

# Past Lives

## *How Intergenerational Trauma Shapes Mental Health*

By Ariel Neumann

**H**elen Epstein was haunted by a sense of lurking danger, always feeling as if something terrible was just around the corner. She was pursued by mental images of the Holocaust, vivid visions of “piles of skeletons and hills of suitcases.” With these mental images came a sense of isolation, anger, and numbness. On paper, Epstein looked like a Holocaust survivor who was feeling the lasting effects of past trauma. But Epstein had not survived the Holocaust. The memories that seemed to haunt her were not hers.

Instead, they belonged to her parents. Epstein was the daughter of Holocaust survivors. Both her mother and her father had survived

concentration camps, and both of their families had been killed by the Nazis. Her parents had rarely discussed their past with her, and she had always been hesitant to ask them for details that she knew would be painful for them to describe. For her, this silence produced a sense of the Holocaust as a “black box,” something she conceptualized as inaccessible and far away. But despite this mental distance from the events of the Holocaust, Epstein was still reacting emotionally as though she had been intimately involved in these events—as if she’d gone through them herself.

Though she felt isolated, her experience was not unique. In the 1960s, psychiatrists started

noticing a pattern of mental illness among many children of Holocaust survivors. Dr. Vivian Rakoff, the psychiatrist who first documented the phenomenon, wondered if it was possible that the psychological distress of the first three people he observed—two of whom had attempted suicide—could stem from what happened to their parents. He wrote, “it would almost be easier to believe that they, rather than their parents, had suffered the corrupting, searing hell.”<sup>1</sup>

Today, we call this experience “intergenerational trauma.”<sup>2</sup> The term refers to the effects of a traumatic event—such as a period of war, starvation, or genocide—that leaves its mark on a population even generations later.<sup>2</sup> The

concept that began with informal descriptions of small numbers of Holocaust survivors' children soon gave rise to controlled studies of this group, and has since been applied to many other populations.<sup>3</sup> In the Americas, for example, research has been conducted into how the history of displacement and genocide affects Indigenous people, and how the legacy of slavery affects African Americans.<sup>3</sup> Elsewhere around the world, researchers are studying the impact of other traumatic historical events, like the genocide of the Tutsis in Rwanda, the Dutch Famine during WWII, and the Holodomor in Ukraine.<sup>3,4</sup>

## The Legacy of Trauma

While not all studies find mental differences in the descendents of people who have survived trauma, most studies do support the idea that past traumas leave their marks on the mental health of the communities subjected to them.<sup>3</sup> Take the legacy of residential schools in Canada. Through much of the 20th century, these institutions separated Indigenous children from their parents, harshly punished them for speaking their native languages, and often subjected them to malnutrition and abuse. Fast forward to the present, and children and grandchildren of those forced to attend residential schools are more likely than controls to experience psychological distress, contract drug-related diseases, and attempt suicide.<sup>3</sup> Likewise, adult children of Holocaust survivors have been found to have higher risk of anxiety, depression, and PTSD than controls.<sup>4</sup> Indeed, studies have found psychological symptoms of intergenerational trauma among many populations, including Cambodians, Palestinians, Russians, Native Americans, and

African Americans.<sup>5</sup>

Beyond psychological symptoms, there's a case to be made that intergenerational trauma can be observed in the physical properties of the body and brain. Research has shown that compared to controls, traumatized people's descendents have altered brain anatomy and hormone levels. For example, Holocaust survivors who experienced PTSD were found to have children with lower-than-usual levels of the hormone cortisol. Cortisol is involved in the body's fight or flight response, and when this response is not properly contained (as in the case of PTSD), cortisol levels are unusually low.<sup>4</sup> Thus, one interpretation of the low levels of cortisol in children of survivors is that they, like someone with PTSD, are stuck reacting to the world as if permanently threatened. Their hormones behave as though not just their mothers, but they themselves are traumatized.

In fact, this hormonal profile may actually make children of survivors more likely to develop PTSD if they go through a traumatic event themselves. Low cortisol levels before experiencing a trauma puts people at greater risk of developing PTSD.<sup>4</sup> This fact may account for the finding that children of Holocaust survivors who became soldiers were more likely than others to develop PTSD, even if they had no psychological symptoms before going to war.<sup>6</sup> Essentially, their mothers' trauma had given them a hormonal profile that made them more vulnerable to the disorder.

