

The New Science of Safety

Taming Your Inner Lizard

By Michael Westgate, NMT



Imagine if everyone you knew suddenly turned into some form of reptile and you had to spend the rest of your days living with these new forms. What would that be like? Would you feel emotionally fulfilled? Would you be excited to get up in the morning? How would special occasions like birthdays, weddings or vacations change? Could there still be cuddling? Answers to these questions might seem obvious and even ridiculous.

However, we all possess the ancient wiring of our lizard ancestors. That means we all can automatically switch into “lizard mode”. Lizard mode refers to our ancient survival responses of fight/flight or freeze. Ironically, the seemingly innocuous stimulus can trigger lizard mode. Current research explains that spending too much time in “lizard mode” or with others in “lizard mode” can lead to mental and/or physical illness as well as early death. Fortunately, this research also shows that we can enhance our relationships with people who are well regulated and can create more happiness, fulfillment and greater health in our lives.

The history of the science of safety

In 1994 Dr. Stephen Porges published The Polyvagal Theory. In it, he shed light on how "safety" is achieved in mammals. He further expanded upon the profound impact that safe feelings have on the health, happiness, and success of everyone.

Science Nerd Corner:

The term polyvagal is derived from the Latin poly meaning many and vagal meaning wandering or vagrant which refers to the many branches of the vagus nerve. This nerve is responsible for all you automatic (autonomic) functions in your body.

Many intelligent and educated people have set out on the arduous adventure of trying to read and grasp Dr. Porges original book on Polyvagal theory. Many have failed to grasp the material. Luckily, a summary of the theory, "The Pocket Guide to Polyvagal Theory" has made his ideas much more accessible. However, even with this summary, it can be difficult to translate his findings into recommendations for our daily lives.

In this article, I will attempt to give a summary that makes this groundbreaking research accessible and explore how this new understanding of our nervous system can boost your ability to navigate through life. Doing so can improve your resilience as well as that of your loved ones and community.

"Polyvagal Theory leads to an understanding that to connect and co-regulate with others is our biological imperative. We experience this imperative as an inherent quest for safety that can be reached only through successful social relationships in which we co-regulate our behavior and physiology. " Porges, Stephen W.. The Pocket Guide to the Polyvagal Theory: The Transformative Power of Feeling Safe (Norton Series on Interpersonal Neurobiology) (p. 51). W. W. Norton & Company. Kindle Edition.

Let's start at the beginning

Millions of years ago our ancestors crawled out of the primordial soup and had nervous systems that were more or less like our modern-day reptiles. Empathy was not in the wiring. The lizard brain's goals were filling his or her basic daily needs. That was the order of the day. Every animal for its self!

Lizard brains basically have three modes of operation:

Rest/digest

Fight/flight or

Play dead (freeze)

After millions of years, mammals developed a new part of their brain, one that allows for some very risky and previously unheard of behavior. They learned to cooperate and in doing so were more successful as a species.

The new neurological upgrade allowed mammals to create a state of safety which made room for learning, creativity, play, long-term caretaking and sex for love and connection among other things. It was no longer just about seeking out ways to satisfy our individual needs. Instead, the needs of others would often come first.

The upgrade, our social nervous system

In this new mode, humans could "play rough", in sports such as Lacrosse and contain the aggressive behavior in the field (at least most of the time). This latest addition to our nervous system is what suppresses the activity of the more primitive systems and allows us to act, well... civilized.

Porges calls this the "social nervous system". It is made up of nerves and environmental sensors in the skin, muscles and connective tissue.

The "social nervous system" is made up of the nerves that influence our:

- Face,
- Eyes,
- Ears,
- Nose,
- Voice

Our eyes, hearing and special sensory nerves distributed throughout our bodies are constantly scanning our environment and analyzing the data and looking for signs of danger or safety. Our responses are automatic and do not involve the thinking part of our brain. Porges points out that especially in times of stress and danger, our conscious brain has a very limited influence on how we react. Our lizard brain decides for us based on the data it is experiencing.

Science Nerd Corner:

Porges coined the term "neuroception" meaning neurological perception. This system scans our environment 24/7 for signs of safety or danger and this information is what our autonomic system uses to decide what nervous system state to turn on or off.



