

# Theory: The Adaptive Information Processing Model

**Shapiro** developed an **information processing theory**<sup>1,2,3</sup> to explain and predict the treatment effects seen with EMDR. This theoretical model also describes the development of personality, psychological problems and mental disorders. The following is a simplified description of Shapiro's theory.

All humans are understood to have a physiologically-based information processing system. This can be compared to other body systems, such as digestion in which the body extracts nutrients for health and survival. The information processing system processes the multiple elements of our experiences and stores memories in an accessible and useful form. Memories are linked in networks that contain related thoughts, images, emotions, and sensations. Learning occurs when new associations are forged with material already stored in memory.

When a traumatic or very negative event occurs, information processing may be incomplete, perhaps because strong negative feelings or dissociation interfere with information processing. This prevents the forging of connections with more adaptive information that is held in other memory networks. For example, a rape survivor may “know” that rapists are responsible for their crimes, but this information does not connect with her feeling that she is to blame for the attack. The memory is then dysfunctionally stored without appropriate associative connections and with many elements still unprocessed. When the individual thinks about the trauma, or when the memory is triggered by similar situations, the person may feel like she is reliving it, or may experience strong emotions and physical sensations. A prime example is the intrusive thoughts, emotional disturbance, and negative self-referencing beliefs of posttraumatic stress disorder (PTSD).

It is not only major traumatic events, or “large-T Traumas” that can cause psychological disturbance. Sometimes a relatively minor event from childhood, such as being teased by one's peers or disparaged by one's parent, may not be adequately processed. Such “small-t traumas” can result in personality problems and become the basis of current dysfunctional reactions.

Shapiro proposes that EMDR can assist to successfully alleviate clinical complaints by processing the components of the contributing distressing memories. These can be memories of either small-t or large-T traumas. Information processing is thought to occur when the targeted memory is linked with other more adaptive information. Learning then takes place, and the experience is stored with appropriate emotions, able to appropriately guide the person in the future. A variety of neurobiological contributors have been proposed<sup>4,5,6,7,8</sup>

See the [Commonly Asked Questions](#) section:

[Do eye movements contribute to outcome in EMDR?](#)

[What are some hypothesized mechanisms of action for eye movements in EMDR?](#)

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<sup>1</sup>Shapiro, F., (1995). *Eye Movement Desensitization and Reprocessing: Basic Principles, Protocols and Procedures* (1st edition). New York: Guilford Press

<sup>2</sup>Shapiro, F., (2001). *Eye Movement Desensitization and Reprocessing: Basic Principles, Protocols and Procedures* (2nd edition). New York: Guilford Press

<sup>3</sup>Shapiro, F., (2002). Paradigms, Processing, and Personality Development. In F. Shapiro [Ed.], *EMDR as an Integrative Psychotherapy Approach: Experts of Diverse Orientations Explore the Paradigm Prism*. Washington, D.C.: American Psychological Association Books.

<sup>4</sup>Shapiro, F. & Maxfield, L. (2002). EMDR: Information processing in the treatment of trauma. *In Session: Journal of Clinical Psychology*, *58*, 933-946. Special Issue: Treatment of PTSD.

<sup>5</sup>Stickgold, R. (2002). EMDR: A putative neurobiological mechanism of action. *Journal of Clinical Psychology*, *58*, 61-75.

<sup>6</sup>van der Kolk, B.A. (2002). Beyond the talking cure: Somatic experience and subcortical imprints in the treatment of trauma. In F. Shapiro (Ed.), *EMDR as an integrative treatment approach: Experts of diverse orientations explore the paradigm prism*. Washington, D.C.: American Psychological Association Books.

<sup>7</sup>Siegel, D. (2002). The Developing Mind and the Resolution of Trauma: Some Ideas About Information Processing and an Interpersonal Neurobiology of Psychotherapy. In F. Shapiro (Ed.), *EMDR as an integrative treatment approach: Experts of diverse orientations explore the paradigm prism*. Washington, D.C.: American Psychological Association Books.

<sup>8</sup>MacCulloch, M.J., & Feldman, P. (1996). Eye movement desensitization treatment utilizes the positive visceral element of the investigatory reflex to inhibit the memories of post-traumatic stress disorder: A theoretical analysis. *British Journal of Psychiatry*, *169*, 571-579.

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