Resilience Starts in the Brain: Why Understanding Brain Science Is So Important for “Bouncing Back”

A Webinar Session with Linda Graham, MFT and Ruth Buczynski, PhD

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The National Institute for the Clinical Application of Behavioral Medicine
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with Linda Graham, MFT
and Ruth Buczynski, PhD

Dr. Buczynski: Hello everyone and welcome. I am Dr. Ruth Buczynski, a licensed psychologist in the State of Connecticut and the President of the National Institute for the Clinical Application of Behavioral Medicine – and I am so glad that you are here.

Today, we are going to talk about resilience and what the brain has to do with resilience. You will find out all about that in the next hour.

My guest is Linda Graham; she is a marriage and family therapist and a licensed psychotherapist in San Francisco as well as a meditation teacher there. She is the author of Bouncing Back: Rewiring Your Brain for Maximum Resilience and Well-Being.

So, Linda, thank you for coming and welcome – we’re glad that you are here.

The Brain and the Importance of Resilience

Dr. Buczynski: Let’s get started and let me ask you: Why did you decide to look at and think about the brain and resilience?

Linda Graham: Resilience, meaning the capacities to cope with the ups and downs in life, the challenges and crises that we face with some skill and with some adaptability, the bouncing back from adverse circumstances as well as our adverse conditioning – that is what we, as clinicians, are trying to help our clients with all the time.

We’re trying to help them cope better with stress and trauma. So, I was interested in techniques that would strengthen the sense of self to be able to do that.

But, at the same time, I am a meditation practitioner, and the freedom from suffering in that tradition is being able to let go of the self or let go of the contraction of the self.

So I was interested in integrating tools from those two paradigms – both relational psychology and mindfulness practice – and it was neuroscience that gave me the clues to do that.

It turns out that both mindfulness and empathy are two of the most powerful agents of brain change known to modern science.

I began to understand what happens in the brain when we are practicing mindfulness or reflection as well as when we are practicing empathy and compassion, and that helped me better teach clients how to change the patterns in their brains, so that they could be more resilient and even rewire patterns from the past.

Dr. Buczynski: That’s interesting.
How Conditioning and Neuroplasticity Work Together

Now, let’s go further into that. You talk about conditioning and neuroplasticity as two processes that work together to change the brain. First of all, what do you mean by conditioning, in this case?

Linda Graham: Conditioning is how the brain learns from experience.

But we know, through neuroscience, that any experience at all – positive or negative – causes the neurons in the brain to wire and to fire.

The more patterns of neural firing repeat, the more they strengthen connections and create new pathways and circuitry.

When we repeat those experiences, we repeat those patterns of neural firing. The more those patterns of neural firing repeat, the more they strengthen connections between them and create new pathways and circuitry.

So, conditioning is how the brain learns in the first place – and over time, patterns stabilize. We develop automatic habits for responding to life events.

What is new about the neuroplasticity is that in the last fifteen years, neuroscientists know that the brain can change lifelong. We take that for granted now – but until fifteen years ago, we weren’t so sure about that.

When we know how to harness self-directed neuroplasticity – and in the book I offer conditioning, reconditioning and deconditioning as new mechanisms of brain change – then we can teach clients how to use the tools of those three mechanisms to rewire their patterns of response.

Dr. Buczynski: All right. We’re going to get into those mechanisms of conditioning, reconditioning, and deconditioning, but before we do, let’s talk a little bit more about resilience.

When Does the Brain Start Building Resilience?

Let’s just lay the groundwork a little more in terms of the resilience. When in the lifespan do we start building resilience?

Linda Graham: The capacities for resilience are innate in the brain; they are hardwired in by evolution.

The capacities for resilience are innate.

In fact, we start developing those capacities as soon as we are born and we are interacting with other people. We are learning from them patterns of responding to life events.

Are we learning to respond with anger or with patience? Are we learning to respond with engagement or avoidance? We are learning from the very beginning how to respond to life events.
Not only are we learning particular patterns on how to be resilient, but those interactions are shaping and kindling the development of the brain itself, especially the prefrontal cortex, which is what I call the CEO of resilience.

We will probably talk more about that. But the interactions with our early caregivers make the brain itself resilient as well as learning the patterns of resilience.