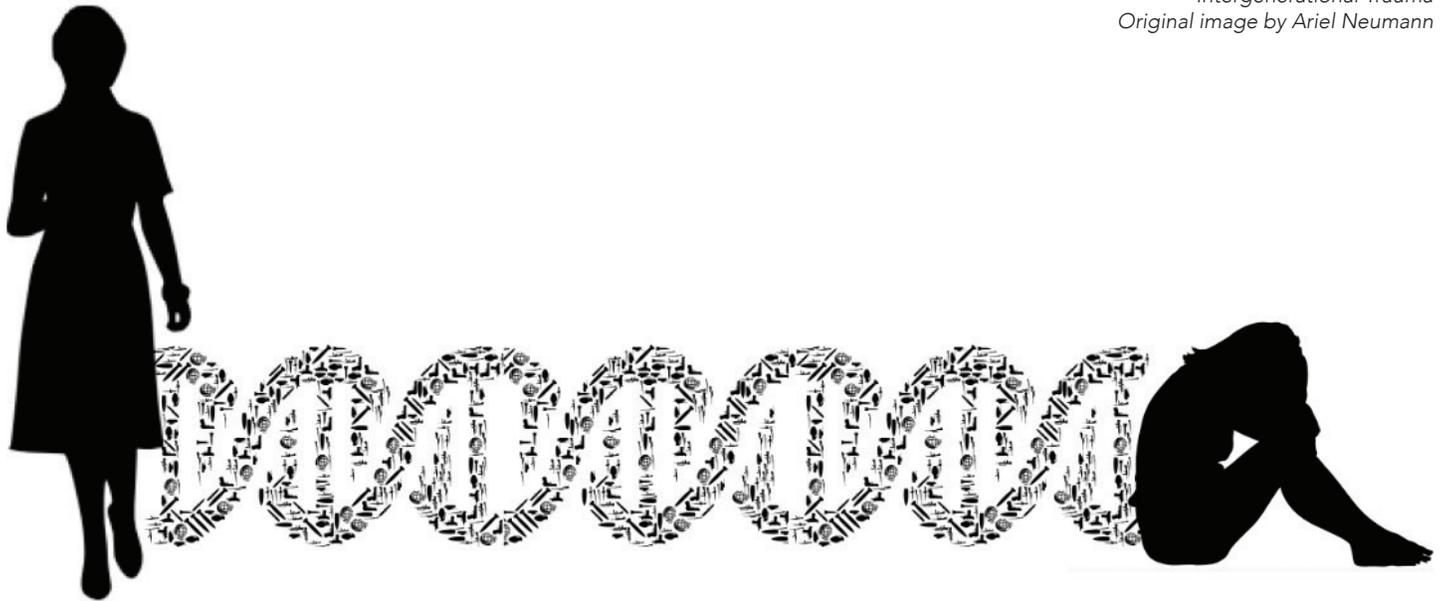
In addition to these hormonal differences, the children of stressed mothers may have anatomical differences in areas of the brain related to emotion. One study found that children of mothers with prenatal anxiety had less gray matter in the prefrontal cortex, while another found reduced

hippocampal growth.<sup>4</sup> These areas play a role in how we react to fear and stress,<sup>4</sup> so it makes sense that people who may be more prone to these feelings due to intergenerational trauma would have differences here. All in all, the hormonal and anatomical differences seen in the children of traumatized parents suggests that intergenerational trauma is not just a metaphor. Instead, it's a physical reality.

Despite this physical evidence, though, the concept of intergenerational trauma can still sound suspiciously mystical, a step away from saying that certain populations are haunted by negative energy. For the concept to really be convincing, it would need to provide an explanation for how psychological and biological signs of trauma get transferred from the generation that actually experienced that trauma to their descendents.

## Psychological Transmission of Intergenerational Trauma

At first, the psychiatrists who initially described the phenomenon looked to family dynamics to answer this question. An early paper proposed that parents who had survived the Holocaust were so preoccupied with their grief over murdered relatives, and in many cases so taxed by the mental and physical illnesses that the Holocaust had left them with, that they had less energy and patience for parenting their children. This, the authors speculated, led the children to become more anxious and aggressive. They also suggested that children might learn to fear the outside world from their exposure to their parents' Holocaust-inspired anxieties.<sup>7</sup> Descriptions of



“secondary traumatization” in the children of Vietnam war veterans followed similar logic, seeing children’s symptoms as the result of growing up with parents who showed visible signs of trauma and told stories of disturbing events.<sup>2</sup> These explanations did not necessarily view trauma as a single entity transmitted from one generation to the next. Instead, they thought these children were reacting to their own trauma, trauma that came from the way they were raised.<sup>2</sup>

As intergenerational trauma has become a focus of controlled studies, researchers have tested these explanations. In many cases, research supports the idea that it can be traumatizing to grow up around a traumatized person. For example, some studies have found that parents who survive a traumatic event are more likely to abuse their children.<sup>8</sup> Even without clear abuse or neglect, though, parents’ behavior may pass their trauma on to their children. Researchers studying Holocaust survivors’ families found that certain ways of emotionally adapting to trauma in parents lead children to be overprotective of their parents and fixated on the Holocaust. The

“victim” adaptive style (in which the parent was hyperfocused on the past trauma and overprotective of the child) and the “numb” style (in which the parent didn’t discuss the Holocaust and discouraged weakness in others) both led to higher rates of these behaviors in children. Children who showed these behaviors, in turn, had more mental health problems.<sup>3</sup> Thus, the study supported the idea that intergenerational trauma can be transmitted through interpersonal dynamics in the families of survivors.

