The Neurobiology of Trauma - What Is Happening in the Brain of Someone With Unresolved Trauma

Quick Start Guide

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with Ruth Lanius, MD, PhD,

1. Increase the self-reflective capacity

For mothers with a history of trauma, interacting with their children may be difficult. Dr. Lanius discusses the mindset that mothers need in order to pick up on cues from their infant.

"One of the key steps is to increase the self-reflective capacity.

If you're completely cut off from your own emotions and if you're not in touch with how you feel, it is very hard to figure out how somebody else, for example, your baby, feels as well.

So, step one is teaching self-reflective awareness – mindfulness – of your own emotions." (p. 10 in the Part 1 Transcript)

2. Increase the capacity to "mentalize"

How do we figure out how others feel? Dr. Lanius explains how to teach mothers to "mentalize" in order to better understand their babies.

"Help them to "mentalize" or know the mind of the other and figure out, "Okay, if the baby engages in this kind of behavior or emotion, how does that make you feel? How can you use that to then figure out what the baby feels?"

Eventually, the caregiver is able to hold the mind of the baby in their own mind.

It is this whole capacity to mentalize – being able to hold another person's mind in your own mind - that is the key to good social interaction." (p. 10 & 13 in the Part 1 Transcript)

Your Action Plan

3. How to approach patients who can't tolerate eye contact*

This tip from Dr. Lanius is critical not only for psychotherapists, but for nurses, physicians or any number of professions working with traumatized patients.

"Psychoeducation is the first step all practitioners can use.

Whether a mental health nurse, a practitioner in the emergency department, or on an oncology unit (or any part of health care), we need to be aware that early-life trauma can be related to tremendous difficulties making eye contact. Many people feel badly about themselves when they're confronted with direct eye contact, so they avert their gaze.

It's absolutely crucial for health professionals just to know and be aware of that.

The next step is: How do you approach that with your patient or client? When you become aware, "Oh, this client really has difficulty making eye contact" – do you bring that up with the client or do you just quietly realize, "Oh, there may be something going on" – or say whatever may be appropriate in the situation.

This approach would really decrease the tendency to judge – to say, "What's wrong with this person? Why can't they look at me? How strange is that?"

We want to promote an understanding and a respect – allowing the person not to make eye contact if they're not comfortable.

Margaret Wilkinson, who is a psychotherapist in the United Kingdom, has suggested that we should always sit at an angle with our patients so if they choose not to make eye contact, they can. She says that this would be less shame-inducing.

That's important as well in the psychotherapeutic situation, but also in the emergency room situation or in any other situation – allowing for our clients not to engage in eye contact if they aren't able to tolerate it." (p. 15-16 in the Part 1 Transcript)

**Please keep in mind that different cultural norms about eye contact may also play a role here.*

4. How to help dissociated patients feel grounded

Patients may have an out-of-body response that prevents them from engaging with their traumatic experience. Therefore, it may be crucial to get them to feel grounded before we try to focus on their trauma.

"Some dissociated patients may have depersonalization responses in which they "leave" their own body, or have derealization responses during which they feel that everything is unreal around them.

If someone, when they're engaged in traumatic memory recall, has this out-of-body depersonalization, derealization response and can't engage with the trauma, we first have to help them to be grounded in the present before we do any trauma-focused work, because essentially, they're shut down.

In helping them to feel grounded in the present, we're looking at how we can bring them back into their own body and feel safe in their own body.

Two forms of mindfulness can be useful for this. One is using the five senses to bring them into the present – "What do I see in the present? What do I hear in the present? What do I feel in the present?"

For example, "Can I feel my butt on the chair? Can I feel my feet on the ground? Can I see what's happening in the room? Can I hear what is happening in the room?"

The second form of mindfulness is also this somatic mindfulness – just being aware of your external senses isn't enough – you also need to be grounded in your own body.

That means: "What do I feel? Can I get in touch with the physical sensations in my body? Can I connect the physical sensations with what emotions and feelings I have?"

Once you've helped an individual to feel safe with grounding themselves both somatically as well as with the environment, they're in a much better place for, first of all, increased emotional awareness and also increased emotional regulation." (p. 18 in the Part 1 Transcript)

5. Developing emotional awareness in dissociative patients

When treating people with dissociative disorders, it is essential to establish a connection with their emotions.

"Emotional awareness is one of the first steps that we help people to develop.

A lot of our clients come in completely disconnected from their own bodies, feeling completely numbed-out, really having learned, as we talked earlier, that emotions are futile, so they've disconnected themselves from all their emotions.