How the trouble starts

The real trouble starts when this social nervous system becomes damaged from long-term abuse or neglect as children or from trauma in adulthood.

Common causes of trauma

- Horrors of war,
- Car accidents, Muggings,
- Loss of a loved one without social support
- Overexposure to negative media etc.

When this happens the individual can no longer access feelings of safety and will remain in a perpetual state of perceiving the world as dangerous. This will cause them to act perpetually aggressive and defensive. (Sympathetic - flight /flight) or collapse (Dorsal vagal - freeze and play dead) into depression and lethargy and will often switch back and forth between these two states perpetually. People who are perpetually in freeze mode are the hardest to help. For an individual in freeze mode, their nervous system perceives an environment filled with the risk of imminent death. Thus they are not inclined to risk a change of any kind since it's better to be uncomfortable than risk dying.

In this article, I'll be referring to both these states as collectively as "Lizard Mode". Being stuck in a state of perpetual fear over a long period of time can lead to a wide variety of health challenges. Additionally, people stuck in this state tend to be very socially disruptive. They are not able to live in synch with other people and can, just like a lizard, have little empathy for the harm they cause others.

Known diagnoses associated with the nervous system stuck in fear modes include:

- Depression,
- Autism
- Autoimmune disease,
- Fibromyalgia,
- Addictions,
- Learning disorders such as ADD and ADHD.

How society challenges self-regulation

There is a lot of emphasis in our western culture on individualism and the ability to "handle ourselves" without any help from anyone else. People often say, "I'm really independent, I don't need anyone else to make me happy".

These societal attitudes run counter to what the science of safety teaches us. Porges explains that we are not so much self-regulators as co-regulators. Our social nervous systems are connected like a social world wide web. We need other people to activate and maintain feelings of safety. We also need other people in order to help us re-activate feelings of safety when our system is temporarily offline.

For the most part, people who are at ease with themselves have a strong social network and grew up in a family with healthy social nervous system behaviors. Porges states in an interview "*You can only be as regulated as the people you interact with on a daily basis*".

Porges emphasizes that we have a much more profound impact on each other's feelings of well-being than we think. Recent studies have backed up his theory stating that social isolation is more deadly than smoking, lack of exercise and poor food choices combined. In addition, the current data on people who live in communities where people regularly live to be over a hundred years old shows that their strong social networks are a major factor in them living this long.

How the social nervous system shuts down

Let's look at how easily your social nervous system can be shut down. Think back to the last upsetting interaction you had with a stranger. Maybe a person cut you off on the freeway or bumped into you on the street causing you to drop your coffee. Were those interactions followed by the offending person giving you the bird or turning away from you with a dismissive attitude? Those are prime examples which can cause your social nervous system to tank and go offline. That waking of your lizard brain likely caused a big spike of stress.

In such moments your feeling of safety will disappear and your urge to act violently will spike. In some cases, you will act without thinking and with regrettable consequences.

The lizard brain in intimate relationships

Now think of the last time you had a conflict with someone close to you like your spouse, parent or sibling. If one or both of you act in an aggressive way rather than giving signs of safety to each other what ensues is a festival of lizard behavior. In lizard mode, the brain alters our ability to hear certain sounds including elements of human speech. Our heart races and our movements can become jerky and uncoordinated. Most of all, we feel like the world is falling down around us.

One reason that conflicts with people closest to us are so intense is because we are sharing the task of helping each other regulate and when this breaks down it can cause tremendous anxiety. It's why, when our relationships fall apart, we can feel incomplete for a while. In cases of people who are happily married for decades, the death of a spouse can be so hard on the surviving partner that they will die soon after. A common statement is: "I just don't feel whole without my other half".

Porges' work has shown that the nerves of the face are neurologically connected to the lungs and heart. This means that when someone loses a loved one, the stress of that loss can literally cause his or her heart rhythm to change. Those are instances of a literally "dying of a broken heart"

How kindness affects the lizard brain

On the other side of the coin think about how you felt the last time a stranger stopped to help you lift something up a flight of stairs or smiled at you and said good morning. How did it make you feel? Most likely you had a boost of energy and a feeling that your day was going well. In turn, you were more likely to act kindly toward someone else.

