

# More Than Just Talk- How Psychotherapy Changes Your Brain

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How does counseling help us feel better? What goes on in talk-therapy that enables people to experience fewer symptoms of depression or anxiety and improved functioning in their life and relationships? These are not simple questions. There are a number of ways that counseling helps people and numerous types of therapy interventions.

Talk-therapy can help people learn how to challenge thoughts that are getting in their way and learn skills to manage symptoms and improve their relationships. Therapists can help clients increase their insight and identify patterns and behaviors that may be limiting them. They can also provide support, validation, and other interventions to help those who have experienced trauma.

There is significant evidence to support the effectiveness of counseling interventions. For example, one type of therapy, Cognitive Behavioral Therapy (CBT) has been studied over 300 times. It has been found to be as effective as antidepressants for people with major depression and anxiety. Additionally, individuals who participated in CBT were half as likely to have a relapse of symptoms after ending treatment. The benefits of psychotherapy are long-lasting (Hainer, 2008).

Medications are prescribed very frequently to those struggling with depression and anxiety, and medication certainly has its place in the treatment of mental illness. We know that medications can change or correct imbalances in brain chemicals called neurotransmitters, resulting in decreased symptoms of depression, anxiety, ADHD, mania, psychosis, and other mental health disorders. Changing the brain does alleviate symptoms for many people, and there is now emerging evidence that participation in talk- therapy with a skilled counselor can also bring about changes in the brain that decreases symptoms, without the possible adverse side effects of medication.

## Our Ever-Changing Brain

Perhaps you are still wondering how it works, what type of therapy works best, and what changes happen in the brain during counseling. Over the past few decades, a number of studies have evaluated how psychotherapy—from CBT to DBT to Psychodynamic Therapy—works to change the brain. They have looked at which areas of the brain are affected during and after the therapy process, and how these changes lead to symptom reduction and overall improved functioning for clients. We know that behavioral health symptoms originate within the brain, so we work to change or correct chemical processes within the brain. For many years, this has been accomplished with medications or treatments like Electroconvulsive Shock Therapy (ECT). However, we now know that our subjective experiences also change our minds for better or worse (Karlsson, 2011). Our brains affect our experiences, and our experiences affect our brain.

One example of this relationship between our experience and our brain functioning is the experience of trauma. Traumatic stress changes not only the chemistry of the brain, but also the actual structure of the brain. The brain structures that can be impacted and changed by the experience of trauma include the amygdala, hippocampus, and the prefrontal cortex. Brain chemicals like Cortisol and norepinephrine, which play a role in memory and our response to stress, can also be knocked out of balance by the experience of trauma. (Bremner, 2006). Another example of how our life experience alters our brain is learning. The brain changes every time we learn something new. Studies have shown that when we learn something new, the synaptic connections between neurons in the brain are strengthened. This may occur because the process of learning engages something called “long-term potentiation” in the cerebral cortex (Fox, 2013).

Our brain’s ability to change, repair itself, and adapt in response to our experiences has to do with something called neuroplasticity, or cortical remapping (Fox, 2014). We used to believe that our brains stopped developing in childhood, but we now know that our brains continue to develop and change over the course of our life. Throughout our lives, our brains create new neural pathways, and new

connections. The neurons that are used most frequently tend to develop the strongest connections. The good news is that we can learn how to influence this process and what connections get strengthened and reinforced. Learning, experiences, memory formation, trauma, or brain injury can all result in chemical and structural changes in the brain (Fox, 2014). So, if life experiences like trauma or learning something new can alter our brain structure and chemistry, what about the experience of participating in therapy?

## Psychotherapy and the Brain

With the advent of non-invasive technology like positron emission tomography (PET), single photon emission computed topography (SPECT), and functional magnetic resonance imaging (fMRI), we can now view the workings of the brain with minimal risk to the individual. These tools enable us to see changes in blood flow, electrical activity, chemistry, and brain structure (Linden, 2006).

We can now see what is happening inside the brain during counseling. In a study using neuroimaging technologies, D. Linden (2006) found that psychotherapy interventions can change the brain in ways that are similar to the changes caused by selective serotonin reuptake medications (SSRIs).

Psychotherapy may seem to be just a client and therapist talking about the client's problems and symptoms in a supportive environment, but much more is happening. Often, therapy focuses on recognizing and changing thought patterns and beliefs that cause suffering and problems with functioning and relationships. Sometimes, our thought patterns are so automatic and unconscious that we don't even notice them. How often do we think about our thinking? Thoughts often lead to feelings which, in turn, lead to behaviors. Depression is an example. Depressive thoughts can increase depressive feelings, leading to the behaviors of inactivity and isolation. The feelings of depression tell us to stay in bed and pull the covers over our head. In cases of severe clinical depression, medication may be needed to help people get the most from counseling, but therapy can also work to change brain activity and imbalances that contribute to a depressed mood.

