

# Stress, Trauma and Survival

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## Introductory Explanation of Terminology:

The following article provides a way of understanding, in reasonably simple terms, the very complex processes in human brains which promote survival and the capacity for healing.

The language used is deliberately simplified so that it is reasonably easily accessible. If professionals are reading this, we have found these explanations are helpful for people who have experienced trauma and sometimes feel as though they are “going crazy”.

We are indebted to Dr Janina Fisher, Dr Daniel Siegel, Pat Ogden, Bessel Van Der Kolk and many others in the Trauma and Neuroscience fields for some of the terminology and their extensive research and practice wisdom which underpin this information.

## Brain structure

The brain is a very complex organ and it is now known that there is brain in human gut as well as in human head. Research into gut/brain health is helping to understand a vast range of increasingly common health problems facing humanity in the 21st Century.

Whilst there have been wonderful developments in the field of neuroscience, (brain science) those involved say there is still much more that is unknown.

However, below is a broad outline of some of the significant aspects of neuroscience and how it works when human beings experience stress or trauma.

There are 3 main parts in the brain: 1) The ‘Survival Brain’, 2) the ‘Feeling Brain’ and 3) the ‘Thinking Brain’.

- 1) The Survival brain (Brainstem, Reptilian brain), which humans share with all animals, is responsible for all survival functions including breathing, blood pressure, temperature, heart rate and so on. It’s also responsible for the survival behaviours, resulting from biological reactions to stress and trauma. These include Fight/flight, Freeze/Submit and Attach
- 2) The Feeling brain (Limbic system, Mammalian brain), which we share with all mammals, contains the Amygdala (which acts like a ‘smoke alarm’ - just like a house smoke alarm) which is constantly monitoring the internal and

external environment for signs of threat or danger. It also contains the Hippocampus which is responsible for memory and which often goes offline with trauma, therefore making memory at best fragmented, or non-existent when significant trauma occurs.

- 3) The Thinking brain (Frontal Lobes, Cortex) is the third part of human brain. This is the capacity for rational thought, planning, organising, observing, memory, perception, empathy, compassion, wisdom, creativity, confidence and much more.

## Brain Function

A key feature of human brains is that they are capable of change from birth until death. **Neuroplasticity** is the term used to describe this capacity.

**Neuroplasticity** a relatively recent discovery in the field of neuroscience and is **like a piece of gold for everyone to know**.

When parents understand this well, the activities they encourage and allow for their children will take this into account; when people have had adverse experiences in childhood which have led to survival oriented behaviours that no longer work and have led to anxiety, depression and other mental health issues, they will be able to apply the principles of neuroplasticity for change; when therapists and teachers understand it properly they will assist clients and students to use it to their advantage.

Brains are sets of neural (brain cell) networks which join through chemical and electrical activity. Depending on the patterns developed, certain brain cells get connected into patterns which then lead to the ability to do or know certain things.

Brain networks are building extremely fast in the early years of life. They are then pruned to the most used ones around the age of 10-11 years.

The implications for parenting are enormous. Whatever experiences young and adolescent children have, whatever activities they engage in will literally build the structure of their brains, which in turn will affect the way their brains function.

Every interaction between a child and his or her environment will help to form their brain.

*See the article on Children and Brain Formation* in this Resource section of the Website

Throughout life, human brains are forming and pruning brain networks according to their use or disuse.

## Survival

The Amygdala ('smoke alarm') part of the brain is fully developed at age 12-14 which is a reason that adolescents sometimes need adult assistance with good quality decision making.

The 'smoke alarm' reacts strongly to social and emotional situations which is why adolescents often have what seem like 'out of proportion' reactions to situations – they don't yet have the moderating influence of their 'thinking brain' because it doesn't fully develop until the mid to late 20s

There are some important things to remember about the 'smoke alarm' :

- It is always 'on'. It's function is to sense threat in order to protect (originally threat to life, like being eaten by a predator). Therefore it reads the internal and external environments 24 hours a day in the same way as a house smoke alarm.

