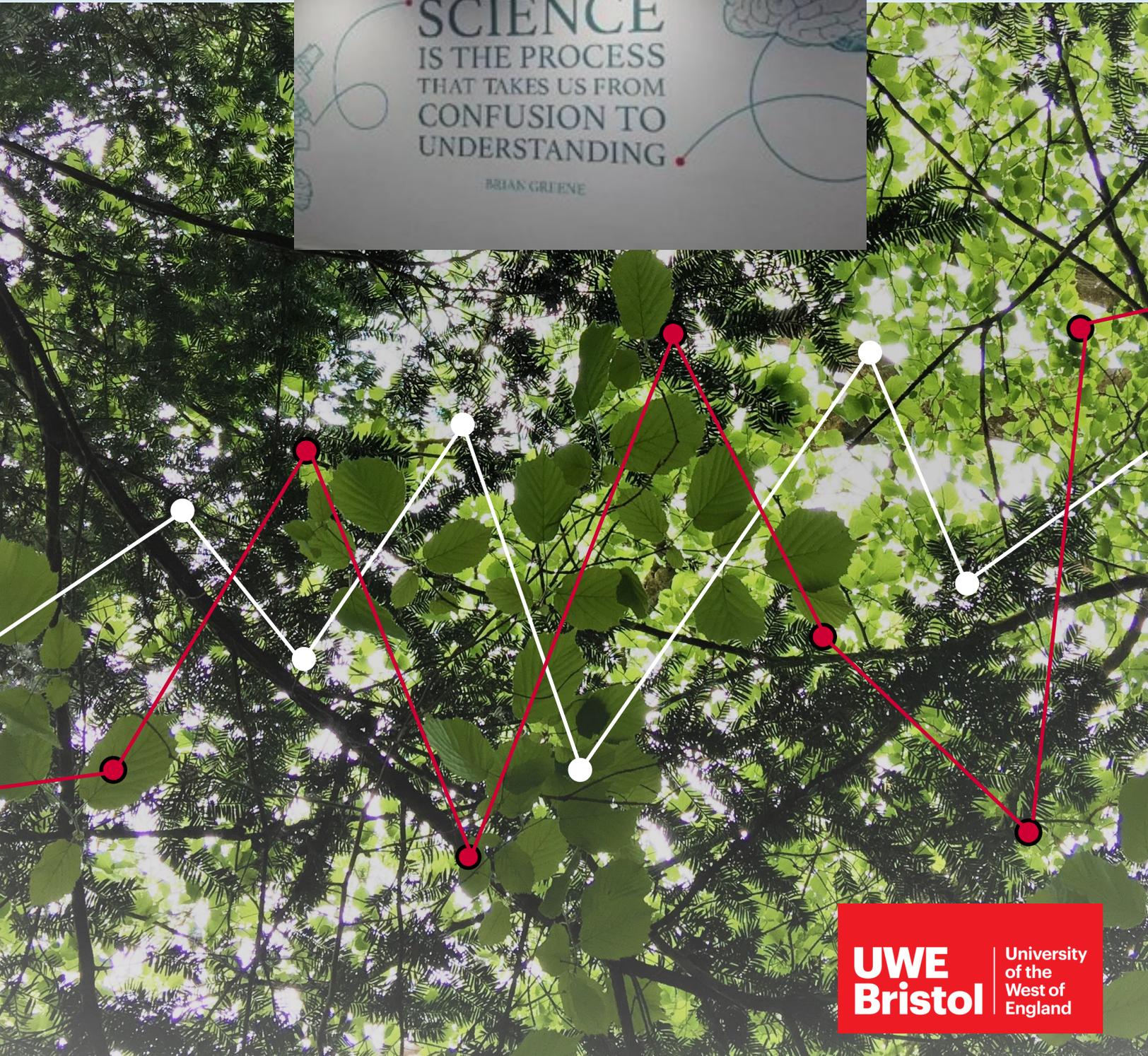
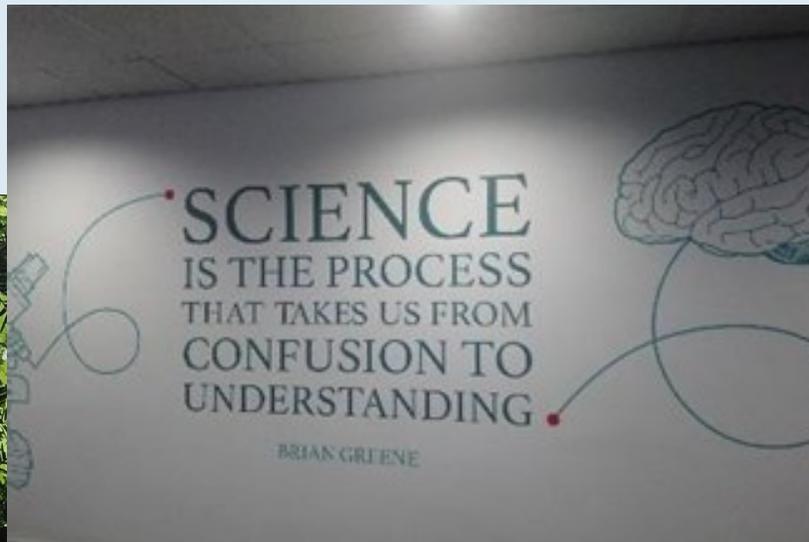


