

BRILLIANT BRAIN FACTS

The **average brain weighs** around **1.4kg**

Your brain is made up of

75%

water,

with the rest made up of **protein and fats.**

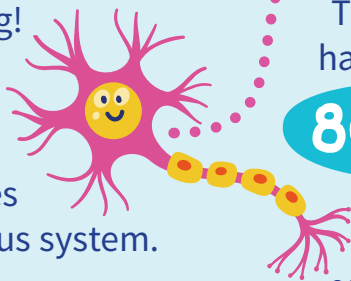


Your **brain makes enough electricity to power a pretty dim lightbulb!**

Even though **it's only about 2%** of our body weight, the brain uses around **20% TO 25%** of the **energy that we get from food and oxygen.** It needs **a lot of power** to do everything it needs to do to keep us going!

Neurons are information signals. They take messages around the brain and nervous system.

Neurons are really speedy – they transmit information to and from the brain **at more than 240 kilometres per hour.**



The brain has around

86 BILLION

neurons*

*(that's 86,000,000,000!)

LOOKING AFTER YOUR BRAIN

Drink lots of **WATER**

KEEP ACTIVE!

Exercise is great for our brains.

PUZZLES and READING are great for keeping your brain fit and strong.

LOOK AFTER YOUR HEAD!

Wear a helmet when you cycle, skate or scoot, or when you do contact sports.

EAT HEALTHY FOODS.

AVOID SMOKING, vapes and other drugs.

GET PLENTY OF SLEEP.

While your brain never fully switches off, sleep gives it a chance to rest and repair.

UNDERSTAND YOUR EMOTIONS and find some coping strategies that work for you.



SOME OF THE PARTS OF YOUR BRILLIANT BRAIN!

The Prefrontal Cortex Thinking Brain

“What can I learn?”

This your thinking brain. It's where thinking, imagining and planning take place. The thinking brain helps with learning, making good choices, problem solving, keeping calm.

The Limbic Brain Emotional Brain

“Do I belong?”

The limbic system, **looks after emotion processing and memory.** The limbic system is in the middle of the brain.

The Amygdala

The amygdala is part of the limbic brain.

It's quite small (about the size of an almond) but important. **It's where all of our emotions come from.**

The amygdala helps keep us safe. It is a bit like an alarm or a guard dog. When we're scared or in danger it helps us react.

Upstairs Brain

Downstairs Brain

The Brain Stem Survival Brain

“Am I safe?”

The brain stem and cerebellum control all the things that happen all the time without our having to think about them, like:

- **Breathing**
- **Circulation** (the heart beating and blood moving around the body)
- **Digestion**
- **Sleep**

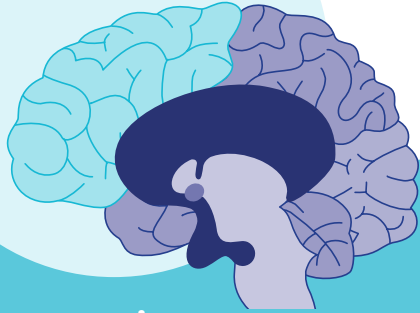
The brain stem links to the spine and nervous system taking messages to all parts of our body.

Our reactions can include:

- **Fight** - we get ready to 'fight'
- **Flight** - we want to run away
- **Freeze** - we can't move or act and don't know what to do

BRILLIANT BRAIN ACTIVATION

Prefrontal activation



Story of connection...

Calm, focused, steady, creative.

Feeling safe
and connected.

Thinking.
Attentive.
Listening.

Problem solving.
Able to pause
and reflect.



Amygdala activation



Story of protection...

Smoke alarm of your nervous system.
Angry, out of control, perceive danger.

Feeling out
of control.
Yelling. Angry.

Anxious,
crying, scared,
irritated.

Hitting,
bullying,
running, fighting.



Brainstem activation



Story of disconnection...

Shut down, numb, unable to work.