This includes reading the images in dreams. When it perceives a sense of threat in dream images, it will 'sound the alarm' which means prompting the release of adrenaline which wakes you up, ready to Fight or Flee. This is experienced as your heart beating fast, feeling hot, sweaty and anxious. These are simply signs that there is increased blood and oxygen flow to muscles so that you have the power to run or fight to save your life. The only problem is that the 'smoke alarm', doesn't know that you were safe in bed and sound asleep. This is just like the house smoke alarm doesn't know that it's just burnt toast and not the house burning down.

- It prompts the survival responses - Fight, Flight, Freeze, Submit, Attach
- It doesn't know the difference between real and perceived danger, past or present. It reacts just like a house smoke alarm. If you burn the toast and the smoke alarm senses smoke, it will sound the warning. You know your house is not in danger and turn the alarm off.
- **You can learn to turn off your biological 'smoke alarm'** when you know it has sounded unnecessarily.

- Once it's activated, the 'thinking brain' often go 'offline'

## Recovery

There is a part in the Thinking Brain (in the Medial Prefrontal Cortex, Insular) which is connected to the 'smoke alarm'. Pat Ogden calls this the 'Noticing Brain'.

In your home when the smoke alarm sounds and you know it's only burnt toast, people usually turn it off by flapping a tea towel, opening a window, or flicking the switch.

Because the 'Noticing Brain' is connected to the 'Smoke Alarm' in your brain, you can learn to use it to 'switch off' the 'smoke alarm'.

This is a vital piece of information because many people suffer from having an over active 'smoke alarm' in their brain.

This is what leads to anxiety, anger, agitation, defensiveness, racing thoughts, feeling unsafe, feeling overwhelmed, with your heart racing, tightness in the chest, sweaty palms, and/or feeling hot. These are signs that the survival states of fight and flight have been activated.

Alternatively some of the opposite reactions can occur, of feeling shut down, numb, depressed, helpless, ashamed, inability to say no, 'flat', no energy, sinking feeling in the stomach, collapsed spine and 'empty'. These are an indication of the freeze and submit survival states being activated.

It's not uncommon for people to experience one state and then the other.

Both states are called dysregulated emotional states.

All of the survival states are usually experienced as very unpleasant and there is a desire to 'stop' the feelings.

**It is vital, if you experience any of these reactions regularly, to learn to re-regulate your emotions effectively.**

## Healing

As well as being designed for survival, human nervous systems are designed for healing.

This means that once someone goes into a survival state, the system tries to get back into balance. Then, instead of consciously recognising what's

happened, there is often an automatic reaction to do something - anything to get back into a regulated state.

This can include some very destructive and unhelpful patterns, some of which are 'socially acceptable'.

Below are some examples of behaviours or patterns people develop. The kinds of reactions indicate which of their survival states has been triggered.

## **ATTACHMENT**

For young children the primary survival mechanism is the Attachment system.<sup>1</sup> When there has been less than optimal attachment in early childhood the individual will be left with feeling desperate, craving connection (which some people call attention) and affection, always tuned to the needs of others, dependent/needy behaviour which can include frequent texting or use of social media as an attempt to achieve connection, possessiveness, jealousy, feeling uneasy/unsafe when parting from someone important. Paradoxically, when people engage in these behaviours they have the counter-productive effect of pushing other people away and then end up feeling more isolated.

Human babies (like all other baby mammals) are designed biologically to pull care from their caregivers for survival. It is the most basic human need to be connected to another human being. When this doesn't work effectively, children often get confused, get angry and give up. When you watch some of the videos on attachment you are likely to see what happens when it's disrupted<sup>2</sup>.

Adult humans are also biologically designed to give care to their babies. There is a complex variety of hormones (including Oxytocin, 'the love hormone') which help this process. But, there are also numerous things, including transgenerational trauma, their own developmental trauma and even some parenting advice which mitigate against the natural flow of this process.