The Science Behind Wellbeing



The Science behind Wellbeing

Health and wellbeing is essential for living well and getting the most out of life. Here, we have put together information about the science of wellbeing to gain a deeper understanding about the impact it has on our bodies and minds.

Stress and stressors

We all face stressful times in our lives, and it is important for our personal health and wellbeing to look after ourselves. A small amount of stress can be good for us, helping us to focus and get things done, but if the stress we are experiencing is consistent and long term, this can have a negative effect on our bodies and minds.

Once the stressor or 'perceived threat' has passed, the body's hormone levels will return to normal. Recovery time for the body depends on the level of stress experienced, but when the stressors are always present and you always feel 'under attack', the body's alarm system stays turned on. Long term, chronic stress and thus long-term activation of the body's alarm system and response to threat affects almost all of the body's systems, and can tip the body into an imbalanced state, causing a large number of illnesses. These include anxiety, depression, digestive problems, headaches, heart disease, sleep problems, weight gain, memory and concentration impairment.

The worst thing we can do therefore is to ignore stress.

WHAT WE CAN DO:

The best thing you can do is find healthy ways to cope with the stressors in our lives and find more balance to help our bodies function properly and reduce the impact of stress on our physical and mental health.

The science

Stress releases hormones which prepare our bodies for 'fight or flight'.

Adrenaline gives our body a surge of energy to be able to focus – tensing muscles, increasing heart rate, breathing rate, boosting energy supplies and causing sweating.

Norepinephrine causes arousal in the body.

Cortisol is a steroid commonly known as the 'stress hormone' – it increases blood sugar levels, helps to maintain fluid balance and blood pressure, alongside regulating and body functions that aren't needed immediately such as digestion.

The Science behind Changing our Thoughts

Negative and repetitive thoughts can be very draining. If we can focus on **positive thoughts**, setting intentions and goals, we can release ourselves from the repetitive cycle allowing us to become more free and motivated.

If you want to create new and real change, you need to become aware of your unconscious thoughts and behaviours, and modify them. You can also look at emotions connected to your past and decide whether or not they belong to your future. When you experience new things you expand your brain by making new connections — old connections start to shrink.

How this works in the brain

When we learn something new, the information is gathered in the cerebral cortex and makes a new synaptic connection between neurons. The more we practice this new information, the stronger the connection becomes. As we expand on this knowledge more neural networks are formed linking the new information to other related areas of learning.

When we apply the new learning further and create an experience from this, our senses gather new information, neurons organise into patterns and chemicals are released creating emotional feeling, enriching the brain circuitry further. Experience therefore alters and widens the knowledge/connections in the brain. Which leads to changing thought patterns.

WHAT WE CAN DO: Negative and repetitive thoughts can be very draining. If we can turn these around by focussing on positives, setting intentions and goals, we can release ourselves from the repetitive cycle allowing us to become more free and motivated.

“We can change our brains by changing our thoughts”

RESEARCH FINDING:

Did you know we have around 70,000 thoughts going around our head every day, that’s about 48 per minute? 98% of them the same every day, over and over again?! And around 80% are negative thoughts.

So, we all have to work at being more positive!

“Be defined by your vision of your future rather than by the memories of your past”

(Dr Joe Dispenza)

The Science behind writing things down

The action of writing things down helps to make things feel more definite and getting those thoughts onto paper helps free up the brain for deeper thinking.

3 positive things

WHAT WE CAN DO: Write 3 positive things down you have done today in as much detail as you can, however large or small, whether it is meeting with a friend, saying hello to a neighbour, getting up early, having a shower, making yourself a good breakfast or giving someone a smile – write it down. Try this for a week including how each positive thing made you feel, why it happened and make sure you focus only on the positive aspects.