We can use the neuroplasticity of our brain lifelong, to create new changes, not only in our patterns of response but in the brain structures themselves. This is something that we do throughout our lives.

Secure Attachment and Resiliency

Dr. Buczynski: So, resiliency starts in infancy and it starts in our relationships – and presumably that would most likely be our relationships with our parents.

Now, we know that there is a range of those relationships. Some of us have parents that are very healthy – patient and empathic and attuned – and others don’t. It sounds to me like you are moving into the whole attachment area.

Linda Graham: Certainly, secure attachment is the neurological foundation of resilience.

That means when the child is reaching out to an attachment figure for safety, protection, comfort, reassurance and validation, and they can get a response from the caregiver that is attuned, empathic, and helpful, then the baby is developing a sense of mastery and efficacy: “I can get a response in a relationship when I need to.”

All this develops a sense of safety and trust within the developing child.

But resilience also maintains the plasticity of the brain as it is developing so that it doesn’t become too rigid in its responses and it doesn’t remain chaotic. The brain stabilizes but stays flexible at the same time.

Not only is secure attachment the best buffer we have against stress and trauma and psychopathology, but it is the basis of our brain being neuroplastic – open to learning – and then we can stay open to how we respond to life events.

Dr. Buczynski: Now, we learned in the trauma series that if parents have experienced trauma themselves, then they don’t have a lot of skill.

It is not that they perhaps lack desire, but they lack the skill to calm their baby down.
I am seeing a chain reaction here: parents have a traumatic experience and now they are not equipped to inculcate in their infant the kind of relationship that would help the infant grow a resilient brain.

**Linda Graham:** Right. This is a lot of what we do as therapists.

When people come to us with less-than-resilient patterns or perhaps even maladaptive and dysfunctional patterns that seem intractable — they’re stuck in them — we can create a new relationship with our clients or our patients, where they are getting that sense of attunement, empathy, compassion, and acceptance, which then rekindles the maturation of their own prefrontal cortex.

We are actually helping their brain to integrate and function in a more resilient way.

When you are speaking about trauma — and we know about the intergenerational transmission of trauma — one of the severe impacts on the brain is that stress and trauma activate the release of cortisol in the brain.

Cortisol kills brain cells on a massive level, and the area particularly vulnerable is the hippocampus, which is where we convert our experiences to long-term memory storage.

> **“If there is a lot of stress and trauma in the home and the developing brain is exposed to that, there can be damage to the hippocampus.”**

If there is a lot of stress and trauma in the home and the developing brain is exposed to that, there can be damage to the hippocampus, which simply makes it harder to learn and retain the learning of new and better responses.

**Dr. Buczynski:** So I want to stop you for a minute because I want to go back to an idea that you said before you started on the trauma piece.

I think what you are doing is giving a nice frame to what we are doing in psychotherapy from a brain perspective . . . and that can be useful to a lot of the people who are listening.

Let me broaden it from psychotherapy to parenting or to teaching — to any kind of caregiver — any kind of practitioner.

A wide range of us have caregiving roles — at least a part of what we do involves caregiving — we’re in a helping setting. You captured what is happening in the brain when that happens. I want you to repeat it, because I want to make sure people understand and caught that.

Can you tell us again, just briefly, what is happening in the brain when we, as psychotherapists, are responding? What is one way of looking at what we are doing?

**Linda Graham:** Whenever anyone is functioning as a true other to the true self of the client, or the patient, or the person that they’re interacting with, that activates the resilience circuit in the brain.

> **“Whenever anyone is functioning as a true other to the true self of the client, thatactivates the resilience circuit in the brain.”**
Our initial sense or vibe of another person comes through the brain stem. Basically, we know whether it’s safe or dangerous to approach that person or be around them, and that’s completely unconscious. We can often react without knowing why.

But then that initial sense comes up through the midbrain, which is giving us our earliest emotional processing, and not only is it about being safe or dangerous, but are we feeling frightened or angry or ashamed or all of those emotional processes.

Then it comes up through attunement. We are paying attention to what the other person is feeling and how they are feeling being with us in a relationship.

There is empathy, which is a cognitive process – it is verbal, it is conscious, and it conveys the understanding of what the other person understands.

There is a sense of complete understanding: “It totally makes sense to me that you would be experiencing what you are experiencing.”