For example there is now a lot of scientific evidence that indicates one of the recommended practices for sleep management - controlled crying - which

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<sup>1</sup> See article in the Resource system of this Website on Attachment. Also look up YouTube articles and information about Attachment which is the basis of all relationship capacity.

<sup>2</sup> Ed Tronick has what he called the Still Face Paradigm which is a way of illustrating all of the stages through which a very young child will go (in just a 2 minute YouTube video) when it loses a sense of connection/attachment to the caregiver.

successfully gains compliance from babies also creates high levels of cortisol, one of the stress hormones. And of course disrupts the development of secure attachment.

## **SUBMIT**

It's useful to think of examples in the animal world to illustrate some of the survival states. If you have seen two dogs fighting, you might have noticed that the weaker dog sometimes lies on the ground with its feet in the air. This is classic biological submission. It indicates - without thought or words, which dogs don't have - that it has given in to the stronger dog. This is in fact a safety device because the stronger dog will (sometimes) stop the attack.

Human beings have the same survival response when the safest thing recognised biologically, is to submit. This will be seen in behaviour which includes being depressed or ashamed, feelings of hopelessness, helplessness, care-taking, being passive, disengaged, having trouble saying no, feelings of self-doubt and self-loathing, trying to please and be good.

## **FREEZE**

The easiest example of the freeze response is to think of a 'rabbit in the headlights' where the animal is extremely still but with its heart beating very fast. This leads in humans to feeling stuck, anxious, panic attacks, frozen, numb, terrified, wary, shut down and phobic of being seen.

There is another form of Freeze which is when the most primitive survival instinct is triggered - when the system perceives a threat to life. This often leads to a dissociative response and complete shut down, even fainting. In animals it's the feigned death phenomenon where the biological systems shut down to only those that keep the animal alive but appearing dead to a predator.

When this happens in human beings it is a very closed down response physiologically and usually psychologically as well.

The above three survival responses are ones that develop in young childhood and as the child gets a bit older are often triggers to the next two survival states; Flight and Fight.

## **FLIGHT**

In the animal kingdom if a deer smells a lion, without conscious thought her nervous system activates the Flight response which is to run as fast as possible away from the danger.

In humans this is demonstrated by a variety of actions which help to escape from pain. These include all the addictions (substance misuse, gambling, sex, comfort eating, behavioural addictions - including excessive gym activity, workaholism and more), distancing emotionally or physically (these days this can include excessive use of technological devices), being ambivalent about things, procrastinating, avoidance and having trouble making commitments, and literally running away (or wanting to) when things feel too hard.

## **FIGHT**

In the animal kingdom it's easy to see examples of the Fight survival response when you see two animals literally fighting or being aggressive to each other.

This is true for human beings too. Being angry, vengeful, bitter, judgmental, aggressive, mistrustful, blaming others (or yourself), being controlling, needing to be in control, thinking of suicide, cutting and other forms of self harm are all signs of being in the Fight survival state.

The development of survival states is natural and helpful when they first arise because they are survival oriented.

In a household where there is conflict between parents, a child becoming submissive ('going under the radar') is very understandable and protective. However to continue this pattern into adult life will often contribute to an unsatisfying and ultimately unhealthy relationship.

As well as this of course, the patterns of behaviour or addiction that develop are likely to create further distress for the individual and their family and friends.

**So its very important for people to learn to understand their behaviour as survival oriented, but also something for which they need to take full responsibility.**

**How do people get an overactive 'smoke alarm'?**

There are many ways this can happen but commonly there has been what is referred to as Developmental Trauma. Another term commonly used is Traumatic Attachment.

Both of these terms really mean that although every parent does the best they can with what they have, and they can love their children dearly, but sometimes the capacity for creating strong, secure attachment is limited for a range of reasons.

