



The Wise Brain Bulletin

News and Tools for Happiness, Love, and Wisdom
Volume 6,2 (4/2012)

Mindfulness of the Body

Excerpted from *The Mindful Manifesto: How Doing Less And Noticing More Can Help Us Thrive In A Stressed-Out World*, by Dr. Jonty Heaversedge and Ed Halliwell (c) 2012.

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Editor's note: Stress is endemic in our culture. We live in a speedy, pressurized world, and there's often little time to really experience and enjoy our lives. For thousands of years Eastern traditions have taught meditation to help people lead healthier, happier lives, and scientific research is now confirming that mindfulness can help us improve our well-being. [*The Mindful Manifesto*](#) is a new book by family doctor Dr. Jonty Heaversedge and mindfulness teacher Ed Halliwell: it integrates the latest scientific and medical research on mindfulness with meditation's historical context, as well as guidance on how to train in this important practice and suggestions for how it can help us as individuals and as a society. In this excerpt, from Chapter 3 of the book – Mindfulness of Body – Ed and Jonty explore how mindfulness can help us manage our physical health, with great potential benefits for our healthcare systems.

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Practice listening to the wisdom of your body—coming into a mindful relationship with your physical form can bring deep healing that goes beyond conventional ideas of health.

Many of us have troubled relationships with our bodies. Perhaps we don't like the way they look – they're too tall, too small, too fat, too thin or too old. Or they don't behave the way we want – they give us pain, and don't work the way they used to. Sometimes we ignore our bodies, disregarding our health and then getting surprised when we become unwell. At other times we worship our bodies, creating a temple of them, and religiously sticking to whatever diet plan or exercise that might promise to keep us young.

Each of these approaches has something in common – none of them relates with the body as it is, with acceptance, compassion, and care. Whether we're resisting, ignoring, or obsessed with our bodies, we

aren't at peace in our physical home. We objectify our bodies, which means we can't truly inhabit them. We become dissociated, caught in a stressful relationship with our form that's mainly managed through the discursive mind – how we think ourselves to be, rather than how we actually are. When we relate with ourselves in this conceptual way, it's like our minds and bodies are separated at a distance. We feel divided, disembodied.

Because of this separation, we miss much of what our bodies have to tell us. They're constantly sending us signals, a steady stream of feedback on our lives. This feedback is sometimes described as intuition, having an inkling, a gut reaction, or funny feeling. It may get dismissed as irrational, but there's nothing very strange about it – it's just information that tells us physically how we're doing. Our body acts like a physical barometer, reflecting the weather of our internal world. If we have an infection, our body lets us know with discomfort and fever; if we feel threatened, it lets us know through sweaty palms, dry mouth and stomach churning; and if we have been over-exerting ourselves, the body lets us know through exhaustion, a call to rest. We now know that there are neural networks all over our bodies, sending electrical signals to our brain – whether we choose to listen or not, our body is constantly communicating.

Many of us become aware of our body's signals only when we get really sick, stressed or tired – we aren't attuned to the more subtle sensations that are present all the time, and which we could use to guide our decision-making. This was demonstrated in an experiment conducted by the neurologist

Antonio Damasio – he measured the electrical conductance of subjects' palms during a gambling task in which the cards were rigged, and found that people's bodies sensed the deception around 5-8 times more quickly than their minds. Their hands started registering signs of nervousness (a higher level of conductance) when they were about to draw from a rigged deck, even though their conscious minds remained unaware of the fraud.

We are less likely to notice cues from our bodies when we are stuck in our thoughts, rushing around like brains on sticks. We don't hear when our bodies tell us it's time to slow down, eat healthily or take exercise. If this is the habitual way we relate with our bodies, distant and unresponsive, drowning out their messages with activity and thinking, is it any wonder that medical practices and hospital clinics are flooded with patients reporting “unexplained” aches, pains, and fatigue? When we don't listen to them, eventually our bodies protest in the only way they can, beckoning for attention with symptoms of disease. They cry out for healing.

When we get sick, rather than treating our bodies with tenderness and care, we often just objectify them even more. We take them to the GP like we'd take a second-hand

Greetings

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[Rick Hanson, PhD](#) edits the Bulletin, and this issue is designed and laid out by the managing editor, [Michelle Keane](#).

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car to the garage, hoping to get them prodded and patched up for the road. We expect the doctor to ask a few questions, do some tests, and try to fix us up. But many symptoms don't fit into neat categories – they can't be resolved by looking at an X-ray or having an operation. The common assumption that doctors can cure us is often false: many medical conditions are chronic, and we have to learn to live with them. Over half of adults in the United States suffer from ongoing or recurrent pain – and their doctors may be able to do little to help them.

The lack of a medical solution can make things worse. We long to feel better, and so struggle to improve things. We fight for a cure – surely the doctor can order some more tests, or send us for a second opinion? There must be a tablet, an injection, a treatment program that can make our bodies work well again – after all, if they can clone sheep, surely they must be able to get rid of *my* pain? Unfortunately, this desperate search for answers can lead to even greater stress. We get angry at our bodies, cruelly cajole them to operate in spite of our condition, or reject them, giving up on self-care. We fire the second arrow of suffering onto the first arrow of pain.

