

Yoga and Stress Reduction

3 Hollis Village Marketplace
Hollis, NH 03049; 603-617- 4955
www.hollisyoga.com

Stress

The feeling of stress is a combination of our perception of events or situations and our body's physiological reaction. Work issues, difficulties, challenges, obstacles, deadlines, papers, tests, athletic events, performances, family problems, and tragic events are only a few of the situations that can instigate stress. Even joyous events like holidays, weddings and new additions to a family can also exacerbate stress. Natural disasters, world conflicts, tragedies, and stories of suffering and heartbreak, even those occurring on the other side of the world, can have wide-ranging impacts, affecting people's mental health.

One of the ways in which we respond to stress is through our fight-or-flight response. This is a combination of the activation of our sympathetic nervous system and specific hormonal pathways which result in the release of cortisol from the adrenal glands. Cortisol is one of our primary stress hormones, and is often used to measure the stress response.

Stress in itself is not necessarily a bad thing. Immediate, or acute stress, can often be motivating, as it can be activating. We hear stories of people being able to accomplish physical feats in emergency circumstances because cortisol increases blood pressure, heart rate, and blood sugar, as well as increasing mental focus. Because the stress response increases mental focus, it can often help us meet a deadline or finish a project. But too much stress, or constant stress with no respite for the body and mind, can interfere with numerous physical and mental abilities.

On a long-term basis, chronic stress can be damaging. Stress hormones including cortisol decrease the responsiveness of our immune system. They also increase blood sugar levels as well as blood pressure and heart rate, helpful in a crisis, but not for long-term health and wellbeing. This is where how we respond to stress can have a significant impact.

Yoga and Stress

The practice of Yoga is well-demonstrated to reduce the physical effects of stress on the body, and has even been found to lower cortisol levels. This effect is noticeable, and it is one of the primary reasons why people often take up Yoga. People find that they feel more relaxed after practicing Yoga. The *asana*, or physical postures of Yoga, are helpful for reducing muscular tension, which reduces stress. We have a tendency to store stress not only in our nervous system, but distributed throughout the musculature and other tissues of the body; our digestive system, for example, responds very quickly to stress. Yoga can be a valuable and effective tool for releasing this stored stress. This can be true even for post-traumatic stress and recovering from the after-effects of traumatic events.

Yoga includes not only the *asana* or physical postures, but most Yoga classes end with *savasana*, or a pose of relaxation. Some classes include a guided relaxation where the teacher leads students through a progressive relaxation of the body, which further reduces the experience of stress.

Yoga also includes meditation and breathing practices (*pranayama*) as well as a set of ethical precepts and observances (*yamas* and *niyamas*). Meditation, the ethical precepts and observances, focused relaxation techniques, and working with the breath all have beneficial stress-reducing qualities, through improving our relationships with the various aspects of our inner nature as well as affecting our psychology and physical body.

Yoga, the Breath and Stress

Working with the breath can be a particularly effective method for treating a negative response to stress. When we are experiencing stress, our breathing tends to become shallow and rapid. Shallow and rapid breath further stimulates the body's stress response, and we can become caught up in an ineffective breathing pattern that only causes more stress. Many yoga techniques emphasize slowing and deepening the breath, which activates the body's parasympathetic system, or relaxation response. Just by changing our pattern of breathing, we can significantly affect our body's experience of and response to stress. This may be one of the most profound lessons from yoga practice.

Yoga and Stress Reduction – continued

The effectiveness of the MBSR has been studied in a variety of different scientific studies both at the University of Massachusetts as well as other medical centers around the world. Results that they have reported on their website which are still in the process

Selected Research Investigating Yoga and Stress

Studies of Yoga have demonstrated that Yoga practice has the ability to reduce stress. As mentioned earlier, Yoga can reduce cortisol levels, a finding which was documented in the October 2004 issue of the journal, *Annals of Behavioral Science*. In the June 2004 issue of the *Journal of Clinical Psychology*, researchers found that caregivers for people with dementia (a very challenging condition) improved physical and emotional functioning after practicing Yoga. February and August 2005 studies published in the *Journal of Alternative and Complementary Medicine* analyzed the breathing techniques of a specific Yoga practice, Sudardhan Yoga Kriya, which the authors maintain reduce stress, including post-traumatic stress disorder.

Another Yoga-based program that has been widely studied in the use of stress reduction is the mindfulness-based stress reduction program (MBSR), which is taught, studied and popularized by Jon Kabat-Zinn and the Center for Mindfulness in Medicine, Healthcare and Society at the University of Massachusetts Medical School. The mindfulness-based stress reduction program includes guided instruction in mindfulness meditation practices, yoga and gentle stretching, inquiry exercises to enhance awareness, individual instruction, group dialogue and home assignments.

The effectiveness of the MBSR has been studied in a variety of different scientific studies both at the University of Massachusetts as well as other medical centers around the world. Results that they have reported on their website which are still in the process of being written about include improved ability to react effectively under high degrees of stress. Published studies have found that program participants experience lower levels of stress. Kabat-Zinn and colleagues also found that people who practiced a meditation technique while receiving treatments for the skin disorder psoriasis (which is sensitive to stress) had skin that healed faster than people who did not listen to the meditation tapes during treatment.

Selected References

- Brown, R.P. and Gerbarg, P.L. Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part I- neurophysiologic model. *Journal of Alternative and Complementary Medicine*. 2005; 11(1):189-201.
- Brown, R.P. and Gerbarg, P.L. Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part II: clinical applications and guidelines. *Journal of Alternative and Complementary Medicine*. 2005; 11(4): 711-7.
- Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M.S., Cropley, T. G., Hosmer, D., and Bernhard, J. HYPERLINK "<http://www.umassmed.edu/cfm/bibliography/abstracts/abstracts9.cfm>" \o "Click here for the ABSTRACT" *Psychosomatic Medicine*. 1998; 60: 625-632.
- Robert-McComb, J.J., Tacon A; Randolph P; Caldera Y; A pilot study to examine the effects of a mindfulness-based stress-reduction and relaxation program on levels of stress hormones, physical functioning, and submaximal exercise responses. *Journal of Alternative and Complementary Medicine*; 2004; 10(5), 819-27.
- Robert-McComb, J.J., Tacon, A., Randolph, P., and Caldera, Y. Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (DHEAS) and melatonin in breast and prostate cancer outpatients. *Psychoneuroendocrinology*. 2004; 29(4): 448-74.
- Waelde, L.C., Thompson, L., and Gallagher-Thompson, D. A pilot study of a yoga and meditation intervention for dementia caregiver stress. *Journal of Clinical Psychology*. 2004; 60(6): 677-87.
- West, J., Otte, C., Geher, K., Johnson, J., and Mohr, D.C. Effects of Hatha yoga and African dance on perceived stress, affect, and salivary cortisol. *Annals of Behavioral Medicine*. 2004; 28(2):114-8.
- Center for Mindfulness at the University of Massachusetts Medical School Web site: www.umassmed.edu/cfm.

NOTE: The International Association of Yoga Therapists (IAYT) carries an extensive set of Yoga and Health Bibliographies, including citations for ongoing research, on their website. Eleven of the most requested bibliographies are accessible free of charge. Dozens more are freely accessible by IAYT members, or available to nonmembers for a modest fee. IAYT also maintains an extensive library containing many of the articles cited, which is open to researchers and the general public. For more information, please see HYPERLINK "<http://www.iayt.org/>" \o "<http://www.iayt.org/>" or call IAYT at 928-541-0004, M-F, 10-4, MST.