



How Yoga Supports Health & Physiology

Lesson



Lesson Overview

In this lesson, we specify the general and specific ways that yoga techniques support health, including its impact on various bodily systems.

Objective

Be competent in specifying the ways that yoga supports health from various perspectives.

Description

Describe four perspectives from which yoga can be described as supporting health. Explain ways that yoga can serve a preventative role and examples of providing symptomatic relief. Understand how yoga techniques can be used along with western medical treatment and how they can help to address imbalances related to health conditions. Specify multiple categories of bodily systems that are supported by yoga practices and the ways in which yoga supports health of those systems.

How Yoga Supports Health



There is an understanding in many healthcare settings that, when all else fails, yoga works. – *Joseph LePage*

There are different perspectives for discussing how yoga supports health. Here we examine yoga's impact from the following perspectives:

1. Prevention and symptom relief
2. Support along with other treatments
3. Balancing stability and ease
4. Impacting bodily systems and processes

See also: A list of benefits by Dr. Timothy McCall MD [here](#)

Prevention & Symptom Relief



Prevention

Dr. Baxter Bell MD explained (in a YogaUOnline article that no longer appears to be available) that yoga serves a preventative role in two ways:

- **Overall healthcare** — Because yoga is a powerful antidote to stress and has a positive impact on strength, flexibility, balance and agility, it naturally serves a preventative role in conditions caused by a sedentary lifestyle and/or stress — conditions such as heart disease, cancer, diabetes, osteoporosis, balance issues, and so on.
- **Particular conditions** v Yoga is adaptable to all sorts of needs. A person at risk for osteoporosis, for example, can emphasize practices to build bone and muscle strength.

In addition, yoga affects mental state and attitude, which may lead to pain prevention, pain relief and/or the placebo effect.

Symptomatic Relief

Yoga is very effective at relieving symptoms. Dr. Bell observes that:

- Sometimes yoga promotes symptomatic relief without impacting the underlying cause, such as low back pain caused by a ruptured disc, for example.
- Other times, yoga addresses the symptoms and also leads to a cure of the condition, such as stress-related headaches or digestive problems, for example.

Based on an extensive and ever-growing library of research, we know that:

- Yoga has a very long list of symptoms it addresses, such as low back pain, depression, headaches, chronic pain and much more.
- Yoga provides relief for a wide range of conditions that underlie chronic pain e.g. migraines, osteoarthritis, chronic inflammation generally, etc.

Examples of How Flexibility & Strength Can Prevent Conditions & Relieve Symptoms

During your first class, you probably won't be able to touch your toes, never mind do a backbend. But if you stick with it, you'll notice a gradual loosening, and eventually, seemingly impossible poses will become possible. You'll also probably notice that aches and pains start to disappear. That's no coincidence. Tight hips can strain the knee joint due to improper alignment of the thigh and shinbones. Tight hamstrings can lead to a flattening of the lumbar spine, which can cause back pain... Each time you practice yoga, you take your joints through their full range of motion. This can help prevent degenerative arthritis or mitigate disability... Strong muscles do more than look good. They also protect us from conditions like arthritis and back pain, and help prevent falls in elderly people. And when you build strength through yoga, you balance it with flexibility. If you just went to the gym and lifted weights, you might build strength at the expense of flexibility. – **Timothy McCall MD**

Attitude, Appreciation & The Placebo Effect

A regular yoga practice changes the lens through which we see the world by creating a more nonjudgmental appreciation for what's within and around us. It allows us moments to sit in the middle and watch the waves of our lives around us, which is a big part of its use in stress reduction. It's fascinating... how we look at placebo as a negative outcome rather than the power of the mind. The importance of our perspective, our mindset, our purpose, setting an intention with practice, all these really simple things are also a big part of what's shaping the effects of our practice. We're learning so much more about the brain and how powerful it is in regulating so many things, including pain and our experience in the world. – **Tiffany Cruikshank (Yogapedia)**

See Also

See the following lessons regarding yoga's impact on specific areas such as brain health, low back or neck pain, depression, trauma and so on:

- Chronic Pain
- Adaptation Hub
- Research on the Impact of Yoga

Support Along with Other Treatments



Dr. Baxter Bell MD describes [here](#) how yoga can be used along with other treatments:

1. Prevention of medical conditions
2. Relief or improvement in symptoms, whether acute or chronic
3. Support in rehabilitation
4. Management and resolution of stress; regulating the nervous system

Balancing Stability & Ease

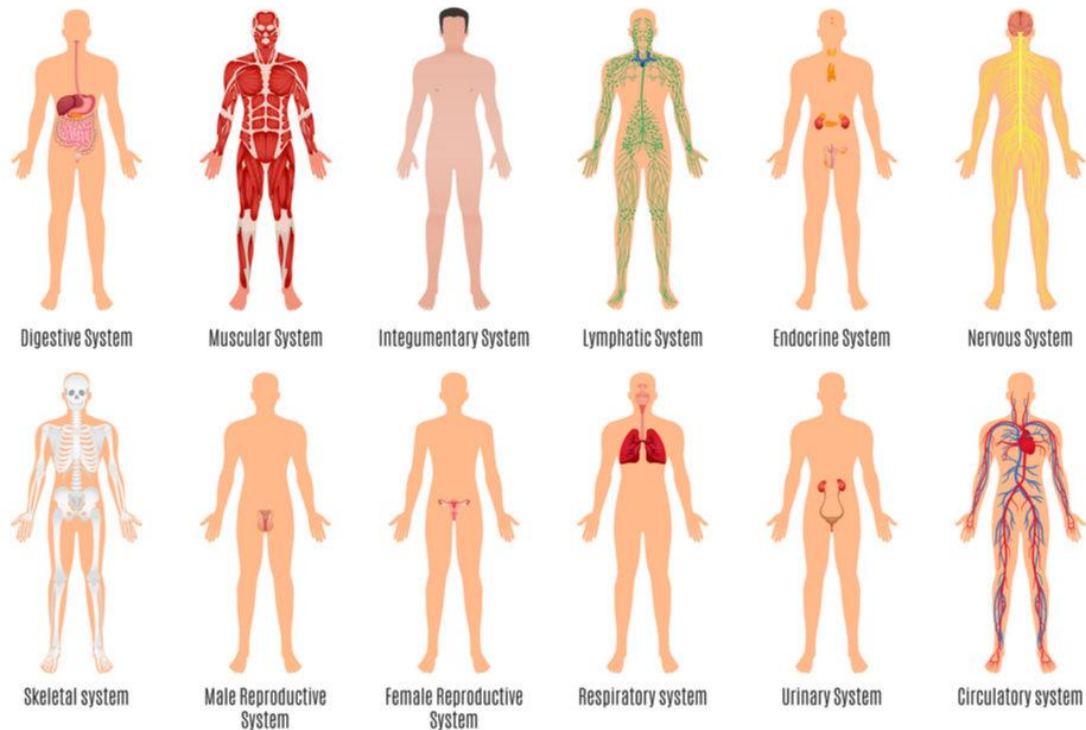


As Olga Kabel notes [here](#), yoga can be adapted to address imbalance on any level — physical, mental or emotional — and can support imbalances on any end of the spectrum, from “too tight” to “too loose.”

Too Tight or Too Loose?

On the physical level, being too tight manifests as muscle tension, restricted movement and the whole body being “stuck” in a posture that you assume for most of your day. Being too loose leads to overall structural instability, overworked muscles that have to both move the body and hold it together, sacroiliac joint pain, dislocations and so on... The cool thing about yoga is that unlike other disciplines (like physical therapy, psychology, philosophy and so on), it offers us tools to work toward balance between stability and ease... And the choice of appropriate yogic tools will depend on which level of your system needs more tuning. Not all of those tools are asana-related. – *Olga Kabel*

Bodily Systems & Processes



Another way to look at how yoga supports health is how it impacts the body and its physiology.

In this view, we consider the impact on various systems of the body:

1. Nervous System
2. Skeletal System
3. Muscular System
4. Mental Health
5. Emotional Well-Being
6. Respiratory System
7. Digestive System
8. Cardiovascular System
9. Immune & Lymphatic Systems
10. Endocrine System

Nervous System



Attempts to separate yoga's impact on one or the other is simply researchers' efforts to pull things apart for greater understanding about how yoga impacts people, and what leads to healing. But let's not lose sight of the fact that the body is a holistic system that defies such rigid lines of delineation. The entire collection of research can help us to get a grasp on just how powerful yoga can be. Yoga's impact on the nervous system is a fundamental reason for its effectiveness in so many situations.

