## February 2023 Sanctuary Monthly Training ACE's is a public health concern

If the group is able to watch an online video please view here: <u>https://www.ted.com/talks/nadine\_burke\_harris\_how\_childhood\_trauma\_affects\_health\_across\_a\_life\_time/transcript?language=en#t-603525</u>

Dr. Nadine Burke Harris, an American pediatrician who is the 1st and current Surgeon General of California since 2019. She is known for linking adverse childhood experiences and toxic stress with harmful effects to health later on in life. The following was in response to the Adverse Childhood Experiences Study conducted by Kaiser Permanente and the CDC which found two things: 1) ACE's are incredibly common. 2) There is a dose-response relationship between ACE's and health outcomes: the higher your ACE score, the worse your health outcomes.



## **Categories of ACEs**

"Well, of course this makes sense. Some people looked at this data and they said, "Come on. You have a rough childhood, you're more likely to drink and smoke and do all these things that are going to ruin your health. This isn't science. This is just bad behavior."

It turns out this is exactly where the science comes in. We now understand better than we ever have before how exposure to early adversity affects the developing brains and bodies of children. It affects areas like the nucleus accumbens, the pleasure and reward center of the brain that is implicated in substance dependence. It inhibits the prefrontal cortex, which is necessary for impulse control and executive function, a critical area for learning. And on MRI scans, we see measurable differences in the amygdala, the brain's fear response center. So there are real neurologic reasons why folks exposed to high doses of adversity are more likely to engage in high-risk behavior, and that's important to know.

But it turns out that even if you don't engage in any high-risk behavior, you're still more likely to develop heart disease or cancer. The reason for this has to do with the hypothalamic–pituitary–adrenal axis, the brain's and body's stress response system that governs our fight-or-flight response. How does it work? Well, imagine you're walking in the forest and you see a bear. Immediately, your hypothalamus sends a signal to your pituitary, which sends a signal to your adrenal gland that says, "Release stress hormones! Adrenaline! Cortisol!" And so your heart starts to pound, your pupils dilate, your airways open up, and you are ready to either fight that bear or run from the bear. And that is wonderful if you're in a forest and there's a bear. (Laughter) But the problem is what happens when the bear comes home every night, and this system is activated over and over and over again, and it goes from being adaptive, or life-saving, to maladaptive, or health-damaging. Children are especially sensitive to this repeated stress activation, because their brains and bodies are just developing. High doses of adversity not only affect brain structure and function, they affect the developing immune system, developing hormonal systems, and even the way our DNA is read and transcribed.

So for me, this information threw my old training out the window, because when we understand the mechanism of a disease, when we know not only which pathways are disrupted, but how, then as doctors, it is our job to use this science for prevention and treatment. That's what we do. "