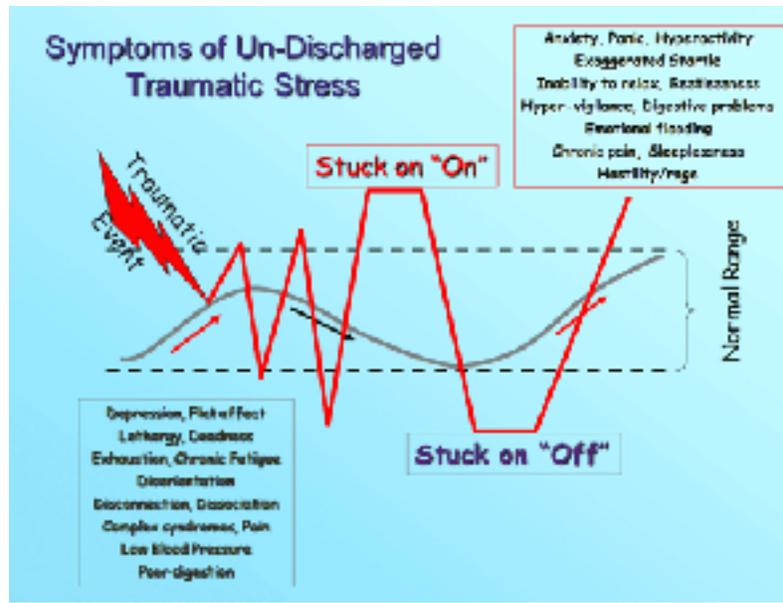
Now think of the last time someone close to you did something that made you feel loved. Maybe it was a special gift, acknowledgment by your boss about your

excellent work, or a warm hug from a friend when you're feeling down. These experiences build the social nervous system. The social nervous system then builds up your immune system. The more often you have heartwarming experiences, the more resilient you will be to negative stresses and traumas.

Common misconceptions regarding a healthy nervous system

Historically we thought that lizard mode was bad and feeling safe is good. This is the old model and is incomplete. What you want is for your nervous system to be agile enough and intelligent enough to turn on the most appropriate mode for what is in front of you. We should be grateful when our lizard mode turns on when a truck is about to hit us in a crosswalk. If rest and digest were switched on instead, we will most likely end up seriously injured or even dead. There are even times when playing dead is our best chance of surviving an attack since fighting back could result in more serious injury or death. When our social nervous system is damaged our neuroception no longer works well and it no longer serves our best interest.

If you refer to the image below you will see that the line that undulates between the dotted lines represents how a healthy nervous system responds to life's ups and downs. There is a constant flow from excited to relaxed but when the system is harmed by a lightning strike of trauma the nervous system now starts to swing wildly from one extreme to another never spending time in the balanced normal range. This is especially serious since our neuroception triggers responses that are hard or even impossible to control. This is another reason why it is so important to keep it healthy and functional.



Your automatic responses don't follow logic

Another thing to keep in mind is that individual neuroception does not follow logic. Each individual's scanning of the world for safety and danger is completely relative. No one person's "triggers" is the same as another's. It is entirely possible for one person's hell to be another person's heaven. If you want to be successful relating to others it's critical to catch your judgments about what puts someone else into "lizard mode". The stimulus might seem trivial to you but it can be 100% real for someone else.

Ways to strengthen your social nervous system

This template is our foundation for the behavior that leads to co-regulation and eventually healthy self-regulation. Porges explains that the majority of our imprinting for co-regulation comes from our mothers. Historically mammalian mothers train their infant's nervous systems by offering a safe place for the infant to come to when he/she feels fear. The training starts with "baby steps" in the form of the infant being able to tolerate stress in greater and greater amounts. With each success, the child healthfully ventures out further from their mothers' influence. They are emboldened by the knowledge that if anything goes wrong they can come back to mom she will make it all better.

The forms of reassurance from the mother are prosodic voice tone (soothing, melodic words and sounds), friendly/caring facial and body expressions, and

reassuring touch. This nervous system training is what helps develop an independent child and eventually a well-balanced adult.

However, there is one more component to this dynamic that is critical for a strong social nervous system. This is the training of co-regulation and it manifests in the close contact and interaction with the mother and child. This dynamic of co-regulation is the foundation for “playing well with others”.