That moves into a kind of compassion – accepting the situation, whatever is happening for them or to them, as well as accepting the person.

This leads to acceptance where the client can begin to experience a kind of self-acceptance.

The entire resilience circuit is what builds – what develops the prefrontal cortex of the brain in the first place. The circuit builds relational resilience within the human being – and then that is what allows us to become relationally intelligent, going forward.

When we are relating to other people, then we can apply skills that help us be resilient, like setting limits and boundaries. We are changing or repairing a rupture with understanding, compassion, and forgiveness.

We can build the capacity for those skills in our work with clients.

But it is also important to be able to talk about what we are doing – not just the external stories that are happening to the clients outside in their lives, but what is actually happening in the relationship in the room – are they feeling and taking in the good of the relationship, the good of the true other to the true self?

I have also found it very empowering to teach clients about what is happening in their brain.

They like a sense of mastery and a sense of efficacy and there becomes a conviction: “Oh, these practices, these tools work. I can take this with me and use it outside of the clinical session.”

Clients really enjoy feeling more and more competent and masterful about their own brain.
Dr. Buczynski: Yes, I would agree, and I would say that that is true not just for psychotherapists, but again, for any practitioner, or parent, or teacher – for all people in a wide range of settings.

How the Brain Develops Habits

Let’s move on and talk about habits for a moment, and again from a brain perspective: how do we develop habits?

Linda Graham: Actually, many habits are hardwired in – we don’t have to learn them.

Our basic survival responses, which, at this point, we are all familiar with, are fight, flight, freeze, numbing out, and collapsing – we don’t have to learn how to do those. The body/brain will do them to help us survive as an individual as well as a species.

The drive to attach is one of those survival responses that we don’t have to be taught – we know how to do that from the very first moments.

"We are choosing the experiences that will develop the habits we want."

But habits are different. A habit of behavior is simply an encoded pattern in our neural circuitry, and we can develop habits lifelong.

The importance of neuroplasticity or self-directed neuroplasticity is that we are choosing which habits we want to develop.

We are choosing the experiences that will develop the habits we want.

I love this quote from Richie Davidson, who of course runs the big neuroimaging lab at the University of Wisconsin at Madison. He says, “Once we know that experience changes the brain, we not only have the opportunity, but we have the responsibility to choose the experiences that will rewire the brain in a wise and wholesome direction.”

We can help our clients discern which experiences actually help them create new habits, new patterns and help them become more resilient.

Dr. Buczynski: From a brain perspective, habits are somewhat developed on the basis of “neurons that fire together wire together.” Can we talk about that a little more?

Linda Graham: That is how the brain operates. An experience will cause neurons to fire, and the more we repeat the experience, the more the neurons will fire together.

Neurons will create more and stronger connections between themselves, which create the neural circuits and pathways.

When we want to change neural circuits, we’re talking about new conditioning. We’re choosing new experiences that will cause the brain to fire in a different way. We are actually creating neural circuitry in the brain.

“We can help our clients to discern which experiences can help them create new habits and become more resilient.”
For instance, if someone has a habit of being critical – how they respond to their partner is in a critical fashion – and they notice that and they notice it is derailing the relationship. They might want to cultivate instead a practice of kindness or compassion.

Even intending and saying the word kindness or compassion can break the automaticity of the old habit.

They are proactively cultivating the new habit of responding with kindness or responding with compassion. It takes repetition, it takes perseverance – but one of the things that neuroscientists have discovered is a positive practice like that will create what they call a left shift in the brain – there is more neural activity in the left hemisphere of the brain.

**Dr. Buczynski:** I want to be clear that I got that. What would a positive practice be like?

**Linda Graham:** Like kindness, or compassion, or gratitude, or generosity or patience – any of those positive practices.

**Dr. Buczynski:** You are talking about it as a practice, though, not the moment of being kind…

**Linda Graham:** I’m talking about the moment of being kind repeated many, many times a day.

When we focus our conscious awareness on it and take the feeling of it into our body so that it’s registering as a somatic resource, we are actually cultivating a circuitry that will support the experience of kindness in our brain.

**Dr. Buczynski:** The problem, though, it seems to me, is, yes, that’s great – but if the person is trying to work on being kind, then it probably implies that they aren’t – that kindness doesn’t come naturally to them.