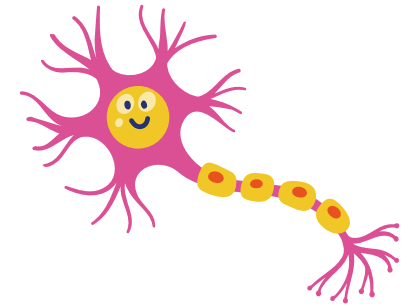
Feeling
overwhelmed.
It's too much.

Shutdown.
Retreating.
Stuck.

Numb.
Disconnected.
Isolated.



BRILLIANT BRAIN CHEMICALS (NEUROTRANSMITTERS)



What Are Neurotransmitters?

Neurotransmitters are tiny chemical messengers in your brain and body that help send messages between nerve cells. Neurotransmitters help control lots of things in your body and brain, such as:



Feelings

They can make you feel happy, sad, excited, or calm.



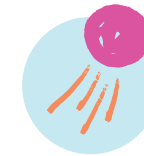
Sleep

They help you fall asleep and wake up.



Focus

They help you pay attention and learn.



Movements

They help you move your muscles.

SOME NEUROTRANSMITTERS IT'S GOOD TO KNOW ABOUT...

Adrenaline

Adrenaline is a chemical in your body that makes you feel excited and ready to act quickly.

What does it do?

When you feel scared or excited, like when you're on a roller coaster or playing a thrilling game, your body releases adrenaline. It helps your heart beat faster and gets your muscles ready to move quickly. It's your body's way of preparing you to either run away from danger or face it head-on.

Cortisol

Cortisol is a chemical that your body makes when you're stressed or worried.

What does it do?

If you have a big test or something is bothering you, your body might release cortisol. It helps you stay alert and focused, but too much of it can make you feel tired or grumpy. Think of cortisol like a helper that keeps you on your toes, but if it's around too much, it can make you feel worn out.

Dopamine

Dopamine is a chemical in your brain that makes you feel happy and motivated.

What does it do?

When you do something fun, like playing your favourite game or eating your favourite food, your brain releases dopamine. It makes you feel really good and encourages you to do those fun things again. It's like a little reward system in your brain that says, "Hey, this is great! Let's do it again!"

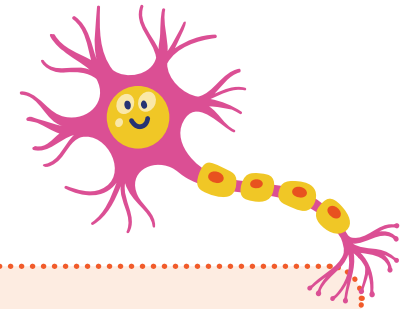


Adrenaline and **Cortisol** are important brain chemicals that help us and that we can't do without. Sometimes, when our body makes too much, they can be a bit tricky.



Dopamine is a 'feel good' chemical - the right amount helps our wellbeing.

BRILLIANT BRAIN CHEMICALS (NEUROTRANSMITTERS)



SOME MORE NEUROTRANSMITTERS IT'S GOOD TO KNOW ABOUT...

Oxytocin

Oxytocin is a chemical that helps you feel love and trust.

What does it do?

When you hug your family or play with your friends, your brain releases oxytocin.

It makes you feel close to them and helps you build strong bonds. Think of oxytocin as the glue that helps people stick together and feel connected.

Serotonin

Serotonin is a chemical in your brain that helps regulate your mood, feelings of well-being, and happiness.

What does it do?

When you feel calm and happy, your brain is likely releasing serotonin. It helps you feel relaxed and satisfied. Serotonin also helps you with sleeping, eating, and digestion. It's like a mood stabilizer that keeps you feeling balanced and content.

Endorphins

Endorphins are chemicals in your body that help you feel happy and reduce pain.

What does it do?

When you exercise, laugh, or do something you enjoy, your body releases endorphins. They make you feel good and can even help when you're hurt by reducing pain. Endorphins are like your body's natural painkillers and mood boosters.



Dopamine, Oxytocin, Serotonin and **Endorphins** are known as 'feel good' chemicals. When our bodies make the right amounts they help our wellbeing.

