



Heart Brain Connection

For years the heart and brain have been considered to be completely separate organs that do not influence one another. No-one thought that the heart and brain were connected. But recently it has been shown that the heart has a network of neurons (brain cells) that act like a small brain. This 'brain' has its own perceptions and it can adapt its behavior according to these. But it also affects, and is affected by the limbic (emotional) area of the brain in the head.

Our brains have developed over millions of years, rather like a house whose owner adds new rooms as the need for them arises. The most ancient area is the brain stem, an structure we share with all animals with backbones, including reptiles. Because this was the original brain it governs all the vital functions, temperature, heartbeat, breathing, and blood pressure, the basic sensory functions, and voluntary motor function, and also functions such as swallowing and digestion.



The limbic system was the next area of the brain to develop. This area, known as the emotional brain, has a number of structures. which are concerned with keeping the body safe and in a state of balance, or homeostasis. **It is this area, which lies below the cortex (the conscious area of the brain) which is connected to the 'small brain' in the heart.**

The cortex or outer layer, the thinking area of the brain, and the pre-frontal cortex, the planning area, developed much later than the limbic system. There are a few connections between these areas and the emotional brain, but on the whole the unconscious emotional brain and the conscious cortical brain do not communicate with one another unless we train them to do it. So, unless we use our cortical brains to continually take note of what our emotions telling us, we may remain largely unconscious of the information that our hearts send to our emotional brains.

When the emotional and cortical brains are working together we are in a state of well-being, which comes from a balance between what our emotions and our rational thoughts are saying. Well-being is the foundation of physical health. We can use the heart's 'small brain' to influence the emotional brain and vice versa.

You may have noticed that when you feel love for another, or remember something that was pleasant or made you feel happy, you immediately feel calmer and more at ease. Even just focusing on your heart can bring about the same result (try it now, and see how you feel.) This comes about because your heart is 'speaking to' your emotional brain and affecting the neuro-transmitters (chemical messengers made by brain cells) that are released.

Another way to influence the emotional brain is by regulating your heart rate, specifically your heart rate variability. Although our overall heart-rate per minute may remain fairly constant when we are in a state of rest, the rate from heart-beat to heart-beat is highly variable. When we are anxious, angry, or depressed the heart-beats from moment to moment vary wildly and become chaotic. When we are in a state of well-being however, the heart-beat varies regularly, alternating between speeding up and slowing down. This is known as coherence.

Variability in heart-rate is an important indicator of health. Little variability from beat-to-beat indicates that the heart is failing and is a predictor of death from heart failure. On the other hand, frequent chaotic variability indicates a high level of stress that can affect physical and/or mental health.



There are [hand-held or computerized programs](#) that you can buy to train you heart rate to become more coherent. But you can also take some free regular actions to increase your heart's coherence. For example, you can take time each day to sit quietly and notice what you are feeling. Then:

- focus on your heart and imagine that you are breathing in and out through it (so your breath is coming in and out through the center of your chest.);
- try to make the in-breath and the out-breath about the same length;
- once you have established a rhythm, remember or think about something pleasant that makes you feel happy.
- do this twice a day for about ten minutes, or more often if you are under a lot of stress.
- notice how you feel after each session; it will get easier and more effective with practice.

Try this, especially if you are feeling a lot of tension and stress, or have chronic pain or a chronic condition. Take note of your emotions and symptoms before and after this exercise, and over time, and write them down so you can notice any changes that may occur slowly.

Please leave a comment on any changes you have noticed after using the above exercise for a while.

Information for this post from: David Servan-Schreiber, MD PHd, *The Instinct to Heal: Curing Depression, Anxiety and Stress Without Drugs and Without Talk Therapy.*