connections in mind

Trauma & the Brain

Our brains develop complex networks and neural pathways as we grow up, and changes in the prefrontal cortex (the control centre of the brain) continue all the way into early adulthood. What we experience on the way to adulthood impacts these changes. So when we experience trauma, is impacts our brains.

Executive Function Skills

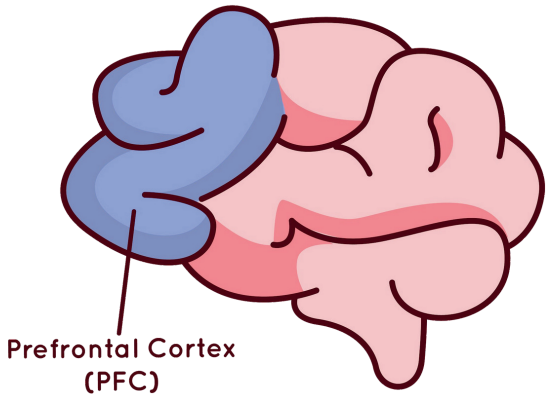
Executive function skills refer to the processes that we need to coordinate to control and regulate our behaviour when working towards a goal. We use these key skills, working together to achieve tasks, to manage our time, to avoid us getting distracted and to regulate our emotions. They are also needed to help us plan, organise and monitor our responses, to be able to work effectively with others, and with competing demands.

Connections in Mind

Connections in Mind was founded in 2015 by three like minded women to change the way society views people with executive function challenges.

We offer a variety of services

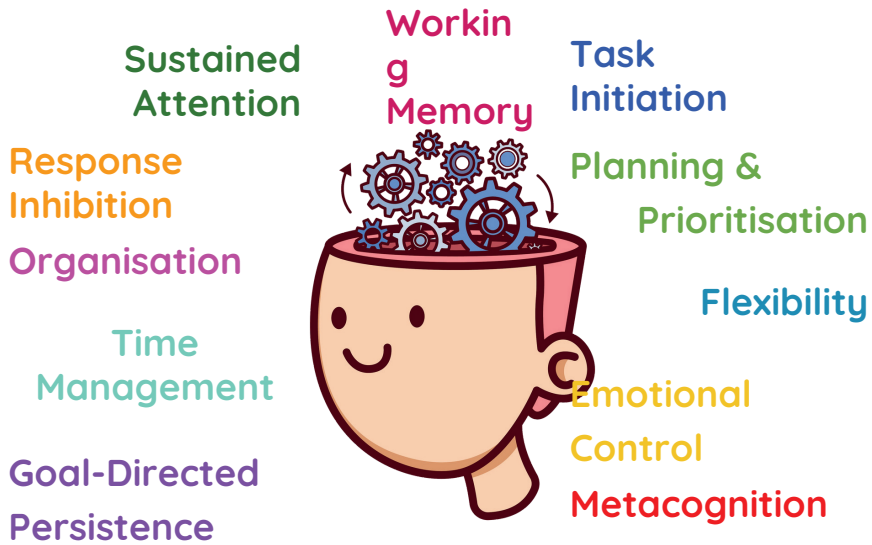
- Executive Function Coaching
- Play based adventures
- Parent Courses
- Schools Training
- Professional development and training

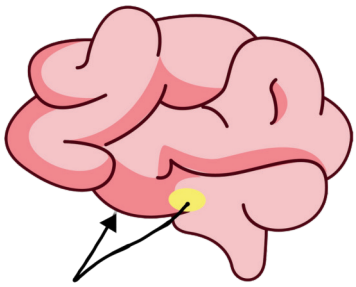


Executive functions are cognitive control processes found in the prefrontal cortex of the brain.

They are called executive functions because they help us to *execute* everyday tasks.
The brain's air traffic control system, they simultaneously manage lots of different elements and keep us focussed to enable us to safely land lots of different planes at the same time...or do tasks!

Executive Function Skills





Amygdala

The Amygdala

The guard dog to our Executive Function. The Amygdala is the integrative centre for emotions, emotional behavior, and motivation. When this part of the brain is triggered and starts "barking", our executive function skills become inhibited. The Amygdala protects us from danger and is in charge of ensuring we stay alive.

Amygdala Values

Executive functions only work optimally when we are well rested, well fed, feel safe, unstressed and connected to people in our environment

The Amygdala wants to know:
Am I Safe?
Am I Loveable?
Am I Valuable?

If it gets a "no" or even perceives a "no" to these questions, it switches on to protect us. This is known as the stress or threat response

What can you do to help give your own Amygdala a "yes" to this question?