Imagine a mother and infant interacting throughout a typical day. Let's say the day starts out with the pair calm and connected after a good nights rest, there is a rhythm of interaction between them of verbal and facial queues. The mom smiles at the baby, the baby smiles back, mom tickles the baby's tummy and the baby starts to giggle, the baby grabs moms finger and bites down (no teeth yet) and mom laughs.

Everything is humming along smoothly and this back and forth continues with the social nervous system healthfully switched on. Then suddenly the baby's finger accidentally pokes mom's eye. Mom cries out in pain and pulls back disconnecting from her baby. The baby feels the change in his/her mother and becomes scared. At this point, both mom and baby's social nervous systems are now turned off and they are both in Lizard mode. The baby starts to cry and mom feels overwhelmed trying to catch her composure. Suddenly that warm safe feeling is gone.

After a minute or so, mom realizes that her child is upset and she snaps out of her reaction to the pain. She picks up her child and starts soothing behavior which includes, speaking in a soothing voice, giving open and friendly facial and body expressions as well as physically picking up and rocking and holding her baby.

These breakdowns also train the infants' nervous system how to recover from upsets and shocks later in life. The experiences give them the tools for repairing breaks with others. They also provide context for how to handle their own distress in the interval between connection and repair. In a sense, this is a healthy social nervous system resistance training. Fairly early in the child's development, he/she will mirror this behavior by soothing their mother with the same behavior. This then becomes the basis of co-regulation.

So keep in mind that even as adults as we navigate our nervous system states and the states that we share with others the basic components of connection and co-regulation are the same as it is between infant and child.

1. Voice tone (melodic, soothing tones = safety, high pitch or deep rumbling tones = predatory or enemy),
2. Friendly, open facial expression and body language (fake smiles don't work), and a reassuring touch.

Because our social nervous system developed before complex speech was in place we are highly tuned to vocal tone and not the specific words. Trying to use the right words to soothe someone who is upset is not nearly as important as getting yourself into a regulated state so that your voice tone (prosody) reflexes a non-threatening presence.

Poor modeling of regulation

If a mother's social nervous system is not functioning well, she is not able to model. Without at least adequate co-regulation and self-regulation skills, the child can develop a wide range of challenges. Depending on the severity of the neglect or overt abuse the child's nervous system can become wired to survive in an environment that is hostile rather than safe. They may not even know what safety feels like.

The problems that stem from this kind of beginning can range from mental illness to autoimmune disease and often-early death. This is what is called developmental trauma and is one of the most difficult forms of trauma to treat.

One of the most devastating effects of people raised in these conditions is how it affects their neuroception (neurological perception). Without the healthy social stimulation, they will typically have their interpretation of safety and danger reversed causing them to end up perpetually in situations and with people who are not good for them. Often they will interpret safe signals from other people as threatening.

This can be especially true for individuals who have experienced sexual abuse from a caretaker. Signals of safety may have been used by the abuser to lure the child into complying with the abuse or even try to convince them that what they are experiencing was an expression of love. Although I will not cover solutions for this condition in detail I will provide resources for effective treatments.

Since the publication of Dr. Porges Polyvagal Theory in 1994 there has been a huge surge of interest from the therapists who treat trauma. The Polyvagal framework has allowed these practitioners to be much more effective in helping people with conditions that were previously unresponsive to the therapeutic interventions available.

How co-regulation shows up in competitive sports.

I'll start with a typical play in soccer. The whistle blows and the ball is in play, each team struggles for possession of the ball. There is jostling and aggressive sounds and facial expressions. The tension rises as a player makes a bold move

to score a goal, but the shot goes wide and the whistles blow again and everyone stops to reorganize.

Suddenly the tension drops and there are pats on the back/butt, friendly waves, and words of encouragement. The aggressive body postures change, not just towards our own team members but also with the members of the other team. Then an instant later the whistle blows and everyone goes back to assertive postures and so on. Even though there is aggressive behavior it is tempered by regular signals of safety from both sides and of course, if there is a break down of these signals that is when a fight brakes out.

The key to good co-regulation with others is reciprocity. How we respond to the messages we get from others is everything. It will profoundly affect the health of our shared nervous system by the degree that reciprocity holds a consistent rhythm between individuals and groups.

