

## The NM Ten Tip Series

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### Understanding Hyperarousal

*The 'Flock, Freeze, Flight and Fight' Continuum*

The human body has some very effective and flexible ways to deal with stress, distress and trauma. A major component of our complex stress response capabilities is the *Arousal Response*, more commonly referred to as the 'fight or flight' response. A related, interacting but separate response pattern is *dissociation*. This is discussed in a separate NMC Ten Tip Series edition, *Understanding Dissociation*. Both of these response patterns – dissociation and arousal – work together to help us cope with everyday stressors and to survive extremely challenging or even traumatic experiences.

When exposed to extreme or prolonged distress (e.g., physical or sexual abuse), or unpredictable and uncontrollable stress (e.g., with poverty, community violence), these stress response systems can become 'sensitized.' This means they become overactive at baseline and overly (and inappropriately) reactive (see the NMC Ten Tip Series edition, *Understanding Sensitized Stress Responses*). A classic example of this is when a child dramatically over-reacts to a caregiver's simple request or direction; a child with a sensitized arousal response will be prone to meltdowns and extreme reactions to simple transitions, the disappointment of "no" or "not now", and simple correction or re-direction. Many adoptive and foster parents are very familiar with these reactions.

The basic mechanisms of the arousal response are intended to help us cope with various challenges including serious threat. Our arousal response is graded – starting with an initial 'flock' response (also known as 'social referencing') – basically the process of looking to others to help you figure out how to interpret and act on the potential challenge or threat (*think of how you might look at a co-worker when your supervisor introduces some new policy; or how a young child looks to a parent when he scrapes his knee on the playground; you are looking to see if your co-worker thinks the policy is as stupid as you do; the boy is looking to mom to gauge how to react to the pain – minimize or over-react*). As the perceived threat increases, the body shifts both mental state and physiology to prepare to 'flee or fight' (see Figure 1).

As the arousal response is activated some areas in the brain will be 'deactivated' and others activated. In general, the more threatened (or sensitized) one becomes, the more the cortex (the

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'smartest' area of the brain) is deactivated; the simpler, more primitive systems in our brain take over (see Figure 2 below). A sensitized threat response – so common in foster and adopted children – then can result in decreased rational thinking and planning capabilities, impaired capacity to anticipate the consequences of behaviors, increased distorted information processing, alterations in attention and increases in impulsivity and related behavioral problems. For more information on this topic see the CTA Press Caregiver Series document on [Effects of Traumatic Events on Children: An Introduction](#).

*Here are few practical tips for those living and working with children with a 'sensitized' arousal response.*

1. Anticipate transitions and provide visual and auditory transitional aides. At 'baseline' these children tend to be 'tuned up' and very 'reactive' – or what is sometimes called labile. When asked to disengage from one task and move to another (e.g., wake up, wash up, get dressed, eat breakfast, prepare for school) they often struggle. This is because, to their body and brain, that series of changes is overwhelming the capacity of their poorly regulated stress response systems to smoothly manage these (even tiny shifts) in attention, motor activity, internal processing – and the thousands of other internal physiological changes that go with any change in body posture, mental focus, and external stimuli (e.g., the visual and auditory cues of the playground vs the classroom).

Think about how **you** feel at the end of a busy day when there are so many 'moving parts' – finishing up at work, getting through traffic, coming home, checking on homework activities, thinking about dinner, getting Sally to soccer practice (and don't forget her shin guards) while you make sure Tommy is working on his homework and not playing videogames, and you are getting cold calls from someone wanting you to switch your phone service, and your neighbor rings the doorbell...AAHHH. Too much, all at once overwhelms anyone. It is helpful to understand that what we feel are simple transitions are often this kind of overwhelming experience for our children. To make this easier a) give the child more time to transition; b) give multiple visual and simple auditory reminders (e.g., a visual clock counting down 2 minutes to disengage from one activity to move to another), c) integrate some form of regulating activity (music, marching, singing) into common routine transitions and d) create transition 'routines' where the same cues and expectations are used again and again. More on transitions is available in the upcoming NMC Ten Tip Series edition, [Managing Transitions](#).

