The Biology Of Trauma -

Summary sheet from Dr Aimie Apigian's Masterclass

Key points:

- Trauma occurs when the amount or severity of stress overwhelms the nervous system's capacity to respond to it. The persistent feeling of shame is a clue that stress has crossed the line into trauma.
- Our nervous system fluctuates through 3 states as it responds to stress/threat (she stressed that this is a *biological* response we have little control over):
    - Our Window Of Tolerance is the state in which we are balanced, feel "alive"; this is where resilience lies
    - At the top margin of the window is the fight/flight response. We naturally go here when first faced with a threat.
    - At the bottom margin is the freeze/withdraw response. We go here when our fight/flight response is overwhelmed.
- The hormones at play in all three states of the nervous system response have other implications as well (digestive, immune, inflammation etc) which is why the way the nervous system is wired to respond to stress can have far reaching health issues that seem unrelated to the nervous system (autoimmunity, chronic pain, allergies, digestive issues…)
- Our nervous system's response patterns are wired in the womb and in early childhood. When in the womb, a baby is already getting information from its mother's nervous system about how to self regulate. After birth, infants are completely dependent on using the signals from their caregiver's nervous system for regulation. This dependency continues until age 1 (sometimes up to age 2).
- We can look back several generations to better understand our own attachment/stress response patterns. What signals were we given in the womb and in early childhood? What about our own mothers?
- It's while in the womb and in that first year of life that a child's sense of attachment is formed and their nervous system starts to settle into patterns of self regulation.
- A child who is able to regulate their nervous system within a strong window of tolerance can experience stress without it turning into trauma. When the window of tolerance is too small, what seem like minor stresses can elicit a reaction as if it were a major trauma.
- A child with insecure attachment did not get the regulation he/she needed in the first 2 year of life. They will tend to spend a lot of time in the upper and lower margins and have a smaller window of tolerance. Stress on the mom during pregnancy, separation from birth mom, needing time in the NICU after birth will all cause dis-regulation in the baby's nervous system because of the disruption in attachment.
- The amount of co-regulation a baby needs to develop secure attachment varies based on their biology. There are certain biological factors which, when present, typically make the window of tolerance against stress smaller (make the need for co-regulation greater). Three were discussed: Pyroluria, Methylation issues, skewed copper-zinc status (this is based on the work of Dr William Walsh who has written about it extensively).

These were the steps she discussed to repair attachment trauma:

- Nourish the nervous system best you can (use all the tools in the Resilience Roadmap for this!)
- Create a safe, connected environment between family members
- Test for possible underlying biological/nutritional factors and use nutritional supplements accordingly

- Dr Apigian discussed 3 tests that can give insight about which biological factors might need support in order to help the nervous system better self regulate:
  - Pyroluria. This is a genetic condition whereby the body produces excess compounds called pyrolls, especially when under stress. These bind to B6 and zinc, pulling them from the body through the urine, and leads to chronic deficiency. You can test this through the urine.
  - Methylation. This is a chemical process that takes place all over the body. It can be understood as an “on-off switch”; some process and chemicals need to be *methylated* to be turned on, while some need to be *methylated* to turn off. Since Histamine needs to be methylated to turn off, if whole blood histamine is very high that tells us methylation is under-active; if histamine is low, methylation is likely overactive. There is a general trend in society now towards under-methylation. Over- or under-methylation will add stress to a nervous system and cause regulation issues.
  - Copper-zinc ratio - copper and zinc work antagonistically. When one is high the other tends to be low. Since they are both involved in neurotransmitter function, a skewed copper-zinc ratio has implications for the regulation of nervous system and hormones.

She also mentioned toxin accumulation, metals and infection as other factors that affect the nervous system’s ability to respond to stress.

The bottom line is….

- When we understand how the nervous system learns to self regulate we can become intentional and move forward, helping our kids expand their window of tolerance. No matter what happened in their first 2 years of life, it is never too late to optimize the health of the nervous system and rewire it so it can regulate better. This requires that we nourish it well and also, since our children’s nervous systems’ capacity to self regulate is dependent on our own ability to do the same, we need to also focus on relationship and attachment.

More on Dr Aimie’s process here: www.traumahealingaccelerated.com