If you **repeat and continue** this process, you may start to notice that you gradually start to automatically focus on more positive than negative thoughts, which can help improve your mood, motivation, happiness and stress levels. This can also help you to feel more grateful. Being grateful can also help you to feel happier – if you start to write down positive things and appreciate the good things, you can also start to heighten your awareness allowing you to feel more gratitude and fulfilment in your life.

Some people find that this is a good practice at the end of the day, before going to bed. You can also reflect back on previous positive things to see how you feel reading them, and see whether there are any themes / things that make you **feel happy regularly**.

Writing thoughts down can also help to process your emotions. Writing down anything on your mind before bed is a good way to give yourself head space and allow you to relax more before sleep.

The science behind writing down 3 positive things

One study published on **Positive Insight** showed that participants writing down 3 positive thoughts every day for a week showed beneficial effects.

After one month participants were happier and less depressed, and remained happier on testing 3 and 6 months later.

Keep a journal of positive things - you can try it for a week, or keep it going long term. It will help to navigate your brain towards the positive things in your life and help to make you feel happier and more enriched.



The Science behind Imagery

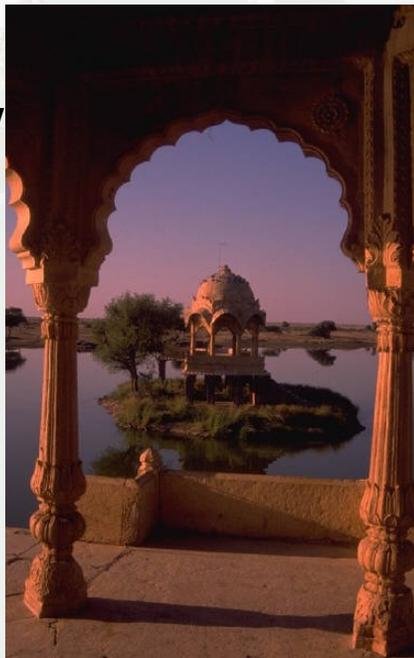
Setting an intention

The brain does not distinguish between real and imagined stress triggers, and similarly between real or imagined imagery. If it feels real to you, your body reacts as if it is real. If we therefore focus on imagining what we want to achieve, and that we are actually doing an activity, we are already starting to transform our minds.

WHAT WE CAN DO: By setting a clear intention about what you want/want to achieve, you are in effect setting a point for our brain to navigate towards it, and this in itself can start a new neural connection.

We remember things more clearly when we have an emotional response. Focus on who you want to be and experience it. If you experience this repeatedly until the behaviour becomes automatic, the mind and body are working together and this new behaviour becomes who you are - **a new state of being.**

You are also bringing yourself into the here and now, being present, rather than repeating old patterns from the past, and therefore 'living' in the past. **You are giving yourself a purpose**
A sense of purpose can help to give people motivation, and it can also help to give you a good night's sleep.



The science behind intention and purpose

Setting an intention can be used to gradually move towards making new experiences, new habits, and ultimately reshaping our brains.



Our immediate environment and how we interact with it shapes our brain – our environment is therefore the key to unlocking our brain.

Gratitude for Wellbeing

The art of appreciation

Being grateful for what you have and looking at the positive aspects of your situation has a big impact on your brain making you feel happier and healthier. Over centuries different cultures have embraced beliefs or religions using prayer or meditation as part of their regular routine, some using rituals to give thanks. Whether it be gratitude for the food we are eating, or to loved ones that surround you, being grateful for what you have has long been recognised as an important part of human life, to help us feel more spiritually enriched.



The Science behind Gratitude

In an American study, subjects keeping gratitude journals showed a greater increase in determination, attention, enthusiasm and energy compared to other groups who wrote about things that annoyed them.

The benefit of this is not only getting more organised, and helping you to get motivated, but it also helps to clear the repetitive thoughts that are going around in your head therefore freeing your mind for being present allowing wider and deeper thinking.

Writing things down also has the effect of setting an intention (neuroplasticity) which helps with focussed thinking.

Organising your thoughts

We can all become overwhelmed with the amount of things we need to do, and if we don't get them done, these 'things' can go around and around in our heads, causing us background stress.

WHAT WE CAN DO

One of the most simple and effective ways to release yourself from the swirl of 'to do's' and other thoughts is to write them down.

Make a **realistic** list of everything you need to achieve each day, and **prioritise** important tasks first.

Wellbeing in the Human Body

Keeping hydrated improves the body's metabolism, giving us more energy, and the ability to concentrate. When we become dehydrated we feel fatigued, have reduced physical and mental performance, can feel dizzy and be prone to more headaches.