2. Create external structure to build internal structure: sleep rituals. Sleep is one of the major transitions traumatized and maltreated children struggle with (see the upcoming NMC Ten Tip Series edition on [Sleep](#)). This transition will go more smoothly by creating a set of regulating and predictable bedtime rituals. This illustrates the importance of a broader principle – if you create external routines, rituals and 'structure', the brain will respond, over time, by creating internal structure. The human brain has some very important and powerful systems that create 'anticipation' of what should be 'coming next' based upon what has happened in similar situations in the past. For many of our children, the chaos and *unpredictability in their earlier lives created 'false' and inaccurate capacity for anticipation*. For example, a child's brain may anticipate physical assault if

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he hears a tiny rise in level of frustration in an adult's voice. In order to overcome these inaccurate 'anticipations' and create new and healthier ones, we adults must provide lots of consistent, predictable interactions. For sleep creating routine is key; screen time off at least an hour before bedtime; bath, jammies, quiet play, reading, snuggling – transitional lighting. Depending upon the age of the child and their preferences, there are many ways to create these rituals and routine. The key is to be consistent, predictable, nurturing and regulating.

3. Walk and talk. When we move, especially when we move in a repetitive, synchronous way – like walk, run, ride a bike – our body is sending regulating feedback to the stress-response systems in the brain. This helps us stay regulated. We all have some patterned, repetitive somatosensory activity that can calm us down when we get stirred up (*somato* – means coming from the body and *sensory* means coming through our five senses; together – *somatosensory* – refers to the collective input the brain receives from our body and the environment). This may be chewing gum, doodling, knitting, whittling, walking, going for a run, swimming, sitting in a rocking chair – all of these activities provide regulating input. So one of the most useful ways to keep your child – and you – regulated is to walk together. When you are in parallel – and regulated – it makes it easier for the cortex (the top and 'smart' part of our brain) to be engaged (see Figures below). Emotionally charged topics will be easier to discuss; constructive feedback will be easier to 'hear.' Intimacy will be easier for the child to tolerate. Walk and talk is a great way to bond.

4. Regulate yourself before you try to regulate your child. This tip is going to be part of almost every one of our Ten Tip Series. Humans are very social creatures; we are contagious to the emotions of others. If we are upset, frustrated and dysregulated we will dysregulate those around us – especially our children. A key is to stay as regulated as possible. This speaks to the ongoing need for self-care. **You can help regulate your dysregulated child ONLY if you stay regulated.** Take care of your needs. It is not selfish – it is essential if you are going to be a therapeutic presence for your child (see the NMC Ten Tip Series edition on *Self Care*).

5. Proactive regulatory activities decrease the need for reactive regulatory actions. Over time, we begin to see which activities and interactions help regulate our dysregulated child. It may be that she responds to being held and rocked, or he will seek solitude and some 'dissociating' activity such as videogames or reading to regulate. In schools, it is common to remove a dysregulated child from a classroom and give them some space and one-one time with an aide to calm down. The point is that we frequently use known regulating activities in a 'reactive' way. We give them the space, personal attention and rhythmic somatosensory activity to 'calm them down'. There is nothing wrong with this; however, if we want to start to change their dysregulated baseline, we need to put in place proactive, frequent 'doses' of these regulating interactions. If, for example, the day at school starts with five minutes of regulating activity and there are scheduled, predictable brief times during the day when the child gets to have one-on-one regulating interactions (such as a five-minute walk) with a trusted aide, it is likely that you will avoid longer and more severe episodes. Starting the after-school routine with a snack and a five-minute mutual hand massage will make it easier to slow down, regulate, reconnect and then ask about homework. Spacing

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proactive, planned five to seven-minute regulating activities throughout a day will start to help keep your child more regulated, thereby allowing him to better benefit from the other positive cognitive and emotional learning opportunities he is exposed to during the day.

