

## Yoga and Speech-Language Pathology

By Renata Sumar, S.L.P.

When I applied to college, I chose speech-language pathology as my major because it filled a gap in my work as a yoga teacher of special children. The courses turned out to be exactly what I was looking for-what yoga lacked in the areas of speech and language development, my training in speech-language pathology provided. I now felt more confident in my work with special children, knowing that I had gained the necessary skills to assist my yoga students in all areas of their development.

It was not until I started working at a local clinic, however, that I realized just how much yoga could help me in my practice as a speech-language pathologist. The first thing I realized was that my private speech therapy clients who practiced yoga with me were more centered and focused than the children at the clinic. More importantly, there was a noticeable difference in the way they breathed. I didn't give it much thought at the time, but now, over five years later, I am convinced that yoga has enormous value as an adjunctive therapy to my speech-language work. Repeated experiences with yoga students and speech therapy clients have demonstrated to me that yoga and speech-language pathology can work hand-in-hand to facilitate a child's motor, cognitive, speech-language and social development.



So what is the bridge between yoga and speech therapy? Breath. From a yogic point of view, breath is prana, or vital energy. In our bodies, the energy that produces motion, warmth, structural integrity, and even consciousness are all manifestations of prana. Without this vital energy, our bodies would be unable to function at all. Yoga teaches us how to increase and control the flow of prana within the body. Through the practice of pranayama (yogic breathing exercises) and deep abdominal breathing, the student of yoga is able to increase her/his intake of prana and use this vital energy to build immunity to disease and overcome many physical ailments.

The way we breathe also has a profound effect on the nervous system. The average person uses only about one-seventh of his total lung capacity, and our brain cells require three times more oxygen than other body cells. By regulating the breath and increasing oxygenation to the brain cells, we help to strengthen and revitalize both the somatic and autonomic nervous systems. When practiced consistently, pranayama also has a powerful stabilizing effect on the mind and emotions.

From the point of view of a speech-language pathologist, breath is the basis of speech. All words and sentences are produced on an exhalation. At the end of each sentence, it is necessary to take a quick inhalation, after which the next new sentence is articulated on an exhalation. Since most sentences last anywhere from two to fifteen seconds, the dynamics of breathing require sufficient breath control to allow enough time for the person speaking to complete the sentence.

In most cases, a newborn baby's breath is very fast (40-45 times per minute) and varies considerably in frequency, amplitude and rhythm. His lungs are smaller, his abdominal muscles and diaphragm are not fully developed, and his neck and scapula are located very close together. During the first year of life, as breathing becomes slower and more regular (25-35 times per minute), the infant learns to produce a variety of sounds and join them together in a coherent manner. Not all children, however, follow the same pattern of development. A child with cerebral palsy or severe motor disturbances may breathe quickly or irregularly like a baby. Such a pattern of delayed development may often last for years.

Generally speaking, the speed of a child's breath is dependent on the type of activity that he is engaged in. As an example, a change in the breathing pattern appears when the child sits up, shakes his head or uses his arms and shoulders. The breath moves faster in order to oxygenate the blood, which nourishes the muscle cells performing a particular movement. If the muscles of the neck, trunk and shoulders are not properly aligned, the movement will require a greater effort and the diaphragm and rib cage will not move freely due to the resulting restriction. Correct alignment will help a child breathe more deeply and with less effort. For this reason, we should never consider the development of proper breathing and speech as something separate from our physiology. It would be better to think of them as part of a dynamic process of establishing healthy patterns and preventing unhealthy ones.

By elongating different muscle groups, yoga asanas (poses) help to release tension and maintain alignment of the trunk, hips, neck and limbs. Since all movements originate from the spine and extend outward to the extremities, it follows that a flexible and properly aligned spine is the key to enhanced performance in any activity involving movement, however gross or subtle it may be. In yoga therapy, we generally avoid the use of toys or props when working with children. This allows them to focus on the flow of breath, the movement of specific muscle groups and the feeling of the posture. With repeated verbal and tactile reminders, we encourage our students to develop body awareness, confidence and concentration.

There are three types of muscle tone that may affect a child's ability to communicate: low muscle tone (hypotonia), high muscle tone (hypertonia) and fluctuating muscle tone. Due to low muscle tone, children with Down syndrome often have difficulty coordinating the movements of the lips, tongue and jaw. Enlarged adenoids/tonsils and recurrent allergies or colds reinforce the tendency to breathe through the mouth, which may also affect the intelligibility of articulation, fluency, sequencing and speech resonance. By paying attention to the child's breath and posture, a YSC therapist can determine which asanas will improve muscle tone and alignment, and which breathing exercises will help to improve respiration and encourage breathing through the nose.

Children with cerebral palsy generally have limited motor and oral skills due to high or fluctuating muscle tone. Speech depends on the coordination of the muscles involved in respiration (the diaphragm), phonation (vocal chords) and articulation (lips, tongue and jaw). The stretching and relaxing of specific muscles that occurs during asana practice, followed by ten minutes of deep relaxation (which is done at the end of each yoga session), facilitates the speech therapist's job by normalizing high or fluctuating muscle tone. Pranayama improves respiration by opening the chest and strengthening the diaphragm; it also improves nerve function, which is directly connected to the execution of motor activities.

In conclusion, proper respiration is one of the key factors in correcting communication disorders. Most children with developmental disabilities clearly understand the concept of language and want to communicate from an early age. In order to give them the opportunity to develop fully and enjoy a higher quality of life, it is important to begin assisting them as soon as possible-this is the principle behind early intervention. Yogic breathing exercises not only teach proper respiration, but also benefit the practitioner by oxygenating the blood and strengthening the central nervous system. Yoga asanas assist the respiration process by establishing good postural alignment and helping to normalize high or low muscle tone.

Yoga's benefits extend to adults, as well as children. Teenagers or adults may have a speech disorder or voice problem simply because they don't know how to coordinate their breathing with their speech. In these cases, I use yoga breathing exercises during speech therapy to teach them how to breathe correctly, using the full capacity of their lungs. Once they are breathing deeply and receiving sufficient oxygen, all bodily systems function better. This leads to improved results in speech therapy.

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