So, yes, if they were to be kind, it would reinforce kindness, but they aren’t naturally kind…

**Linda Graham:** We may be talking about the difference between new conditioning and reconditioning: new conditioning is simply creating a new pathway – people can choose to be kind and enable more in that direction.

The old pattern of being critical is still there in the brain, but they are overriding it. They may choose to be kind more often, but under stress, they will probably go back to the old critical habit.

So we are talking about being able to rewire or recondition old patterns, old habits – reconditioning.

Now, neural scientists can see in their scanners that the neurons holding a network of a memory together can be caused to fall apart, and they will rewire again a fraction of a second later.

What causes them to fall apart and rewire is the juxtaposition of an opposing, contradictory, disconfirming experience or memory.
If we are working with criticism and compassion – if I can actually evoke a sense of being critical, and I have the feeling in my body – I have my visual image, and I have my feelings and my thoughts on being critical, and if I can also evoke for real a sense of being compassionate and I can feel that in my body and I know the visual image of it and the emotions and thoughts of being compassionate, then if I can hold those in my awareness, in simultaneous dual awareness at the same time (that takes practice and sometimes people can travel back and forth), then that juxtaposition will cause the neurons to fall apart.

They will rewire, and when the experience of compassion is stronger, it will rewire the old experience of the old memory.

Now, that is the basis of all trauma therapy, and we have been doing trauma therapy for a while – but now the neuroscientists are able to explain to us what is happening in the brain when we do that.

Dr. Buczynski: So you are saying that somehow we are doing a practice that holds both – the critical person who wants to be kind – as well as some memory or intention. How do we hold that at the same time? Is it in a guided imagery or a meditation, or exactly how do we do that? Can you get as specific as possible?

Linda Graham: One of the ways that I teach people to do this is through a guided imagery exercise called “A Wishful Outcome.”

I have the person first remember an experience, especially an experience in a relationship that went awry – it didn’t go so well.

They can evoke the memory of it: what they said, what the other person said, what they did, what the other person did, where they were standing, who else was there, the feeling in their body . . . They light up the network of that memory as much as possible.

Rather than just bringing in an opposite memory, I have them begin to imagine a different outcome, a wished-for outcome to that scenario.

From a brain perspective, it does not matter if that could have happened in real life or not.

So they imagine saying or doing something differently or they imagine the other person saying and doing something differently – even if that never could have happened in real life. They can bring in new people who weren’t even there the first time to help out.

They come to a wished-for outcome, a different resolution of the scenario – that doesn’t rewrite history, but it does rewire the brain.

It doesn’t change what happened but it changes the person’s relationship to themselves about what happened.

This is the technique that I teach in workshops all over the country now, and people experience it as very powerful and very transformative. The changes can be instant, and they can be permanent.
Conditioning, Reconditioning, and Deconditioning

Dr. Buczynski: We do have some research to back that up, but which one were you talking about – was it new conditioning or reconditioning or deconditioning?

Let’s get into clarifying that now. I was going to do it later, but we are jumping around here a bit so let me follow you and have us go through that now.

Linda Graham: New conditioning is a new experience that creates new patterns or new habits in the brain.

“Conditioning is a new experience that creates new patterns.”

We do that anytime we have an intention or new experience. We let it register in our awareness and take a somatic sense of it. We do that a lot.

Reconditioning uses a positive experience to deliberately rewire an old or traumatizing memory or experience.

That can take a little more practice. It is useful to do that in therapy, and then people learn to do it on their own.

The third is deconditioning, which operates in the brain differently.

New conditioning and reconditioning both use the processing in the brain that we call the self-referential network. This processing is task and detail-oriented; it makes things happen.

The deconditioning uses a more defocused mode of processing in the brain: this is when we are not controlling and guiding what the brain is doing. We are letting it go into a more open, spacious awareness like with daydream or reverie.

“The deconditioning uses a more defocused mode of processing in the brain.”

This is the brain’s default network, and it is more active than ever.

Here the brain is actually playing around, making links, creating associations, connecting the dots in a new way, and we are not controlling that.

That is what people experience when they have a sudden insight or an epiphany or an “Aha.” That becomes new material to be brought back into the client’s sense of self, and it can even transform the client’s sense of personal self.