The following comments by Harvard Medical School editors are referring to research conducted by the Benson-Henry Institute for Mind Body Medicine at Massachusetts General Hospital in 2013.

Eliciting the Relaxation Response Caused Genes to Turn On & Off That Have Extensive Positive Impacts on Health & Well-Being

Skeptics have long believed that meditation and other stress reduction techniques are nice but ineffectual practices that do little for you. Nothing could be further from the truth — and now we have the science to prove it... Exciting new research... suggests that the simple act of eliciting the relaxation response... temporarily changes the activity of certain genes... it switches off genes associated with chronic inflammatory responses. Many experts believe these inflammatory responses stress the body, possibly contributing to a host of chronic ailments, such as heart disease, inflammatory bowel disease, and diabetes. At the same time, it switches on genes linked with a variety of functions: the use of energy in the body, the release of insulin (which helps regulate blood sugar), the maintenance of telomeres (protective end-caps on our chromosomes that erode with age until a cell dies), and the functions of tiny cellular powerhouses called mitochondria... This information was prepared by the editors of the Harvard Health Publications division of Harvard Medical School. It is excerpted from our Special Health Report: Stress Management. – **Harvard Medical School**

Findings and implications:

1. Chronic stress is known to both cause and exacerbate disease, and can lead to other problems such as anxiety or depression.
2. A balanced nervous system is key to positively managing stress. Eliciting the relaxation response balances the nervous system and brings a cascade of positive health effects.
3. The Benson-Henry research shows that the relaxation response is also impacting the body in another, even deeper way. The relaxation response affects us at the deepest level of physical life, the cellular level, impacting which genes are turned on and off (called epigenetics). This sets off a series of powerful activities that relate to health including the health of telomeres and mitochondria.
4. Chronic inflammation overwhelms the immune system and causes additional symptoms. Chronic inflammation is on a short list of underlying causes of imbalance and disease. The Benson-Henry research shows that the relaxation response switches off genes associated with chronic inflammatory responses.

The information above is from the lesson, Epigenetics & Lifestyle. Please see that lesson for more detail

See Also

- [Nervous System Introduction & Overview](#)
- [Fight-or-Flight, Relaxation, Polyvagal](#)
- [Good Stress & Chronic Stress](#)
- [Adaptation Hub](#)

Skeletal & Muscular Health



Dr. Baxter Bell MD has summarized the general effects of *asana* practice into these categories:

1. Strength
2. Flexibility
3. Balance
4. Agility
5. Posture

Here are examples of how these general benefits affect specific health conditions:

1. Improving muscle strength can help with any condition that causes weakness (e.g. sarcopenia, chronic fatigue syndrome, recovery from broken bones or other lack of use such as having been bedridden as a result of illness or surgery).
2. Improving bone strength can help with osteoporosis and osteopenia.
3. Improving flexibility can help with any condition that causes stiffness (e.g. osteoarthritis or parkinson's disease).
4. Improving balance can help with any condition that impacts balance (e.g. frailty from aging and inactivity, multiple sclerosis, parkinson's disease, peripheral neuropathy from diabetes, and poor eyesight.)
5. Improving agility can help with any condition that affects nimbleness and response time, including any condition that affects balance and slowing of brain-body nerve conduction.)
6. Improving posture helps with problems caused by poor physical alignment (e.g. carpal tunnel syndrome and back pain).

The first 20 minutes of moving around, if someone has been really sedentary, provide most of the health benefits. You get prolonged life, reduced disease risk — all of those things come in the first 20 minutes of being active. – **Gretchen Reynolds**

See Also

- [Musculoskeletal System](#)
- [Adaptation Hub](#)

Mental Health



The very purpose of yoga practice according to the Yoga Sutras (to bring about “the cessation of fluctuations of the mind”) is clearly intended to affect mental health. These are some of the specific ways it does that:

1. **Yoga balances the nervous system** – Yoga is beneficial in part because of its proven ability to impact the nervous system and bring stress relief.
2. **Yoga affects brain chemistry** – Dharma Singh Khalsa MD explains that “yoga and meditation can alter the very biochemistry of the brain more directly and efficiently than regular exercise.” Not only does yoga stimulate the Relaxation Response, it also invokes a balance of stimulation and relaxation via glandular secretions of endorphins and adrenaline. (Amy Weintraub)
3. **Yoga brings attention to the present moment** – Present moment awareness is a key element of relieving symptoms related to many mental health concerns, including anxiety.
4. **Yoga cultivates self-awareness without judgment** – Meditation and mindfulness teachings help the practitioner to invoke the observational distance necessary to release identification with emotional patterns. This brings the student vital knowledge, increased acceptance and peace, and a pathway for change. “If you are willing to take a step back and observe your mood, you are practicing self-awareness. From here, you can better manage and even overcome your depression by developing a practice that suits your feelings.” (Amy Weintraub)
5. Yoga leads to an embodied experience – The experience of embodiment is one of the reasons yoga tends to have a positive impact on the practitioner’s sense of well-being. Clinical psychologist Bo Forbes has found with her patients that the insights a student gains from becoming present and embodied tend to have a lasting effect on emotional balance and mental health.

Bo Forbes summarizes these five benefits of yoga, calling them the “building blocks for lasting healing.”

1. Balancing the nervous system
2. Regulating the breath
3. Cultivating direct experience
4. Quieting the mind
5. Changing our personal narrative

See Also

- [Mental Health](#)
- [Anxiety](#)
- [Depression](#)
- [Adaptation Hub](#)

Emotional Well-Being



To achieve emotional well-being requires the recognition that emotions are healthy and normal, and the willingness to allow emotional energy to move through without excessive resistance. To feel feelings, we must focus on the body. This is in contrast to being caught up in thought, whether judgment, fix-it mode, or layering on additional feelings of frustration or shame in response to simply having emotions.

Yoga teachers often use phrases such as “come back to your body,” “feel where your body is in contact with the floor,” and “feel your torso expanding with the inhalation.” These are invitations to:

- Bring the mind back (from an external focus or from scattered or obsessive thinking), and
- Turn attention to the inner state of being.

This essential practice is to be grounded, embodied or “in the body” which means to be aware of bodily sensations and the inner experience.

Another name for inner sensing is interoception. Breathing, mindfulness and grounding practices encourage students to practice inner sensing and to experience the state of being “in the body.” In this way, yoga supports emotional well-being. For much more specificity, see [Emotional Well-Being](#).

See Also

- [Emotional Well-Being](#)
- [Adaptation Hub](#)

Respiratory Health



Yoga's consistent focus on the breath leads to a cascading effect of benefits in the body and mind's healthy functioning.

Yoga [asanas](#), [breath awareness](#), and [pranayama](#) can help improve lung function to foster general health.

Additionally, research shows that yoga improved quality of life and symptoms of people with [asthma](#) and people with [COPD](#).

See Also

- [Respiratory Anatomy](#)
- [Asthma, COPD, Bronchitis](#)
- [Adaptation & Coaching Hub](#)

Digestive Health



Yoga practices support digestive health in general, as well as specific conditions.

Digestive Health in General

1. Digestive health is supported by overall well-being, of course. Mindful yoga practices support nervous system balance, stress reduction, pain management and more. Learn more: [Why Yoga Works](#).
2. The digestive system works best when the nervous system is in a balanced state, which for most people means spending more time in rest and digest mode (as opposed to flight or fight mode). Yoga has a positive effect on the nervous system, thereby promoting proper digestive system functioning. By reducing stress and calming the nervous system, yoga helps to calm an irritated digestive system.
3. Yoga can also teach students to listen to their body, helping them to gain the skills to more easily identify which foods or other factors aggravate their digestion.