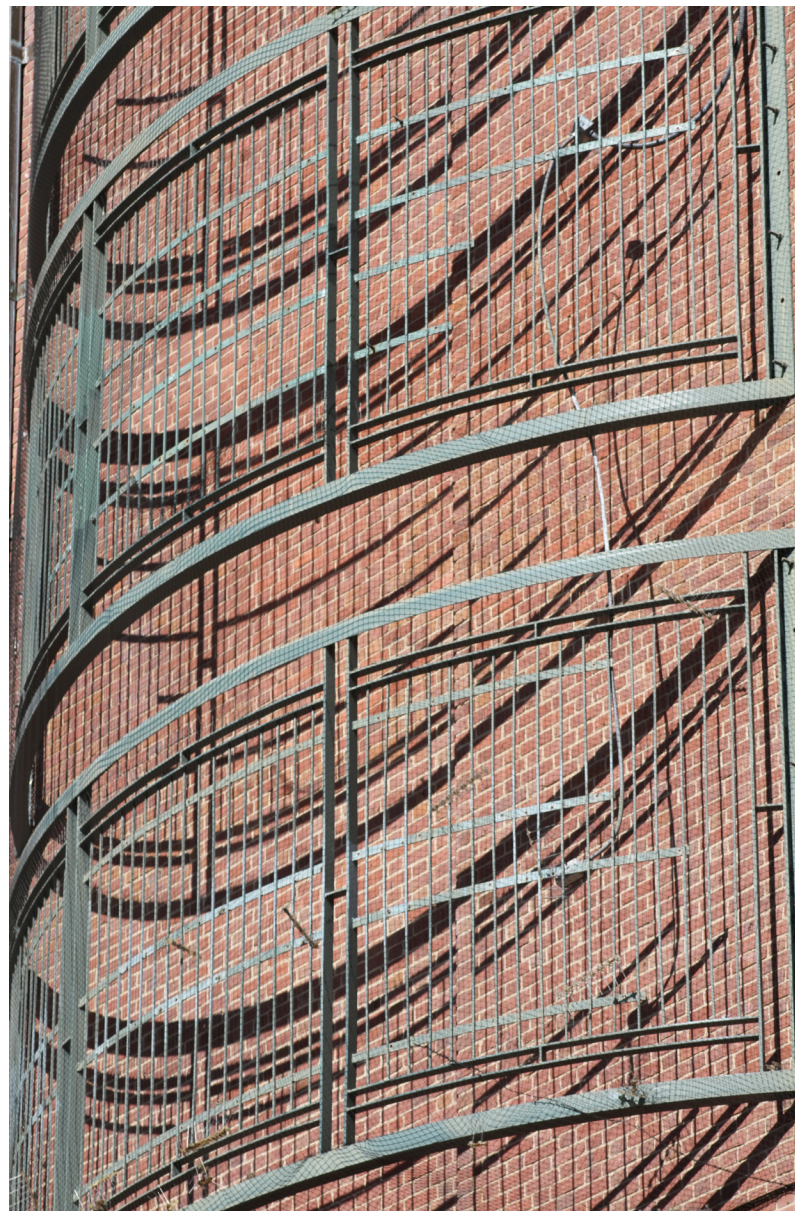


Photo: [Christa Gallopoulos](#)

Modern medical practice doesn't always help matters. Doctors' training breeds a mechanical kind of healthcare – the human "machine" is broken down into all of its material components, and the doctor's job is to try to work out where the problem is and then resolve it. Medicine has developed this way of working because it's based on scientific method, which relies on detailed observation and experimentation to find out how things work. In many respects it's a fine way of doing things – scientific detail has brought amazing advances in the treatment of many illnesses, especially over the last century. But it has its drawbacks, meaning we place far greater importance on what we can see than what we can't, focusing in on material detail rather than zooming out and taking in the bigger picture.

It's easy to lose sight of the fact that we are not just biology and chemistry. We are an interconnected matrix: of physical components, yes, but also our emotions, thoughts, and relationships, everything that makes up our conscious experience and which so profoundly impacts our well-being. Taken to its extreme, medical healthcare sometimes doesn't recognize that we have minds at all – you still sometimes

hear trainee doctors talking about “the amazing heart murmur in bed 14” or “the liver cancer in bed 22.” Patients become their diagnosis – a collection of disconnected flesh and bones.

Despite all our amazing technology, we don’t have cures for many of the most common conditions that afflict us – heart disease, high blood pressure, asthma, or arthritis. Medicine can help us manage these illnesses, but in most cases there is no way to get rid of them. Even with the best physicians, the best medicine, and the best technology, our bodies still wear out – we *will* have to face aging, sickness, and death. If healthcare is just about fixing us up, it is doomed to failure. So might there be a more skillful way of working with our bodies, some way to healing – even when our bodies aren’t in good shape?

A Different Kind of Health

It has been shown again and again in studies that our mood and thinking processes affect when and how we get sick, as well as our prospects for recovery. People prone to mental illness are at a much higher risk of a whole range of other health problems, including cardiovascular disease and diabetes. Chronic stress itself is a major cause of illness – it increases our blood pressure, making us more likely to suffer a heart attack or stroke, and weakens our immune systems so that we are more likely to get infections. It contributes to skin disorders such as eczema, and it plays an important part in conditions like irritable bowel and chronic fatigue. It can also give us headaches and migraines, as well as disturbing our sleep – placing our bodies under even more strain.

To address this issue, we can’t just ask the mechanic to fix our body/machine – we need to take a closer



Photo: [Christa Gallopoulos](#)

look at how we're driving. In the late 1970s, molecular biologist Jon Kabat Zinn began teaching patients to do just that. At the time, Kabat-Zinn was working in the cell biology and anatomy department at the University of Massachusetts Medical School. But his inspiration was moving in another direction.