Western society is now flooded with generations of people who have experienced wars, the breakdown of multigenerational groups and the inherent support, the economic necessity for both parents to work as well as increasing numbers of single parent, often isolated families. All of this, and other factors such as increased chemical toxicity, electromagnetic stress and dislocation has increasingly resulted in more people demonstrating the symptoms of trauma, defined by Judy Atkinson<sup>3</sup> as mental health issues, violence against self and others, substance abuse and sexual assault. There are people in the Integrative (Functional) Medicine field who believe these factors also underlie many of the increasingly common conditions including Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), Anxiety, Depression, Alzheimers, Parkinsons, Autoimmune conditions, Cardiovascular disease and Cancer.

So, it could be argued that being aware of your own 'smoke alarm', and the nervous system as a whole, is one of the most important things for creating a healthy, happy life.

The simple thing to remember is that although this is the result of less than optimum conditions early (or later) in life, there are ways which are well documented, to manage the 'smoke alarm' effectively and to keep your nervous system well balanced.

### **Brief summary of steps to take it if your 'smoke alarm' has become too active resulting in constantly being in survival states?**

- 1) Notice your behaviour
- 2) Take full responsibility for how you are behaving
- 3) Remember that your brain is plastic/changeable and you can build new neural networks and patterns

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<sup>3</sup> Emeritus Professor Judy Atkinson is an Indigenous woman from Northern Australia who wanted to understand the violence in her family and community. As a result of her study she developed a healing model We a Li. She also looked at 6 generations of her family and could demonstrate that from the point of colonisation there were people with some symptoms and as she looked down the generations more people had more symptoms so that by the 6th generation everyone had multiple symptoms of trauma. This is one of the ways we can understand transgenerational trauma.

4) Put in the effort to make change

5) Understand the factors which create mental wellbeing - Good quality sleep, good quality diet, regular exercise, good quality connection.

*See below for some more detail on these.*

6) Learn some strategies which work for you to re-regulate your nervous system.

7) Consult the ideas below and some of the suggested resources on the internet or phone apps to support you.

8) Seek support from family, a professional or a group so that you can become the best person you are capable of being.

### **More Detail on How to Make Changes?**

It's important to remember that because human systems are designed for things to be the same, any change, even something positive can be perceived as a threat.

People develop patterns and ideas about the world as a result of their experiences. If you've experienced a number of stressful or traumatic events in your early life, or if you have a very sensitive personality, your nervous system will be quite strongly 'survival oriented'.

This means that it will be even quicker for the 'smoke alarm' to go off and take you into a survival pattern you developed earlier in your life.

So, when you experience change or stress now, it is likely that you will be operating out of survival patterns without realising it. Being angry, for example, and justifying it, is a common one. Also, shutting down emotionally is quite common. However both of these reactions are unhelpful and can be damaging in terms of your relationships. Just as likely is to become the carer for everyone or to take responsibility for everything and everyone but with the tendency to ignore your own needs. The thing to remember here is – like on aeroplanes – it's important to put your own oxygen mask on before helping anyone else. So, when there is a stressful event or situation, it's very important to attend to your own wellbeing with extra care so that you can adequately and appropriately attend to the needs of others also.

## 1. Observe yourself and Identify your reactions to Stress

See the list of Survival responses listed above. These have been adapted from Janina Fisher's chart<sup>4</sup>

Once you've identified them, look out for them in your interactions with other people and in times when you are tired or under pressure.

Recognise the impact of these default mechanisms. As mentioned above, they are quite destructive to relationships but also they prevent you from expressing and developing the best of who you can be.

The key here is to be as self-reflective as possible.

Commit to making changes.

*See below (page 10) some Specific Techniques to settle the 'smoke alarm'*

## 2. Build your capacity to make responsible choices.

The best way to do that is to observe your reactions and to use a mental process which separates the two parts of who you are: the Observer and the Other.

The **Observer** is capable of noticing what you are feeling, thinking or sensing, without judgment.

The **Other** is the part that is having the feeling, thought, bodily reaction (sensation).

Often people get fused with the feeling, thought or bodily sensation and think, for example "I am angry". If instead you say "I'm noticing I'm having the angry feeling". It might sound unnecessary but it's a very important separation. Once you observe, rather than become fused with a feeling, thought or body sensation, you have a choice about how to respond.