More Specific Effects

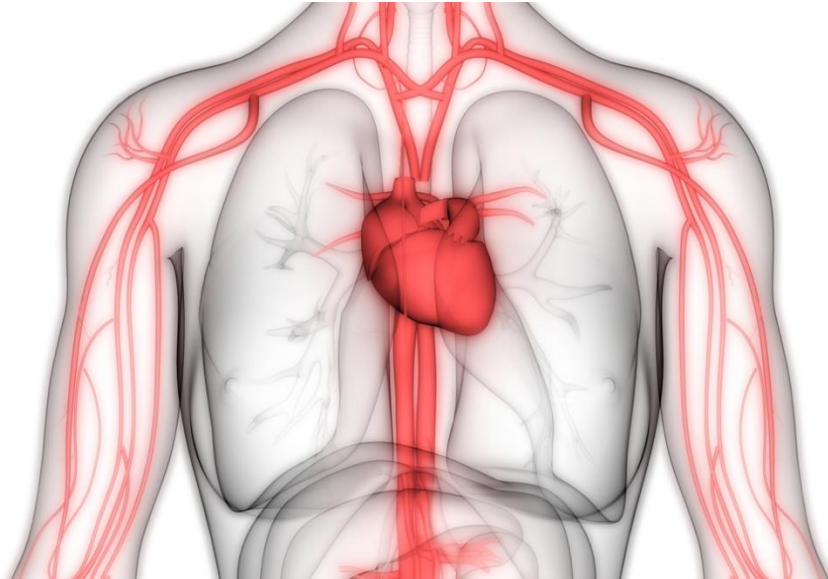
1. **Healthy Gut Bacteria** – Stress management may also play a role in maintaining healthy gut bacteria, which influences the metabolism of certain nutrients in food, regulation of the immune system, and experiences of hunger, satiety and sleep.
2. **Organ Health** – *Asanas* can benefit the digestive system by supporting good circulation to the digestive organs, strengthening the muscular support around the organs and stimulating good elimination. “Increased blood flow to the small (and large) intestine means stronger intestinal contractions, more digestive enzymes, and chyme moving along with a bit more vigor.” (Olga Kabel)
3. **Effective Esophagus Functioning** – “Restorative poses where your head and chest are higher than your belly and standing yoga postures can improve the functioning of your esophagus, and stress management practices will help both you and your esophagus relax.” (Yoga for Times of Change)

4. **Symptom Relief & Prevention** – For conditions such as irritable bowel syndrome, a yoga practice can help to bring the digestive system back into balance during an acute flare up and can extend symptom-free periods. (Yoga for Times of Change)
5. **Shortened Recovery Time** – Restorative practices, relaxation techniques and *pranayama* can help to shorten recovery times from flare ups and from surgery. (Yoga for Times of Change)

See Also

- [Digestion](#)
- [Adaptation Hub](#)

Cardiovascular Health



Research shows that yogic techniques have a beneficial effect on cardiovascular health in general and on high blood pressure.

For clinical research on the impact of yoga on heart health, see: Research – Cardiovascular Disease & Heart Health. The research demonstrates yoga’s extremely impressive successes with high blood pressure, cardiovascular disease, post-heart attack recovery, and heart health generally.

There are presumably numerous reasons for why yoga has such success with heart health. The following points to some of them.

Stress Relief & Nervous System Regulation

1. Chronic stress is a primary driver of disease. See Good Stress & Chronic Stress.
2. Stress specifically impacts heart health via the cardiac ANS (the part of the autonomic nervous system responsible for heart rate, blood pressure, and homeostasis during physiological stress). See Cardiovascular Disease (“physiology & underlying conditions” and “dysautonomia”) and Nervous System Introduction (“ANS directly related to heart & emotions”).
3. Yoga is highly successful in relieving stress, regulating the nervous system, and optimizing gene expression for health. See Yoga’s Impact on Gene Expression & Stress.
4. For clinical research on the impact of yoga on stress, see Research – Cellular Health, Immunity & Stress.

Regulates Inflammatory Response

1. Chronic inflammation is a primary driver of disease. See: [Chronic Inflammation](#).
2. Inflammation is a primary underlying condition of cardiovascular disease. See [Cardiovascular Disease](#) (“physiology & underlying conditions”).
3. Yoga is highly successful in reversing inflammation. See [Research – Chronic Inflammation](#) and [Research – Arthritis](#) (an inflammatory disease). For example:

Lowering & Regulating Blood Pressure

1. High blood pressure is the result of particular underlying conditions and root causes. See [Hypertension](#).
2. Many of the underlying conditions and causes of high blood pressure are the same as for cardiovascular disease. Resolving the underlying conditions and causes of high blood pressure can prevent or reverse other heart issues. See [Cardiovascular Disease](#) (review any conditions of interest).
3. Yoga (including breathing & meditation) is highly successful in reducing and regulating blood pressure. See [Hypertension](#).
4. For clinical research on the impact of yoga on high blood pressure, see [Research – Blood Pressure & Heart Health](#).