Individual accounts greatly support the idea that psychological factors contribute to transmission of intergenerational trauma. Helen Epstein, discussed previously, went on to write a book in which she interviewed other children of survivors. She found that just as she remembered being hesitant to ask her parents questions about their past, other children of survivors reported feeling a need to protect their parents. One said, “we had to be gentle with them, because they could shatter very easily.” Others, many of whom were named after murdered relatives, told her about feeling a pressure to succeed in life and have families of their own, as if to replace those who had died.<sup>1</sup> It’s

easy to imagine that the stress of this responsibility could account for the higher rates of mental illness in these populations.

When discussing the psychological fallout from intergenerational trauma, it’s also important to note that wars and genocides can be economically and culturally devastating to the groups who endure them. This destruction may play an additional role in the transmission of trauma from one generation to the next. The Rwandan genocide resulted in poverty for many children of survivors, requiring some to leave school and work to keep their families afloat.<sup>3</sup> The stress of these conditions could be a contributing factor in this generations’ trauma. Cultural effects like the loss of language and tradition may also play a role. And in addition to this loss, subsequent generations may experience “vicarious traumatization,” absorbing ancestral pain as a result of growing up in a community that keeps traumatic events alive through oral tradition.<sup>5</sup>

But as much evidence as there is that psychological, social, and cultural factors can pass trauma to the descendents of survivors,

these explanations don't tell the full story. More and more, we are looking at ways that trauma may be passed down independently of the environment that a child grows up in. It seems that even without abuse or other types of psychological damage, trauma may be passed down through the body itself.

## Biological Transmission of Intergenerational Trauma

Studies in animal models seem to support the idea that intergenerational trauma can be transmitted biologically. One study in mice subjected them to painful foot shocks whenever they smelled certain scents. Unsurprisingly, the mice learned to fear those scents. The researchers predicted that the mice's scent-related stress would be transmitted to their offspring when they reproduced. Sure enough, the next generation of mice also avoided that scent.<sup>9</sup>

This kind of finding suggests that in cases of intergenerational trauma, there is something more going on than children growing up in a traumatizing environment. After all, the mice who feared these smells probably didn't do so because of anything their parents had told them. Instead, researchers observed that these second generation mice were physically different than the offspring of mice who had not been trained

to fear these smells. Descendants of the "traumatized" parents had more sensory neurons dedicated to detecting the feared smells than controls did. These changes stemmed from alterations to the genes that coded for those sensory neurons. This experiment, and others like it, tell us that children can physically inherit the stress of their parents through their DNA.<sup>9</sup>

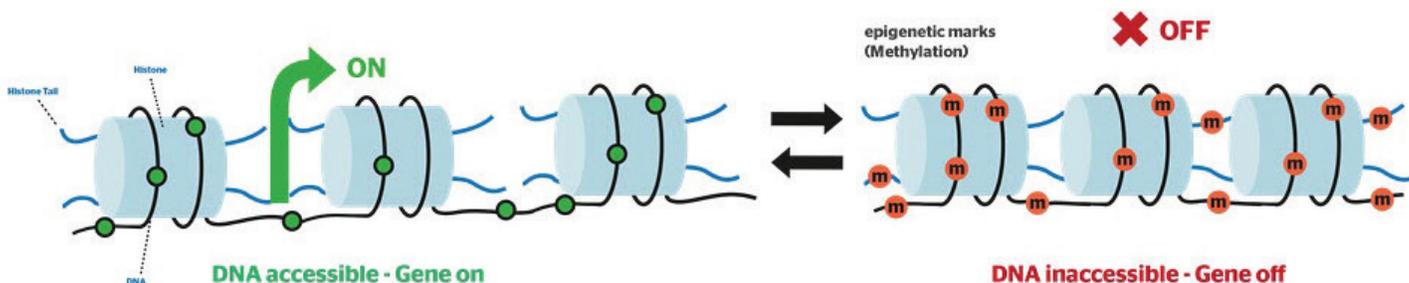
To understand how this could work, it's important to first understand the relatively new field of epigenetics. For a long time, scientists believed that life experience could not affect the traits a person passed on to their children. After all, the logic went, a dog with its tail cut off doesn't give birth to tailless dogs. But more recent findings have shown that some experiences in life actually can affect what traits we pass on to our children. This is because environmental factors can lead certain molecules—methyl, for example—to attach to DNA. These molecules function as "tags" on the genes they attach to, alerting the body to activate or repress these genes.<sup>10</sup> Importantly, this "tagging" process can affect the DNA of a person's sperm or egg cells, or the DNA of their fetus if they are pregnant. As a result, epigenetic changes like methylation can be passed on to the next generation.<sup>4</sup>

