YOGA AND ASTHMA

Dr. Michael Cheikin
Medical Director of Chestnut Hill Rehabilitation Hospital
Section Chief of Physical Medicine and Rehabilitation
Chestnut Hill Hospital, Philadelphia, PA

Asthma can be defined as a chronic inflammatory condition of the airways, characterized by acute and chronic spasm, caused by multiple triggers, altering pulmonary function. In a traditional medical model, we search for a single agent that causes a disease, and a corresponding "cure", that eliminates or reverses that cause. Penicillin for bacterial infection and insulin for diabetes are examples of such a model. However, even with these examples, there remains the question of why, out of 100 people exposed to a bacterial load, only a certain percentage will come down with a bacterial illness. Clearly, there are other factors involved in the development of illness, or, on the contrary, the maintenance of wellness. Such factors include heredity, environment, nutrition, exercise, and emotion ("stress") to name a few. Furthermore, traditional medicine does not offer a cure for a growing list of chronic diseases, including asthma, diabetes, heart disease, and osteoarthritis, but at best keeps the disease at bay.

Provider Perspective

In "complementary alternative medicine (CAM) rather than seek a "cure", we work to "heal" a person by addressing several factors, acknowledging the web-like nature of the human being. The CAM model does not work on an organ level, it works on a system level. Clearly while affecting the lungs, asthma involves several systems, including the immune system, the autonomic nervous system and the endocrine system. (In fact, the drugs used to control asthma target these systems, not the lungs themselves.) Through CAM methods, many people with chronic diseases, including asthma, have experienced substantial healing, and even reversal. Dean Ornish's work, demonstrating the reversal of coronary heart disease, based on his study of yoga, raises the question of what other chronic diseases are reversible.

Yoga is a system of mind-body-conscious training that has evolved over thousands of years. While society has changed dramatically over the past 200 years, the bodies that we inhabit developed hundreds of thousands, if not millions of years ago. Our nervous, endocrine, immune and even consciousness systems have not changed, and so the yoga methods developed long ago are still relevant and effective today.

I define yoga operationally as a combination of movement, consciousness and breath. It is different from other forms of "exercise", where there is movement, but not necessarily consciousness (paying close attention to what you're doing) and breath (coordinating breath with movement in a very precise way).

Within the body of yoga work, there is a specific study of breath, called "pranayama". "Prana" itself means breath, energy and spirit. So, in the yoga system, there is no separation in concept between consciousness and energy. In the Chinese model of the body (which evolved in parallel with the Indian system of Yoga), "qi" or "chi" energy flows through meridians of the body. Illness occurs when this energy is blocked, or becomes excessive in certain meridians and is manipulated through acupuncture needles or herbs. In the yoga system, the prana energy also flows through similar channels, and is altered through doing yoga postures ("asanas") or specific breath work ("pranayama"). While science has not yet "proven" the existence of this energy, one only has to look back to the not--too-distant-past when society did not believe in bacteria and used electricity without knowing what it was. People who practice yoga begin to experience and utilize this energy.

The breathing cycle has four basic components: inhale, pause after inhale, exhale, and pause after exhale. In pranayama, one manipulates the speed and ratio of these four phases. The experience of doing these sorts of exercises is usually quite profound, having clear autonomic effects and affecting the state of consciousness.

The act of breathing is particularly interesting

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physiologically, as it is one of the few bodily functions that is under both involuntary and voluntary control. Most of the other autonomic functions--such as heart rate, gastrointestinal motility, blood pressure, bodily temperature, do not have direct conscious control, unless there is special high-tech training using biofeedback. However, we are born able to control our breath. It is as if our breath is a window to the autonomic nervous system, and therefore, indirectly, the immune, endocrine, circadian and other systems.

There are several mechanisms by which a yoga practice can help with asthma: 1) autonomic, 2) mechanical, 3) neurological 4) energetic and 5) emotional. Autonomic mechanisms include altering sympathetic/parasympathetic balance, and indirectly altering the hypothalamic effect on hormones, immune system, and circadian system. Mechanical effects including mobilizing the chest, where most people get "tight", as well as strengthening the diaphragm, and changing the contributions of abdominal, thoracic and diaphragmatic muscles to breathing pattern. Neurological benefits involve "recalibrating" perceptual awareness so that one can utilize the body more efficiently and feel when things are going awry (kind of a natural peak flow meter). "Energetic" refers to the above discussion about prana energy that can become blocked or excessive, and can be manipulated by yoga postures and yoga breathing. Emotions and stress ultimately affect the other three mechanisms: autonomic, mechanical, neurological and energetic. By study of the self through a yoga practice, one learns about emotional patterns and develops the ability to modulate them. The concept of "psycho-neuro-immunology" refers to the ability of the mind to alter the immune system in positive or negative ways.

There are several studies on the benefits of yoga, relaxation, and exercise for various medical conditions, including asthma. However, alternative methods are difficult to study using traditional double-blind, placebo controlled methodology, due to huge individual differences in practitioners and patients. I prefer to use single-case design, where the patient is used as his/her own control. If you think about it, most medical practice is single-case based. We attempt multiple interventions, one at a time, using both objective (clinician) and subjective (patient) feedback and outcome to optimize therapy. Designing an optimal yoga sequence, or recipe, for an individual patient follows the same logic.

A yoga practice can last anywhere from 10-90 minutes and is best done daily, like brushing teeth. A yoga practice usually consists of opening warmups/settling, a sequence of postures, closing with breathing/relaxation work. While the popular notion is that yoga requires doing a headstand or lotus posture, a balanced series of postures should not be painful or excessive and can be adapted to most people's physical capacities. The most practical way to begin a practice is to go to a class 1-3 times per week. I do not recommend video tapes because yoga is a three-dimensional, individual practice that needs the supervision of an experienced teacher to ensure proper technique and safety. There is not one standard yoga method or certification. The best way to assess a yoga class is to go to a good institution, review the credentials of the practitioner, and to observe or take a trial class.

For further reading, the following books are recommended: Sivananda Center, The Sivananda Companion to Yoga. New York: Simon & Schuster, 1983 (ISBN 0684-870-002); Speads, Carola: Ways to Better Breathing. 1992 (ISBN 0892-0813-970); Weil, Andrew: Spontaneous Healing. New York Fawcett-Columbine, 1995 (ISBN 0449-910-644); Zemach-Bersin, David: Relaxercise. Harper, 1990 (ISBN 0062-509-926); Benson Herbert: The Relaxation Response. New York: Avon, 1975 (IBSN 0380-006-766).

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Athletes whose symptoms cannot be prevented by pretreatment with albuterol or other beta agonist need daily treatment with an inhaled steroid to bring their asthma under control. This will prevent the inflammation of the airways that is a precursor to an asthma episode, and it will minimize the risk of a fatal attack. Athletes whose asthma is well controlled with inhaled steroids will have no need to use albuterol during play. The NCAA places no ban on the use of inhaled steroids, and the International Olympic Committee allows their use with prior medical approval.

Thomas F. Plaut, M.D., Amherst, MA