Photo: [Christa Gallopoulos](#)

One of those young people who had made a powerful connection to the practice of meditation during the 1960s and 70s, Kabat-Zinn looked around at his work environment and saw suffering staring him in the face. Like all hospitals, it was full of sick people, and many of them had come to the end of the road with conventional medicine. When he asked his clinical colleagues what proportion of patients they could truly help, the figure that came back was depressing: maybe one in seven, one in ten. The rest either got well on their own or stayed unwell.

Kabat-Zinn came up with an idea. What if he were to put together an intensive training in meditative disciplines – the kind that was taught in a Buddhist monastery or retreat center – and offer it right there in the hospital, to people the doctors had little to offer? What if he were to challenge them to work with their suffering in a new way? Of course, he realized that meditation wouldn't get rid of these people's pain, but could it help them to relate with their very serious problems differently? The response was enthusiastic – if

Kabat-Zinn felt he could do something useful for these people, the hospital clinicians would be more than happy to send some his way.

Kabat-Zinn called his program Mindfulness-Based Stress Reduction (MBSR). Over eight to ten weekly sessions, he taught groups of people a range of practices – mindful breathing, a “body scan” meditation in which attention is brought to different parts of the body in turn, and gentle movement exercises based on the tradition of Hatha Yoga. He also taught them how to cultivate awareness during activities such as eating and walking – to take what they were learning into their daily lives.

MBSR: The Science

Because it had a simple, clear, and easily replicable format, the MBSR course lent itself easily to scientific

research. Many patients could be put through the same training, and by evaluating how they responded, it was possible to discover whether the program really helped.

The research started with a small trickle of studies carried out by Kabat-Zinn and his colleagues, but as news of the course spread – other clinicians and researchers began offering it to their patients and analyzing the results. The outcomes have been similar all over the world – hundreds of papers have offered compelling evidence that MBSR does indeed reduce stress, help people deal with the symptoms of illness, and improve their quality of life. In one early inner-city trial (in Meriden, Connecticut), participants' anxiety levels fell by 70 percent after they took the course. Their reported medical symptoms also reduced by 44 percent, and they visited their doctor much less often.

The effects seem to be long-lasting too – another early trial found that not only did participants get less anxious during and after the course, but most were still feeling the benefits three years later. The MBSR program also seemed to help people enjoy a more harmonious relationship with their bodies. In one of Kabat-Zinn's studies, participants were asked to rate how far they considered each part of their body to be problematic. At the end of the course, the scores had fallen by around 30 percent, suggesting that these patients' minds and bodies were no longer in such a state of struggle.

As the quantity and quality of data has grown, researchers have begun to compile reviews and meta-analysis of the evidence – pooling them to come up with an overall picture of the program's impact. These have consistently concluded that MBSR reduces stress and increases emotional well-being across a wide array of well-being measures (less anxiety, better mood, improved sleep, more vitality).



Photo: [Christa Gallopoulos](#)

The program has also shown a positive impact on people's ability to cope with a range of specific medical conditions, including diabetes, cancer, fibromyalgia, arthritis, multiple sclerosis, epilepsy, chronic fatigue, irritable bowel syndrome, and heart disease.

Studies have suggested that meditation practice has an effect on our ability to cope with pain too. Researchers at the University of North Carolina have found that people who meditated for 20 minutes a day had higher pain thresholds after just four days – they were given small electric shocks and those rated as “high pain” before meditation diminished to “low pain” afterwards. Of course, the intensity of the shocks remained the same, so it was the subjects' relationship with the discomfort that changed. An experiment at Wake Forest University School of Medicine reported that another short training in meditation reduced pain's unpleasantness by 57 percent, and subjects rated the same pain as 40 percent less intense. This shift was mirrored in their brains, which were scanned using magnetic resonance imaging – brain activity decreased in areas known to process painful stimuli.



What's Happening In The Body?

Photo: [Christa Gallopoulos](#)

It seems clear that mindfulness helps people reduce their stress, as well the intensity of their pain and suffering. But what is actually going on in their bodies? Can meditation transform not just how we relate to our bodies, but biology itself?

Some of the early research on meditation reported effects on the body's metabolism – in the 1970s, scientists Herbert Benson and Robert Wallace found it could lead to health-promoting changes in the body, including a lowering of blood pressure and heart rate. However, the first studies to investigate the impact of mindfulness-based stress reduction on the body was carried out by Kabat-Zinn and a team of dermatologists. They studied a group of patients with psoriasis – a common skin condition which produces “plaques” of thickened, red scaly skin on the body. Psoriasis is made worse by stress, and it also seems likely that the body's immune system plays a part in its development. The immune system normally protects us from harm, but in patients with psoriasis, cells from the system build up in the skin,

releasing chemicals that cause inflammation and an overgrowth of cells in the affected area.

Most treatments for psoriasis try to reduce the inflammation or dampen the immune system by slowing down cell growth. This is usually done with powerful creams applied to the plaques, but if the psoriasis is widespread, patients are sometimes given ultraviolet-light treatment, known as *phototherapy*. Given that stress usually makes psoriasis worse, Jon Kabat-Zinn and his colleagues wanted to find out if practicing mindfulness could have the opposite effect, and enhance the effect of phototherapy.

The researchers divided the patients into two groups, and while one set received their usual light treatment, the others were also guided through a set of mindfulness meditation techniques – played on a tape as the patients stood in the phototherapy booth. Pictures were taken of the psoriasis before the treatment started, and again at regular intervals throughout the trial, until the plaques had disappeared. The results were striking: the skin of the patients who listened to the tape while receiving phototherapy cleared four times more quickly than those who just had the light treatment.

