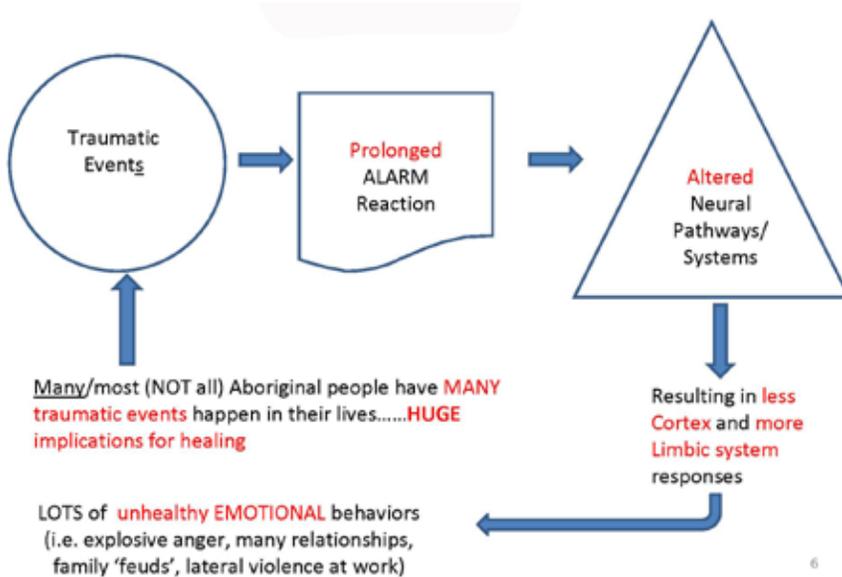




Trauma: The Brain, Body & Healing

Trauma affects how the brain works



When we experience traumatic events, it affects how our brains work, especially if the events are spread over time or happen when we are young. Our brains get designed differently.

Traumatic memories that have pain, anger, guilt or unhealthy emotions still attached to them will often shape how we respond to issues today.

When traumatic memories are free from painful emotions, this traumatic memory doesn't affect us—we are healed from that memory. This is where one wants to be in life.

“Pain from your past will bite you in the ass, unless you learn how to deal with it.”

3 parts to the brain

1. Cerebral Cortex or Neocortex

This is the front part is where common sense happens.

2. Limbic System

The limbic system is made up of different parts. Two important parts linked to how we deal with trauma are the **thalamus** and the **amygdala**.

The **thalamus** does many things including body movement and receiving sound, touch and visual signals. It relays these sensory signals to the cerebral cortex. It is the switchboard of our brain. All sensory input (except smell) is processed by the thalamus.

The two **amygdala** in our brain play an important role in the formation and storage of memories that are linked with emotional events. They also are the part of the brain that kicks in the “fight, flight or freeze” response when a person is faced with an emergency or a very emotional situation.

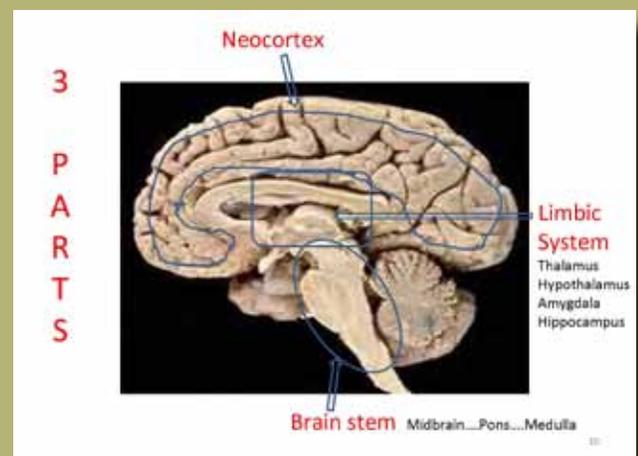
As a whole, the limbic system is the subconscious part of our brain. It is where our memories of our pain are stored.

If you have a memory and a pain attached to it, that memory doesn't age – it stays the same.

So traumatic memories, even ones from before you can speak, will be stored in this part of the brain. The emotion associated with that memory can be triggered by other actions or dreams.

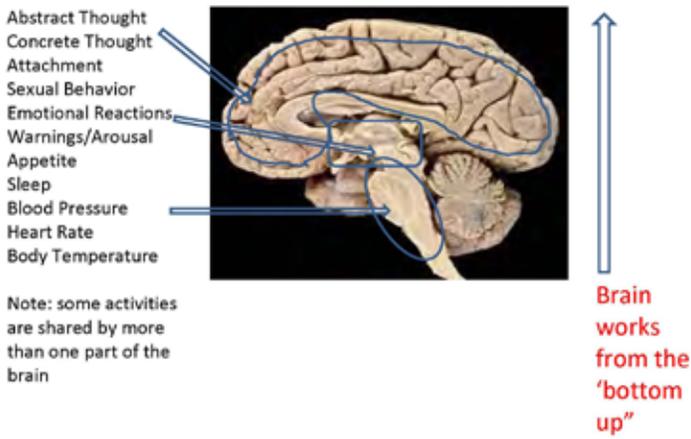
3. The Brainstem

The brainstem affects things like our heart rate, breathing, sleeping, and eating. Nerve connections from the main part of the brain to the rest of the body pass through the brainstem.

