



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

# Coronavirus Disease 2019 (COVID-19) and Beyond: Micropractices for Burnout Prevention and Emotional Wellness

David Fessell, MD, Cary Cherniss, PhD

With coronavirus disease 2019 (COVID-19), the demands and stresses on radiologists and physicians have increased dramatically. Even before this pandemic, the high prevalence of burnout, complex causes, and critical consequences had been widely reported [1,2]. Many institutional and individual interventions have been advocated to address burnout and promote wellness, including decreased workload, improved work schedules and electronic health record, mindfulness (including mindfulness based stress reduction [MBSR]), and personal coaching [1-3]. The need for effective strategies and tools is only increasing as both individuals and institutions navigate the current anxiety and uncertainty.

We have conducted workshops on emotional intelligence exclusively for physicians, including radiologists (D.F.) and separately for managers and business leaders (C.C.). In our experience, both physicians and managers hunger for skills and strategies to help successfully navigate their increasingly complex worlds. In particular, physicians long to serve their patients and practices with energy and inspiration and have some semblance of balance in their lives. In our experience, physicians especially enjoy highly actionable tools that

require minimal time to learn and implement, aka “micropractices.”

Micropractices only require a few seconds to a few minutes to implement. Those that connect with an already existing activity offer a special appeal and ease, such as a moment for mindfulness when using hand sanitizer [4]. Hand hygiene—now a constant routine in and out of the hospital—is a continual opportunity for self-awareness and self-management. It can be an opportunity and invitation to focus on one’s breath, center one’s mind and body, and visualize the kind of presence, empathy, and calmness one would like to bring to the next patient and the next moment. It is also an opportunity to self-connect—Am I well hydrated? Hungry? Carrying an unreasonable emotional or mental vestige from the last patient or the last news update? Quick micropractices like these are potentially possible even for the busiest radiologist or other health care provider.

Opportunities to engage in this type of mindfulness micropractice are available on a daily basis. Examples include the wait time when logging into the PACS or electronic health records. Such opportunities present themselves continually outside our work lives as well—when hearing the concerns of family or friends, when waiting at a red light, before answering

e-mails or texts, or when brushing one’s teeth. Any recurring event can serve as a cue for a wellness self-check. Over time, such built-in wellness moments have the potential to shift one’s energy level and the tone of one’s day.

Another favorite micropractice from our physician workshops is taking a moment to name one’s emotions, especially challenging emotions. For example, when I notice that I am feeling upset, is it anger? Concern? Exhaustion? Such naming aids self-awareness and self-management. This “name it to tame it” practice, to paraphrase Dr Dan Siegel, MD, has supportive functional MRI research; it has been shown to shift brain activity from the amygdala, the emotional center of the brain, to the higher-order thinking area of the brain, specifically the right ventrolateral prefrontal cortex. In so doing, it can help bring calm and ease [5]. Helpful lists of the range of human feelings are readily available and can help facilitate this process [6].

An additional evidence-based practice that can appeal to frazzled radiologists and other physicians is the simple act of writing down three things one is grateful for several times a week. This quick practice can aid well-being [7]. Sexton and Adair studied a similar practice called “Three Good Things” in health

care workers including physicians, physician assistants, nurses, and administrative staff. They found that a 15-day practice of recording three good things had significant positive benefits on self-reported happiness, burnout, work-life balance, and depression [8]. Extending gratitude practices into groups, such as starting meetings by giving kudos for recent efforts, can also help stimulate positive emotions and positive relationships among team members. Clearly many good things are happening in the midst of all the stress and swirl—the dedication of so many, kindness and consideration for those most at risk, and emotional support. To help us survive, our minds are biased to notice risks and danger; consciously noticing the good can help bring balance and calm.

In our experience, radiologists and physicians find it empowering to share their personal practices around burnout prevention and wellness in a workshop setting, and they enjoy learning from their peers. An important element of “Oh, I am not alone with these challenges” seems to spontaneously arise. They see, and hear, that others they know and respect face similar circumstances and stresses. While learning about these micropractices, they also gain practical tips from their colleagues’ hard-earned wisdom and experience. One radiologist reported tracking her tension level during a busy workday. If the level is high and she gets a flurry of questions from technologists, she has learned to pause and consciously respond with the statement, “I just need a minute.” This simple phrase gives her time to settle and then offer a more connecting response, rather than a reflexive reaction. The technologists have come to know the short wait is well worth the few extra seconds of time.

Lastly, a simple technique known as diaphragmatic breathing has also

shown promise for reducing stress and self-perceived anxiety and can be an additional micropractice. This involves inhaling deeply by expanding the lungs downward rather than inhaling using the abdomen or rib cage alone [9]. Inhaling is done through the nose, with a pause before exhaling slowly and completely through the mouth. Some find silent counting during inhalation and exhalation helpful to establish a respiratory rate of six to eight breaths per minute (eg, inhale for a count of 5 seconds, pause, and exhale for a count of 5 seconds for a respiratory rate of approximately six breaths per minute).