So we have conditioning – new experience, new patterns, and new habits, reconditioning, which is using the new to rewire the old, and then deconditioning, which is letting go and letting something new happen in the brain.

We can still guide that through guided imagery or guided imagination or guided meditation, but the brain is doing it on its own – it’s a mental play space for the brain, and we simply harness it when it comes back into our conscious awareness.

“Deconditioning is letting go. It’s a mental play space for the brain.”
Dr. Buczynski: But for a lot of people, let’s say if they “let go,” their brain or chatter, from a mindfulness perspective, goes right back to their grudges or their bitterness or whatever.

Linda Graham: The reason we think that happens in the brain is that when we are letting go of the control of the brain, it is looking for something to do. It is very active; it is playing around.

If we are bitter, or we have unresolved grudges or anxieties or trauma, it can latch on to that – and we all know that. We can start ruminating and getting obsessed for hours or for days.

“When we let the brain go into its defocused mode of processing, it is already in a safe space.”

When we are learning how to do the deconditioning – and we can do this in our mindfulness practice as well – we begin by focusing on something that is benevolent, like focusing on our breath or focusing on someone who loves us or focusing on a benefactor, or focusing on a sense of ease and well-being.

Then, when we let the brain go into its defocused mode of processing, it is already in a safe space. It experiences what Dan Siegel calls “The plane of open possibilities.”

The brain is not narrowly focused on one thing, ruminating – it goes more to a sense of possibility, and that is what we are trying to cultivate.

The Prefrontal Cortex: The Brain’s Resilience Center

Dr. Buczynski: Now, I had meant to talk about this a little bit earlier but let’s talk about the prefrontal cortex because you refer to that as, “The brain’s resilience center.” Why do you see it that way?

Linda Graham: Most neuroscientists will see the prefrontal cortex as the center of our executive functioning.

It is the most recent structure of the brain to evolve and it is the latest to develop in the individual human brain. It takes the longest – it is not fully mature until we are about twenty-five years of age.

Because it is the center of executive functioning, it does many of the things that we need for resilience: it manages the body and our autonomic nervous system; it quells the fear response of the amygdala, the lower brain; it manages all of our emotions as signals to take wise action; it is what we use for attunement and empathy and insight or self-awareness.

The prefrontal cortex is also the structure of response flexibility; it is the structure of the brain that allows us to stop, shift gears, and respond in a different way, not out of habit.

“Calm down!” You know what I mean?

Dr. Buczynski: Now, I want to stop you for a second and I just want to say, yes, that is sort of true, but it is not like I can say, “Calm down!” You know what I mean?
I can’t make myself do that when I am in a state of arousal, no matter what my prefrontal cortex is thinking – “You need to be wise here. You need to calm down.”

**Linda Graham:** Probably being critical of ourselves for not being calm is not going to help us calm down. That’s really true.

But here is the trick: we get agitated out of our sense of calm through the autonomic nervous system – we will rev up our sympathetic nervous system into fight/flight/freeze, or we will over-activate the parasympathetic nervous system, and we will go down into too much calm – we will become lethargic or passive or numb, or we will collapse.

We want to be able to stay in the window of tolerance: it is this middle ground where we are calm and relaxed but we are engaged and working.

That is where we can be resilient. That is where the prefrontal cortex can function.

Frankly, we need tools and techniques to be able to calm ourselves down and come back into that window of tolerance, so the prefrontal cortex can stay online, think clearly, see what is happening and our reactions to what is happening, and choose a different path.

A lot of the techniques that I offered in *Bouncing Back* are actually somatic tools to calm down the body and the nervous system first, so then we can begin to think about what else we could do to stay calm.

### Brain Development

**Dr. Buczynski:** You alluded to it, but we didn’t really go into it – you talked about what part of the brain was developed first, and then we jumped into the prefrontal cortex.

**Linda Graham:** Roughly and basically, the lower brain operates very rapidly and completely unconsciously – it doesn’t give us very many options. It is about survival.

The higher brain operates much more slowly. Sometimes it helps to count to ten to get the higher brain operating again.

It operates consciously, it is much more comprehensive, and it gives us many, many, many, more options.

