

Emotional Transformation

Heart-Brain Communication

- During the 1990's scientists discovered that the heart has its own brain, with its own independent nervous system, its own set of hormones, and neurotransmitters, that functions independently from the brain. (Armour, 1991)
- The heart communicates to the brain in four major ways:
 - *Neurologically* – through the transmission of nerve impulses
 - *Biochemically* – through hormones and neurotransmitters
 - *Biophysically* – through pressure waves
 - *Energetically* – through electromagnetic field interactions
- The heart has its own sense of learning that can sense, feel, and remember. (Armour and Kember, 2004)
- The heart actually sends more information to the brain, directing the brain as to what to do, than the brain sends to heart. (Cameron, 2002)
- The heart produces great quantities of the hormone oxytocin, often known as the “love” hormone or bonding hormone. It is the same hormone produced during the romantic phase of a love relationship, after childbirth, or during satisfying sex.
- The heart produces ANP (Atrial natriuretic peptide), a stress balancing hormone that has receptors in the brain. (Cantin, and Genest, 1986; Gutkowska, et al. 2000)
- In the 1980's the heart was reclassified as hormonal gland. (Cantin, and Genest, 1986)

Heart Rate Variability

- In the 1990's it was discovered that the heart beat pattern of the heart's rhythmic activity varied with different emotional expressions. (McCrathy et al. 1995; Tiller, McCraty, and Atkinson 1996)
- "Heart Rate Variability" refers to the variability in the natural rhythm of the heart from beat to beat and is measured in milliseconds.
- Signals generated by the heart's rhythm send messages to the brain and the rest of the body.
- Your brain, respiratory, and digestive system all respond to your heart rhythm.
- Each of these systems produces its own distinctive rhythmic pattern.
- Because your heart is your body's metronome, it synchronizes those systems to dance to the heart's rhythmic pattern.

Heart-Brain Coherence

- When you are experiencing positive emotions such as, joy, appreciation, love, compassion, your heart's rhythms are harmonious, creating a coherent pattern bring the two parts of your Autonomic Nervous System (ANS) the sympathetic system – the part that speeds you up- and the parasympathetic system – the part that slows you down, relaxes you.
- When you are experiencing negative emotions, such as anger, hurt, frustration, depression, hopelessness your heart's rhythm becomes disordered and chaotic. Your body falls into a state of "stress."
- In addition, the electromagnetic fields generated by your chaotic or coherent rhythms are transmitted throughout your body and to other people in close proximity to you (McCrathy 2004; McCarthy et al. 2006).

Transformation

- The power to transform your emotions involves learning how to bring your, heart, brain, and ANS into coherence.
- You can shift into heart coherence whether your heart rate is 50 or 130 beats per minute. Heart coherence is akin to being in the “flow” or achieving “peak performance.”
- Heart coherence renews and revitalizes.
- Coherence is not just relaxation, it is an optimal state of healing, learning, and emotional transformation (McCraithy et al. 2006).
- As you learn how to shift into heart rhythm coherence, you increase your power to change your mood more quickly.