Now let's look at how the metaphor of the game of tennis can illustrate how our social nervous systems thrive and how they break down. Think of the tennis ball as the messages we send back and forth when interacting with another person. In a functional situation the ball is served and returned until someone misses a shot, then the ball is recovered and is served again and so on. The ball represents bids for connection, followed by a response. Also during the game, there are constant social queues that help reassure everyone that "We are only playing". If the game is played in a "civilized" way it can build the feeling of safety for both players. The break down comes when someone doesn't follow the rules of safe interaction and disrupt the flow of reciprocal interaction. Suddenly someone refuses to return the ball (stonewalling), starts acting like they don't want to be there and they keep playing not with full engagement (passive-aggressive), takes the ball and starts playing against a nearby wall (withholding), takes the ball and suddenly joints another game nearby without asking if its that's ok (cheating on your partner). In all these examples trying to engage with someone who isn't playing fair will result in lots of "lizard mode" feelings and will break down the social nervous system.

How to spot the lizard mode in other people

How do you know when someone else's social nervous system is offline and their lizard brain is driving the bus.

1. They will have an unexpressive face with very little movement above the eyes. Their face smiles but the eyes do not.
2. They have a collapse body posture
3. They are expressing only aggressive or defensive facial and body signals

4. Their voice sounds constricted, high pitched or with deep rumbling/growling sounds and unmelodic
5. They behave in a way very unusual for that individual i.e. they usually act fidgety but now they are completely still

Spotting your inner lizard

How will you know if your social nervous system is offline and your inner lizard has taken over?

1. You experience tunnel vision
2. It's hard to understand what people are saying even if they are speaking clearly
3. You feel like you want to jump out of your skin
4. You feel intense sensations in your stomach, chest, jaw, head and upper back and neck
5. You have trouble relaxing or settling down
6. You aren't motivated to connect with other people and feel suspicious of their motives
7. You find yourself doing things that you don't want to do and it feels like someone is controlling you with puppet strings

Resources for lizard training

Let's look at resources for building and maintaining a healthy social nervous system:

Keep in mind that the best resources for building your social nervous system are the forms of play that require face-to-face contact and synchronization with another person(s). This means engaging the muscles of the face, eyes, and ears (hearing) as well as tracking the movements of others and being mindful of the sensations in your own body.

Resourcing with other people

1. Partner dancing
2. Sex for connection and intimacy. No, hooking up doesn't count
3. Volunteering, but you must be engaged with the people you're helping
4. Caretaking of someone you love
5. Working with a therapist or a coach/mentor
6. Theater acting
7. Cooking with others

8. Team sports
 - a. Acro yoga, this is a form of yoga where you support each other in acrobatic moves that require being finely in tune with the other person and your own body
 - b. Baseball
 - c. Soccer
 - d. Basketball
 - e. Wrestling
 - f. Lacrosse
 - g. Volleyball
 - h. Golf
9. Board and card games
10. Singing with a choir
11. Massage
12. Acupuncture

Building inner resources

Self Regulation – these activities will help your ability to regulate when you are alone and will also help you be centered and present when other people in your life are having a lizard moment and need your help to come back to mammal mode.

1. Listening to music with melodic female voices like Enya or Loreena McKennitt. Pandora has a station called Healing Sounds that was developed by Marin General Hospital to help their patients heal faster it only has melodic music and nature sounds.
2. Mindful Yoga, it's important that your movements are slow enough for you to stay with and track your body sensations. Sorry, power yoga isn't as effective
3. Pranayama yoga breathing
4. Playing a wind instrument
5. Singing
6. Metta Meditation (loving-kindness). This works because you are focusing on wishing yourself and other people well
7. Nature bathing, spending at least 20 minutes immersed in a natural setting
8. Taking a Mindfulness-Based Stress Reduction Class (MSBR). This is like mindfulness training 101 and teaches a broad range of meditation techniques that can help you tame your inner lizard.
9. Swinging. This might include swinging on a porch swing or a glider or a rocking chair.
10. Watching movies or shows that illustrate the healthy interaction between people including successful repair when things go wrong and a trend towards more intimacy among the characters. Think of the shows

like Friends, Cheers, Downton Abby, and Seinfeld etc. Sorry Game of Thrones doesn't count

Things that wake up your inner lizard

Lets review behaviors that break down the social nervous system and releases the inner lizard in all of us. Remember that behavior or stimulus that says "you are my enemy" or "you are not accepted by me or my group" or "you are in danger from a threat that you can't control"(everything on the nightly news) are especially potent.