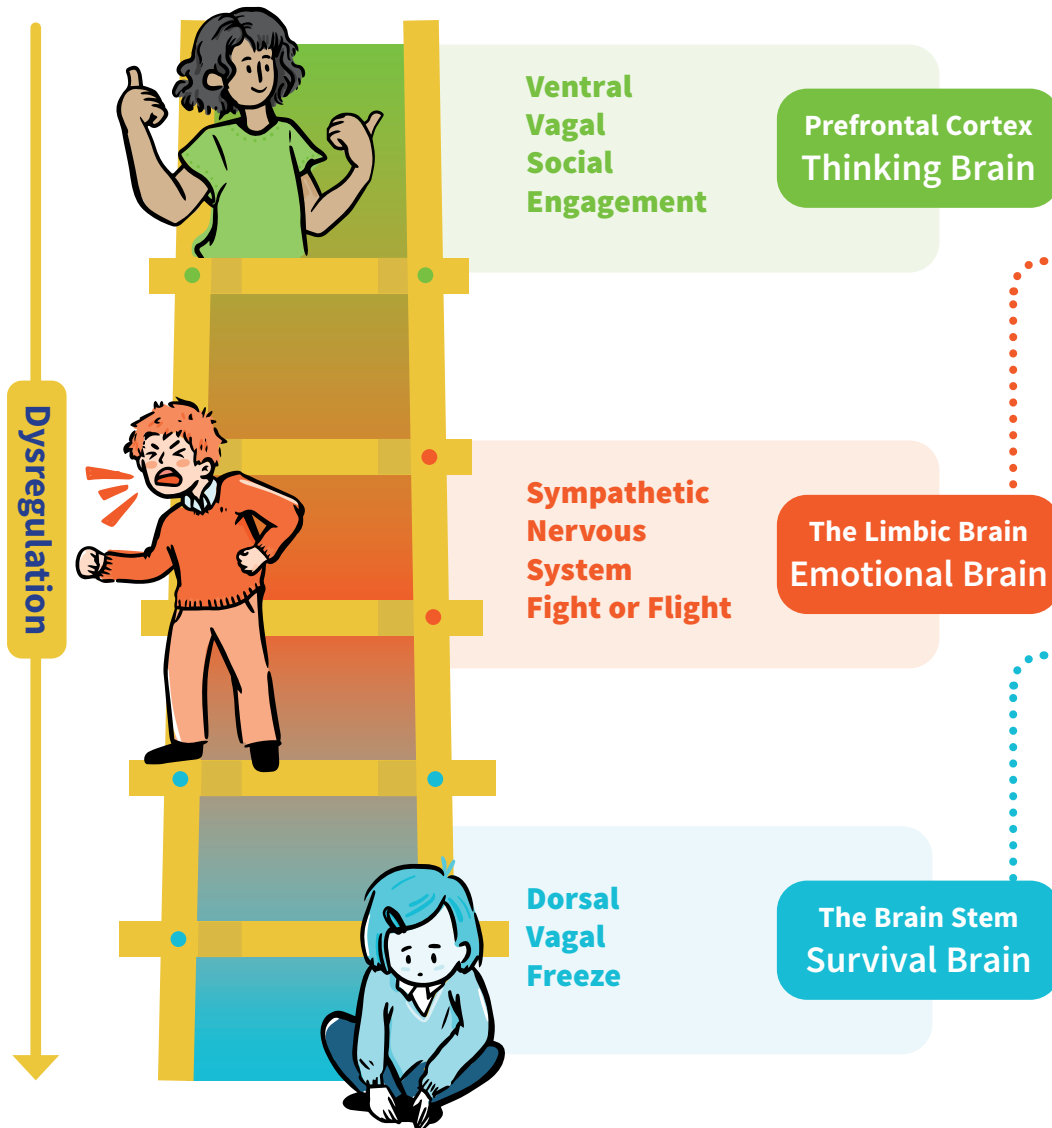
We can boost our feel good chemicals in simple ways everyday. So check out how to get your Daily