One thing we do very carefully to help people reengage with their body is the body scan, and this has been outlined by Jon Kabat-Zinn, for example, in his book *Full Catastrophe Living*.

It's important to be aware of the fact that they need to be adapted to use with traumatized individuals.

The dosing needs to be done much more carefully because the body is a scary place and a lot of very scary emotions are situated in the body.

We have to be aware that becoming aware of physical sensations in the body can be very frightening for people – we need to go at a pace that feels comfortable and safe for an individual.

That pace is going to vary across individuals, so we carefully do these body scans – they're very carefully dosed – until someone is able to become aware more and more of their physical sensations.

We then teach them to figure out what physical sensations are associated with certain feelings or emotions.

For example, in one person, anger may be related to the hand tensing up and forming a fist and their chest getting tight. In another person, anger may be associated with feeling heat in their body and their neck becoming tight.

Creating a body map of feelings and emotions is going to be different for each person.

That is usually one of the first steps we teach in people with high levels of dissociation." (p. 18-19 in the Part 1 Transcript)

6. The importance of positive emotions: A look into anhedonia

For people coming to us with trauma, there can often be a lot of focus on identifying the negative emotions associated with the traumatic experiences they've endured. Dr. Lanius discusses with us how it's also important to focus on helping patients experience positive emotion, and how we can utilize psychoeducation to help our patients feel normal.

"Anhedonia is this inability to experience pleasure. People that are dissociated are more prone to anhedonia.

Anhedonia is a bit more complex in people with chronic, early-life trauma.

The whole neurobiology of play and curiosity is not really developed in people with chronic, early-life trauma. They were preoccupied with fear – there was no opportunity for play, pleasure, or curiosity.

Often what we see in our patients is that they have an inability to experience any positive emotion.

They can't even bring up positive emotion. Often, they feel they don't deserve it, so it can be very, very difficult and take a long time in therapy to bring that online.

Then, the second problem is often that when they do bring positive emotion online, they have this interference of negative emotional states.

We teach them to feel a little bit positive – and then they're flooded with negative emotion.

Psychoeducation is really important here – to explain to people that this is normal. The dosing of positive emotions has to be done very carefully depending on the level of difficulty the client has with positive emotional experiences.

Some clients are only able to tolerate positive emotions for a millisecond or so. Then over time, we increase that – but we always want people to let go with positive emotion; we don't want them to be flooded by negative emotions.

Debbie Korn and Andrew Leeds have done a lot of work on this – what they call "resource installation," or installation of the capacity to experience positive emotion. It is one of the key ideas we need to address in psychotherapy.

Often, we're so trained to focus on the negative and when somebody comes in to see us and says, "You know, I've had a great week and things have gone so much better," we're taught to ask, "But how about your flashbacks?"

This whole concept of positive emotion and this inability to feel that you deserve to experience the positive – this incapacity to experience pleasure and joy and curiosity and triumph – all this is so important in the treatment of PTSD.

Without bringing that online, therapy really hasn't been successful." (p. 19-20 in the Part 1 Transcript)

7. How to repair impaired attachment

Dr. Ron Siegel talks about how the level of attachment between mother and child can predict the kind of behaviors that children will develop.

There are basically, different ways in which adults offer emotional regulation to kids, and particularly to little kids.

There is secure attention, which is when the child is distressed and the adult goes to comfort the child, and the child molds right into the adult and feels comforted. It works quite nicely and easily.

But that's only with a limited percentage of the population and it's different in different cultures how big that population is – but it's never more than a modest majority.

Then there are the other patterns that come up.

There are the kids who are anxious in their attachment and who flail about and do things to try to get more attention from the parent when the parent isn't able to provide that kind of attention.

Or there are the avoidant kids who pull back and won't mold in and they act as though they are not distressed if the parent is not there –"I'm cool – I don't need anybody."

There are the disorganized attachment kids who flit from one style to another style desperately trying to find something that will work.

Researchers found over the years – and this is striking, almost tragically striking – is that, by giving an adult attachment interview and asking questions of the mother, prenatally, before she has her child, they could determine the likely attachment pattern that was going to be seen when these kids were being brought up.

Dr. Karlen Lyons-Ruth was very deeply involved in this research and said, "We can screen these people in advance. Let's pour in services at the very beginning, even before the baby is born, to, in essence, help the parents integrate their past trauma and then show them how to do things that for a non-traumatized person come naturally." For example, "When the baby cries, try picking him/her up like this. When the baby is angry, try responding in this way."

They've followed these kids now for thirty years, so they have seen them through all sorts of developmental stages, and they discovered that you could tell from the prenatal interview which kids were going to be in the principal's office by the time they were in first grade and which kids were going to be in jail later on.

