

## Workbook Chapter Thirty-Nine Do Breathwork

### Self-Assessment Tools:

#### WHAT ARE SEVEN WAYS ADVERSE CHILDHOOD EXPERIENCES CAN CHANGE YOUR BRAIN?

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Here are some of the ways that excessive (4 or more) Adverse Childhood Experiences can change your brain:

**1. Epigenetic Shifts.** When we experience repeated stress-inducing situation early in life, our brain adapts and we lose the ability to respond appropriately and effectively to future stressors – 10, 20 or 30 years later. The reason for this is known as gene methylation where small chemical markers, or methyl groups, adhere to the genes involved in regulating our response to stress and prevent these genes from doing their jobs. If the function of these genes is altered by adverse childhood experiences, the stress response is re-set on “*high*” for life, promoting inflammation and disease.

This makes us more likely to over-react to everyday stressors such as an unexpected argument with your spouse or a car that swerves in front of you on the highway, thus creating even more inflammation. The new research on epigenetics shows that early emotional trauma breaks down longstanding delineations between “*physical disease*” and mental or emotional disorders.

**2. Size and Shape of the Brain.** Studies show that when the developing brain is chronically stressed, it releases a hormone that actually shrinks the size of the hippocampus, the part of the brain that processes emotions and regulates responses to stress. Recent (MRI) studies show the higher the individual’s ACE score, the less gray matter he or she has in other key areas of the brain including the prefrontal cortex, where decision-making and self-regulation take place. The amygdale, or the fear-processing center of the brain is also smaller. People with high ACE scores become adults who find themselves over-reacting to even minor stressors.

**3. Neural Pruning.** Children naturally have an overbalance of neurons and synaptic connections to help them process their “*busy*” lives. It was once thought that you either “*use it or lose it*” when it comes to these brain functions, but recently it was learned non-neural brain cells known as “*microglia*,” make up one-tenth of all brain cells and are part of the immune system. These cells participate in a natural pruning process. However, when

a child experiences unpredictable, chronic stress, these cells get activated and create neuro-inflammation, that can reset the brain for life. Kids who enter adolescence with experiences of chronic stress and who lack the presence of a consistent, loving adult are more likely to develop mood disorders or have poor executive functioning and decision-making skills.

**4. Telomeres.** Adults, who faced developmental trauma showed greater erosion of the protective caps on the ends of their DNA strands, like the caps on shoelaces that are known as "*telomeres*." As our telomeres erode, we are more likely to develop degenerative diseases and age prematurely.

**5. Default Mode Network.** Inside our brain is a network of neuro-circuitry known as "*default mode network*." It is always on stand-by, helping us to figure out what to do next. Children who faced early adversity are routinely thrust into a state of fight-or-flight. When this happens the default mode network goes "*off line*." It is no longer able to help us figure out what's relevant or what we need to do next. As a result, they have trouble reacting appropriately to the world around them.

**6. Brain-Body Pathway.** Until recently it was thought that the brain is separate from the body's immune system. Researchers have now found that an elusive pathway travels between the brain and the immune system via lymphatic vessels. They found that the relationship between mental and physical suffering is strong and inflammatory chemicals associated with early childhood trauma flood a person's body from head to toe.

**7. Brain Connectivity.** Researchers recently found that children and teens, who experienced chronic adversity, showed weaker neural connections between the prefrontal cortex and the hippocampus. This connection plays an essential role in determining how emotionally reactive we are on a day-to-day basis. Importantly, it also determines how likely we are to perceive these events as stressful or dangerous.

### **Case Example:**

While I was in a training in Breathwork Techniques, one of my instructors mentioned that he had used Breathwork with his aging father, with remarkable results. I thought, "I wonder if I could do the same with my parents.?"

Immediately after the training session, which was held in Snowmass, CO, I called my parents and told them I would like to come home (Pennsylvania) to do Breathwork with both of them. Surprisingly, they agreed. When I got home they wanted to include their friends and my sister and her son, my nephew, who had asthma. So, I held a short seminar on

what the Breathwork was and what results they might achieve by going through a Breathwork session. To my surprise, almost everyone who attended the introductory seminar agreed to do Breathwork with me.

I started with my Dad and he had remarkable memories that took him back to his birth. He was born at home and he remembered the room where he was born in his parents' home. He said that he felt very relaxed after the session. Later, on he told me that the session changed his whole outlook on life. He said to me, "I used to be a 'brooder,' always worrying about the future. I don't seem to do that anymore, and the change came after you did the Breathwork with me.

My mother had a trauma that was affecting her life. She had a minor auto accident, but it freaked her out so much, she could drive a car anymore.

The Breathwork session seemed to heal that trauma and she was able to go back to driving her car again.

The most dramatic results, however, came with my mother's sister, Aunt Emma. Aunt Emma had MS and was confined to a wheelchair. My mother asked me if I thought the Breathwork would help her with her MS. I told her, I didn't know, but if she was willing, I would see what happens if I did Breathwork with her.

She agreed to do it and we helped her out of her wheelchair and onto a bed. I instructed her on how to begin breathing. Emma closed her eyes and began the breathing rhythm I taught her. She didn't say much during the session but then, after about 45 minutes of connected breathing, I asked her to stop and tell me what she was experiencing.

She said to me, "I felt Jesus touch me on my upper lip and tell me that it was going to be alright. (She was very religious) I feel so relaxed." With that statement, Emma almost leaped off of the bed and stood up straight. She said, "I can walk again. This is a miracle." For the rest of her life, she never went back to using a wheelchair again.

I told her that she would have to continue to do Breathwork herself, every day if she wanted to maintain her new strength. Later, she told me that every day after lunch she would lay down and do "the breathing," as she referred to it. Following all this, I was interviewed on a local radio show and I asked her to join me to share her story. She also began to share her experience at her church and as a result, she began teaching interested members how to do "the breathing." She even taught her minister how to do "the breathing," so he could use it with his ailing mother. I was thrilled by the results and saw how much healing occurred in my short trip home. Later, my Dad told me that the Breathwork session saved his life. He seemed so much more relaxed after doing the Breathwork.