6. Expect to see wide variability in your child's functioning. All of our brain-mediated capabilities – thinking, feeling, behaving – are influenced by our 'state' (see Figures below). This means that in one moment your child may be capable of sitting quietly in your lap, respectfully listening to your advice and ten minutes later screaming obscenities, throwing toys and saying he hates you. At home a child may demonstrate mastery of a concept in math and then when tested at school get a zero. This 'lability' in cognitive, emotional and behavioral functioning is a classic (and predictable) issue with children exposed to developmental trauma. But it confuses teachers, parents and, often, professionals. In one moment, the child can demonstrate compassion and thoughtfulness – and the next his behavior looks anti-social or cruel. Because, in some moments and some contexts, the child can demonstrate healthy interactions and behaviors, the adult assumption is that when he is not 'behaving' he is *choosing* to act in these impulsive, thoughtless or cruel ways. This is a mistake in interpretation – and all too often it leads to the creation of ineffective or even destructive efforts to shape the child's behaviors. In truth, these inconsistencies are very predictably part of the trauma-related changes in the child's brain. The inconsistency is related to the sensitization of their stress-response systems – and the 'state-dependence' of brain-mediated capabilities (see the Figures below and the NMC Ten Tip Series on *State-dependent Functioning*).

7. Consistency and predictability at home and school will be helpful. As mentioned above, the brain has very important 'anticipatory' networks that help us make sense out of the world. The more the day is consistent and predictable, the less 'vigilant' the brain needs to be. And the less vigilant a 'sensitized' brain is, the less likely there will be meltdowns. Try to develop some daily routines that can help anchor the child's day. Consistency around meals, chores, predictable 'down time' – all can help. A key to this is to look first at how consistent and predictable your day is; start small. Can our family develop a very predictable routine for evening meals (sometimes really hard with busy engaged families and all of the after-school activities)? Can we develop simple rules – no phones or screen-time during meals? It is often very sobering to realize that we – the grown-ups – have minimal consistency or predictability in our lives. We bring our busyness – and chaos – to our families. Children who have experienced trauma or maltreatment are very sensitive to this. Look at number 4 again; the regulation of our children starts with our regulation.

8. Use simple, calm and clear instructions for tasks at home and in school. Reinforce these with visual or written reminders. Children with a history of trauma frequently have inefficient access to their cortex – the thinking part of their brain. This means that when we give them complex, multi-step commands, they will frequently not process these instructions accurately or completely. To help them we should give them simple instructions. Do not assume they actually processed these instructions accurately even if they say they understand. Repeat the directions; ask them to tell you what they heard. Give them written or visual reminders (e.g., a calendar with reminders written on specific days). You may tell them to make their bed – they hear you and understand.

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They make the bed today. Tomorrow, the concept that you want them to make the bed every day is simply gone from their head. Some aspects of memory are effected by developmental trauma. Be patient. Be prepared to repeat instructions, rules, expectations again and again. And if you stay calm and regulated when you do, they will ultimately 'get it.' It takes time. Visual and written reminders can be very helpful.

9. These children can also 'shut down' - different evocative cues can cause profound avoidance, 'false compliance' and dissociation. It is common for children with complex and pervasive histories of trauma to have BOTH a sensitized dissociative and arousal response. Different evocative cues (e.g., loud male voice, authority figures) will elicit the externalizing (i.e., hypervigilant, hyperactive, impulsive and aggressive) behaviors. The same child may find female evocative cues elicit 'dissociation' – and he will be compliant and apparently 'regulated' with the female staff or teacher but clearly dysregulated by the male staff/teacher. This results in a confusing and complex behavior picture. Remember that both of these response patterns can be addressed; and in all cases, a calm, patient and confident approach by adults will help the child become better regulated.

10. If you use reward and consequence, understand that immediate relational rewards are more effective than punitive consequences. The most common approach used in schools and mental health systems with maltreated and traumatized children is a traditional 'contingency' model (points and levels with 'rewards' and 'consequences'). These approaches are effective for some basic behavior changes with neurotypical children or youth (but not with dysregulated or sensitized children or youth). These approaches escalate and further dysregulate children with a sensitized 'arousal' system, leading to increased rates of critical incidents such as run away or aggressive behaviors, often requiring extreme interventions such as restraint.

Your time and attention are the most powerful rewards. Finding time to be present, parallel, and patient with these dysregulated children will pay off. In future Ten Tip Series we will discuss reward and consequence in more detail (see *NMC Ten Tip Series Understanding Reward and Consequence*) – but for now, remember that what is rewarding – and what is a consequence – for a child who is calm and regulated is very different from what is a rewarding or a consequence for a dysregulated child. Often what we think will be a motivating consequence (e.g., withholding recess from an acting out child) is often a dysregulating act – it makes things worse. And what we think should be a reward, has no pull.

