

# BRAIN DEVELOPMENT

Your child's brain won't be fully developed until they reach their mid to late 20's!

It's only when you go beneath the behavior to biology and neuroscience that you can understand the true reasons behind your child's needs and behaviors. Which lets you choose the care they need so their brains build pathways that are wired for safety and love.

It's nurture, connection and attachment that helps their brains flourish, building connections that tell the rest of the body they are safe and loved.

We are born the most underdeveloped mammals on the planet. In the first 3 years there is rapid brain development with billions of synapses fusing together.

So, why so small and why so fast?

As humans began to walk upright the shape and size of our pelvis needed to change which resulted in a shrinking of the birth canal. So evolution's answer to this was to be born much earlier in our development. Compared to other animals humans are born only half way through their gestation.

So we continue development outside of the womb over the first 3 years. This is why our infants are so dependent on us during this period of development.

Evolution's answer to smaller brain size at birth is responsive caregiving.

We have an influence over which pathways wire together in their brains, which is a HUGE responsibility and a MASSIVE opportunity to help foster connections for positive mental health.

So you have the power to encourage those that connect in response to safety or those that connect in response to stress.

Adult brains are customized by infant experience.

Early experiences affect the quality of the brain by establishing either a sturdy or a fragile foundation for all of the learning, health and behavior that follow.

We are born with one main need and we use attachment. The drive to attach evokes caregiving in us and closeness and proximity for them.

We are a carrying species. We evolved to take our babies with us rather than hide them and return like some other mammals. Being born so developmentally immature it makes biological sense for their protection to keep them upon our bodies as we hunted and foraged.

Being close to and being held by a caregiver helps to regulate their brain stem function.

Touch and closeness is essential to the human infant.

## **DEVELOPMENT**

You can only expect from your child what their brain can support at their stage of development.

The ability to self soothe is in an area where there is no connection in infancy. So the advice about sleep training, or to ignore feelings and do timeouts, or being expected to sit still in school all day just doesn't support where their brain is at.

Brains are built over time in a bottom up fashion with 3 stages of development.

Survival brain. Birth (often called reptilian or lizard brain)

Asks, Am I safe? When you're in a survival state you're in fight, flight or freeze mode.

The only way to calm the survival brain is through the creation of safety.

Emotional brain. 0-3+

Asks, Am I loved? Am I seen? Am I heard?

The only way to soothe the emotional brain is through connection.

Cognitive brain. 3-25+

Asks, What can I learn from this? How can I solve this?

The only way the cognitive brain functions optimally is when it is balanced with the emotional brain.

The brainstem is the most developed part of the infant brain at birth. It's responsible for survival and controls functions such as breathing, heartbeat, digestion, sleeping, crying, startling, blinking, sucking, smelling, all vital skills for a newborn.

It also orients to the smell and sound of parents, facial recognition, eye contact, facial expressions allowing the early bonding with parents.

When they are close to you it stabilizes brainstem functions.

Their survival brain asks, Am I safe? The only way you can calm their brain is through the creation of safety, through connection, holding them close and responding to their cues.

Their brain needs you to be sensitive to the cues from the survival brain and nurture the emotional brain and thinking brain by providing reliably positive responsive care.

## **CHILDHOOD AND BEYOND**

The cognitive (thinking) brain, also known as the Prefrontal Cortex (PFC), is immature at birth and develops across infancy and adolescence up to and beyond age 25.

The thinking brain develops alongside the emotional brain from 0-3 years, but the process of brain development doesn't end at age three.

The brain creates more synapses than it needs and discards the extras. Genetics provide a blueprint, but their environment and experiences form the essential wiring of the brain.

This process of creating and pruning neural connections is why humans are so successful as a species. We develop a brain for the physical, mental and emotional conditions in which we live.

Because their experiences have such potential to affect brain development, they're especially vulnerable to negative influences during this time of their lives. And it's also a window of opportunity for positive experiences.

So when you think you're getting nothing else done when you're spending time with your kids...you're doing the most monumentally important work there is! You're growing your child's brain in a healthy way. You're investing in their long term mental and emotional well-being.

## **STRESS AND THE INFANT BRAIN**

Babies are not mini adults and they experience stress very differently than us.

They're learning how to detect and initiate stress. Their brain is in an undeveloped state, so the way they experience stress will shape the long term way in which they'll continue to respond to stress.

They're capable of initiating a stress response but they're not capable of turning it OFF.

So the only way to regulate their stress is by relying on you to coregulate. The way we do this now teaches their brains how to do it later.

## **HOW ATTACHMENT AFFECTS DEVELOPMENT**

Attachment is written in your DNA.

The human condition is wired for connection.

Each species has a different survival mechanism, ours is closeness.

Everything about our physiology is wired for attachment, closeness and connection.

By age 6, your child's nervous system is almost completely wired. The ability to trust and empathize has been established, and they have developed a working model of relationships.

Their experiences have given them a clear picture about what to expect from people and they have developed strategies to manage their own emotions.

Early experiences of secure or insecure attachment are encoded into the implicit memory systems of the brain and become mindsets and expectations that guide their behavior in relation to others.

Implicit memory is our unconscious or automatic memory. It uses past experiences to remember things without necessarily being able to recall them. Implicit memory is present from birth and includes behavioral, emotional, perceptual and bodily memory. Conscious awareness is not required to code experiences into our implicit memories.

Explicit memory is the ability to recall events and experiences. It develops from the second year and requires conscious attention for things to be encoded within it.

So our babies, whether consciously or unconsciously, remember how they've been nurtured even from the very beginning. How you relate to them is stored within their implicit memory and this builds the foundation of how they relate to the world, whether they recall it or not.

You have the power to wire your child's brain and nervous system for safety and love.

Those feelings that make sense in your heart, the ones that you hear beyond the noise of society to hold your baby close, to respond when they need you are all grounded in relevant and real science. Everything we currently know and is emerging about the developing brain agrees that responsive, attuned caregiving is vital.