Mindfulness and the Brain

What the neuroscience tells us about being mindful — and simple ways to practise it. A self-help guide from Wellness Counselling and Psychotherapy

Mindfulness means paying attention to the present moment, on purpose, with curiosity and without judgement. It is not about emptying the mind or feeling calm all the time. It is about noticing what is here — thoughts, feelings, sensations — and choosing how to respond rather than reacting on autopilot.

What happens in the brain

Research using brain scans suggests regular mindfulness practice can change how parts of the brain work together. The brain stays adaptable throughout life (this is called **neuroplasticity**), so what we practise repeatedly tends to get stronger.

Brain area	What it does	How mindfulness may help
Amygdala	The brain's alarm system — spots threat and triggers fight, flight or freeze.	Studies link practice with a calmer, less reactive alarm response and reduced stress.
Prefrontal cortex	The 'thinking brain' — planning, focus, decisions and calming emotions.	Practice is linked with stronger activity here, helping us pause before reacting.
Default mode network	Active when the mind wanders — rumination, worry and self-criticism.	Mindfulness helps us notice wandering sooner and step out of overthinking loops.
Insula	Senses what is happening inside the body — heartbeat, breath, tension.	Better body awareness helps us recognise emotions earlier, before they build.
Hippocampus	Learning, memory and putting experiences in context.	Some studies show changes here linked with learning and emotional regulation.

The nervous system

Slow, steady breathing — especially a longer out-breath — activates the **parasympathetic nervous system** (the 'rest and digest' response) via the vagus nerve. Heart rate slows, muscles soften and stress hormones such as cortisol can reduce.

Benefits people often notice

- Less stress and anxiety, and a greater sense of calm

- Better focus and concentration
- Less time stuck in rumination and worry
- Steadier emotions and more space before reacting
- Improved sleep and more awareness of the body's needs
- More kindness and compassion towards yourself and others

Like exercise, the benefits come from regular practice. A few minutes most days makes more difference than a long session once in a while.

How to do a mindful activity

You can bring mindfulness to almost anything. Use these steps:

Step 1 **Choose one activity** — e.g. drinking a cup of tea, washing up, walking, showering.

Step 2 **Slow down** — Do it a little slower than usual and give it your full attention.

Step 3 **Use your senses** — What can you see, hear, smell, taste and feel? Notice small details.

Step 4 **Notice when your mind wanders** — It will — that is normal. Simply notice where it went.

Step 5 **Gently come back** — Without criticising yourself, return your attention to the activity.

Practices to try

Mindful breathing (3 minutes)

Sit comfortably. Breathe in for 4, out for 6. Notice the breath in your nose, chest or belly. When your mind wanders, gently return to the breath.

5-4-3-2-1 grounding

Name 5 things you can see, 4 you can feel, 3 you can hear, 2 you can smell and 1 you can taste. Helpful when anxiety rises.

Body scan (5–10 minutes)

Slowly move your attention from your toes to the top of your head, noticing any sensations without trying to change them.

Mindful tea or coffee

Notice the warmth of the cup, the steam, the smell, the first taste. Stay with each sip.

Mindful walking

Feel each foot touching the ground. Notice the air, sounds and colours around you.

STOP

Stop. **T**ake a breath. **O**bserve thoughts, feelings and body. **P**roceed with what matters. A one-minute reset for busy days.

My mindfulness practice

The practice I will try:

_____

When and where I will do it:

_____

What I noticed (body, thoughts, feelings):

_____

_____

How I felt before (0–10) ___ and after (0–10) ___

If mindfulness ever brings up difficult feelings or memories, it is fine to stop, open your eyes and focus on something around you. Talking it through with a therapist can help.

This worksheet is for general self-help and is not a substitute for therapy. To arrange a free 15-minute enquiry call, visit www.wellnesscp.co.uk or email miriam@wellnesscp.co.uk.