A big function of the higher brain or the prefrontal cortex is to regulate the survival responses of the lower brain.

Survival responses are unconscious; we can change our conscious responses to our survival responses. That is why we want to stay calm and within equilibrium, so that the higher
brain can stay online – functioning – and we can reflect on what we could do differently.

**Dr. Buczynski:** When we practice meditation – when we practice mindfulness – we develop the skill of interrupting that part of ourselves that is reactive.

**Linda Graham:** Certainly, a big part of mindfulness practice is equanimity, which is being able to be with our experience without being reactive to it – either too positive or too negative – facing the eight winds of change from a place of equanimity or equilibrium.

Mindfulness practice is a spiritual correlate of that window of tolerance when we have our physiological equilibrium.

**Training the Prefrontal Cortex to Pick the Most Resilient Response**

**Dr. Buczynski:** We talked about the role that the higher brain or the prefrontal cortex would have and why it is so crucial for resilience, but how do we train our prefrontal cortex so that it will pick the most resilient response to a situation?

**Linda Graham:** In the book, I focus a lot on the tools that we learn in mindfulness and empathy practices because those are the practices that will strengthen the prefrontal cortex the most.

In empathy, we are trying to be able to tune in, understand, and have compassion for our own experience and for ourselves, as the experiencer of that experience. We want to be able to calm down, come back into a sense of safety and trust again. That allows the higher brain to keep on functioning.

In mindfulness, we are pausing; we are noticing our experience and naming it – that does keep the left hemisphere of the brain online; we are stepping back and disentangling from it so that we are more observing it and reflecting on it.

That allows us to monitor and modify what is going on. We can shift perspectives, look at things from a different angle – we can discern what our options might be and choose among them wisely.

But another benefit of mindfulness practice is that, over time, we begin to see our thoughts as thoughts, our feelings as feelings, patterns of thoughts as patterns, cascades of feelings as cascades, and our states of being as states.

We begin to see that all of it is the pattern of neural firing. Everything that is happening in our mind, in our brain, is the pattern of neural firing.

Seeing it as neural firing helps to take it less personally; we still care about ourselves, and we will want to behave and respond wisely but we don’t have to get so thrown off center if we understand what is happening in our brain.
That is particularly important when we have implicit memories that come up from the lower brain; we have a sense of fear, or anger, or grief and it can be very powerful and overwhelming.

But we may not have a sense that those are in memory – implicit memories don’t have any time stamp – we are reacting to something that isn’t even happening in the present moment.

So, when we can understand and be mindful of that, we can just get a little distance from our own reactivity and see how to respond to it differently.

**Dr. Buczynski:** All of these processes and strategies can help us stay calm, cool, and even collected when we feel ourselves moving into a stress or reactive kind of state.

**Linda Graham:** Right.

### How the Window of Tolerance Relates to Equanimity

**Dr. Buczynski:** This calm place is sometimes referred to as the window of tolerance. Can you explain what the window of tolerance is, and how it relates to equanimity?

**Linda Graham:** The window of tolerance is simply the physiological equilibrium that we experience in our body when we are calm and relaxed, engaged and alert.

We are not revved up in fear and we are not shut down in fear. It relates to equanimity because equanimity practice is its spiritual correlate.

What feels most important to me about neuroscience and the window of tolerance is that when we get activated by fear, the stress hormone, cortisol, is running through our system, and that mobilizes us – it is meant to keep us alive and survive.

But the most immediate and direct way to calm down, to antidote that stress hormone of cortisol, is the hormone of oxytocin, which is the hormone of calm and connect.

**Oxytocin is the hormone of safety and trust, and is the brain’s direct and immediate antidote to cortisol.**

Oxytocin is the hormone of safety and trust, bonding and belonging, and calm and connection; it is the brain’s direct and immediate antidote to cortisol.

As soon as we can get the oxytocin released, we can begin to calm down. When we do a simple tool like “hand on the heart,” we can calm down a panic attack in less than a minute.

I teach my clients many, many ways to activate the release of oxytocin. It is one of the most useful tools they have.

**Dr. Buczynski:** Tell us some others.
Linda Graham: “Hand on the heart” is one. Any warm, safe touch will activate oxytocin but there are neural cells in the heart that can speed up that activation of oxytocin.

