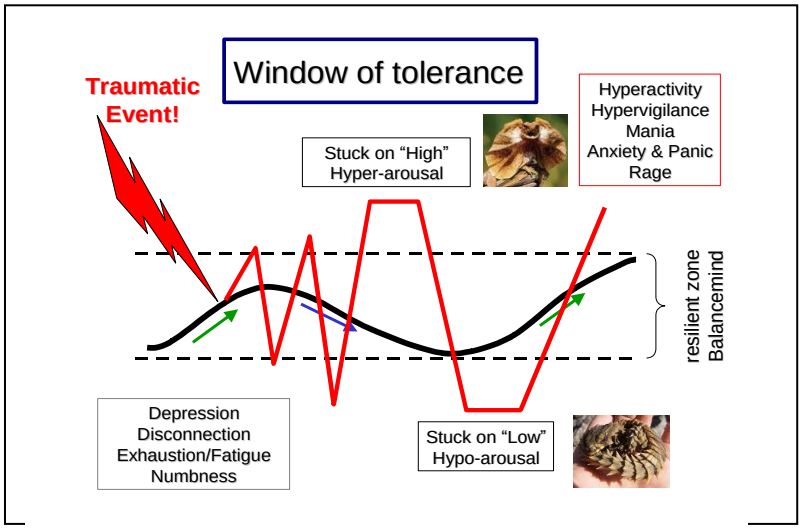
Briefing for Education staff: Traumatic Memory and ideas for intervention.

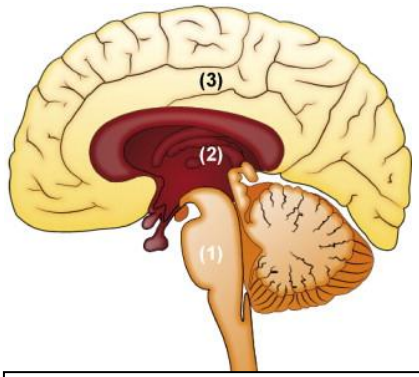
Trauma has variously been defined as: Any situation resulting in an overwhelming sense of vulnerability and/or lack of control; where a person's coping mechanisms are overwhelmed; when natural defences are disabled through terror, horror, and helplessness, and where there is no completed 'act of triumph', of safe survival. We are not adapted as a species to being overwhelmed in this way, particularly to modern human-made conflict and disasters.

The human body and mind have a set of important and predictable responses to threat (for review see Perry, 1994; 1998; 1999). Under normal circumstances we operate within a resilient zone where we may become stressed but then experience a sense of release and carry on in this gentle wave pattern. However a significant threat may come from an internal (e.g., pain) or external source (e.g., an assailant). One common reaction to this threat has been labelled the 'fight or flight' reaction.



As the individual begins to feels significantly threatened, the initial stages of a complex, total mind and body response begin. As the treat level increases their brain and body move out of the resilient zone and into a state of hyper or hypo arousal as they feel they are not coping. The person then may become stuck in these altered states with the related difficulties or oscillate between the two extremes.

MacLean, *(1990)* provides an additional level of 'under-standing' of what is happening in this hypo or hyper aroused states. His concept of the **Triune Brain** is a three-tiered system, each tier corresponding to a significant stage in its evolution and serving three different levels of functioning: cognitive, emotional and body regulating.



3: Human brain [Neo-cortex, plus mammalian and reptilian brain] Language, thinking, planning organizing and communicating. The last area of the baby's brain to develop after birth, because the baby needs to be able to adapt to the environment it is born into.

2: The Mammalian brain, [Limbic system plus reptilian brain] Emotion, memory, eating, mating, fear. Emotions linked to attachment and bonding in babies - almost fully developed at birth. Basic emotion and self—regulation.

1: The 'Reptilian' brain [**brainstem and the cerebellum**]. Unconscious and automatic responses. Related to physical survival and maintenance of the body (basic regulation of digestion, circulation, breathing, heartbeat and fight, flight, freeze response.) Almost fully developed at birth.

