

YOUR MIND INC.

Racing thoughts, distractibility, worries playing on repeat. It's difficult to think our way out of these mental loops. To train our minds to behave, we need something completely different. This paper looks at the surprising ways meditation can be used to regain control of stressed out minds.

Rising stress levels during the global pandemic mean that our minds regularly scamper down tunnels we'd rather they didn't. But we can't solve overthinking with more thinking. What we need instead is an effective way to train our minds, and to regain control over rogue thoughts and emotions.

There are lots of survival strategies we can use to help us through crunch moments (deep breathing, exercise, writing; see Paper 2 in this series). But there's one method which can help with all the rest: meditation. Fundamentally, meditation is about learning to control our attention – our mental spotlight. This is why it's an excellent and efficient method to tame an anxious, wandering mind. The scientific evidence growing up around this form of mental training is compelling and it's not just practiced by those in robes. Basically, all the cool kids are doing it.

This paper explores what precisely meditation training can do for our mind and looks at the surprising diversity of people now embracing the practice. It also gives concrete advice on how to start an effective habit and to keep it going.

MENTAL CROSS-FIT

Saying *meditation* is like saying *sports*. There are all sorts. There's mindfulness, breath focus, resting awareness, Mindfulness-Based Stress Reduction, body scan, loving-kindness, transcendental, Mindfulness-Based Mind Fitness Training, sound bath...the list goes on and on.

There's more to this sports analogy though because the mind is really no



different from the body. If we do the right mental exercises regularly, it will lead us to mental fitness and health. (Our brains' ability to change as a result of training was headline news in neuroscience only recently; see **Box 1** for some surprising facts about taxi drivers' brains). What's more, just as sprinting and jumping develop different muscle groups, practising different kinds of meditation will have slightly different effects on our brain and our thinking (this is one reason why it's sometimes difficult to compare research studies meaningfully).

The various meditative disciplines do share some common features though. All require us to train our mental focus so that our attention rests on just one thing – like our breath. When our mind wanders off like a naughty puppy, we gently lead it back to the object of our attention. Most types also encourage a non-judgmental attitude: there is no good or bad, no right or wrong (phew).

While meditation is obviously an ancient tradition rooted in deep spirituality, this paper focuses on its more modern, practical applications.

BOX 1. What taxi drivers' brains can teach us

Until relatively recently, neuroscientists held two fundamental misconceptions. First, that malleable young brains harden during childhood until they become permanently fixed, like clay in a kiln. Second, that we are born with a finite number of brain cells many of which may die (never to be replaced) over the course of our life. Hence the depressing dogma: *you can't teach an old dog new tricks*.

Fortunately, oceans of research has blown these beliefs apart, proving that even mature brains are capable of change and growth. In fact, our nervous system (which includes the brain) changes constantly as a result of everything we experience and do. When we practice a particular skill, for example, nerve cells become stronger and more efficient (**functional plasticity**) and new neural pathways can emerge in the bit of the brain that's being exercised (**structural plasticity**).

Researchers at University College London found a brilliant example of this process in London taxi drivers, who famously have to memorise 25,000 city streets ("The Knowledge") to qualify for a license. Structural brain images revealed that cabbies have bigger hippocampi (the part of the brain responsible for spatial memory and navigation) than normal people. What's more, hippocampus size increased with time behind the wheel.¹

Neuroplasticity is the catch-all term describing (rather loosely) this process of change. It may be poorly understood by the man on the street but "rewiring your brain" is one of those buzzy concepts that has caught the public's attention. Meditation changes the brain – toning up our mental muscles – through this process of neuroplasticity.



YOUR MIND INC.

There's one thing that often holds us back from kick-starting a new health habit: not knowing for sure if it's worth the effort. We're all time poor. How do we know if eating our mental greens will make the grade? When it comes to meditation, what sort of returns can we expect and what's the cost of the initial time investment?

The results of meditating aren't something we can easily see like bicep definition after 30 days of push-ups. Luckily for us, the effects of meditation are measurable – and it has grand slam home run potential for our mental health fund.



DEBUG AND UPGRADE

The effects of meditation-type training are wide-ranging and comprehensive. It's like a wholesale debug and upgrade of our mental software.

Thanks to our brain's ability to change (**Box 1** explains how), practising this mental skill alters the neural structures underpinning our cognitive and emotional control – two things we really want if we're stressed out.

Developing our mental focus also creates a number of changes that help us manage stress specifically. Three core areas of upgrade are awareness, resilience and focus.

1. Awareness

Deliberately paying attention to our mental focus shows us where (and how very often) our mind strays. If the first step to reducing stress is knowing what it does to our brain and body, the second step is knowing what our mind is doing at any given time. Once we have these insights, it's a hundred times easier to put other stress-busting strategies into practice (see Paper 2 in this series for a summary of the best tools and tricks to beat stress).



Each of these skills (awareness, resilience, focus) is critical in effectively handling and recovering from stress – the very definition of resilience.

Impressive test results aside, when people start meditating, they often report having more time to think before they react – as if they have space between their thoughts. If the hallmarks of a stressed mind are racing thoughts, distractibility and an unwanted focus on the negative, learning to watch and control our thoughts is just the antidote we need.