Deep breathing into the heart center will activate the parasympathetic and calm us down.

When we remember a moment of feeling safe and loved and cherished by someone – a memory or even imagining that to happen – the oxytocin can be released and calm down the cortisol.

So I recommend to my clients that they have twenty-second full-body hugs many times a day. Twenty seconds is about three breaths, so they can time it with a partner and release the oxytocin.

Even from the brain perspective, we do know that remembering a moment of feeling safe and loved and cherished works as effectively as actually being with someone who loves and cherishes us.

Many times a day, by calling upon memories of feeling safe and loved and cherished, we can actually stay within our window of tolerance far more effectively.

Dr. Buczynski: Why does being around a person who is calm help other people be more relaxed?

Linda Graham: The brain does that in several different ways. The most basic way, again, is from the brain stem which is right at the base of the skull, where the spinal column comes into the skull.

By the way, if you massage the brain stem, it is loaded with oxytocin receptors so you can give yourself a hit of releasing oxytocin.

But the brain stem picks up the vibe of other people: if we are around someone who is calm and if their calm is stronger than our upset, their nervous system is actually regulating our nervous system, and we don’t even have to be consciously aware of that happening.

We can use our conscious practice if we make eye contact with someone who is calm and regulated.

The fusiform gyrus, which is the small fold of tissue in the visual cortex, is what we use to recognize faces and read emotional expressions.

If we are having eye contact with someone who is calm and we see that in their eyes and in their facial expression, there is a correlation between activation of the fusiform gyrus and the deactivation of the amygdala.
Simply by making eye contact with someone who is calm, we can regulate our own body and nervous system to be calm.

**Trauma and Lacking the Skill to Calm**

**Dr. Buczynski:** Way back in the beginning, we were talking about people who experience trauma early in life and how those people often have a hard time raising their own infants – not because they lack desire but because they lack skill.

And really, it may not even be *exactly* skill as much as they lack the ability to calm *themselves* down. If you can’t calm yourself down, then it would be hard to have this effect – this calming effect – on the infant. Is that correct, would you say?

**Linda Graham:** Oh, yes, that’s very correct. In addition to that, we have discovered that if there has not been a lot of oxytocin in the caregiving relationship – not a lot of holding or cuddling or warm and safe, connective feelings – then the oxytocin receptors in the child’s brain don’t develop fully.

It might actually even be harder for them to *feel* love and safety and connection. We have to have practices that rebuild the oxytocin receptors in the brain so we can *feel* the love that, in fact, is there.

**Dr. Buczynski:** Based on your understanding, is that why with some people, it is very hard to comfort them? They are very uncomfortable, perhaps, getting any kind of positive attention/affection.

**Linda Graham:** If relationship has seemed *not* comforting but perhaps even dangerous in the past, then there is wariness – there is a resistance to taking in. We don’t have the receptivity to take in a love that is being offered, so that pathway has to be rebuilt.

A lot of what I am offering in the book is not just developing resilience but *recovering* resilience and recovering those capacities if we didn’t get them the first time around.

**Dr. Buczynski:** But there are people who *are* seeking tenderness and warmth but can’t accept it when it is there.

You talked about the oxytocin receptors, but if people didn’t have the tenderness and warmth, they don’t have the receptors to take it in even if it is genuinely there.

**Linda Graham:** That’s right, and it could be not enough receptors.

Another thing that can happen is that very often, if people didn’t grow up with a lot of love and acceptance and maybe don’t have a lot of self-love and self-acceptance, then being cared about or receiving love may trigger a shame response: “I don’t deserve this. If you *really* knew who I was, you wouldn’t be doing this.”

Shame derails the resilience, and it derails the receptivity.
A lot of what I am trying to offer is using these techniques of neuroplasticity to rewire shame – and reconditioning can be used to rewire shame.

**Reconditioning: A Tool to Rewire Shame**

**Dr. Buczynski:** Let’s get into that for a minute – rewiring shame. What would you suggest?

**Linda Graham:** When there are experiences of love and acceptance from another person and we are trying to help that translate to a sense of love and acceptance of the self, then that is what can rewire an experience of loathing or self-hatred.

The networks have to both be lit up at the same time. It takes a lot of mindfulness and compassion to hold that in a container; it can take a lot of practice to do that – it takes a lot of conscious processing.

