

## **Traumatic Experiences in early life as a trigger for altered stress response, Moskau 17.9.16, AMWC EE 2016, Section Stress**

I want to talk to you about the following issue: Traumatic Experiences in early life as a trigger for altered stress response.

I'm working in my own practice since 1993. Since 2002 I'm certified as an EMDR therapist and I'm working with this technique ever since.

According to Dr. Hans Selye, an endocrinologist credited with pioneering studies on the effects of stress on the human as early as 1936, the human body reacts to stress in three distinct stages he calls the general adaptation syndrome. These are: alarm reaction, resistance and exhaustion.

This still applies today.

Dr. Selye was the pioneer regarding to the researches, that stress, especially permanent stress, changes in a biochemical way every single cell, and causes premature cell aging and in the long run can lead to a lot of diseases. Because of that, it makes greatest sense, to reduce inner stress, where and whenever you are able to.

Interesting for my special issue today is the third stage:

If the body continues to be exposed to stress, and exactly this is, what traumatic experiences in early life can lead to, our adaptive energy eventually runs out and the transition into the third stage happens: exhaustion sets in and can lead to altered stress response and in the long run to a breakdown in the functioning of vital organs, causing disease.

Research shows, the long-lasting effects of early life trauma, which can go hand in hand with permanently high stress levels and result in increased risk for adult psychopathology, from cardiovascular diseases to anxiety disorders, depression and more. The way to change our stress response is the so-called epigenetic programming, which may be inheritable.

Research in the field of Post Traumatic Stress Disorder or PTSD, a long lasting reaction after a traumatic event, shows that it does not happen to everybody. Most individuals process traumatic experiences naturally.

Humans and animals require nurturing from a caregiver in order to survive. If a child does not experience consistent, secure interactions or, even worse, experiences painfully stressing situations, the result is a maldevelopment of the brain with major consequences for how that person handles stress.

Prof. Allan Schore of the *University of California, Los Angeles (UCLA)*, points out that if a baby is not treated properly in the first two years of life, the genes for various aspects of brain function cannot operate, and may not even come into existence at all. So the genes a baby has will be profoundly affected by the way it is treated. The reason is the absence of Oxytocin, our hormone for nurturing, attachment and relationships.

Michael Meaney of McGill University/ Montreal and his team were among the first researchers to identify the importance of maternal care in modifying the expression of genes that regulate behavioral and neuroendocrine responses to stress, as well as brain structures, f.e. the hippocampal synaptic development. Meaney and his team found that individual differences in maternal care can modify an offspring's cognitive development, as well as its ability to cope with stress later in life. Meanwhile there is no doubt: the amount of care and love we got in our early childhood determines how we react to stress.

Trauma in children, such as sexual, physical or emotional abuse or abandonment alter the child's physical stress mechanisms and, as a result, the child is more reactive to stress throughout their adult life.

The key for understanding how these things are connected, I mentioned before, is the epigenetic programming. Environmental influences and personal experiences with long lasting stress induce changes to our DNA on molecular level:

These behavioral alterations are associated with an increased level of the glucocorticoid receptor in the hippocampus -- a brain area essential for cognitive processes and that contributes to stress responses. This altered expression results from an epigenetic dysregulation of the gene for the receptor that binds stress hormones like cortisol. The activity of this gene is normally reduced by DNA methylation, an epigenetic mark that silences genes. Traumatic experiences lead to the removal of some of these DNA methylation marks which results in an increase in gene activity and an increased production of the glucocorticoid receptor.

The consequence is, that this inability can become epigenetically inherited.

To give you a interesting example:

Isabelle Mansuy, a brain researcher at the University Zürich/ Switzerland and her team, is researching this issue, of course looking to prove that her findings from research on mice can be applied to human beings as well.

She and her team implanted the sperm of a traumatized male mouse into a complete healthy mouse. The offspring is raised by the mother and another, not traumatized mouse “father”, such that both parents are considered healthy. However, the young mice exhibited the same inability to react in stressful moments and the same behavioral problems as their biological father, although they got care under best conditions. Mansuy’s observations align with the findings of Meany’s research and together strongly suggest that epigenetical inheritance is real.

Actually Isabelle Mansuy and her team have recently shown, that epigenetic dysregulation of the glucocorticoid receptor gene is reversible. The impact of childhood trauma can be corrected by a low-stress and enriched environment in adult life.

We have to realize: Continuous stress in early life can make an adult human more susceptible to stress diseases. If a person is already severely traumatized, this healing process can become overloaded, leaving the disturbing experiences unprocessed.

Such unprocessed memories can be stored in the brain in a "raw" form where they can be continually re-invoked when a person faces as an adult i.e. stressful life events that are similar to the original traumatic experience.

There is no doubt, that psychotherapy is a very effective way to improve the personal circumstances in life and counteract stress in any case, for children, teenagers and of course adults. Specially the one method, I specialized in, I like to present to you, if it is not already known to you: is EMDR.

In my over twenty years of work I have encountered many patients with various degrees of traumatization. And in most cases, those who were easily irritable and described a lot of stress symptoms had not only had traumatic experiences in the present but also in their early life.

There are different possibilities for treatment. But for me the most effective is EMDR.

It's only possible to give a short explanation. The abbreviation means: Eye Movement Desensitization and Reprocessing. It's a form of psychotherapy, which was developed approximately 1990 by Dr. Francine Shapiro a psychologist from California, for the treatment of traumatic stress disorders.

Simply said: we induce new processing of information in the brain of people with stressful life events by quick eye movements from right to left. Meanwhile it's well known that this so called bilateral stimulation of the brain through the eyes also works through acoustic stimulation or tactile stimulation, f.e. alternately touching or tapping the right and left hand. In some cases you can work with the technique directly, sometimes it appears necessary during a longer current psychotherapy. EMDR utilizes the body's natural healing ability and allows the brain to heal psychological problems at the same rate as the rest of the body heals physical ailments. Because EMDR allows the mind and body to heal at the same rate, treatment can be rapid. The number of sessions required for EMDR treatment, however, will vary according to the complexity of the issues being dealt with. In general, the more isolated the traumatic memory being treated, the shorter the treatment tends to be.

New research shows that EMDR is not only for treatment of traumatic stress, but also for symptoms resulting from other stressful life events. They can generate the core symptom of a later depression or anxiety symptomatology. Because of that, it makes absolutely sense to process our own stressful life experiences with EMDR, to counteract a depressive disease on the long run. And these researches are corresponding completely with my personal experiences in longterm psychotherapies, after integrating EMDR for special targets. Since I work with this method, again and again I have been impressed of the effect of EMDR, contributing to a significant reduction in stress levels and therefore to prevent the epigenetical inheritance. I followed a lot of clients through huge developments and became witness of impressing changes. Based on my own experience I believe that EMDR is one of the most effective methods to treat early as well as current traumas.

EMDR belongs into the skilled hands of experienced therapists, often with attendant psychotherapy. Even though at a first glance it seems to

be very simple, it's a highly effective method of psychotherapy , and also has its risks and sideeffects.

Bringing all of this together, my recommendation is to mainly continue preventing traumatic experiences in children, but in any case start treatment as early as possible to stop the deposition of long lasting stress in our genes with all the dramatic consequences. Even though if epigenetic dysregulation of the glucocorticoid receptor gene is reversible, we should try to prevent traumatizations, because for the individual it means to suffer for a long time and raises the possibility to become diseased.