In preliminary experimental studies, diaphragmatic breathing has demonstrated a statistically significant improvement in stress reduction as measured by both physiologic biomarkers (blood pressure and salivary cortisol) and self-reported stress levels via the widely used Depression Anxiety Stress Scales-21 [9]. The mechanism is thought to act by increasing parasympathetic activation. Given that diaphragmatic breathing is low cost, self-administered, non-pharmacological, and highly portable, it is easy to try (provided no prohibiting health conditions exist). Further study is needed to better define its mechanism and efficacy and the minimal time needed for positive benefits. One study has noted statistically significant benefits on blood pressure with one 10-min session of diaphragmatic breathing [9].

One could take a deep breath or three before the start of a readout session or between each case or spend 30 to 60 seconds in deep breathing on bathroom breaks, after reading e-mail updates or news, or before starting a meeting. Such small changes may seem inconsequential and futile in the face of immense pressures. Small changes, however, have the advantage of being doable and sustainable. Over time, anchoring deep

breathing and other micropractices into our existing habits can help build more wellness into our lives.

These micropractices are not advocated as prescriptions for treating burnout, and they will not extinguish the stress and anxiety of COVID-19. Individuals experiencing burnout should seek professional help. These practices are intended for strengthening burnout prevention and for adding a bit more wellness. Such micropractices do not replace but rather complement previously described individual efforts such as MBSR and personal coaching.

Studies have indicated mindfulness practices and coaching can be beneficial provided one can devote the time and energy they require [2,3]. The micropractices we describe are quick and easy and can be done solo or with others, at the PACS workstation, in one’s office, at home, while commuting, or almost anywhere. Such practices are intended to build personal resources; they are potential tools in an individual’s “wellness toolbox.” Given personal differences and preferences, it is expected that some practices will have more appeal and benefits than others for a specific individual. Having a robust toolbox of practices that resonates with you can be a helpful resource in navigating expected, and unexpected, challenges.

Clearly larger and randomized studies of these micropractices, with active controls and a longitudinal time course, are needed. As with the many structural and cultural changes that are needed to help prevent burnout and promote wellness, such studies will require considerable time, energy, and resources. Meanwhile, these micropractices may be of help. As the demands and stresses of COVID-19 evolve, we can use and build our resources—both internal and external. Micropractice by micropractice,

breath by breath, we can move toward increased calm and elevated emotional wellness.

## REFERENCES

1. Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc* 2017;92:129-46.
2. Panagioti M, Panagopoulou E, Bower P, et al. Controlled interventions to reduce burnout in physicians: a systematic review and meta-analysis. *JAMA Intern Med* 2017;77:195-205.
3. Dyrbe LN, Shanafelt TD, Gill PR, Satele DV, West CP. Effect of a professional coaching intervention on the well-being and distress of physicians: a pilot randomized clinical trial. *JAMA Intern Med* 2019;179:1406-14.
4. Saint S, Chopra V. How doctors can be better mentors. *Harv Bus Rev*. Available at: <https://hbr.org/2018/10/how-doctors-can-be-better-mentors>. Accessed April 3, 2020.
5. Lieberman MD, Eisenberger NI, Crockett MJ, Tom S, Pfeifer JH, Way BM. Putting feelings into words: affect labeling disrupts amygdala activity to affective stimuli. *Psychol Sci* 2007;18:421-8.
6. Center for Nonviolent Communication. Feelings inventory. Available at: <https://www.cnvc.org/training/resource/feelings-inventory>. Accessed April 3, 2020.
7. Emmons RA, McCullough ME. Counting blessings versus burdens: experimental studies of gratitude and subjective well-being in daily life. *J Pers Soc Psychol* 2003;84:377-89.
8. Sexton JB, Adair KC. Forty-five good things: a prospective pilot study of the Three Good Things well-being intervention in the USA for healthcare worker emotional exhaustion, depression, work-life balance and happiness. *BMJ Open* 2019:e022695.
9. Hopper SI, Murray SL, Ferrara LR, Singleton JK. Effectiveness of diaphragmatic breathing for reducing physiological and psychological stress in adults: a quantitative systemic review. *JBHI Database of Systemic Reviews and Implementation Reports* 2019;17:1855-76.

David Fessell, MD, is from the University of Michigan Medical School, Ann Arbor, Michigan. Cary Cherniss, PhD, is from the Graduate School of Applied and Professional Psychology, Rutgers University, New Brunswick, New Jersey.

The authors state that they have no conflict of interest related to the material discussed in this article.

David Fessell, MD: Department of Radiology, Taubman Center Room 2910K, 1500 E Medical Center Drive, Ann Arbor, MI 48109-5326; e-mail: [fessell@umich.edu](mailto:fessell@umich.edu)