It's very helpful to remember that all strong feelings or thoughts come from younger parts of who you are.

This notion of other parts of yourself is very useful. Think about it. If, when you were 3 your mother had to go to hospital for an extended time and your

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<sup>4</sup> Psychological Aids for Working with Psychological Trauma. Janina Fisher, PhD.  
It is recommended that professionals purchase this chart for enhanced work with clients.

father had to work full time so you went to stay with a grandparent who loved you but wasn't very well, it's likely that you could feel a number of things. These could include that you were not loveable, that you had been rejected, that you aren't good enough and so on. These feelings for any child under about 5 or even a bit older are quite normal because children in this age group believe that whatever happens to them is because of them. So, if it's good the child believes s/he is good. But if it's not good, the child believes there's something wrong with him or her.

Then what happens later in life if someone acts in a way which leads to one of those feelings?

The 'smoke alarm' believes you're back there as the 3 year old and it goes off, because it senses danger. The likely reaction is feelings of abandonment, rejection, helplessness, fear and/or anger.

So, in a present day situation this is described as being *Triggered*. The external situation has triggered the 'smoke alarm' to react as if you are in danger because it doesn't have thinking capacity (that's another part of the brain) it just reacts to a sense of danger. When a 3 year old seems abandoned s/he actually is in danger. But you're not 3, you're whatever age you are now but your body memory is from your 3 year old self.

Life improves for people who accept the idea that there are things they might not remember, that happened when they were younger, but that are often still active in them unconsciously. When they strive to become more conscious, they find their quality of life improves.

Why is this?

In very simple terms it's because whenever something is not conscious it has the power to impact negatively in your life.

**One of the most helpful things for developing a fulfilling life is to strive for consciousness.**

One of the ways of becoming more conscious is to actively observe yourself without judgment.

When you are able to recognise that the strong feelings and thoughts are coming from a younger part of you, it is easier to take responsibility. That means you are less likely to blame someone else for your situation or to look for the solution outside yourself.

When you start to recognise that the answers to whatever pain you're feeling can be found inside yourself, it's usually very helpful.

### **3. Building consciousness**

Most people are walking around effectively 'asleep'. It's often life's challenges which help to 'wake people up'.

Trauma, difficulties in relationships, life stage challenges and nightmares (which literally wake you up) are all challenges but also opportunities to become more conscious.

In each instance there is an opportunity to change from old habit patterns - many of which formed in the first years of life, before you knew they were developing - and build new ones consciously.

Building new patterns takes considerable determination and effort. Learning to drive is a good example. It's no surprise that authorities require many hours of practice before someone can be tested for a permanent licence to drive because it takes considerable time to build reliable patterns of behaviour associated with a complex skill. With any skill or activity such as new diet or fitness regime or development of consciousness most people start with considerable motivation for change but once into it, also feel a bit overwhelmed. This is normal for learning any new skill or form of awareness and depending on the level of motivation and commitment, people either learn the new skill (or develop new awareness) and get to a new point of consciousness or give up and default to the old pattern. Anyone who has tried to build a new habit, or get rid of an old one will be well aware of this.

There are many ways to increase consciousness:

- 1) Observe yourself and take responsibility for what you notice.
- 2) If you see a survival pattern which no longer serves you, learn some strategies for responding in a more helpful way
- 3) Notice your slips of the tongue, humour, and 'leaking anger' or other 'disguised' feelings
- 4) Process your dreams
- 5) Notice Projections through your emotional reactions to other people.

See the section on *Responsibility* in the Resource section of this Website for more on Projection

#### 4. Make Changes - Build New Neural Pathways

It's worth remembering that all of your thought patterns, skills, behaviour patterns, emotional patterns, all your habits, are developed the same way. Each is the result of building a neural pathway.

Using self discipline, build new ways of responding to stress

All patterns of behaviour and thought are built in the same way. It's simple neuroscience.

*See the sheet on Neural Pathways.*

Neural pathways are created from the beginning of life. Once created, they continue to build because they become your 'default' mode. Those most used become like multi-lane highways.

