

# UPMC Center for Integrative Medicine

*Dedicated to increasing knowledge about safe and effective complementary and integrative medicine approaches.*

## The Heart: the Key to Physical and Emotional Well-Being

Ronald Glick, MD, Deborah Grice-Conway, PhD, Carol Greco, PhD

If just knowing what to do was all that we need, life would be simpler. We wouldn't smoke or have other addictions, we would eat a healthy primarily plant-based diet, we would exercise regularly, and our physical and mental health would benefit. It goes without saying that we would embrace regular mind-body practice. But choosing healthy behaviors is not necessarily simple, particularly when we are feeling stressed.

**What is stress?** Simply put, stress is when the demands on an individual exceed the resources for adaptation or coping(1). We're caught in a *Catch 22*: stress management is more important than ever, particularly for our immune systems, but demands and events may limit our time and energy to engage in practice. Stating the obvious, we understand:

- There's a direct physical health effect of stress on our hearts, hormone system, and immune system.
- Our current crisis has placed incredible demands on individuals and families, at the same time, limiting our resources for managing these issues.
- It is more of a challenge to find activities we can engage in which bring us joy or relaxation.
- We hear about the importance of engaging in stress management activities, leading us to feel guilty for not managing our stress better!

**The autonomic nervous system (ANS)** is the part of our body that regulates the things we do without thinking, like how fast our hearts beat. It has an accelerator and a brake. We talk about fight or flight, which describes our reaction to a sudden stress. Stressors that are ongoing drain the system and deplete our resources, contributing to anxiety, depression, fatigue, insomnia, and health problems.

This raises several questions:

**Why do we need both an accelerator and a brake?** It might be nice to walk around "chill" all the time, but part of human experience and what defines us as individuals is the range of emotions. We experience joy, elation, love, grief, and fear, and we need to be able to mobilize in a crisis situation.

**If our musculoskeletal system becomes compromised, we might see a physical therapist and engage in rehab to get us back on track. Are there any exercises that can train the ANS?** It turns out that the heart provides a unique window into the accelerator and brake of the ANS. There's a two-way connection between the heart and the brain. We know this from

our everyday experiences. If we're worried about something, in addition to sweaty palms, our hearts beat faster. And if we're in the doctor's office, we might have an increase in blood pressure, known as "white coat hypertension." The opposite is true too. Yogis can slow down their hearts through breathing and meditation practice, leading to a state of deep relaxation.

**What is Heart Rate Variability (HRV)?** As long as we have had measurement tools, like EKG, we've appreciated that the heart rate speeds up and slows down throughout the course of the day. This allows a person to respond appropriately to demands and stressors and have times of greater focus or relaxation. That's part of our resilience or ability to adapt to the world around us. In general, a higher level of HRV is associated with greater physical and emotional well-being.

**How does HRV affect health?** Conditions such as anxiety, depression, heart disease, and diabetes all have a lower level or blunting of HRV.

**Is there a way to change HRV?** Activities that are health promoting include yoga, tai chi, aerobic exercise, mindfulness practice, meditation, as well as prayer and religious contemplation. All of these are found to increase HRV and result in a more relaxed and focused state.

**What is biofeedback?** In brief, it is the use of technology to help a person become aware of a specific bodily function, and through practice, learn techniques to change that function to promote health.

The Institute of HeartMath™ is a nonprofit organization which supports education and research into work enhancing HRV and emotional health. Much of their activities center around biofeedback technology for HRV. However, the programs and skills can be practiced and learned without technological aids. In fact, when we use the techniques developed by HeartMath, many patients quickly drop the biofeedback component and practice the skills by themselves.

David Servan Schreiber, MD, PhD, Cofounder and former Medical Director of the Center for Integrative Medicine, wrote a seminal book, *Instinct to Heal*, describing seven holistic approaches that can enhance mental health(2). One of these, connected with the HeartMath system, is cardiac coherence training. We spend much of our day with our hearts beating in a chaotic pattern; our heart rate goes up and down randomly, reflecting a constant struggle between that accelerator and brake. We go between these states all of the time. When we're multitasking, juggling a lot of balls, our minds go in different directions and our hearts follow suit.

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The flip side, coherence, reflects a deeper state of focus and relaxation. If we're absorbed in a book or movie or music, there's a smooth organized pattern to the up and down of our heartbeat, referred to as coherence. A person can learn skills that help move from a state of chaos to coherence.