The triune brain is a system of both conscious and unconscious components working cooperatively together when operating within the resilient zone as discussed earlier. Malfunction in any of the parts causes disharmony in the whole. Over-activity in the Mammalian brain [Limbic system plus reptilian brain] can disrupt the higher functions of the Human brain [Neo-cortex, plus mammalian and reptilian brain]. Over-arousal from the 'Reptilian' brain [brainstem and the cerebellum] can shut down the activity of the other two layers when the brain then operates at the Reptilian level only. It is useful to conceive of these reactions within the following grid:

Hyperarousal Continuum	REST	VIGILANCE	RESISTANCE Crying	DEFIANCE Tantrums	AGGRESSION
Dissociative Continuum	REST	AVOIDANCE	COMPLIANCE Robotic detached	DISSOCIATION Foetal Rocking	FAINTING
Regulating Brain Region	Human brain Neocortex	Human brain Limbic	Mammalian brain Limbic Midbrain	Reptilian brain Brainstem	Reptilian brain Brainstem and cerebellum
Cognitive Style	ABSTRACT	CONCRETE	EMOTIONAL	REACTIVE	REFLEXIVE
Internal State	CALM	AROUSEAL	ALARM	FEAR	TERROR

The cognitive, emotional and behavioural functioning of the individual will reflect this shift along the arousal or dissociative continuum. During the traumatic event, all aspects of the individual's functioning changes. Someone being assaulted doesn't spend a lot of time thinking about the future or making an abstract plan for survival. At that moment, their thinking, behaving and feeling is being directed by the more primitive 'reptilian' parts of the brain. The alarm continuum is characterized by a graded increase in sympathetic nervous system activity, in turn, causing increased heart rate, blood pressure, and respiration; a release of glucose stored in muscle and increased muscle tone.

Theoretical and practical implications for support, with a focus on children:

Multiple exposures to interpersonal trauma, such as abandonment, betrayal, physical or sexual assaults or witnessing domestic violence have consistent and predictable consequences that affect many areas of a child's functioning, which may persist into adult life. These experiences engender intense affects such as rage, betrayal, fear, resignation, defeat and shame and efforts to ward off the recurrence of those emotions, including the avoidance of experiences that precipitate them or engaging in behaviors that convey a subjective sense of control in the face of potential threats.

These children tend to behaviorally reenact their traumas unconsciously either as perpetrators, in aggressive or sexual acting out against other children, or in frozen avoidance reactions. Their physiological dysregulation may lead to multiple somatic problems, such as headaches and stomachaches in response to fearful and helpless emotions. Persistent sensitivity to conscious or unconscious reminders interferes with the development of emotion regulation and causes long-term emotional dysregulation and precipitous behavior changes. Their hypo and/or hyper reactivity are manifested on multiple levels: emotional, physical, behavioral, cognitive and relational:

- They have fearful, enraged, or avoidant emotional reactions to minor stimuli that would have no significant impact on secure children.
- After having become aroused these children have a great deal of difficulty restoring homeostasis and returning to the resilient zone as their baseline may vary greatly.
- Insight and understanding about the origins of their reactions seems to have little effect.

In addition to the conditioned physiological and emotional responses to reminders characteristic of Post Traumatic Stress Disorder (PTSD), complexly traumatized children develop a view of the world that incorporates their betrayal and hurt:

- They anticipate and expect the trauma to recur and respond with hyperactivity, aggression, defeat or freeze responses to minor stresses.
- Reminders affect their cognitions: they tend to become confused, dissociated and disoriented when faced with stressful stimuli and respond from their reptilian brain.
- They easily misinterpret events in the direction of a return of trauma and helplessness, which causes them to be constantly on guard, frightened and over or under - reactive.
- Expectations of a return of the trauma permeate their relationships. This is expressed as negative self-attributions; loss of trust in caretakers and loss of the belief that some somebody will look after them and making feel safe. They tend to lose the expectation that they will be protected and act accordingly.
- As a result, they organize their relationships around the expectation or prevention of abandonment or victimization. (See transference and counter transference reactions for further reading).
- This is expressed as excessive clinging, compliance, oppositional defiance and distrustful behavior, and they may be preoccupied with retribution and revenge.

Despite having potentially high levels of resilience all of these problems may be expressed in multiple areas of functioning: educational, familial, peer relationships, problems with the legal system, and problems in maintaining jobs.