Drink enough water! The European Food Safety Authority (2010) suggested that women should drink just under 3 pints (1.6 litres), and men should drink just over 3.5 pints (2 litres) everyday to remain hydrated.

Keeping the body in balance

It is important to have a variety of foods such as fresh **fruit** and **vegetables, pulses, whole grains, lean protein** and **carbohydrates** which help to balance the body.

Prebiotics and probiotics are beneficial to the microbiome - useful microbes thrive on the prebiotic foods high in fibre; probiotics such as natural yoghurt and fermented foods contain beneficial microbes. If we regularly include these in our diets we introduce beneficial bacteria into our gut flora.



Acidic vs alkaline digestive system – the body functions best with an internal chemistry that is slightly alkaline (pH 7.0 - 8.0). **Include alkaline foods in our diet such as** vegetables, fruits, seeds and some nuts (almonds), pulses and beans, some whole grains such as millet and quinoa, molasses, raw honey, apple cider vinegar, plain yoghurt, soft cooked egg yolks. Avoid acidic foods such as sugar, salt, coffee, tea, processed meats and white bread.

Free radicals and antioxidants

Free radicals are released in the body from metabolic processes, and also from external sources such as pollutants. If not kept in balance they have a detrimental effect on body.

Antioxidants reduce the damage capacity of free radicals helping to prevent cellular damage and keep the body in balance. Some are produced by the body; others which cannot be made by the body are found in the diet which include Vitamin B, C and E.

WHAT WE CAN DO:

Including foods containing Vitamins B, C and E along with dietary fibre in our diets helps keep free radicals in check.

Taking time out for yourself

The first person we need to care for and nurture is ourselves: [Care, nurture, relax and energise.](#)

To help you sleep

[A relaxing bath](#) to help soothe and relax muscles.

To wake you up in the morning

[A refreshing shower.](#) The effect of water on your skin and the release of negative ions from water movement can help to wake you up.

The science behind taking a nap

A study at NASA on military pilots and astronauts found that a 40-minute nap improved performance by 34% and alertness by 100%. A nap can help with emotion regulation, and studies have shown improvements in perceptual learning following a nap.

[WHAT WE CAN DO:](#) A short nap of 20-30 minutes can help improve alertness and performance without leaving you feeling groggy or interfering with your night time sleep pattern.

Exercise - Inactivity increases the risk to our health. It is therefore important for us to move around, not sit for too long at a time, and exercise.

[The science behind exercise:](#) You don't need to do a large amount of exercise to make a marked difference. As well as making us fitter, exercise causes the release of hormones and neurotransmitters in the body that helps to improve our mood and reduce depression.

[WHAT WE CAN DO:](#) Find a form of exercise that suits you. There is plenty you can do within your home environment if you are unable to go out and plenty of online fitness videos.

The science behind listening to music

If you listen to your favourite music, there is an increased connectivity in the brain areas involved with internally focussed thought, empathy and self-awareness. It seems to be your experience linked to your favourite/preferred music and the feelings/memory associated with it that provides this response.

[WHAT WE CAN DO:](#)

[Listening to your favoured music can be enjoyable and uplifting, as well as giving you time to connect deeply with yourself.](#)



Create a space for study

Organise your study space

Your study space is highly important if you want to be able to fully concentrate and get your work done.

So, make your space as tidy and organised as possible, remove any clutter and distractions, and make sure you have a good desk, the right kind and level of lighting, a comfortable, supportive seat and footstool if needed, to allow you maximum comfort while you work. If you are distracted by noise, choose quiet times when you need maximum concentration, and noisier times to get organised, doing other tasks such as researching or referencing. Put up pictures or photos to make it 'your' space and help to give you comfort.

Finding it hard to concentrate at home?

- **Try a change of scene**

Look for alternative spaces for a change of scene – a quiet corner in a cafe to research, a very quiet space in a library to concentrate on reading, working with a friend to help understand a difficult subject area – whatever suits your needs. Make sure you have some good healthy snacks and drinks for breaks. Make sure you take breaks away from your desk – get up, move around, go for a short walk, make a drink, stretch and do some gentle exercises. Whatever helps you to take quality time out, however long or short.

Aim for quality focussed study time, relaxation and, social time.

There are many small steps you can take that will help achieve this.