Improving Sleep Quality

1. Poor sleep quality and insomnia are primary root causes for disease: [Sleep Physiology & Impacts](#)
2. Sleep quality is related to heart health. See [Heart Health Techniques](#) (“restorative sleep vital for heart”).
3. Yoga is highly successful in improving sleep quality. See [Techniques for Quality Sleep](#).
4. For clinical research on the impact of yoga on sleep quality, see [Research – Insomnia & Sleep Quality](#).

Relieving Blood Sugar Issues, Insulin Resistance & Diabetes

1. Blood sugar issues, insulin resistance and diabetes are the result of known underlying conditions and root causes. See [Blood Sugar Issues & Diabetes](#).
2. Insulin resistance is a primary underlying condition of cardiovascular disease. See [Cardiovascular Disease](#) (“physiology & underlying conditions”).
3. Yoga is highly successful in relieving and reversing blood sugar issues, insulin resistance and diabetes. See [Blood Sugar Issues & Diabetes](#).
4. For clinical research on the impact of yoga on insulin resistance & diabetes, see [Research – More Conditions: Diabetes](#).

See Also

- [Heart Health & Yoga](#)
- [Adaptation & Coaching Hub](#)

Immune & Lymphatic System Effects



Research shows yoga's positive impact on gene expression, cellular and metabolic health, immunity, and microbiome health.

From a big picture perspective, yoga helps immune system function in these ways.

1. Supports immune system functioning in general, particularly through nervous system impacts.
2. Boosts lymphatic efficiency.
3. Addresses particular factors that contribute to and exacerbate immune system disorders, including inflammation and stress.

Immune System

A key to understanding how yoga helps with immune system functioning is to understand the nervous system and how yoga impacts it.

Learn More

- [Fight-or-Flight, Relaxation, Polyvagal](#)
- [Good Stress & Chronic Stress](#)
- [Why Yoga Works: Yoga's Impact on Gene Expression & Stress](#)

Lymphatic System

Lymph is moved by:

- Moving the body
- Tapping and/or self-massaging the body (examples [here](#) and [here](#))
- Deep breathing
- Stimulating massage
- Dry brushing the skin from where lymph nodes are located toward the heart

Yoga can promote lymphatic efficiency through movement, self-massage and deep breathing.

See Also

- [Immunity & Yoga](#)
- [Adaptation & Coaching Hub](#)

Endocrine System Health

Health of the endocrine system is associated with overall good health and healthy lifestyle practices regarding food, sleep and exercise. [Mark Stephens; Yoga Therapy]

Yoga practices that support endocrine health include breath, asana, sound and meditation.

A research summary in the Journal of Yoga & Physical Therapy suggests that yoga has a positive impact on the endocrine system via hormone regulation. As YogaUOnline describes here, the research showed:



- A decrease in cortisol (related to feelings of well-being and pain management)
- Elevated serotonin
- The release of oxytocin during visualization, and
- Higher levels of melatonin (related to sleep quality and immunity)

Lifestyle, Breath, Movement, Sound & Meditation

The Yoga theory for working with any condition involving hypo-functioning is to first consider appropriate lifestyle changes, including taking time for relaxation, modifying diet, and reducing stress... In addition, we can use the Yoga techniques of breath, movement, sound and meditation. – *Gary Kraftsow*

Poses Affect Glands of the Endocrine System & Are Associated with Chakra Balancing

Yoga is extremely helpful with hormonal imbalances because of its design. In fact, every time you're doing a yoga pose, you are working on at least one of the glands in the endocrine system, and usually more than one. Part of the reason is because yoga is designed to work on the chakra system, and when you look at the chakra system next to the endocrine system, they are exactly lined up. – *Lynn Jensen*

See Also

- [The Endocrine System](#)
- [Hormonal Issues & Health](#)
- [Adaptation & Coaching Hub](#)

Online Resources

Please see [online version](#) for links to more resources.