To counter those which are not helpful you need to build new neural pathways (new multi-lane highways) and the only way to do that is to repeat a new habit consistently, hence the requirement for discipline and determination 😊

If you take feeling rejected as an example you can see what could happen. Someone who has felt rejected as a child on enough occasions is likely to develop a belief such as "I'm always the one who's left out". If this person is in a workplace where a change occurs and s/he feels left out, what will happen?

- 1) His or her 'smoke alarm' will sound. And remember this happens outside consciousness.
- 2) It immediately prompts engagement of a survival response.
- 3) If the survival response is to 'shut down' (the Freeze response) the person will be likely to disengage with others and feel isolated, distressed and misunderstood as well as confirming the belief "I'm always the one who's left out". If the person uses the Submit response, s/he might become self-sacrificing or self-loathing, and think nasty things about themselves. If the survival response is to 'get angry' (the Fight response), they might yell at someone, or they might smoke or drink more (the Flight response). The

other likely response is to become more needy (Attach response) which will often have the effect of pushing others further away!

- 4) None of this is conscious, it all just happens when someone is fused with the (old) feelings.
- 5) But, if the same person is using the Observing self, s/he could mentally note "I'm noticing that I'm having that shut down (self-loathing, angry, addictive, needy) feeling and I recognise I've been triggered". This then leaves room for choice about what is the most constructive and mature way to respond.
- 6) Once the choice is made to create a new pattern, there are strategies which can help. Often, if the patterns are longstanding, it's helpful to engage a therapist and/or coach to help you to make the changes.

**Below is a list of Techniques which can be used to settle the 'smoke alarm'**

**Each of these activities is a healthy way to re-regulate your nervous system so that it is balanced again.**

Leading from Within is able to support you in learning more about all of the strategies listed below.

Please contact us for more information.

- Breathing patterns

There are numerous breathing techniques which can help you to restore balance in your nervous system.

Some patterns lower your brain wave numbers<sup>5</sup>, especially those which have a long out breath as part of the pattern and some provide focus which helps to calm your system.

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<sup>5</sup>There is a good blog if you want to explore more about brain waves and the value of understanding them for wellbeing. See CognFit Health, Brain and Neuroscience - Brainwaves: What they are and What they do.

- Mindfulness

Mindfulness is using the 'noticing' brain to focus your concentration. There are now many mobile phone apps and YouTube examples of mindful activities.

Regularly engaging in mindful activity is very good for your brain and your wellbeing.

- Bodyscan

Doing a body scan is a particular mindfulness practice. It can be done in two ways. First of all attending to each part of your body with focussed attention. Secondly, focussing on each muscle group, tensing and then relaxing it.

Both are very good for relaxing your nervous system and can promote good quality sleep.

- Visualisation

Elite athletes have used this technique for a long time. They set their goal and continually play in their minds the capacity to enact the physical feat they desire and are therefore building the neural pathways associated with doing the activity. Recent research has proven the capacity to build muscle mass for example when people have only visualised using a set of muscles<sup>6</sup>

- Meditation

There is now plenty of research which indicates that if you meditate daily it helps overall wellbeing and assists in self regulation which means being able to manage your emotional reactions to situations more effectively.

It is particularly valuable for people who have over active 'smoke alarm' parts in their brain. If children learn a meditation technique early in life they will have an increased ability to regulate their emotions and ultimately make better choices in life.

- Exercise, diet, sleep, connection

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<sup>6</sup>See Dawson Church Mind to Matter: The Astonishing Science of how your Brain Creates Material Reality.

These are 4 essential ingredients to promote mental wellbeing.

Failure to attend to each of these enough leads to compromised mental health.

- Body posture

It is now evident that using body posture can be very effective in helping to change mood.

The chemicals which go around human bodies are affected by many things including whether you are slumped or erect.

Activities like Yoga, Tai Chi and Martial Arts can be very powerful for helping you learn how to manage your nervous system, especially if you have an overactive 'smoke alarm'.