Amygdala Hijack



- Part of the limbic system: responsible for emotional and behavioral responses.
- Sometimes known as the Survival Brain.
- Prompts the Stress or Threat Response: Fight or Flight
  - But really fight, flee, freeze, fawn & flounder.
- Gets the body ready to react - signals brain to pump stress hormones, preparing to either fight for survival, flee to safety, freeze to avoid being seen, flounder (i.e. panic), or *fawn.
- Executive Function (EF) should process the input to determine if the danger is real. For low level threats, the EF can override your amygdala so you can approach the situation rationally. But in the case of strong [perceived] threats, or poor EF skills, the amygdala hijacks the brain and triggers the threat response.
- The Amygdala also preserves memories and attach them to specific feelings (such as happy, sad, angry, scared, etc) so it stores key information about trauma and adverse experiences
- *Fawning is a fear response. The brain decides to try to please whoever is triggering the fear response to prevent them from causing harm. This response is very common in survivors of trauma, who might try to avoid abuse by keeping the abuser as happy as possible, or comply to avoid being hurt.

"Our Amygdala is a fierce warrior for our safety, but not always the best role model for making good decisions!"

If you're walking in the woods and you see a wolf, your Amygdala will react and trigger the response that helps your brain make the crucial super-speedy decision to run or hide or fight. And if even you only **think** you see that wolf, your brain and body will respond as if you really had.

That's your Amygdala doing what it was designed to do - that fight-or-flight response that's supposed to protect you, from every possible threat.



But sometimes the wolf lives in your house...



Dr Nadine Burke Harris
Surgeon General of California

"...traumatic experiences without the adequate buffering of a nurturing caregiver, lead to changes in brain development and in our body's biological stress response..."

Which means Trauma...

...has a direct impact on the executive function of the brain and, therefore, the ability to acquire social, emotional, and academic skills.

Trauma does two things here:

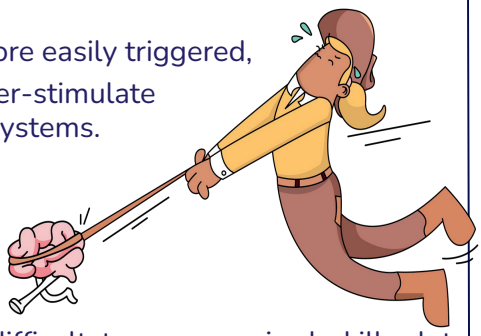
1.It inhibits Executive Function development
2.It also exacerbates existing executive function challenges

It's important to note that many traumatic situations in adulthood can also exacerbate executive function challenges.

ACE - Adverse Childhood Experiences

Some people may have had adverse experiences in their childhood resulting in trauma and attachment challenges. These Adverse Childhood Experiences (ACE) can result in difficulty in the development of their executive function skills and may impact on the cognitive processes required to achieve well in school, in work and to complete everyday tasks.

It can also mean their Amygdala is more easily triggered, because the childhood trauma can over-stimulate or over-activate our stress response systems.



This state of functioning makes it difficult to use acquired skills, let alone learn new ones. If the wolf lives in your house, then your stress response is always switched on. But what the neuroscience is telling us is that the brain is really in survival brain mode. And that we need to calm down the guard dog in order to be able to hear, process and absorb information, to learn, to work out how to do things differently or to think about things like the consequences of our actions.

It's not only big traumas that can have this king of effect.

Smaller and repeated negative experiences can trigger a trauma response in the brain. So if someone kept repeatedly shaming or belittling us and we didn't feel nurtured through that, it could create the same coding in the train as a bigger, more obvious, trauma.
Bullying is a really good example of this.





Adolescence is a time of significant growth and development inside the teenage brain. A bit like a gardener tending a garden, we prune or get rid of the unused connections in the thinking and processing part of our brain. At the same time, other connections, the ones we use a lot, are strengthened. This is the brain's way of becoming more efficient. Essentially; 'use it or lose it'.

But if in childhood if we've been taught that to stay safe we need be hypervigilant in case there's a wolf, the brain links into that and believes it and disregards things like self-care or confidence. So the brain is formed through either the lens of Survive or the lens of Thrive, depending on the experiences we've encoded.

Amygdala Focus Activity

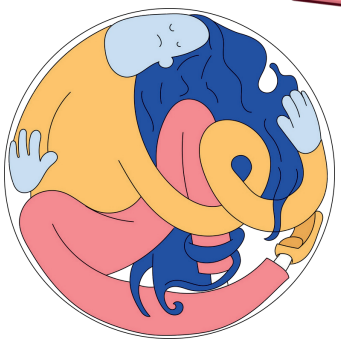
Think of the last time you experienced extreme stress or your own personal tragedy.

How did you feel the next day?



Write down how you felt here:

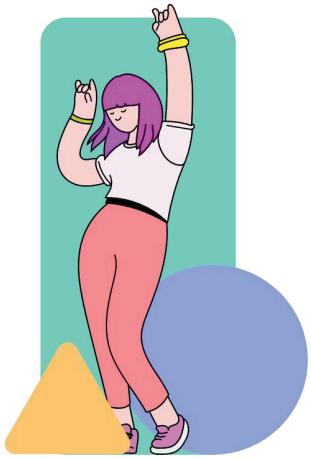
- [ ] Were you a bit slower to get started?
- [ ] Did you lose your train of thought?
- [ ] Did you zone out a little?



This state of functioning makes it difficult to use acquired skills, let alone learn new ones. Before we can adequately improve our executive function skills, we need to feel safe so we can reduce our stress and anxiety so that we can learn. Think of examples of things that help YOU feel safe.