Trauma is one experience that appears to be able to cause DNA methylation. A gene called NR3C1, which codes for molecules that are involved in the body's fight or

flight response, is one example that has received attention in recent years. Fathers with PTSD from the Holocaust were found to have offspring with greater NR3C1 methylation. So were mothers who were pregnant during the Rwandan genocide. Indeed, many studies of people who have experienced stress or PTSD from a variety of sources showed the same pattern of methylation changes in offspring. Given that NR3C1 is involved in the fight or flight response, the fact it is methylated in children of survivors may help explain their sensitivity to anxiety and PTSD.<sup>4</sup> And methylation of other genes may also be involved in epigenetic transmission of trauma. For example, FKBP5, another stress-related gene, was found to have different patterns of methylation in Holocaust survivors and their children than in controls. This gene has been linked to PTSD and depression, so it is another example of how the emotional distress of trauma can be transmitted from parents to children on the molecular level.<sup>3</sup>

## Future Directions

Ultimately, there is strong evidence that trauma can pass from parents to children in multiple ways, from the cultural level to the psychological level to the molecular level. But while these findings are fascinating, they can also be disheartening. When Epstein published her interviews with other children of survivors, exploring



Methylation of certain sections of DNA "tags" genes, which can activate or repress them  
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the effects of the Holocaust on her generation, she provoked an intense backlash from some. She said, "it really upset Holocaust survivors who were invested in normal children, and in not giving Hitler a posthumous victory." In addition to challenging this desire, the concept of intergenerational trauma can also be emotionally difficult to accept. Ian Brown, after reading Epstein's book, wrote, "you can't help but think of all the agony that has been stored up and passed on—by survivors not just of the Holocaust, but of Hiroshima and of Cambodia and of Rwanda, of residential schools and wars and countless other public and private calamities."<sup>3</sup> If the reality of these atrocities is difficult for us reckon with, how much more so to consider whole new generations of victims?

But while intergenerational trauma is in many ways a sobering concept, it is also one that offers a foundation for positive change. For one, simply shifting our medical understanding to include the insight that people's mental health is shaped by their community's history provides a foundation that can help shape better health policies.<sup>5</sup> Programs like "Strengthening Families," which works to prevent early substance abuse in Native American and First Nation communities,

counters the cultural loss that often drive substance abuse by bringing together families and communities.<sup>3</sup> In addition, research into intergenerational trauma can also help define specific parenting styles that reduce transmission of trauma. To use an example already discussed in this article, the knowledge that the "victim" and "numb" adaptive styles are related to mental health problems in descendants could help mental health professionals counsel new parents who have survived a trauma away from such styles. And beyond giving an idea of what to avoid, research can also cast light on parenting styles that promote resilience, as in a study that found that better family communication reduced transmission of trauma to the second generation of Holocaust survivors.<sup>11</sup>

Finally, one of the most hopeful insights that the study of intergenerational trauma has yielded comes from the same team of researchers who showed that mice can inherit their parents' fear of smells. After that finding, the researchers repeated the experiment, but made an important change. After teaching a parent generation of mice to associate a smell with a shock, and therefore to fear it, they taught them to stop fearing it. They exposed the

mice to the smell over and over again without shocking them, so that eventually, they stopped associating it with pain (a process called extinction). And when the mice who had undergone extinction reproduced, they had offspring who did not fear those smells. Moreover, the offspring exhibited none of the changes to their sensory neurons that the other descendants had shown. Essentially, these mice had not inherited their parents' stress.<sup>9</sup>

Although there are certainly differences between mice experiencing fear conditioning and humans surviving a trauma, this could be a very promising finding. The researchers who conducted this experiment compared the process of extinction in mice to the process of therapy in humans. That the extinction process prevented the next generation of mice from inheriting their parents' stress suggested to the researchers that therapy for parents before conception could help protect children from inheriting trauma. Such interventions, they concluded, could break the cycle of intergenerational trauma.<sup>9</sup> This idea requires more research, but if this study is anything to go on, it's not just the parents' trauma that can be passed down through the body. Their healing could be as well. ■

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