**Five Basic Concepts**

**Illustrating the Usefulness of Neuroscience to Counseling**

1) **Neuroplasticity:** Simply put, the brain can change — it is not fixed. Instead, it responds to external environmental events and/or actions initiated by the individual. The old idea that the brain does not change is simply wrong. Neuroplasticity means that even in old age, new connections and neural networks are born and can continue development. Regardless of age, genetic background or life experience, change can happen. As Jeffrey Schwartz and Sharon Begley have noted, “Neuroplasticity can result in the wholesale remodeling of neural networks … a brain can rewire itself.” Effective counseling not only changes minds but changes brains as well. As helpers, we find that our brains also grow and change.

2) **Neurogenesis:** Counseling can support the building of new neurons! One of the most startling findings is that completely new neurons can be generated in the learning process, even in older people. The idea that we only go “downhill” in later life has been proved wrong. Neurogenesis occurs in many areas of the brain. We develop new neural networks throughout the life span in response to new situations or experiences in the environment. Exercise is particularly important as a lifetime process to ensure brain and physical health. Exercise increases blood flow and the release of positive neurotransmitters such as serotonin. Many of you reading this article have experienced the serotonin “high” of running or other physical activity. This positive high through exercise needs to be part of your treatment regime for clients. Serotonin release is particularly helpful in mitigating depression. If clients are sad, encourage them to walk or run. Not only will they feel better, but their brains will be expanding as well.

3) The importance of attention and focus: Our basic concepts of attending behavior and attention — required for the learning process that is counseling — are measurable through brain imaging. When client and counselor attend to the story, the brain of both interviewer and client become involved. Factors in attention include arousal and focus. Arousal involves the reticular activating system, at the brain’s core, which transmits stimuli to the cortex and activates neurons firing throughout many areas. Although the brain is holistic, the executive frontal cortex can determine the direction of attention. If you attend with energy and interest, and this is communicated effectively, expect your client to see you as a positive resource. The microskill of attending behavior becomes ever more important. Meditation is an excellent treatment to facilitate client focus and attention. As with exercise, evidence is clear that meditation is an important treatment and wellness alternative.

4) **Clarifying our understanding of emotions**: We think of the basic emotions as sad, mad, glad and fear. Disgust and surprise have been added through Paul Ekman’s research. Brain imaging now reveals that each of the emotions fires different parts of the brain. Again, we see that our basic counseling concepts are verified. The amygdala is the major seat of the negative emotions of sad, mad and fear, but it is also an energizer for learning and absorbing new input and memories. Many areas of the brain are activated by positive emotions. The prefrontal cortex and the hippocampus are obviously important, but the nucleus accumbens sends out signals to the dorsal cingulate cortex and prefrontal cortex, making it possible to focus on the positive. Thinking and feeling positively are heavily influenced by executive cognition functions.

5) **Focusing on wellness and the positives**: When counselors focus on negative issues and problems, this builds a self-reinforcing circularity between the “demons” of the amygdala and the frontal cortex. The result? Negative thinking, accompanied by negative feeling, which is characteristic of depression. Pessimism feeds on itself. Research is clear, however, that an effective executive frontal cortex focusing on positives and strengths can overcome the negative. Appropriate medication (for example, Lexapro and Wellbutrin) can enhance positive thinking by increasing the supply of serotonin. Albert Ellis’ and Aaron Beck’s cognitive behavior counseling does the same thing. As the old popular song goes, “You’ve got to accentuate the positive, eliminate the negative.”

Keep in mind that wellness activities such as exercise, positive reframing of old stories, interpersonal relationships, meditation and leisure all facilitate our ability to control the demons of negative thinking and feeling.