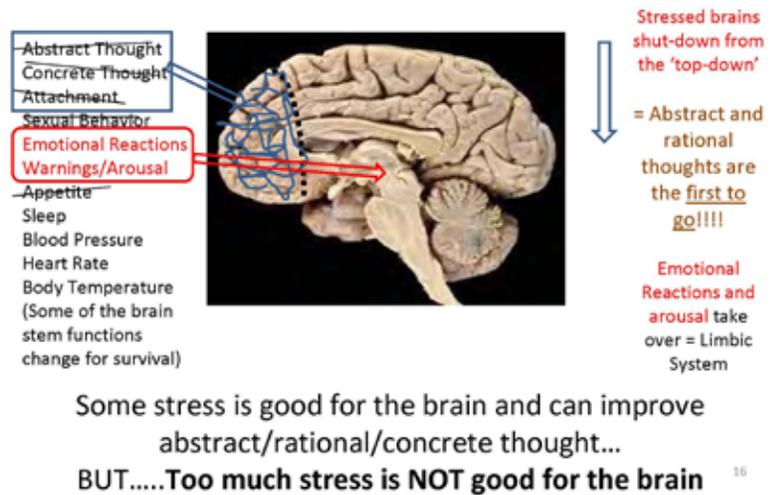


The Traumatized Brain

“Healthy/Normal” Functioning Brain.....that is not stressed



“SUPER”-STRESSED BRAIN.....



Two possible routes for information to our brain

Sensory input to the *thalamus* part of our brain has two possible routes:

- 1. The high road:** When there is no fear or harm detected, information gets sent on up to the common sense part of our brain, *the cortex*.
- 2. The low road:** If there is harm detected, the information gets sent in a flash to our *amygdala* and a survival response kicks in. We might fight, run or freeze.

If a person was raised in a stressful home, the thalamus sent much of its information on the low road, straight to the amygdala (freeze, flight or fight).

Because it was on alert so much, the neural pathways between the thalamus and the amygdala became highly developed (like freeways).

This puts a person in an ‘emotionally alert’ state of being much of the time. They become hyper-sensitive to environmental signals. The problem is sometimes we misread these environmental signals causing stress when stress is not necessary.

Traumatic memories

Memories with trauma or fear attached do not really age. Traumatic memories from our past—if not dealt with—will continue to ‘cause problems’ throughout our lives.

The traumatic memory will resurface with the original emotions attached—even though the experience is no longer a threat and you are now safe. Every emotional trauma leaves a scar on the brain.

Sensory input that triggers traumatic memories we haven’t dealt with will get sent to our amygdala instead of the common sense part of the brain. Fear or anger takes over rational thought. We act without really thinking and spit out words or do things we often regret.

Working with people with a traumatized brain

A traumatized brain is different than a normal brain. A traumatized brain has different routes in it. They take longer to develop and work around.

If you are working with people with a traumatized brain, you need to find different routes into that person’s being, to get new pathways to develop.

Brain scans tell a story



Brain of a normal 3 year-old



Brain of an extremely neglected 3 year-old

The dark areas of the brain of a neglected child (on right) is smaller and the dark areas show that it is not as 'wired up' as a healthy brain. The brain needs positive stimulation.

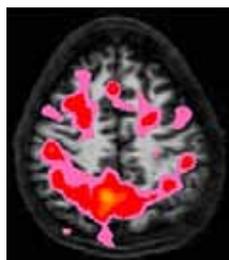


Brain during active drug and alcohol abuse

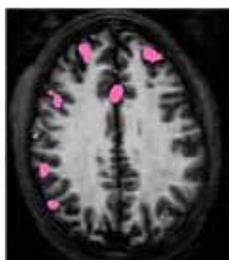


Brain after a year drug and alcohol free

The above SPECT images illustrate the effect of drug and alcohol use on brain function, and how the brain can heal after non-use.



15 year-old male non-drinker



15 year-old male heavy drinker

These brain images show how alcohol may harm a teen's mental function. Compared with a young non-drinker, a 15 year-old with an alcohol problem showed poor brain activity during a memory task. The finding is noted by the lack of pink and red colouring. Think how this could impact learning!

Trauma Patterns

If you were in a car accident and hurt your back, we would find ways to help you heal. But emotional traumas are worse as they are hidden.