Interventions for recovery:

The National Institute for Health and Clinical Excellence (NICE) recommends specific types of psychological therapy for treating Post Traumatic Stress Disorder, rather than medication. Known as 'trauma-focused psychological treatments', they are Cognitive Behavioural Therapy (CBT) and Eye-Movement Desensitisation and Reprocessing (EMDR). Shapiro and Solomon (2011) argue that all three levels of the triune brain should be addressed with any intervention addressing traumatic memory. This is often referred to as 'bottom up' processing and targets body memories that may be implicitly stored. Van der Kolk (2001 / 2004), Lanius (2006), Ogden (2006), Rasolkahani-Kalhorn and Harper (2006), and Levine (2007) all agree that 'top-down therapy' (like Cognitive Behaviour Therapy), where verbal means to access feeling and body sensations of the trauma are attempted, may not work. Simply talking about trauma can be re traumatising and reinforce conditioned hypo or hyper arousal responses. A 'bottom-up approach' has to be used. Different authors stress differently the primacy of the levels of the triune brain that need to be involved in this kind of therapy.

The most significant form of intervention is establishing safety and competence. Complexly traumatized children need to be helped to engage their attention in pursuits that do not remind them of trauma-related triggers, and that give them a sense of pleasure and mastery that help create / re-create positive body memories. Safety, predictability and "fun" is essential for the establishment of the capacity to observe what is going on, put it into a larger context and initiate physiological and motor self-regulation.

Before addressing anything else these children need to be helped how to react differently from their habitual fight/flight/freeze reactions. (See **ABCCC** below) Only after children develop the capacity to focus on pleasurable activities without becoming disorganized do they have a chance to develop the capacity to play with other children, engage in simple group activities and deal with more complex issues.

After having been multiply traumatized the imprint of the trauma becomes lodged in many aspects of the child's make-up. Unless the tendency to unconsciously repeat the trauma is recognized, the response of the environment is likely to replay of the original traumatizing, abusive, but familiar, relationships. Because these children are prone to experience anything novel, including rules and other protective interventions, as punishments, they tend to regard their teachers and carers who try to establish safety, as potential perpetrators.

Mastery is most of all a physical experience: the feeling of being in charge, calm and able to engage in focused efforts to accomplished the goals one sets for oneself. These children experience the trauma-related

hyper and hypo arousal on a deeply somatic level. Their hyperarousal is immediately apparent in their inability to relax and by their high degree of irritability. Children with hypo / "frozen" reactions need to be helped to reawaken their curiosity and to explore their surroundings. They avoid engagement in activities because any task may unexpectedly turn into a traumatic trigger. Neutral, "fun" tasks and physical games can provide them with knowledge of what it feels like to be relaxed and to feel a sense of physical mastery.

At the center of interventions with terrified children is helping them realize that they are repeating their early experiences and helping them find new ways of coping by developing new connections between their experiences, emotions and physical reactions. Unfortunately, all too often, medications take the place of helping children acquire the skills necessary to deal with and master their uncomfortable physical sensations. In order to "process" their traumatic experiences these children first need to develop a safe space where they can "look at" their traumas without repeating them and making them real once again.

ABCCC as a strategy to help with Self Regulation:

The ABC acronym use in First Aid Training (Airways Breathing Cardio) can be adapted into something people can easily remember if unfortunate enough to deal with a critical incident or if they become hypo or hyper aroused: This strategy is based on using an easily accessible and visible physical reminder of how to regain control over ones physiology and then higher level functioning. The underlying theory is developed from an understanding of brain physiology, mindfulness theory, loss and trauma theory and the Adaptive Information Processing Model. The idea is to use your own hand as an accessible and visible reminder of the strategy:

ABCCC (Your Thumb is a reminder of **A**, Your Pointer is a reminder of **B** ……etc)

- **Attention**
- **Breathing**
- **Choice**
- **Control**
- **Communication**

Attention principle: What you pay attention to determines your reality.

Consciously take some Control over a situation where you may feel out of control and where you may feel that you have no Choice about what is happening to, or around you. You can consciously Chose what to look at and what to listen to, what to think about and in so doing reduce the information overload, and then Choose to concentrate on your Breathing.

Breathing: Consciously Choose to focus on something you CAN DO something about and that would benefit your body . Breath in and out. If intrusive thoughts come into your head - make a Choice about what you are Choosing to Control and shift Attention to Breathing.