TIME IS MONEY

So what's the investment? Because time is money. Actually, time is *more* than money. It's more valuable and more scarce. Most of us feel like we're living in time poverty – that feeling that we're always rushing, always behind, constantly thinking "*I don't have enough time*".

2. Resilience

In simple terms, meditation changes the way we react to negative events. In one study, stressful thoughts triggered less of a reaction in people with social anxiety after 8 weeks of mindfulness-type training.² But the good news is it doesn't take months to feel the effects. Just 20 minutes a day for 1 week is enough to change the way brains process negative information. After a week of mindfulness practice, gruesome images triggered significantly lower amounts of activity in the amygdala (the brain's fear centre; see Paper 2) when participants were focusing mindfully on their breath.³ What's more, the longer you meditate, the stronger your immunity to emotional shocks (according to a brain imaging study of expert meditators).⁴



The great thing about meditation is that *even a few minutes is enough*. And we can means-test our time investment, thinking about what's reasonable for right now. Maybe we can't commune with our inner peace for 4 hours before lunch because our children/clients/dogs simply won't stand for it. Ideally we'd be aiming for 5 or 10 minutes, but if that feels too much to fit in to an already packed schedule, 1 minute is enough to begin. (The other great thing about meditation is there's *definitely* a slippery slope effect; one minute today and it'll be a 10-day silent Vipassana retreat in Nepal by Christmas.)

On the topic of time pressure, it's important to be prepared for the "I don't have time to do it today" trap. This is because: *the day you think you don't have enough time to practice is the day you need it the most*. Skipping meditation because we're too busy is a false economy. Bearing in mind the upside it

3. Focus

Our attention also gets a big boost from practising meditation – and these benefits are immediate. People report less mind wandering after just 8 minutes focusing mindfully on their breath (compared to others who read a newspaper or just relaxed).⁵ And if you're interested in performance, students who practised mindfulness for a fortnight (10 hours in total) smashed their pre-mindfulness graduate school entrance exam scores by 30%. Compared to non-meditating peers, these students showed better concentration (less mind wandering) and a bigger working memory capacity (i.e. holding information in our short term cache before it's transferred to permanent files).⁶



can bring to our thinking – including our clarity, our ability to plan and (re)prioritise – it's bad mental budgeting to pawn 5 minutes on the cushion for a head-start on our inbox. In fact, it's a sure sign that our decision-making is going off-piste when this thought sneaks in to view.



NBA ALL-STARS

For some, the idea of meditation is still a bit too hippy. Too corduroy trousers, gluten-free quinoa cookies, friendship bracelet-wearing...just too much. If this is you, then just forget the word meditation. Think of it instead in terms of mental training and performance. And think instead of all those people who look like they enjoy cold showers and snacking on lemons and yet meditate.

The US Marines are a case in point. Psychologists have been working with the military for years to find ways to protect them against the certain and extreme stress of war. One study offered Marines 8 weeks' mindfulness training before deployment to Afghanistan. Those that practiced just 12 minutes a day scored higher than troops that didn't across several tests of mental functioning (e.g. working memory capacity, emotional experience, perceived stress).⁷ Most interesting though was what happened to a sub-group of skeptical resisters – those Marines who weren't interested in the training, who really didn't get into it and yet showed improvements during deployment. It turned out that several of these Marines contacted their mindfulness instructor from Iraq asking for catch-up lessons because their meditating buddies weren't getting the shakes and were better able to function and sleep at night.⁸

Big brands are also embracing meditation, and leading the way are those at the vanguard of innovation and performance. Google, Apple, Amazon and Nike are all corporate converts, training their employees with mindfulness programmes because they realise that meditation is not just good for stress-busting, it's also good for business.

The NBA may seem like another unlikely source of cushion-dwelling breath-counters – until you appreciate the



benefits of meditation; then it's a no-brainer. It's no coincidence that Michael Jordan, LeBron James, Shaquille O'Neal and the late Kobe Bryant, all practiced meditation to help them find the focus they needed for clutch (match-winning) moments and otherwise perform with All Star-levels of concentration. (There are strong links between meditation and being in the flow state, or in the zone.)

But this isn't just for elites. Everyone's mind works the same way. We respond to stress in the same way (albeit that different things trigger stress for different people), we fall into the same thinking traps – and critically, we can all be trained in the same way. Our biceps may be

smaller than Arnie's but if we bench-press weights every day, they'll get bigger just like his do. The bottom line is that we need to update our preconceptions about what meditation is and who it's for.

MONSTERS UNDER THE BED

A common concern – especially for anxious minds – is what might come out from under the bed if we actually take the time to sit still and watch. This isn't unreasonable, especially in today's world. But the thing is, those monsters will be there whether we look or not. The only difference is how ready we are to face them. (Also, if we're brutally honest with ourselves, we all know which particular breed of gremlin we're going to find.)

There is something more reassuring here though. An equally common experience is that staring thoughts in the face is often the best way to neutralise them. Observing thoughts (even scary ones) from an unbiased perspective is a bit like seeing a movie being shot on set. Instead of a full-immersion Dolby Surround Sound cinema experience, watching a film being made dials the felt emotion right down.