Cardiac coherence training can help a person improve in a number of areas, as shown by research from the HeartMath Institute and other groups(3, 4). These include: school performance; work performance; work-related stress; blood pressure control; and mood and anxiety. Additionally, coherence training can evoke health enhancing effects in our hormonal and immune systems.

**Is cardiac coherence training better than other mind-body approaches?** Most mind-body approaches share common elements, such as focusing the attention inward. The most important thing is to find something that resonates, that we find enjoyable and rewarding, and that keeps us coming back. Many people experience activities such as meditation or yoga as "work." It is said that if you love what you do, you'll never work a day in your life. This applies to mind-body practice as well. We've instructed hundreds of patients in cardiac coherence training. A number have told us that this has been an enjoyable, relaxing, and recharging practice that they can easily incorporate into their daily routine.

### The How-To of Cardiac Coherence Training:

(Refer to this instructional video [Breathing Exercise for Stress Management](#) by Dr. Deborah Conway)

1. Recognize a stressor or negative feeling you are experiencing.
2. Become aware of your breath. It is sometimes helpful to place one hand on your abdomen and another higher up on your chest. Notice which hand moves when you breath. (If it is the top hand you are breathing shallowly, which may trigger feelings of anxiety.)
3. Settle into a pattern of deep, rhythmic breathing.
4. Shift your attention to the area of your heart. Breathing a little slower and deeper, imagine the breath flowing in and out of your heart or chest area, finding a pace that is comfortable for you.
5. As you continue the heart-focused breathing, make an effort to re-experience a positive feeling of appreciation or care for someone or something in your life. This might be your child, a pet, a special place, a time of accomplishment, or just a general feeling of calm or ease. Continue this focus until you notice the positive feelings replacing the depleting energies. (If you are accustomed to having more negative feelings this may feel uncomfortable at first. Do your best to simply recall a fun time in your past and re-experience it.)



With repetition, you can more quickly regain stability as you readjust your emotions in times of stress. Practice makes it easier to sustain coherence for longer periods of time as it feels more familiar to your body, making it easier to remain calm and balanced in challenging times.

Over time, the coherence that you establish becomes a new setpoint in your system, and it becomes easier to stop the negative impact of stress on your body, as emotional reactions and drama are neutralized.

May we all be well, safe, and free from harm.

### References

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# UPMC Center for Integrative Medicine

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We're pleased to announce that the Center for Integrative Medicine at UPMC Shadyside will be opening for direct in-person patient visits on Monday May 18, 2020. The COVID-19 crisis has impacted all of our lives, kicking up stress levels and making many of us feel isolated. We've heard from a number of our patients that they feel like it caught them coming and going. They've had a heightened level of stress and pain and their usual supports and treatments are unavailable.



In keeping with federal and UPMC guidelines, we are resuming “medically necessary non-emergent care”. Many of our patients experience chronic pain and stress-related conditions that interfere with their quality of life and respond nicely to the integrative health services offered at the Center.

The administrative staff is in the office and available to schedule appointments. Each of the clinicians has their own schedule as to when they're starting to see patients back. Also, as we're increasing the spacing between patients, we would appreciate your patience if there's a delay in scheduling. For the clinicians who provide consultation, such as mental health counseling, integrative medicine and psychiatric management, functional medicine, naturopathic medicine, and nutritional counseling, we are offering services via telemedicine.

For patient safety, we're instituting a number of measures:

- We will carefully clean rooms in-between patients.
- We ask all patients and visitors to wear a mask, it is fine to wear/bring a cloth mask.
- We will be screening for symptoms of possible COVID-19 infection or exposure at the time of scheduling and on the day of the visit. If anyone feels they may be coming down with something, please stay home.
- We will strive to minimize patients' time in the waiting room. As 1 part of that, we ask that patients call from the parking garage and we'll let you know when to come up for the appointment.
- We request that patients come by themselves, except in extenuating circumstances.
- As with patients, staff will be screened every day for signs of COVID infection and will be wearing masks in all patient care areas.
- We continue to have hand sanitizer available in all patient care areas. Staff will be observing strict hand hygiene and we encourage patients to use it as well.

We appreciate your support of the services we offer here at the Center for Integrative Medicine. We hope that you and your families stay healthy.

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