Choice: Make a conscious decision not to dwell on "What if….". / "If only…." / intrusive thoughts or compulsions but make small Choices over things that you DO have some Control over....ie pay Attention primarily to your Breathing.

Control: Make attempts to take Control by making small decisions in the face of events over which you may have no control. Decide how you are going to respond....ie pay Attention to your Breathing. This will allow higher level functioning in your brain to come back 'on line' and potentially make for better decisions.

Communication: Once your body is more regulated and calmed down with the focus / Attention on Breathing, make an attempt to get the focus of your Attention then onto what others are doing to help you. You will then by now be in a space where your brain is 'back on line' and you can Communicate with others about your needs.

ABCCC needs Practice to build up the neural connections and to break conditioned learning.

People may need a reminder from someone on the 'outside' - a gentle reminder that they Can Choose to take Control by paying Attention to their Breathing.

A hand gesture whilst in or going into a dysregulated state may help if this has been discussed beforehand.

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Links to articles:

- British Psychological Society. Guidelines on Memory and the Law. http://www.bps.org.uk/sites/default/files/documents/guidelines_on_memory_and_the_law_recommendations_from_the_scientific_study_of_human_memory.pdf
- What is the Neurosequential Model? http://childtrauma.org/index.php/services/neurosequential-model-of-therapeutics
- Applying Principles of Neurodevelopment to Clinical Work with Maltreated and Traumatized Children. http://childtrauma.org/images/stories/Articles/neurosequentialmodel_06.pdf
- Examining Child Maltreatment Through a Neurodevelopmental Lens: Clinical Applications of the Neurosequential Model of Therapeutics. B Perry. http://childtrauma.org/images/stories/Articles/traumaloss_bdp_final_7_09.pdf
- The Psychobiology of Traumatic Memory. Van der Kolk http://onlinelibrary.wiley.com/doi/10.1111/j.1749-6632.1997.tb48272.x/full
- The Body Keeps The Score: Memory & the Evolving Psychobiology of Post Traumatic Stress http://homepage.psy.utexas.edu/homepage/class/psy394U/Bower/03%20Emot,%20Trauma,Mem/Body%20keeps%20the%20score.%20Kolk%20.pdf
- EMDR and the Adaptive Information Processing Model Solomon, Roger M, Shapiro, Francine http://www.lifespanlearn.org/documents/2011Handouts/Shapiro/Solomon%20%26%20Shapiro%2008%20AIP.pdf
- Review of child neglect in Scotland. http://www.scotland.gov.uk/Resource/0039/00397132.pdf
- Children's needs – Parenting capacity.

https://www.education.gov.uk/publications/eOrderingDownload/Childrens%20Needs%20Parenting%20Capacity.pdf

- David Baldwin's Trauma Pages.http://www.trauma-pages.com/
- Dissociation of the Personality in Complex Trauma-Related Disorders and EMDR: Theoretical Considerations. https://www.ptsdforum.org/c/gallery/-pdf/1-78.pdf
- Roger M. Solomon and Atle Dyregrov, Ph. D. Eye Movement Desensitization and Reprocessing (EMDR): http://www.krisepsyk.no/rapporter/pdf/EMDR%20assumptios.pdf
- http://www.handsonscotland.co.uk/flourishing_and_wellbeing_in_children_and_young_people/flourishing_topic_frameset.htm
- http://www.mindfuleducation.org/mindfulnessforchildren.pdf
- Solomon and Shapiro : EMDR and the Adaptive Information Processing Model http://lifespanlearn.org/documents/2011Handouts/Shapiro/Solomon%20&%20Shapiro%2008%20AIP.pdf