# STATE-DEPENDENT FUNCTIONING I

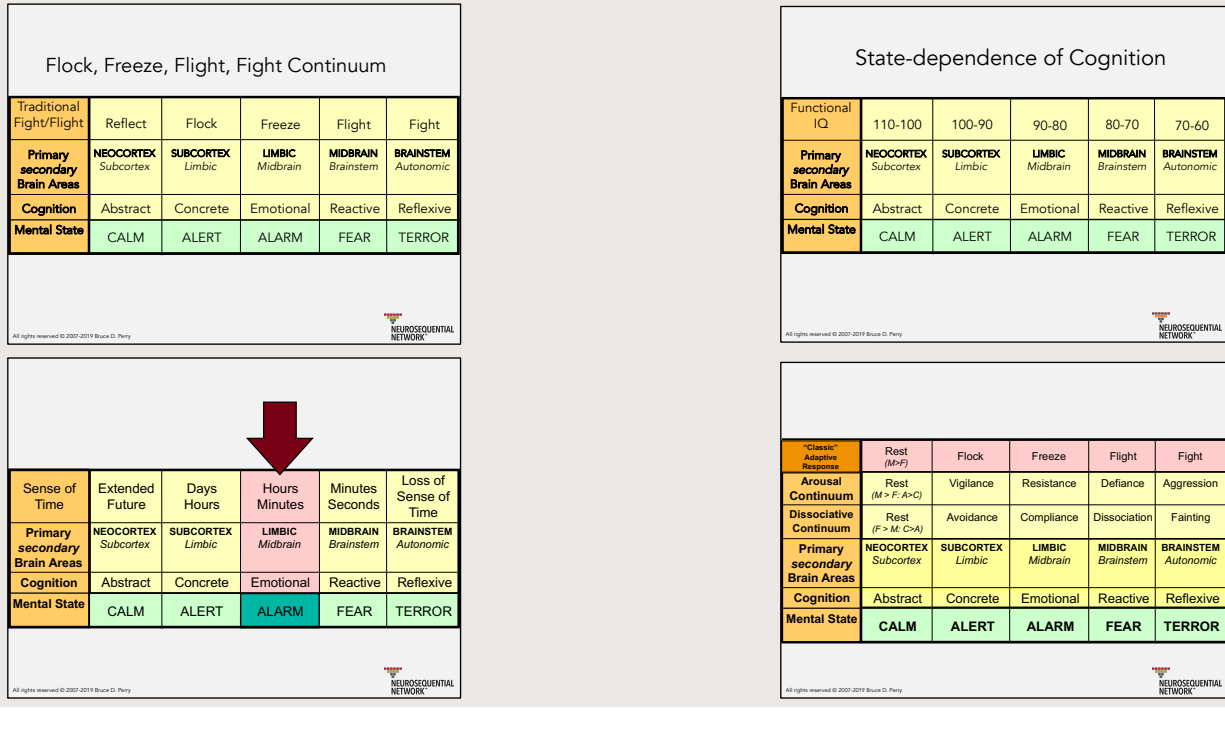


Figure 1: The continuum of adaptive responses to threat. Different children have different styles of adaptation to threat. Some children use a primary hyperarousal response, others a primary dissociative response. Most use some combination of these two adaptive styles. In the fearful child, a defiant stance is often seen. This is typically interpreted as a wilful and controlling child. Rather than understanding the behavior as related to fear, adults often respond to the 'oppositional' behavior by becoming angry and more demanding. The child, over-reading the non-verbal cues of the frustrated and angry adult, feels more threatened and moves from alarm to fear to terror. These children may end up in a primitive "mini-psychotic" regression or in a very combative state. The behavior of the child reflects their attempts to adapt and respond to a perceived (or misperceived) threat.

