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CARL YASTRZEMSKI, STRESS, AND THE PHYSIOLOGICAL SIGH

By Scott Rogers Special to the News Columns

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As we approach the 44th anniversary of baseball great Carl Yastzremski's record breaking 3,000 hits, we can learn something about a much-touted and recently researched relaxation technique. The Physiological Sigh, as it is known, is presently making the rounds on health focused podcasts and blog posts. What's the connection here? In Yastzremski's words, "When I saw the hit going through, I had a *sigh of relief* more than anything."

You probably can relate to Yastrzemski's experiencing of a sigh of relief after a period of heightened stress. When breathing becomes shallow and irregular, carbon dioxide (CO_2) can build up, leaving us feeling starved for oxygen and even panicky. At such times we are likely to have more than enough oxygen in our blood, but the rise in CO_2 triggers a feeling to the contrary. Sighing recalibrates the balance of oxygen and carbon dioxide in the bloodstream.

Many popular relaxation techniques involve slowing the breath and extending the outbreath. A subset involve holding the breath so as to become more tolerant of the accumulation of CO_2. If you are interested in learning more about such practices you can read books like "The Oxygen Advantage: The Simple Scientifically Proven Breathing Techniques for a Healthier, Slimmer, Faster, and Fitter You," by Patrick McKeon, "The Wim Hof Method: Activate Your Full Human Potential," by Wim Hof, and "The Healing Power of the Breath," by Richard Brown and Patricia Garberg, and **previous Florida Bar *News'* columns** that addressed the topic.

Among the different breathing exercises, many have been around for a very long time, prompting James Nestor, author of the bestseller "Breath" to subtitle his book, "The New Science of a Lost Art." One such breathing practice — first discussed in the 1930s, but gaining in prominence now due to its being

popularized by podcaster and Stanford Professor of Medicine, Andrew Huberman — is the “Physiological Sigh.”

THE PHYSIOLOGICAL SIGH

The physiological sigh involves taking a full inhalation immediately followed by a short, quick second inhalation. This is followed by a long, slow, and steady outbreath (which slows down the heart rate and can have a calming effect on the body). In this **short video**, I demonstrate this technique. If comfortable, do the exercise with mouth closed, or open only on the outbreath, exhaling as if blowing through a straw. Huberman and his colleagues recently **published a study** pitting this technique against a few others breathing exercises — along with a mindfulness practice — and reported that the Physiological Sigh was the most effective at achieving a quick re-balancing of the nervous system when feeling stressed. You can listen to Huberman **discuss** this technique and read a short **write up** of the research.

REVERSE ENGINEERING YASTRZEMSKI’S SIGH

How often do you think you sigh? Research finds we sigh about once every five minutes, all day long. This frequency tends to go up when feeling stressed. Often it is automatic, triggered when the brain receives a signal from the body that CO_2 is accumulating — like when you feel under pressure and your breathing changes. Sighing facilitates a more relaxed state.

Breathing, however, is one of the few regulatory processes that take place both involuntarily and voluntarily. Unless you are making a special effort to sigh, most sighs are automatic. Just like Yastrzemski’s. But what if you make a conscious effort to engage the Physiological Sigh during the day, especially when feeling stressed or about to enter into a stressful situation. This is what Huberman and his colleagues recommend. Study co-author, David Spiegel notes that, in doing so, “you can very easily take over and control your breath, which then affects your overall physiology and stress response.”

A SIGH IS NOT JUST A SIGH

As noted above, the build-up of CO_2 can be associated with feeling stressed, which occasions a shift to more rapid, choppy, and shallow breathing. This can, in turn, lead to the further accumulation of CO_2. Over time, small air sacks in the lungs called alveoli can collapse, leaving them less readily able to fill with oxygen as you breathe. These alveoli may be small, but they are plentiful, as we each have about 700 million. Because these sacks are the site where oxygen enters and carbon dioxide exits the blood, it can

be quite helpful — and healthful — for them to inflate fully. The second, quick inbreath of the physiological sigh helps to inflate the alveoli.

Putting all this together, while your brain and body will communicate and ensure that you sigh regularly, you can take a few intentional sighs during the day (often two or three will do the trick for quick relief while five-minutes makes for a solid period of practice and possibly lead to more enduring changes) to help regulate nervous system arousal and reset your mood. Research subjects practiced their assigned exercise for five-minutes a day. Some did box breathing, others a form of vigorous breathing and breath holding, and others practiced mindfulness meditation. While all benefitted, those assigned to the Physiological Sigh condition showed the larger effects.

BREATHING PRACTICES

Previously we have considered the **importance of breathing exercises** to feel more relaxed and the connection between relaxation exercises and mindfulness practices. If you have a regular mindfulness practice, you may want to drop a few physiological sighs into the start or end of the practice. And if mindfulness in **new to you**, know that the physiological sigh is also an opportunity to slow down and practice a little mindfulness by noticing the sensations of breathing.

Scott Rogers, M.S., J.D., is a nationally recognized leader in the area of mindfulness in law and founded and directs the University of Miami School of Law's Mindfulness in Law Program where he teaches mindful ethics, mindful leadership, mindfulness and negotiation, and mindfulness in law. He is the creator of Jurisight, one of the first CLE programs in the country to integrate mindfulness and neuroscience and conducts workshops and presentations on the role of mindfulness in legal education and across the legal profession. He is author of the recently released, ***"The Mindful Law Student: A Mindfulness in Law Practice Guide,"*** *written for all audiences.*