What makes you feel safe?

Watch Dr Kate Truitt's Amygdala CPR video (see the resources page) to learn how to calm your brain when your Amygdala tries to hijack you.



Learning about trauma and its impact can often feel pretty overwhelming, but there is so much hope to be gained by learning and better understanding this, and recognising that although trauma does impact our executive function, there's also a lot we can do to build and rebuild those neurological pathways.

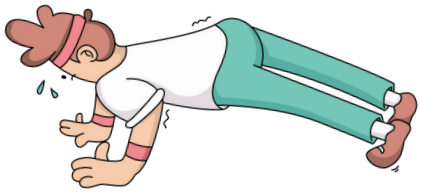
Reducing Trauma Impacts

For those for whom trauma has disrupted Executive Function, there are a range of possible evidence-based responses that can help, including therapeutic sessions with and input from mental health professionals, physical exercise, executive function skills coaching, meditation, spending time in nature, amongst others.

Of course, the ideal approach, is to reduce the need for interventions by removing as many potential sources of stress or trauma in people's lives as possible. This can happen by helping to meet their basic needs and promoting their safety, value and worth.

Executive function challenges are normal

- Resisting temptation to say or do things
- Hold a thought in memory while doing other tasks
- Knowing and managing your feelings
- Paying attention even if tired or bored
- Starting a job on your to-do list straight away
- Planning and deciding what to do when
- Organising information or material
- Managing time
- Sticking with it towards a goal
- Changing, adapting and being flexible
- Being aware of how you think about things



The Good News

The science shows us that we can **train executive function skills**. It a bit like going to the gym – when we work out, we build muscle and reduce fat.

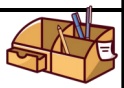
Similarly, when train or **coach executive function skills**, we build new neural pathways and prune out old habits. When we work on developing our executive function skills, we develop the internal resources to monitor and manage our responses.

These internal skills, combined with external connections and resources, like **support from a coach, therapist or peer support group**, build the foundations for resiliency.



We can't remove anyone's trauma (big or small), but we can try to understand their Executive Function impacts, and help them to balance the scales away from overactive Amygdala responses and towards healthier decision making and more effective executive function.

Executive Function Skills Explained

Skill	Definit ion
Response inhibition 	The capacity to think before you act; this ability to resist the urge to say or do something allows your child the time to evaluate a situation and how his or her behaviour might impact it.
Working memory 	The ability to hold information in memory while performing complex tasks. It incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future.
Emotional control 	The ability to manage emotions to achieve goals, complete tasks, or control and direct behaviour.
Sustained attention 	The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue, or boredom.
Task initiation 	The ability to begin projects without undue procrastination, in an efficient or timely fashion.
Planning/ prioritisation 	The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what's important to focus on and what's not important.
Organisation 	The ability to create and maintain systems to keep track of information or materials.
Time management 	The capacity to estimate how much time one has, how to allocate it and how to stay within time limits and deadlines. It also involves a sense that time is important.
Goal-directed persistence 	The ability to create a roadmap to reach a goal or to complete a task. It also involves being able to make decisions about what's important to focus on and what's not important.
Flexibility 	The ability to revise plans in the face of obstacles, setbacks, new information, or mistakes. It related to an adaptability to changing conditions
Metacognition 	The ability to stand back and take a bird's-eye view of yourself in a situation, to observe how you problem solve. It also includes self mentoring and self evaluative skills (e.g., asking yourself, "How am I doing?" or "How did I do?"

Self-Development Strategies

Introduce self-regulation techniques such as:

- Calming techniques (e.g. deep breathing, meditation, counting exercises, and soothing music)
- Role-playing different skills
- Thought-stopping strategies

Improve communication by:

- Demonstrating and requesting compassion, consistency, empathy, patience, reassurance, and validation
- Using simple, clear, and concise language
- Ensuring ample time to process any information
- Minimising the presence of any distractions

Learn diverse skills including:

- Delaying gratification
- Developing routines
- Emotional processing
- Building and maintaining positive relationships
- Removing one's self from bad situations
- Self-awareness and regulation
- Vocalising and discussing thoughts and feelings

We Need To Feel:

SAFE

LOVEABLE

VALUABLE



Further Resources

Harvard trauma research https://developingchild.harvard.edu/science/deep-dives/a dult-capabilities/

Dr Nadine Burke Harris on ACEs https://www.ted.com/talks/nadine_burke_harris_how_chi ldhood_trauma_affects_health_across_a_lifetime?langua ge=en

Dr Kate Truitt - Amygdala CPR (*calming the guard dog*) https://www.youtube.com/watch?v=UK4oF2YLOio

Reading and Resources https://connectionsinmind.com/reading-and-resources/

Empathy Course https://www.cimlearning.com/courses/empathyhome/

Intro to executive functions course **https:/cimlearning.com/courses/intro-efs/**

Webinar Series https://connectionsinmind.com/webinars/

Parent Facebook Group https://www.facebook.com/groups/executivefunctionssu pportgroupparents

Adult Facebook Group https://www.facebook.com/groups/204786124308836