This was from prenatal interviews. But they also discovered that if you try to teach people these skills early on, it is mitigating. And the parents are actually able to learn how to provide these basic resources for their kids.

The other way we do this…is simply in the corrective emotional experience of the therapeutic relationship.

Whether we're doing healthcare generally or we're in psychotherapy, if we're aware of the person's attachment style, we can begin to think about, "What was this person's attachment experience? How are they having difficulty allowing me to help them in their emotion regulation?"

Simply being aware of attachment style helps us to figure out how to pick up and hold our patient – I don't mean literally now, but figuratively – in a way so that they can find it soothing, and then they can pass that on to others." (p. 4-5 in the Part 2 Transcript)

8. How mindfulness can be used with trauma

Dr. Ron Siegel explains two ways to use mindfulness to help people with trauma.

The first task is diagnostic. We need to assess the person's resources: What is the strength of the therapy relationship? Are they able to feel that we can hold them through what might be turbulent waters if they get close to the traumatic memories?

What is their external situation like? Are they living in a safe environment where they don't have to worry about getting enough to eat or not being beaten by somebody?

What is their willingness? Do they have a psychoeducational framework – a way to understand that, "Oh, okay – I've blocked these things out because they

were too intense and now I'm going to begin to let them come back in and I'm doing this intentionally?"

When that is not in place, then there are mindfulness practices that help to develop "safe places."

I think of them as falling into two categories. One is simply to bring our attention to the safety of the external world: to look at a tree, to feel our feet planted on the ground, to taste an orange.

This simply means to notice that – even if we're feeling the inner turmoil of some kind of memory that has been very painful – the outer world is safe and we can take refuge in this present moment.

The other set involves conjuring up images that are comforting to us – images that are soothing to us, such as a place we've been to that was safe.

This might be doing something like the mountain meditation that Jon Kabat-Zinn helped to make widely known, in which one imagines oneself as a mountain, even as all these seasonal changes are happening.

The key for us is to differentiate which they need. Do they need more safety or are they ready to do this reintegrating work?

Then, we have to choose methods either that make them feel safer or that help them start to reintegrate this material.

You can use mindfulness for both; you can use mindfulness practices for reintegrating the hard things, by simply noticing, as you come up with the memory, how it feels in the body. What is happening now." (p. 7-8 in the Part 2 Transcript)

9. Understanding how epigenetics helps patients heal

Dr. Borysenko explains why epigenetics, or the study of how changes in the DNA sequence are inherited, can be important in understanding our patients.

"Every emotion has its own hormonal fingerprint, you might say, and the beliefs that we have affect the chemistry of the blood.

The base pairs of the genes don't change, but what does change is that little groups called histone groups or methyl groups are added, and the DNA folds differently.

When the DNA folds differently, different genes are exposed and other ones are hidden. So, not only can this completely change the way that your body functions but obviously it affects the mind.

Then, here's another interesting aspect. There's a constellation of genes, for example, that have to do with how serotonin is metabolized and can be changed epigenetically.

Now, as you know, there's a whole study of, "Do people with poor impulse control who get angry and murder have problems in these certain genes?" The answer is, "Yes – it does seem like there's a correlation."

We were talking a little bit about attachment off-air, and Ron Siegel was saying that attachment definitely is very, very important, but it's not the whole picture. Temperament is important, too.

What controls temperament, in part, is epigenetics. We know that stress and trauma create epigenetic changes that can last for three to four generations.

So, now, I'll make this personal: I always felt, but not anymore, "Why do I personally have trouble?"

I have spent a life learning to be emotionally literate – but for many, many years, I was really a hyper-reactor – always on edge. That's, in part, why I got interested in this field.

A relative, five years ago, sent me a picture of my own family – thirteen people, and, honest to God, I looked at them and I burst into tears. They looked exactly like me – little kids all the way up to a great-uncle – and they had all perished in Auschwitz.

Then I realized, "Why did my family come here?" They came in the late 1800s – all except for this branch of the family.

Because of pogroms, they had lived with trauma and they had lived with fear – for generation after generation after generation.

As clinicians, this is what we often miss. We say, "Well, this person wasn't in a concentration camp or doesn't have any background of trauma. Why are they behaving like a person who's traumatized?"

If you look into their family history, probably they have the same changes that are there because of epigenetics.

We have to be so aware culturally of people's lineage – what they've been predisposed to – and this is a neglected part of practice and it's very good for us all to bear that in mind." (p. 8-9 in the Part 2 Transcript)