Other famous meditators

*Bill Gates, Ray Dalio, Warren Buffett,
Oprah Winfrey, Jeff Weiner, Bill Ford,
Arianna Huffington, Marc Benioff,
Roger Federer, Novak Djokovic*



EASY AS 1, 2, 3

If you're ready to join the club, here are some practical tips about how to get started.

→ Apps

As with learning any new skill, it helps to have a (good) teacher. There are now plenty of sources you can find online to welcome and guide you on your meditation journey. Popular apps are Headspace, Insight Timer and Calm. And to make things even easier, there are packs and classes designed especially for beginners.

→ Teachers

Different instructors vary enormously in their approach. If you've found one who's sing-song tones or casual mention of "serenity" drive you crazy, just pick another. This isn't school. Don't let a clash in personal approach put you off the subject for life.

→ Persevere

It can take a few tries to take. If it doesn't feel right today, try again in a few days. Or a few weeks. But keep trying. Lots of people who become master meditators weren't sold first time round. Similarly, if you fall off the wagon after an impressive 17-day "run streak", stay calm. Remind yourself that the present moment is what it's all about – so really, every day is Day 1.

→ Habit

Intentionally picking a time of day for your mental training is the best way to install the habit. Bookending the day is often successful (morning or night), and attaching it to another habit is even better (e.g. after you brush your teeth, after you set your alarm).



→ One a day

Set the bar low. Thinking that you need to spend half an hour in the lotus position before breakfast will put you off before you've begun. 5 or 10 minutes is ideal but even 1 minute a day is enough to get you started. Take heart from the slippery slope.

→ Beginners' mind

If your mind is zipping about like a pin-ball machine on fast-forward, it may seem hard to bring your attention back to your breath. At this point, remember that there are no judgments (you can throw out *easy*, *hard*, *good* and *bad*). Also, console yourself that if this is your starting point, you'll probably notice improvements very quickly.

→ Buddies

Get a friend or family member involved. Or look into live "group" sits. It's much easier to stay motivated and to keep coming back when other people are involved. Plus unlike gym classes, you can wear what you want and no one will know if you do accidentally nod off.

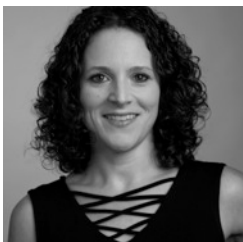
The research into meditation may still be in the ugly duckling phase (aside from all the different flavours of meditation, finding the right control group can be tricky) and findings on its effects are by no means a perfect 10. But a rigorous review of almost 19,000 studies (where only 47 trials made the cut) concluded that mindfulness meditation improves multiple dimensions of stress.⁹ This, combined with the benefits it brings to our focus and our resilience, make it a first pick when we're searching for calm.

NOTES

- ¹ Maguire, E. et al (2000). Navigation-related structural changes in the hippocampi of taxi drivers. *Proceedings of the National Academy of Sciences*, 97: 4398-4403
- ² Goldin, P. R. & Gross J. J. (2010). Effects of Mindfulness-Based Stress Reduction (MBSR) on emotion regulation in social anxiety disorder. *Emotion*, 10: 83-91.
- ³ Taylor, V. A. et al (2011). Impact of mindfulness on the neural responses to emotional pictures in experienced and beginner meditators. *NeuroImage*, 57: 1524-1533.
- ⁴ Kral, T. R. A. et al (2018). Impact of short- and long-term mindfulness meditation training on amygdala reactivity to emotional stimuli. *NeuroImage*, 181: 301-313.
- ⁵ Mrazek, M. D. et al (2012). Mindfulness and mind wandering: finding convergence through opposing constructs. *Emotion*, 12: 442-448.
- ⁶ Mrazek, M. D. et al (2013). Mindfulness training improves working memory capacity and GRE performance while reducing mind wandering. *Psychological Science*, 24: 776 – 781.
- ⁷ See, for example, Jha, A. et al (2010). Examining the protective effects of mindfulness training on working memory capacity and affective experience. *Emotion*, 10: 54-64.
- ⁸ Reported in Paulson, S, Davidson, R, Jha, A and Kabat-Zinn, J. (2013). Becoming conscious: the science of mindfulness. *Annual New York Academy of Sciences*, 1303: 87-104.
- ⁹ Goyal, M. et al (2014). Meditation programs for psychological stress and well-being – a systematic review and meta-analysis. *JAMA Internal Medicine*, 174: 357-368.



Cortex Capital is running training webinars on **how to manage stress and mental health** during the pandemic. Get in touch to find out more at info@cortexcapital.org



Dr. Ula Cartwright-Finch is Managing Director of Cortex Capital, Visiting Researcher at University College London and Visiting Lecturer at Queen Mary University of London. She has worked as an international disputes lawyer for more than 12 years in London, Hong Kong and Madrid. She also holds a PhD in Psychology and collaborates with leading researchers applying psychology to legal practice. Ula delivers training and advice to firms and businesses using insights from behavioural science to help them perform and excel.