More evidence that mindfulness can affect the immune system came from a study of MBSR offered to office workers in Madison, Wisconsin. At the end of the course, the participants were given a flu vaccination, as were some of their colleagues who hadn't received the training. Vaccinations stimulate the immune system to produce antibodies to a virus, which are then able to recognize and destroy that virus if it gets into the body again. The stronger a person's immune system, the greater the antibody response to the vaccination. Earlier studies had shown that being under stress can lower antibody response, and the investigators wanted to see if taking the program could increase it. A few weeks

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after the vaccination, the flu antibody level in the bloodstream of the workers who had taken the course showed, as predicted, a higher antibody response than those who had not.

If practicing mindfulness can help our immune system handle illnesses like psoriasis and the flu, could it also help us manage more serious conditions, like cancer? Linda Witek-Janusek and her colleagues in Chicago offered an MBSR course to 38 women after they'd had surgery for breast cancer, and then

compared their recovery to that of another 31 women. Witek-Janusek found that the women who took the course had lower levels of the stress hormone cortisol, and that their immune systems recovered more quickly after treatment – they had a higher level of what is called “natural killer cell activity.” Natural killer cells can recognize and destroy cancer cells – the more active they are, the better chance there is of being able to clear the cancer and prevent it from returning. Several other studies of MBSR with cancer patients have also found lower levels of cortisol and improved immune function.

In each of these cases, it seems that the body is responding favorably to a reduction in stress. Just as symptoms of illness can be exacerbated by tension, so the letting go of stress that can come with mindfulness training helps protect us from illness and gives our bodies a greater chance to heal – we experience the benefits not just as an attitude of mind, but in the very tissue and fiber of our physical make-up.

Mindfulness training represents the possibility of a paradigm shift in how we approach our health. When we treat our bodies as machines to be taken to the garage for servicing and repairs, we disempower ourselves – handing over the keys to our well-being to “experts.” Of course, it’s sensible to use the wonderful technologies of modern medicine to help when they can – they often bring healing that we could only dream of a few decades ago. But by also learning practices that can help us heal from the inside, we too can start to become experts in looking after our own bodies.

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Ed Halliwell is a mindfulness teacher and writer, based in the UK. He is the author of the Mental Health Foundation [Be Mindful Report](#), and writes for the Guardian newspaper on meditation and well-being. He also writes a regular [blog](#) for [mindful.org](#). He teaches mindfulness to a wide range of individuals and groups, and is a faculty member at the School of Life in London. [www.edhalliwell.com](#).



Dr. Jonty Heaversedge is an inner city GP in a large practice in South East London. Jonty completed a degree in psychology and then a Masters in Mental Health Studies whilst at Medical School, and continues to pursue a particular interest in the psychological health and wellbeing of his patients. Jonty has also become an increasingly familiar face on the BBC, having presented three series of ‘Street Doctor’ for BBC1. Jonty is a regular contributor to BBC news – both TV and radio. [www.drjonty.com](#).

LENS Neurofeedback: A Shortcut to Meditation Results?

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Technology may be catching up with ancient wisdom practices via techniques for optimizing brain functioning. A Vipassana (insight) meditation group called Tam Dharma Friends is informally reporting results from the Low Energy Neurofeedback System (LENS) that mimic the effects of sitting a long meditation retreat, and are investigating similarities such as increased concentration (less distractibility), increased awareness of bodily sensation, the ability to witness emotional states instead of being swallowed by them, strengthening of the immune system, and access to a resting state of kindness, compassion, equanimity and joy.

Neuroplasticity

Neuroscientists have validated what the Buddha taught – that physical brain structures can change over time (Cheney 2007). Because of this neuroplasticity, we don't have to be stuck with the old neural pathways that once defended against trauma and the stress inherent in life. The Low Energy Neurofeedback System (LENS) seems to clear these habitual thought patterns that are not grounded in present time. Addressing the brain in its own electromagnetic language through an EEG reader and sensor wires to the head, LENS Neurofeedback encourages the brain to “reboot” itself, restoring optimal functioning. LENS is a significant medical breakthrough, one of the most important developments in mental health and cognitive enhancement I have seen in decades of psychotherapy practice.