According to Marriage and Family Therapist, Dr. Athena Staik (2011), our subconscious and conscious mind and bodies are always in a state of either self-protection or learning –surviving or thriving. When we have toxic, anxious, depressive, or negative thinking, we tend to remain in more of a survival mode. These thoughts can become self-perpetuating because they create deeper and deeper “pathways” in the brain that get reinforced each time we entertain the toxic thoughts. Spending too much time in survival mode is hard on our bodies, and it limits our ability to learn and thrive. In counseling, clients learn that it is possible to consciously use language and practice self-talk that enable us to move from survival mode to learning mode.

## Brain Therapy

Cognitive Behavioral Therapy intervention can also create changes in the brains of people suffering from phobias or obsessive-compulsive disorder. The symptoms of Obsessive-Compulsive Disorder (OCD) include intrusive and unpleasant thoughts or images and/or by the urgent need to engage in rituals like as hand washing or checking things. It is believed that these symptoms may be caused by abnormalities in the neurotransmitter serotonin or overactivity in a part of the brain called the caudate nucleus (Patterson, 2008).

Participation in CBT resulted in decreased metabolism the right caudate nucleus, bringing about a decrease in obsessive and compulsive symptoms. Similarly, this therapy caused decreased activity in the limbic and para-limbic areas of the brain in people diagnosed with a phobia. These brain changes are similar to the changes caused by SSRIs. Brain changes and symptom reduction also occurred in people with depression, as a result of participation in CBT. However, the changes were of a different nature than the changes caused by SSRI medication (Linden, 2006). This may mean that psychotherapy works in a different way than medication, but still provides relief from the painful psychological symptoms of depression.

Different people, and different disorders, will respond differently to various treatment interventions. For example, we know that people with schizophrenia can benefit from psychotherapy, but treatment with medication is almost always necessary, as well. For many people, a combination of counseling and medication is the best approach. We know that CBT can create changes in the brain that help those struggling with depression and anxiety disorders, but what about other types of psychotherapy? Can other treatment interventions also change the brain? The answer is yes.

In one study of patients with depression, some patients received both medication and intensive interpersonal psychotherapy, while the rest received 20-minute support sessions and medication. Researchers found that 70% of the patients in the interpersonal psychotherapy group experienced significant reduction in symptoms, as compared to only 51% in the group that only received support sessions. Twelve months later, the researchers found that those in the interpersonal psychotherapy group experienced significantly better social functioning, as well (Talk Therapy, 2008). Even though both groups received medication for their depression, the therapy group experienced more reduction in symptoms of depression.

The research is mounting that certain types of psychotherapy can have the same positive effects on the brain as psychotropic medications. Perhaps counseling can be viewed as a type of learning, and that's how the changes in brain chemistry and function occur. As the counselor and the client talk, the client is learning skills to change their behaviors, think differently, and regulate emotions. Therapy is much more than a chance to chat or vent with a supportive person with great listening skills. We know that some conditions respond better to psychotherapy than others. However, our understanding of the relationship between counseling and brain chemistry is encouraging news for those who would prefer to try talk-therapy before taking medication and risking the side effects that often go with them.

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Bremner, D. J., M.D. (2006). Abstract. *Dialogues Clinical Neuroscience*, 8(4), 445-461. Retrieved September 1, 2014, from [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181836/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181836/Cherry, K. (2014). How will your experiences change your brain? Understand brain plasticity. Retrieved September 1, 2014, from http://psychology.about.com/od/biopsychology/f/brain-plasticity.htm)

Fox, M. (2013, October 19). Study: Learning changes the brain. Retrieved September 1, 2014, from <http://abcnews.go.com/Technology/story?id=99209>

Hainer, R. (2008, August 22). Is there proof that psychotherapy works? Retrieved September 1, 2014, from <http://www.health.com/health/conditionarticle/0%2C%2C20220497%2C00.html>

Karlsson, H. (2011, August 11). How psychotherapy changes the brain. Retrieved September 1, 2014, from <http://www.psychiatrytimes.com/psychotherapy/howpsychotherapy-changes-brain>

Linden, D. J. (2006). How psychotherapy changes the brain – the contribution of functional neuroimaging [Abstract]. *Molecular Psychiatry*, 11, 528-538. Retrieved September 1, 2014, from <http://www.nature.com/mp/journal/v11/n6/full/4001816a.html>

Patterson, M. (2008, May 3). Neurological changes during psychotherapy: Do we need drugs to change the brain? Retrieved September 1, 2014, from <http://serendip.brynmawr.edu/exchange/node/2447>

Talk Therapy Can Change Your Brain. (2008, April 16). Retrieved from <http://www.health.com/health/condition-article/0%2C%2C20188165%2C00.html>

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