One of my favorite interventions with clients these days is, “What are you noticing? What are you noticing? What are you noticing?”

This is about noticing the love coming from a *true other* to the *true self*, and noticing the reaction inside. Is it being received or rejected?

It is about noticing what happens when you try to evoke a sense or a memory of self-love or self-acceptance, and what happens when you juxtapose that with the self-loathing.

There’s a lot of mindfulness and compassion, but reconditioning is the tool that can do that noticing when we do it over and over and over.

**Why the Vagus Nerve Is Important**

**Dr. Buczynski:** You talked in your book about being around people who are calm and how that can transmit calmness to the stressed-out person . . . and you talked about two structures in the brain that can contribute to that: the vagus nerve and the fusiform gyrus.

You have talked a bit on the fusiform gyrus but let’s go into the vagus nerve just a little bit – how is that related?

**Linda Graham:** The vagus nerve, as we have been learning from Stephen Porges, both regulates our survival responses and the social engagement system so that when we look at someone else’s facial expressions and see that they are calm, then that registers in us through the mirror neurons.

We register that and we can calm down our own nervous system as well. It does what he calls, “Puts on the vagal brake.”

When we have good vagal tone and we are able to engage with other people socially, that helps regulate the fear response of the amygdala. It just doesn’t come up as much.
Cortisol and the Hippocampus

Dr. Buczynski: A while back, you talked about cortisol and its effect: too much cortisol affects the hippocampus. But can a low level of cortisol also affect the hippocampus as well?

Linda Graham: We use a mild stimulation of the sympathetic nervous system all the time when we are out exploring and creating and producing and relating to people.

It is not that being activated is always negative – it is just whether there is a lot of fear associated with it.

One of the things that we can do – we can prime our brain to not be so reactive or responsive to the cortisol.

“If oxytocin is already flowing in the system, events that might cause a stress reaction actually don’t.”

Not only can oxytocin calm down the brain once the stress is activated, but it can prevent it or preempt it.

We are discovering that if oxytocin is already flowing in the system, events that might cause a stress reaction actually don’t. There is a preemption of the stress response.

We could talk about the study that Jim Coan did at Richie Davidson’s Laboratory for Cognitive and Affective Science at the University of Wisconsin. He had three groups of women going through an fMRI scanner as they were being told that they were going to get a slightly unpleasant electrical shock on their ankles.

The first group of women, in the scanner by themselves, reported pain when the shock actually happened and anxiety in anticipating it.

The group of women, who were holding the hand of the lab technician while they were in the scanner – a stranger but another human being – reported less anxiety and less shock when the pain happened.

The group of women who were holding the hands of their husbands not only reported no anxiety and no pain, but they reported a pleasant experience because they were holding the hand of someone who loved them; the oxytocin flowing in the brain preempted the stress response.

“So we are learning how to use what is going on in our brain to actually manage or preclude our stress responses in the first place.”

Dr. Buczynski: Thank you. That is very interesting research. I think not everyone knows about that – and it does illustrate very well what we are trying to talk about here.

This was fun. I appreciate your time and all of the work you have done.
Again, Linda’s book is *Bouncing Back: Rewiring Your Brain for Maximum Resilience and Well-Being*. Thanks very much for being part of our series.

**Linda Graham:** Thank you, Ruth. I enjoyed it very much.
About The Speaker:

Linda Graham, MFT, is a practitioner and facilitator of personal growth and self transformation. She has had 20 twenty years of experience in integrative study and practice. She teaches transformational psychotherapies, vipassana meditation, life coaching, and facilitates groups and workshops, all of which have helped her to become a skillful guide, interweaving paths of compassionate and conscious connection.

Currently, Linda works as a consultant-trainer-facilitator, seasoned clinician, skillfull life coach, and dedicated practitioner.

In her latest book, *Bouncing Back: Rewiring Your Brain for Maximum Resilience and Well-Being*, she offers ground-breaking integration tools and techniques that both rewire old patterns of response encoded in neural circuitry and help to navigate the storms and struggles of life more quickly, adaptively, and more effectively.

Featured Book by Speaker: Linda Graham, MFT

*Bouncing Back: Rewiring Your Brain for Maximum Resilience and Well-Being*

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