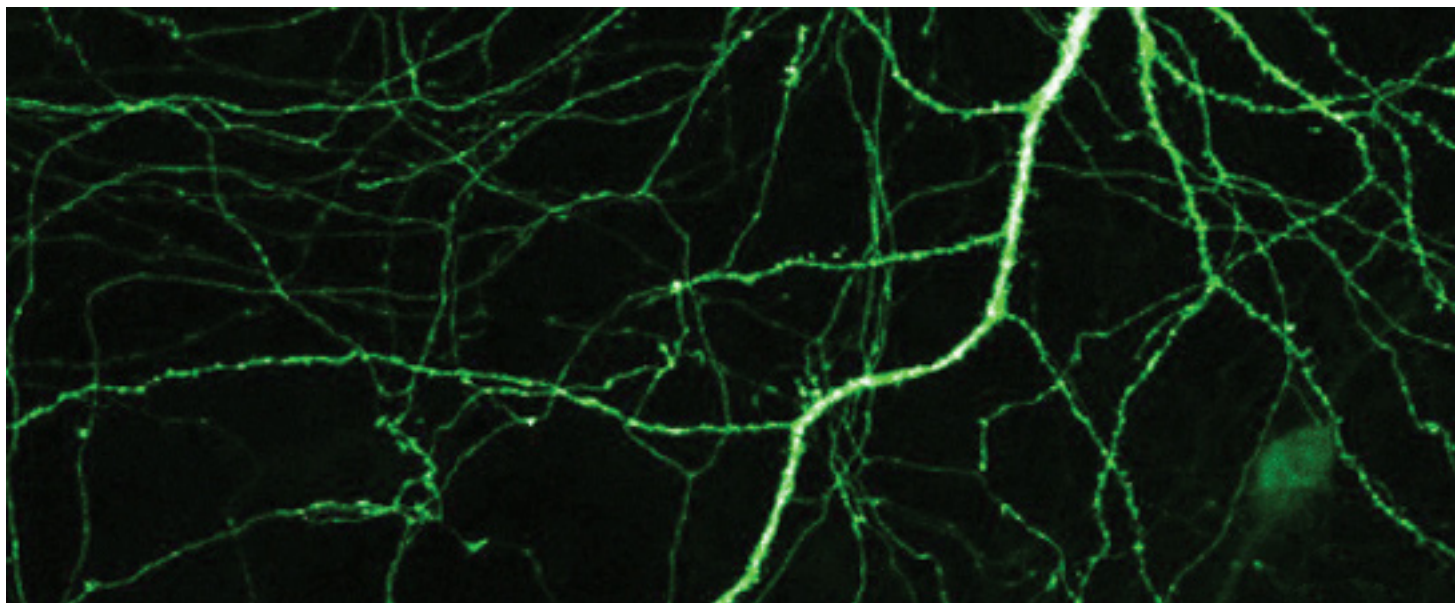
Introduction to the Low Energy Neurofeedback technology

The Townsend Report, a peer review paper, clarifies “The LENS process is not a treatment for any specific condition or directed toward a specific diagnosis. It's a general process that optimizes brain function. However, as self-regulation occurs, many symptoms that have their basis in central nervous system.

LENS has been reported to be effective with symptoms associated with:

- Anxiety, depression, fear, aversion and anger
- ADHD, foggy thinking, memory
- Energy, motivation, sleep
- PTSD, concussions / traumatic brain injury
- Seizures, strokes and migraines
- Addiction recovery and Obsessive Compulsive Disorder
- Faster, easier thinking (Larson 2006)

With physical symptoms like migraines or fibromyalgia, improvements are easier to track. But more subtle LENS effects are also appreciated by people who simply want their brain to function better. They report that thinking is easier, as though they are “in the zone” all the time. They notice the return of clarity and energy during the day, sleep at night, a sense of humor, motivation to get things done, ease of cognition, better memory, the ability to read and listen with less distraction, and the absence of depression, irritability, impatience, and explosiveness. Their concentration during meditation practice typically deepens.



History

LENS neurofeedback was discovered over 20 years ago when the neuropsychologist Len Ochs wrote a computer program designed to calm the brain during biofeedback. It tracked the frequencies of brain pulsations measured on the skull through sensor wires from an electroencephalograph. Ochs noticed dramatic changes in practical functioning for the people who tried the program, even when the flashing feedback lights were unplugged, and wondered how this could be possible. The practical behavior changes were finally explained by taking the EEG and computer to Lawrence Livermore Labs, where scientists detected a very slight electromagnetic field being generated by the crystal sequencing clock inside the EEG. This electromagnetic signal was extremely faint – a thousand times less than the field around a digital watch. Yet when that varying signal traveled back up the sensing wires to the brain, something about how *accurately* the signal tracked the brain’s own varying pulsations caused observable changes in behavior.

In 2006, Frank Duffy, MD., Pediatric Neurologist at Children’s Hospital Boston and editor of the *EEG and Clinical Neuroscience Journal* stated “In my opinion, if any medication had demonstrated such a wide spectrum of efficacy [as neurofeedback], it would be universally accepted and widely used.”

Safety

Several hundred health practitioners worldwide have administered this faint amount of mirroring signal to the brains of over 75,000 people. So far there have been no reported cases of new negative symptoms, and hundreds of studies have documented the benefits of EEG neurofeedback, especially for ADHD, anxiety, and head trauma. Symptoms sometimes recur briefly as they gradually “clear away” using this method.



Photo: [Christa Gallopoulos](#)

Difference from Traditional Neurofeedback

In traditional neurofeedback, brainwave information is translated to images on a computer screen or sounds. Clients attempt to train their brainwaves by making certain effects happen on the screen. No signal is transmitted back to the brain. This kind of neurofeedback typically requires substantially more sessions to see changes than with LENS.

With LENS neurofeedback, clients simply sit still for a few moments. A brief, tiny signal feeding back to the brain does all the work. And unlike traditional neurofeedback clients, LENS clients generally notice changes either immediately or within the first few sessions. Fast action, a limited number of sessions, overall cost, and the ease and simplicity of treatment all distinguish LENS from traditional neurofeedback.

The Process

The LENS process starts right out with treatment and not expensive testing. Sensor wires from an EEG are clipped on to each ear, and is another moved around the head for a few seconds at each location. The

LENS, or Low Energy Neurofeedback System, uses a very low power electromagnetic field, smaller than the ones that surround digital watches, to carry low energy feedback stimulation. Despite such a weak signal, LENS produces a measurable change in brainwaves and greater self-regulation.