1. Turning away from someone while they are in the middle of talking to you. This is a highly aggressive move and will instantly trigger a lizard response from most people
2. Engaging in too much negative media: The news, violent movies, video games, and violent pornography.
3. Getting divorced
4. Getting fired from your job
5. Receiving or engaging in negative judgmental dynamics with others such as:
 - a. Criticism
 - b. Righteous indignation
 - c. Contempt
 - d. Defensiveness
6. Spending more time on devices than you spend with people face to face. Connecting on Facebook, Twitter, Instagram etc. doesn't effectively build the social nervous system because they don't engage enough of the social nervous system. They can be especially insidious since they create an illusion of connection. Even talking on the phone, since the sound of someone's voice is involved, is more effective



Resources for living in harmony with your inner lizard

If you or someone you love is suffering from trauma be it from a recent overwhelming event or from long-term abuse or both, please seek out professional help. I've found the following resources helpful in understanding how these experiences impact our ability to function and show effective ways to come back from them and live a full life. All the practitioners and authors I've listed below are professionals who are currently working with Dr. Porges and his Polyvagal Theory.

1. The Body Keeps Score, By Bessel Van der Kolk M.D – This is the best book on the subject of trauma I've ever come across. Not only is Dr. Van der Kolk an excellent writer he is also amazingly knowledgeable and compassionate. However, you might want to skip over his case studies since he doesn't edit these peoples stories and the details can be overwhelming and even triggering to some people. His website is also full of great resources <https://besselvanderkolk.net/index.html>
2. Healing Trauma: A Pioneering Program for Restoring the Wisdom of Your Body, By Peter Levin, Ph.D. This book is short, easy to understand and includes exercises that can be done at home to start the process of reconnecting you with your body. <https://traumahealing.org/>
3. The Polyvagal Theory in Therapy by Deb Dana. This book is brand new and is the cutting edge in the application of Dr. Porges theory in a therapeutic setting. Dana has worked closely with Dr. Porges for years to

craft this exciting approach and I felt that just reading it made me feel better. <http://www.debdanalcsw.com/where-to-buy.php>

4. The Safe and Sound Protocol – Developed by Dr. Porges, the SSP is a five-day auditory intervention designed to reduce stress and auditory sensitivity while enhancing social engagement and resilience. Based on Dr. Porges' Polyvagal Theory, by calming the physiological and emotional state, the door is opened for improved communication and more successful therapy.
<https://integratedlistening.com/ssp-safe-sound-protocol/>

These resources are not directly connected to Dr. Porges work but are ones that I find excellent at building and repairing the social nervous system.

1. The Mindfulness-Based Stress Reduction Class. This class was developed by Jon Kabat-Zinn at the University of Massachusetts Medical School and uses a combination of mindfulness meditation, body awareness, and yoga to help people become more mindful and reduce unhealthy levels of stress. This class is taught all over the United States and is available in many hospitals. Some individuals with trauma may have trouble tolerating this level of self-awareness without first working with a therapist. <https://www.umassmed.edu/cfm/mindfulness-based-programs/>, Jon Kabat-Zinn also wrote a book called "Full Catastrophe Living" as a textbook for his course. It's an excellent primer for the practice and benefits of mindfulness practice for health and happiness.

2. Oren Jay Sofer is a meditation teacher based in San Francisco. He is the only meditation teacher I've worked with who really understands how to integrate mindfulness with trauma and illness. I would recommend studying with him in person whenever possible but his recorded talks are well worth your time. <https://www.orenjaysofer.com/>
These are some of the talks on pain and illness <https://www.dharmaseed.org/teacher/248/?search=pain>
His class on emotional resilience on the 10% happier app is the best class of its kind I've ever studied
<https://www.10percenthappier.com/>

I hope that you've found this article helpful in forming a deeper understanding of how to work with the dynamics of your nervous system and that of your friends, colleagues and the larger community to create more health and happiness for everyone. I welcome your comments and questions.



415-924-2323

michael@westgatetherapy.com

www.westgatetherapy.com