DOSE

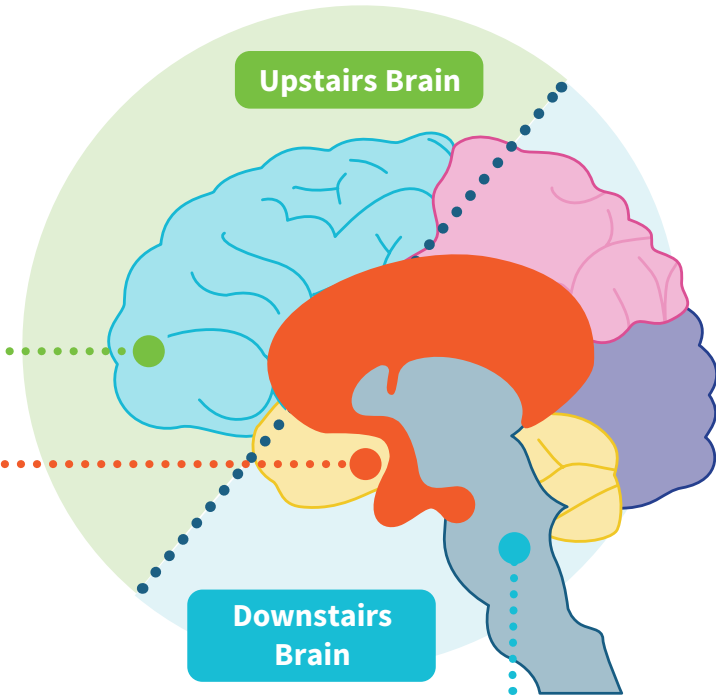


3 BRILLIANT BRAIN MODELS

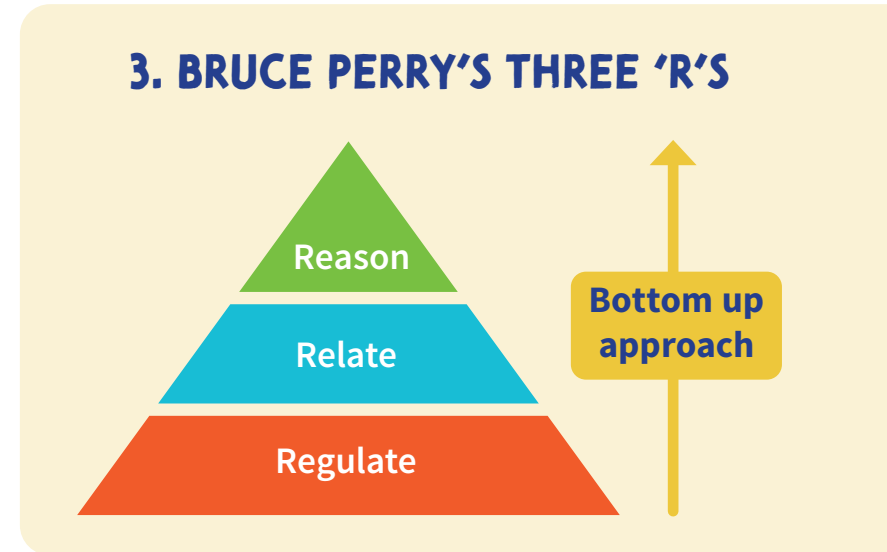
1. THE POLYVAGAL LADDER



2. THE TRIUNE BRAIN



3. BRUCE PERRY'S THREE 'R'S



UPSTAIRS/DOWNSTAIRS BRAIN

Dan Siegal

WHAT CAN I LEARN?

Upstairs Brain

Downstairs Brain

DO I BELONG?

AM I SAFE?

FLIPPING OUR LID

What happens in the brain when we lose emotional control?

Hold up your hand like this. Imagine your wrist is the **brain stem**.

Now fold your thumb into your palm. Imagine your thumb is the **amygdala**.

1. The **amygdala** (our “alarm system”) takes control of our brain.

Now fold your fingers over your thumb. The fingers represent the **prefrontal cortex** (The thinking part of the brain).

2. The **prefrontal cortex** (our “thinking brain”) goes offline.

Now flip your hand open! This represents a loss of control - the thumb (amygdala) flips up the fingers (prefrontal cortex). **Our thinking brain disconnects and emotions take over.**

3. This results in **big reactions** — fight, flight, or freeze.



THE WINDOW OF TOLERANCE