By mirroring back the brain's own patterns, LENS takes advantage of the brain's efficiency at healing itself. A typical course of treatment is 8-20 sessions, with noticeable changes typically reported after only the first few sessions. And the changes are enduring, which means that ongoing sessions become unnecessary. Something about the brain being mirrored so accurately, perhaps like a mother's love or a teacher's acknowledgement, snaps the brain into housecleaning mode. The LENS process trusts the brain to choose its own reorganization priorities. Our wise brains seem efficient at letting go of whatever is outdated, while keeping our good qualities active. It's like deleting unused programs and malware on a computer. The human brain is the most complex system in the known universe, and to us, this complexity invokes an attitude of humility before its mystery. So we like the way LENS trusts the brain to direct its own reorganization.



Photo: [Christa Gallopoulos](#)

Keep the Good

LENS does not change skillful thought patterns that are still in use. It's like a rainstorm blowing old dead leaves and branches out of a tree – the living branches stay connected, and new growth accelerates. In fact, EEG neurofeedback has been shown to enhance artistic performance (Gruzelier 2008). Our LENS clients report that the habitual, though not necessarily useful, thought-patterns that used to fascinate them no longer have the same pull. You could say the dead branches of defensiveness have fallen off the tree.

Counter Indications

LENS is not effective with the “live branches” in our metaphor. It won’t help conditions that are still irritating the brain in present time. Examples include an ongoing virus or parasite, mercury poisoning, dental infections, continued alcohol use, toxins that are still being ingested like MSG or sulfites, and allergies to something still being eaten like wheat. The small percentage of people not helped by LENS brain optimization in the first few sessions need to shift to taking care of these ongoing problems before continuing LENS.

Head Injury/ Mild Traumatic Brain Injury

Over 85% of LENS clients benefit significantly, often dramatically. The success rate is even higher with people who have ever hit their head. Many people believe they have never had “serious” head trauma, but recent research has shown that even very small bumps on the head are cumulative, and the effects are pernicious. A report to the US department of Health and Human Services (Thurman et al. 1999) stated that:

- Concussion, or mild traumatic brain Injury, is the most un-diagnosed cause of ADD symptoms.
- An estimated 5.3 million men, women, and children are living with a permanent Traumatic Brain Injury-related disability in the United States today.
- Cognitive, emotional, and sensory impairments often permanently alter a person’s vocational, social and family relationships – an invisible epidemic.

Who can make it to age four without falling and hitting their head numerous times? And a 20 mile-per-hour fender-bender subjects the brain to forces 18 times the pull of gravity! And then there are all those tiny bumps that seemed not to matter. We just keep going, suppressing these insults to our brains. The typical rapid improvements after the first session or two of LENS may occur because the brain prioritizes by addressing these suppressed head traumas first. It’s as if major neural “real estate” is tied up, holding a defensive stance in case that concussion ever happens again. When those neural pathways are released from guard duty and new cortical mapping takes place, people typically say that thinking gets easier.

Worry, Hurry and Blurry

The brain optimization that is induced both by LENS and by meditation could be thought of as indirectly addressing the three traditional Buddhist personality tendencies of aversion, greed and delusion or in today’s terms: stressful worry, workaholic hurry,

Perspectives on Self-Care

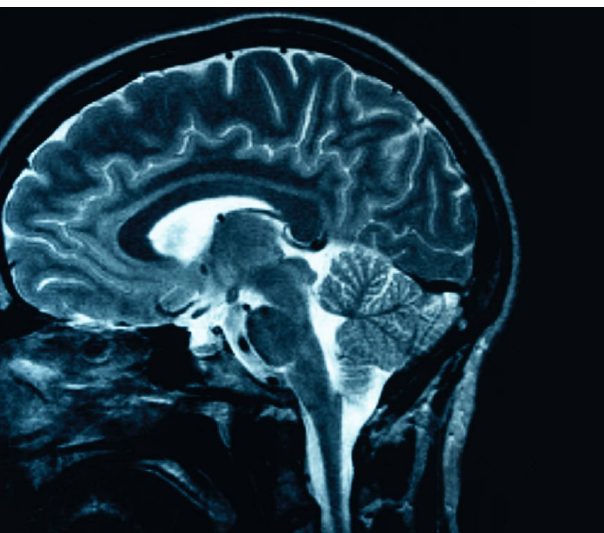
Be careful with all self-help methods (including those presented in this Bulletin), which are no substitute for working with a licensed healthcare practitioner. People vary, and what works for someone else may not be a good fit for you. When you try something, start slowly and carefully, and stop immediately if it feels bad or makes things worse.

and brain fog blurriness. These states can be thought of as remnants of our evolutionarily older “rat brain” or reactive nervous system, which impels us “don’t BE lunch, eat lunch, and then nap.” We are the product of evolutionary natural selection, which favored immediate reaction to the stick that could be a snake. We are wired to favor stressful reactions; we unconsciously incline our attention towards anxiety, hyperactivity and fatigue.

Worry, Hurry, and Blurry poison our tranquility and our ability to be present in each moment. Meditation and LENS both seem to insert a longer pause between these alarms and our reactions. Brain optimization allows the frontal cortex to establish equanimity. Anxiety fades about public speaking, not being able to remember a name, or even about a big life crisis, when the reasoning part of our brain has the capacity to relax and address what needs to be done in the present. The wise brain focuses on the

task at hand instead of being distracted by the past and future.

Everyone works with the balance between focus and distractibility, and when it becomes a problem we label it ADHD. It’s the most commonly diagnosed psychiatric disorder of childhood and adolescence, with prevalence rates ranging from 3% to 7% in the United States (Monastra 2004). The National Institutes of Health issued a consensus statement associating improvements in focus and other behaviors included in the diagnosis ADHD with treatment through EEG neurofeedback (NIH Consensus Statement 1998).