Remove distractions - such as your mobile phone or internet

Switch off social media— disconnect from Facebook, Twitter and Instagram

Make an intention to study – engage your brain

Make notes – organise yourself and plan time

Focussed study time - a timer may be helpful

Take regular breaks— taking a break improves your focus



The Great Outdoors

Scientific research has found that just being with trees has both physiological and psychological benefits. Known in Japan as “forest bathing”, being amongst trees has been found to lower heart rate and blood pressure, reduce production of the stress hormone Cortisol, boost the immune system and promote overall feelings of wellbeing and relaxation.

Researchers in Japan have carried out in-depth studies into the physiological and psychological effects of 'forest bathing' – walking and being amongst trees. They have found that essential oils (phytoncide) released by trees, plants, and some fruits and vegetables to protect them from damage from germs and insects, and cause a physiological response in humans which boosts our immune systems (If you suffer from hay fever avoid times when trees are producing pollen!).

The science behind negative ions

A review on air ions and mood showed that high levels of negative ions have been found to significantly reduce depression. We are surrounded by positive and negative ions in our environment. Positive ions are usually carbon dioxide molecules that have lost an electron. Negative ions are usually oxygen molecules that have gained an electron. Our home environment and cities with a wide range of electrical equipment and pollution, have become imbalanced with a high amount of positive ions which have a detrimental impact on our wellbeing and health. They can cause tiredness, changes in mood, tension, anxiety, can affect our lungs and respiratory tract, and have an impact on our immune systems. Positive ions also increase in our environment with increased humidity and pollution, and before an electrical storm. Conversely, **negative ions also found in nature, have many benefits to our systems.**

WHAT WE CAN DO:

Just be with trees. A stroll around the park or woods, sitting under a tree reading, or taking time to relax. Even looking at a tree through a window, or a photo of a tree can be calming to the mind.

WHAT WE CAN DO: Go near to the sea, a river, a waterfall. Go out after a downpour of rain. Smell the change and inhale the air. And if you can't get outside? Take a shower. The movement of water releases negative ions which we soak up through our skin and airways. This has the effect of making us feel more refreshed.



The Science behind Meditation

“The best way to be present is to pay attention. This is how we cultivate mindfulness” Jon Kabat-Zinn

The science behind meditation

Studies have shown that the ways we intentionally focus our attention internally in meditation and mindfulness practices induces a state of brain activation throughout the duration of the practice. As with other experiences, if we repeat these practices, and intentionally create this state of being, **we can alter our brain function and structure** giving long term changes to us as an individual.

These changes have an impact on our everyday lives, allowing us to be less reactionary, allowing us to bring awareness into every moment and allowing ‘a moment in time’ to make choices as to our behaviour and actions. This is a fundamental property of neuroplasticity—how the brain changes in response to experience. Here, the experience is the focus of attention in a particular internal and mindful way.

Meditation and mindfulness are a way of taking time out to relax, with the intention of bringing the mind into the present moment, by encouraging the brain to let go of thoughts and focus on the breathing. If we focus on our breath, sounds, physical feelings, we are bringing our focus to the here and now, and taking our brain away from thoughts i.e. past and future. Why not try it for your wellbeing?

WHAT WE CAN DO:

By practicing meditation techniques regularly, we can help reduce stress, anxiety, mood, gain greater self-control, improvements in working memory, improve our immunity, and improve our physical and emotional wellbeing.

WHAT WE CAN DO:

Focusing on your senses - what you can see, hear, smell, and feel right now - helps to bring you into the present moment, and takes you away from thoughts that are repeating in your head.

Useful Apps

UWE Map App – really useful to find way around each UWE site.

First Bus App – has a really good UWE map with very good detail including room numbers.

Pomodoro App – Helps you to concentrate for 25 minutes on task followed by 5 minute break.

Hold App – points system for concentrating on task. Rewards for completing. Can build up points for bigger rewards

Sleepbot App – Free. Similar to FitBit. Can follow sleep pattern, and wake you during lightest sleep phase around the time alarm set.

Headspace – Mindfulness App. 10 free sessions. Payment required for further sessions.

CALM – Mindfulness app.

One Moment Meditation – one minute meditation App. Also 5 minute video for initial trial.

Genius Scan – scans sheet and saves as document. Productivity apps for saving time.



Afterword

Looking after your wellbeing is the best way to ensure that you feel happy and satisfied in your life. Its important to remember that your wellbeing is something you can take charge of.

Personal wellbeing should be a lifelong pursuit, which you can enjoy taking time for. Building your resilience will help you to be more successful in your professional and personal life.

Hopefully, knowing more about the Science behind Wellbeing will aid you by improving your understanding of the real benefits of some of the techniques highlighted here.