THE SAFE PLACE / butterfly hug

- Making the child feel safe in any setting is essential
- The child who cannot find a ''safe place' may not be safe in the real world
- Suggest to the child that they try and think of a special place where they feel safe and happy – this could also be a special time when they did something they felt great at doing (scoring a goal / swimming for the first time) – any positive experience where they felt good about themselves.
- Get them to picture this and ask them to describe it, what it looks like, feels like, smells like sounds like, etc.
- Ask "When you picture that place in your mind, what does it make you feel right now?" "Where do you have those feelings in your body?"
- "Now hold that picture in your mind together with those feelings and where they are in your body and hold your arms wide open….now slowly gather in that memory and close your arms until they are on opposite shoulders in a big butterfly hug – pat your shoulders alternatively 1 at each time and enjoy the feeling."
- "Think of a word that you can use to remember this feeling and where you feel it in your body. You can then practice this and when you are feeling distressed/ angry / upset then you can think of this word (if you can - give yourself a butterfly hug but if not..) then this feeling can come back."
- "It means you can choose what you are feeling because we cannot always choose what happens to us".
- Or safe place can just be visualised or drawn or modelled in play in the therapy room
- Safe place can be used when the feelings become too upsetting or strong or if something makes them feel bad. The more Practice the better the pathway to this positive body memory becomes and the more effective it can be with body regulation. Safe place provides an escape when feelings are overwhelming, providing a form of '*controlled dissociation'*

Mindfulness and Breathing

We are what we think. All that we are arises with our thoughts. With our thoughts we make the world. Kornfield [1996].

Mindfulness has been more succinctly defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experiences moment by moment" (Kabat-Zinn, 2003, p. 145).

The most basic body-based meditation is **breath counting** (Lehman 1974; Gunaratana, 1991; Fontana & Slack 1997; Kabat-Zinn 1990). Meditation on the breath is fundamental to mindfulness: training to enhance the focus on the present moment of experience. When the exercise is done properly, the child is aware only of the present, as the focus is on the current breath rather than the one before it or the next one coming. The

exercise also has the effect of calming the mind and any anxiety in the body that may be related to short, shallow breathing (Fontana & Slack, 1997).

This exercise should be introduced first by demonstrating breathing. For young children, this basic, natural function may be something to which they never paid attention before. Begin with noting how cool air enters the nose, and then warm air is exhaled. There should be no attempt to hold the breath, push it out, or change the natural rhythm—just to be aware. Using counting helps remind the child to stay focused on the breathing, avoiding other distracting thoughts. Counting can be done in different ways. For most children, it will be helpful to count "one" as they inhale, and "one" as they exhale, then "two" inhale, "two" exhale, and so on, up to five. Then they should start back at "one."

If they find it difficult to maintain their focus, they may repeat the number, counting "one, one, one, one" as they inhale, and the same as they exhale. Again, they should be reminded not to force the breath, but to follow its natural rhythm. Remind the child that in spite of his or her efforts to stay focused on breathing, his/her mind may wander away to places he/she has been, an activity once shared with a friend, a favorite book, or other thoughts. As the child becomes aware that the mind is no longer focused on the breath, he/she should simply note the thought and return to counting the breath, beginning with "one."

Meditation on the Bubble:

To further focus on awareness of the thinking process as well as on letting go and not engaging thoughts, the meditation of the bubble is a useful mindfulness technique (LeShan, 1974). The purpose of this practice is to slow down, observe thoughts, and release them or let go without judgment. Begin the meditation by reading the following script slowly and in a calm voice. Then, allow the child to continue the meditation for a few minutes in silence, setting his or her own pace. This meditation can also be adapted to feature thoughts on clouds drifting across the sky. *Begin by sitting in a comfortable position, with your back straight and shoulders relaxed. Softly close your eyes. Imagine bubbles slowly rising up in front of you. Each bubble contains a thought, feeling, or perception. See the first bubble rise up. What is inside? See the thought, observe it, and watch it slowly float away. Try not to judge, evaluate, or think about it more deeply. Once it has floated out of sight, watch the next bubble appear. What is inside? Observe it, and watch it slowly float away. If your mind goes blank, then watch the bubble rise up with "blank" inside and slowly float away.*

Some practice guidelines:

An essential component of mindfulness training is practice. It should be explained to children that practice in this case is not like practicing a musical instrument for a concert, but rather practice on a regular basis "aimed at cultivating a continuity of awareness in all activities of daily living" (Kabat-Zinn, 2003). Through bringing increased awareness to the external environment and to the internal experience of the body and the mind, children will likely benefit psychologically and emotionally, as well as through gaining a general sense of well being. The goal is for children to learn to use mindfulness techniques whenever they need to calm themselves and refocus their energy and attention. Such a refocusing could enhance concentration, memory, and learning, as well as facilitate a more productive and relaxed—less anxious and stressful—school environment.

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