www.yogastudio.org](http://www.yogastudio.org).

## Glossary

**asana:** A yoga posture.

**atherosclerosis:** A disease in which plaque builds up inside arteries.

**gamma-amino butyric acid (GABA):** A brain chemical associated with improved mood and decreased anxiety.

**inversions:** Postures where your head is below your heart, such as a forward bend, downward-facing dog, and headstand.

**meditation:** a practice to train your brain and promote relaxation.

**parasympathetic nervous system:** The part of your body's autonomic nervous system that promotes a balanced, relaxed state, sometimes called the rest-and-digest response.

**pranayama:** In yoga, the practice of breath control and breathing exercises.

**proprioception:** The ability to sense where your body is in space.

**range of motion:** The extent of movement in a joint and thus flexibility. This is measured in the degrees of a circle.

**supine:** Lying faceup.

**sutras:** Classic yoga texts.

**sympathetic nervous system:** The part of the autonomic nervous system that activates the flight-or-fight response when there is danger or a challenge.

**telomerase:** An enzyme involved in the lengthening and shortening of telomeres.

**telomere:** A component of DNA that is a cellular marker for how well you are aging.

**ujjayi:** A style of yogic breathing, also called victorious breath, that is characterized by the ocean sound that it makes.

**yogi:** A male practitioner of yoga. The feminine is yogini.







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