Motivation through Mindfulness and Neurofeedback

The Low Energy Neurofeedback System also seems to address motivation. In *Buddha’s Brain* (Hanson 2009), Rick Hanson explains the internal conversation about motivation that goes on between the brain’s Anterior Cingulate Cortex hub (ACC) and the amygdala hub. The ACC manages deliberate, reasoned action while the amygdala handles reactive, passionate motivation. The amygdala “emotions” energize and activate ACC “reasoning” by pulsing rhythmically at rate of four to seven times a second – theta frequency brainwaves. In the research Hanson cites, when the ACC is triggered by this theta energy, it responds by pulsing at a faster gamma frequency of 30-80 times per second, sending signals back to the amygdala that limit the reactive theta waves.

This increased ability of the reasoning cortex to limit the theta frequency brainwaves has traditionally been known as wisdom or maturity. It is exactly what practitioners observe, whether they are using meditation or neurofeedback to achieve cortical remapping. So it appears that LENS and meditation may operate partly through the mechanism of increasing the logical ACC’s ability to limit the amygdala

“mammal brain” theta waves and the way in which they link sites in the brain. People report behavior changes that support this theory – they say it’s easier to start projects, and easier to accomplish them. After some initial LENS sessions, people have often reported feeling motivated to clean out a closet or the garage, or something similar.



Inclining Towards the Good with LENS and Meditation

LENS is not a replacement for meditation or for the work of constantly paying attention to mind states. Preliminary investigations, however, indicate an exciting area for formal research, because meditators are reporting that LENS sessions bring about effects similar to sitting a long silent retreat. Because LENS disrupts unstable defensive thought patterns from past trauma, people feel like they have bypassed much of the arduous effort required to move thoughts from habitual distractive looping to present awareness and choice. At Echo Rock Therapy Center, we are getting reports that our clients believe they have leapt years ahead in their meditation practice. With less distractibility, there is more concentration. With more concentration, there is more insight. With more insight, there is more equanimity.

LENS seems to open up a moment of “sacred time,” during which the brain has newly available space to remap its favorite pathways. In this moment, the intentions and actions of the client may play a critical role by choosing the direction

of these new trails. We think of it as a partnership, like psychotherapy, in which we point out and demonstrate new attitudes that people may want to

choose. We find that most people are quite clear about how they want their thoughts to change, once LENS makes those changes easier. And if they have already spent time practicing skillful attention, they are able to incline their new thought patterns towards the good.

So, for some people the most exciting applications of LENS are emerging not from the treatment of disease, but in the enhancement of positive qualities. If they bring their intentionality to the partnership, meditators are able to clear some of the distractions that have long obscured access to the underlying

sense of joy and connectedness that accompanies being present simply with the way things are. At Echo Rock Therapy Center, we are working to formulate the right questions to ask about how this all happens. What is the relationship between LENS neurofeedback and the states and traits produced by meditation? We are searching for metrics that can quantify things like mindfulness, curiosity, energy, joy, tranquility, concentration, kindness, and equanimity. We welcome collaboration. We hope to design a larger study that would ask interesting questions about the relationship between ancient wisdom and LENS technology.

Grant Rudolph, MFT, and Victoria Vogel, MFT have been the clinical co-directors of [Echo Rock Therapy Center](#) in Mill Valley, CA since 1988. They practice LENS neurofeedback, mindfulness therapy, and Jungian dream work. They also co-lead the meditation group Tam Dharama Friends, and are Dedicated Practitioners at Spirit Rock Meditation Center. Grant has studied or taught at Yale, Sonoma State, Pacifica Graduate Institute, and CA Institute of Integral Studies.



References

Cheney, W. 2007. *The Dynamic Mind*. New York, NY: Houghton-Brace Publishing Company.

White, C. 2008. Restoring Optimal Brain Function Helps Many Health Problems. *Townsend Letter*. Retrieved from http://www.townsendletter.com/April2008/ltr_white0408.htm.

Larsen, S., PhD. 2006. *The Healing Power of Neurofeedback: The Revolutionary LENS Technique for Restoring Optimal Brain Function*. Rochester, VT: Healing Arts Press.

Duffy, F., MD. 2000. *EEG and Clinical Neuroscience Journal*. 31(1).

Gruzelier, J. 2008. A theory of alpha/theta neurofeedback, creative performance enhancement, long distance functional connectivity and psychological integration. *Cognitive Processing*, 10 Suppl 1(0), S101-9. Retrieved from <http://dx.doi.org/10.1007/s10339-008-0248-5>.

Thurman DJ, Alverson C, Dunn KA, Guerrero J, Sniezek JE. 1999. Traumatic brain injury in the United States: A public health perspective. *The Journal of Head Trauma Rehabilitation* 14(6):602-15.

Monastra, V. J. 2005. Electroencephalographic biofeedback (neurotherapy) as a treatment for attention deficit hyperactivity disorder: rationale and empirical foundation. *Child and Adolescent Psychiatric Clinics of North America* 14:55-82.

Diagnosis and Treatment of Attention Deficit Hyperactivity Disorder. 1998. NIH Consensus Statement. 16(2): 1-37.

Hanson, R. 2009. *Buddha's Brain: The Practical Neuroscience of Happiness, Love, and Wisdom*. Oakland, CA: New Harbinger.