When threatened, a child is likely to act in an 'immature' fashion. Regression, a 'retreat' to a less mature style of functioning and behavior, is commonly observed in all of us when we are physically ill, sleep-deprived, hungry, fatigued or threatened. During the regressive response to the real or perceived threat, less-complex brain areas mediate our behaviors. If a child has been raised in an environment of persisting threat, the child will have an altered baseline such that the internal state of calm is rarely obtained (or only artificially obtained via alcohol or drug use). In addition, the traumatized child will have a 'sensitized' alarm response, over-reading verbal and non-verbal cues as threatening. This increased reactivity will result in dramatic changes in behavior in the face of seemingly minor provocative cues. All too often, this over-reading of threat will lead to a 'fight' or 'flight' reaction - and increase the probability of impulsive aggression. This hyper-reactivity to threat can, as the child becomes older, contribute to the transgenerational cycle of violence.

# STATE-DEPENDENT FUNCTIONING

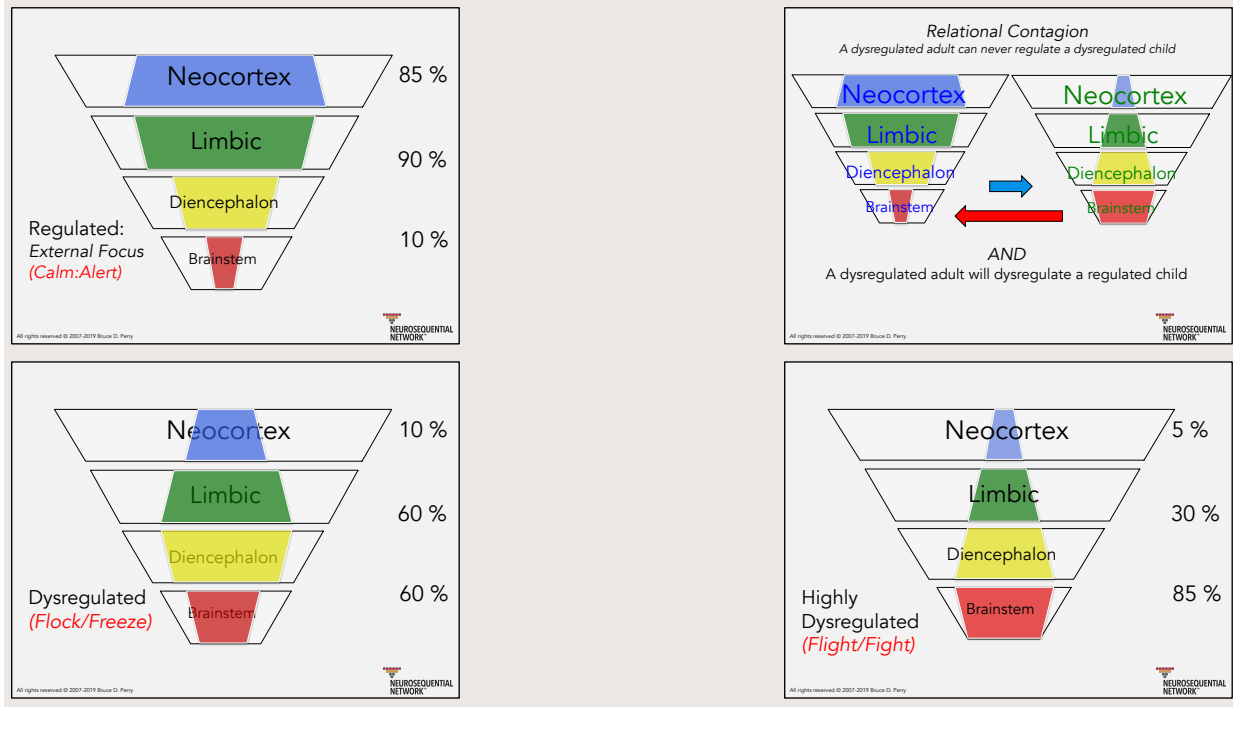


Figure 2: Shifts in brain regions during stress and threat. As we move from a state of calm to alert, then alarm, fear and terror, the regions of the brain that are 'in charge' shifts from the higher, more complex, 'thinking' parts of the brain to lower, more primitive and reactive parts of the brain. This 'state-dependent' shift means that anyone in a state of alarm or fear, will have minimal access to the smarter areas of the brain. The 'solutions' to the present problems will be more reactive and reflexive.