We don't see them so we act like they are not there. Instead, we get mad when kids with emotional trauma skip school, go onto drugs, fight with the teacher, wander the halls all day. But these are all trauma patterns.

Because people have trauma, they can't think. The brain changes in a user dependent fashion—you have to use it for it to change. You don't use it, you lose it.

We have our antennae out to survive. We learn to read and appraise people very fast to determine what might happen. We develop the skill to read body language. But we can misinterpret and misread body language when we have a traumatized brain.

If a kid is traumatized before they can speak, they will develop fear. They might not be able to sit still, they are scattered, they are always getting into trouble.

Traumatized youth act out in different ways: drinking; vandalism; attention-getting; fighting; or taking risks. They are confrontational and belligerent; or they withdraw and listen to IPODS all day.

We learn patterns to survive, but the patterns are unhealthy. Many of us use anger to survive. We still use patterns we learned in order to survive when we were kids *unless we learn new patterns*.

We have to retrain our brains, we have to relearn our emotional controls. If anger was our survival response, we need to relearn how to use other responses. We can do this!

People with traumatized brains:

- Aren't able to concentrate in school so acting out or dissociating are common.
- Have difficulty learning how to interact socially, because they're in flight, fight or freeze mode.
- Grow up using substances that offer relief from their situation - or to keep a door closed on the past.
- Repeat unhealthy patterns – even though they know things won't change!
- Often act in 'completely inappropriate' ways.
- Often emotionally 'delayed' in various areas of their lives (but physically often 'way older').
- Hyper-sensitive to non-verbal cues but often misread them.

Developmental stages & healing

We learn emotional control from the age of nine months to two years. It is about the same age we learn habitual ways of responding.

The window for learning emotional control closes when we are about six to seven years old.

This means that the impact of trauma in our early years is huge.

Resetting the baseline

Youth with traumatized brains have a different baseline state of arousal.

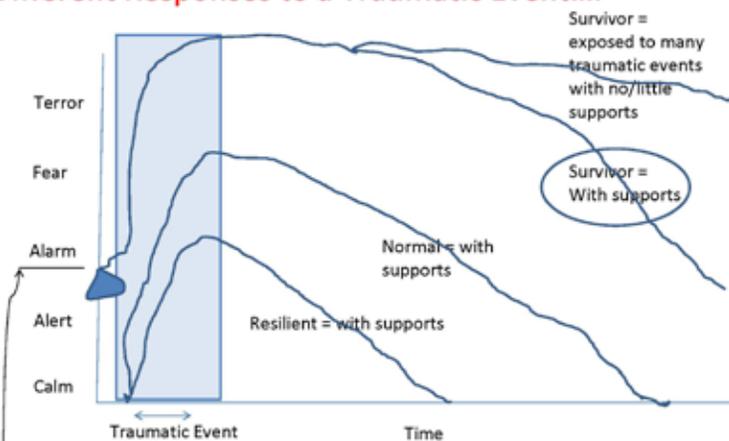
They are in an alert or hypersensitive stage almost all of the time, unlike non-traumatized people.

They just need a little external stress to set them off and it takes them a long time to come down to a calmer state.

This is also true of adults with traumatized brains. Their baseline for reacting to stress is set to high.

Small stressors can make people with traumatized brains react with fear, rage or terror. This contributes to a high degree of lateral violence in our organizations.

Different Responses to a Traumatic Event....



Note 'survivors' have a higher 'baseline'...shoot up faster....longer to come down
Some stress = under attack VERY fast = distorts the continuum = overly reactive

Healing from Trauma

Healing from trauma is possible and it doesn't have to be painful! There are gentle trails to healing.

For starters, be grateful to your younger self for making it. Also learn to accept your limitations and to set your own pace for healing.

Learn about what triggers you to react in unhealthy ways.

Learn about how the brain and body are affected by trauma.

Remember that everyone is different. Have patience with yourself.

And don't forget to reach out to others on your journey. Having support is important. You are not alone.

Other healing activities that can help (use many!)

- Spend time on the land
- Learn meditation
- Practice forgiveness
- Practice gratitude
- Use your culture (vision quests, sweats, sunrise ceremonies)
- Make music
- Spend time connecting with Elders
- Enjoy the simple things in life
- Develop a more 'aware' approach:
 - Develop an increased awareness of living, of being alive and discovering your beauty.
 - Respond to your experiences through focused attention or awareness.
 - Turn towards, rather than away from, issues.
 - Develop a healthy relationship with your experiences.

This information sheet is based on a presentation by David Rattray, a counsellor and aboriginal educator. He spoke at the *Healing Together with Land and Culture: Gathering of Wisdom* event hosted in March 2014 by Kwanlin Dün First Nation. Funding for the gathering and this publication was provided by Health Canada.

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