Skillful Means

The [Skillful Means wiki](#), sponsored by the Wellspring Institute, is designed to be a comprehensive resource for people interested in personal growth, overcoming inner obstacles, being helpful to others, and expanding consciousness. It includes instructions in everything from common psychological tools for dealing with negative self talk, to physical exercises for opening the body and clearing the mind, to meditation techniques for clarifying inner experience and connecting to deeper aspects of awareness, and much more. The following psychological practices help one simulate the parts of the brain that create positive feelings and help reduce stress.

Mindful Pause

Purpose/Effects

Throughout our day it is easy to get wrapped up in bouncing from task to task, becoming highly stressed, exhausted or emotional without even being aware of it. By taking a moment to stop what we are doing and mindfully pause we can become more focused, aware, and direct our attention where we want it to be. Pausing mindfully can also help us regulate our emotions so that we do not further exacerbate our stress or destructive mind states.

Method

Summary

Throughout the day at various times, stop and take a moment to check in with yourself and how you are feeling.

Long Version

- Begin by designating three times a day that you will pause mindfully and check in with yourself.
- For each mindful pause begin by stopping what you are doing.
- Take three mindful breaths, placing your full attention on each in-breath and each out-breath.
- Proceed to shift your awareness and attention to what is going on internally.
 - Become aware of any and all physical sensations throughout your body.
 - If you come across areas of tension, invite them to soften.
 - Become aware of any emotions that may be present and see if you can greet them with a curious and compassionate attention.
 - Become aware of any thoughts that might be present in the moment.
- See if you can observe these thoughts, emotions and sensations as passing events and refrain from engaging in their content or pull.

- After you have become aware of your internal experience, bring your attention back to your breath and follow your breathing for a few rounds, allowing all thoughts, sensations, and emotions to be however they are.
- When you are ready, with awareness, set your intention for how you want to proceed in the next moments of your life and what you want to focus on.
- Return to whatever you were doing with greater awareness.

History

Many Buddhist meditation teachers recommend mindfully checking in with yourself throughout the day to become aware of your experience. The method presented here was adapted from a variety of sources, some of which are listed below.

See Also: Books

Williams, M., PhD., Teasdale, J., Ph.D., Segal, Z., PhD., and Kabat-Zinn, J., PhD. 2007. *The Mindful Way Through Depression: Freeing Yourself From Chronic Unhappiness*. New York, NY: The Guilford Press

Chodron, P. 2009. *Taking the Leap: Freeing Ourselves from Old Habits and Fears*. Boston, MA: Shambala Publications.

Stahl, B. and Goldstein, E., PhD. 2010. *A Mindfulness-Based Stress Reduction Workbook*. Oakland, CA: New Harbinger Publications.

External Links

[Guided STOP method](#)



Photo: [Christa Gallopoulos](#)

Neurofeedback Training

Purpose/Effects

Neurofeedback therapy is a technique that uses high-tech sensors on the scalp to provide real-time feedback about the brainwave activity of the user. With this feedback, the user can condition the brain to self-regulate its functions and thus perform better. It has been used successfully in the treatment of anxiety, depression, AD(H)D, sleep disorders, autism-spectrum conditions, seizures, and dozens more problems. It can also be used by neurotypical individuals who simply want to have more control over their brain's function.

Method

Summary

Undergo neurotherapy with a trained professional for 20-40 sessions.

Long Version

1. Because of the complex equipment involved, neurofeedback training is not a do-it-yourself technique. Thus, the first step is to find an EEG provider. You can start by using the directory [here](#). For a list of all the conditions that neurofeedback training might help, look [here](#).
2. When you are in your neurofeedback session, you will answer some questions so that the EEG technician can better understand your conditions and, thus, which brainwaves to target. She or he will place sensors on your scalp (this is painless) that are attached to a machine that processes the signal. This machine will display the feedback often in the form of a video game, which you will have to “play” using your brain. When the activity of the desirable brainwave frequency is increased, the video game will reward you; when the adverse occurs, the video game will “punish” you. The brain will begin to answer these prompts and thus be trained in new brainwave patterns: patterns that are healthier and more optimal.
3. After about twenty to forty of these sessions, the brain should be “trained.” These results are not temporary—they will stay with you! However, sometimes individuals need “boosters”—you can talk to your provider if this is something you are interested in.

History

Psychiatrists in the early 20th century discovered brainwave activity and attempted to analyze it, but it wasn't until the 1960s when Joe Kamiya published a paper with the results of a primitive neurofeedback experiment that trained people to go into alpha brainwave mode. During the 60s and early 70s, biofeedback caught on with the human potential movement, and forms of training other sorts of brainwaves were developed. In the early 1990s, EEG biofeedback (the specific monitoring of brainwaves instead of heart rate, sweating, or other biological responses) rose within the field of biofeedback as it

Cautions

Although neurotherapy helps the brain to function better, it is not capable of curing any of the conditions it treats. Your EEG provider, because she or he is most likely going to be a trained psychologist, counselor, or therapist, must know the details of your condition so as to ascertain if further treatment beyond EEG is necessary. Some people (often estimated as high as 20% of the population) unfortunately do not respond to neurofeedback.

Notes

- Many insurance providers cover EEG biofeedback. Check with yours.
- It is possible to buy neurofeedback equipment and train yourself to use it. This is costly, but is often a helpful measure for parents of children with autism or severe AD(H)D.

External Links

[What Is Neurofeedback?](#)

[AboutNeurofeedback.com](#)

See Also

[Autogenic Training](#)

Fare Well

May you and all beings be happy, loving, and wise.



Photo: [Christa Gallopoulos](#)