

Mindfulness 101

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If you have ever been a tourist in places such as the Grand Canyon, the Eiffel tower, or Buckingham palace you're sure to have noticed many people on their cameras or camcorders attempting to store the experience for the future. Instead of just pausing and being fully in the present moment, some people have a tendency to delay the precious moments of experiencing the present. They instantly reach for their camera, take a picture and rush off.



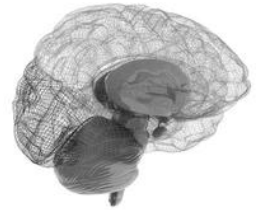
The purpose of this paper is to introduce the reader to the concept of mindfulness with practical applications into our daily lives.

Mindfulness definition 1: ***"Paying attention in a particular way: on purpose, in the present moment, and non-judgmentally"***

There are theoretically 3 ways that we can influence the chemical balances in our bodies. One is by the food and drugs we ingest, second is by the way we move, and the third way that we can alter our body chemistry is by our thoughts. The most widespread intervention in modern medicine to normalize chemical imbalances in the body is by introducing new drugs to the body which is no doubt effective for addressing many medical conditions from diabetes to depression to high blood pressure. The less common medical approach to influencing the chemical imbalances

in our bodies is education on taking control of our thoughts.

For thousands of years, philosophers, physicians, psychologists have written about how our thoughts affect our body and physiology. A thought can be considered to be a chemical process capable of directly influencing the release or the inhibition of certain hormones and enzymes.



For example, if someone had a thought that that they had to go on stage and make a speech; just the thought would likely trigger increased heart rate, increased blood pressure, sweaty hands, skin colour changes, increased breathing rate, shallow breathing, etc. Thoughts, although traditionally believed to be only localized in the brain, trigger specific neurophysiological responses that can affect every organ and tissue such as the heart, kidneys, skin, nervous system, etc.



The idea behind mindfulness is that by consciously controlling our thoughts we can alter our body's chemistry and in addition, alter the neurochemistry and structures in the brain (De Jong et al 2016)

Mindfulness is a way of paying attention that originated in Eastern meditation practices and is gradually making its way into the Western world. There are now a number of randomized controlled trials and systematic reviews supporting the practice of mindfulness for the management of various conditions such as chronic pain (Bawa et al 2015), depression (Piet et al 2012) and stress (Sharma et al 2014). With growing evidence, Western medicine is now accepting that the ability to control our thoughts has far greater positive effects on the body's physiology than ever suspected.

One does not need to join a Yoga retreat or go to the top of a Himalayan mountain to practice mindfulness. The simplest and most effective form of mindfulness pertains to simply breathing. For the vast majority of time we breathe without focusing on every breath, which is perfectly alright. However, by taking a few minutes a day to simply appreciate a few breaths as they naturally occur, without force, without judgement, you can begin to experience the benefits of mindfulness. It is not as simple as it sounds. Even over a short period of five minutes of focusing on comfortably breathing in and out, the mind has a tendency to focus away from the breath. The challenge is it to allow the "mind wandering" to occur without being judgemental and when noticed, to slowly return the thought and attention back to the breath. The power of mindfulness breathing as promoted in various meditation practices cannot be overemphasized.

If you have trouble putting 5-10 minutes a day aside for mindfulness breathing, you may consider applying mindfulness into your daily activities. Let's begin with showering. Most

people do not shower alone but rather have up to 10 people in the shower with them! While showering, they have their mother-in-law in the shower with them as they think about words spoken a week ago that offended them. They have their kids in the shower with them as they think about what they are going to give them for lunch. They have their boss in the shower with them as they stress over a project due next week, etc.



Mindfulness showering involves learning to shower alone. Simply feeling the water as it sprays on the head; feeling the shampoo as it flows through the hair, the scalp, and the back of the neck; sensing the soap between the toes, etc. To shower alone means to be present and experience the moment.

Mindfulness definition 2: "Bringing one's complete attention to the present experience on a moment-to-moment basis"

Unmindful eating is biting into a sandwich while driving and talking on the cell phone. It is rapid eating with no attention to being present in the moment while chewing, tasting and swallowing.

On the other hand, mindful eating is paying full attention and appreciating every bite, texture, and the flavour of the food slowly being consumed.



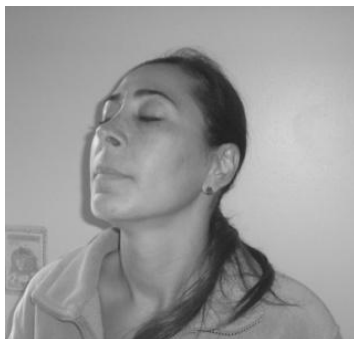
Unmindful exercising is sitting on a stationary bicycle in a gym while watching the TV screen for distraction and frequently looking at the time to see when the dreadful 30 minutes is over.



Mindful movement on the other hand is being in the present and fully aware of the movement of the body and all the sensations associated with it. Mindful movement is frequently experienced in Yoga, Tai Chi, Qi Gong, Feldenkrais, pole walking or anytime a person decides to focus their attention on the movement of their body in space.

One does not need to join a Tai Chi or Feldenkrais group to experience mindful movement, one may simply slowly walk and pay attention to every movement and contact of the foot with the ground, feel every push off, pay attention to the big toe as it bends, etc.

On a clinically practical note, I frequently prescribe to my patients with whiplash associated disorders mindful neck movements. This extremely effective exercise is simply performed by requesting the patient to close their eyes, be in the present moment and with control, move their head in space. They may imagine a pencil at the tip of their nose and very slowly draw a large figure “8”. They may write their name or the whole alphabet with the conscious movement of their head and neck. When done mindfully, slowly and with control it is a potent exercise for



training proprioception and cervical muscular control.

A potential mechanism for the therapeutic benefits of mindfulness is the enhancement of body awareness (Hölzel et al 2011). Body awareness with respect to mindfulness is defined as “*the sensory awareness that originates from the body's physiological states, processes (including pain and emotion), and actions (including movement), and functions as an interactive process that includes a person's appraisal and is shaped by attitudes, beliefs, and experience in their social and cultural context*” (Mehling et al 2012). A number of neuroimaging studies have demonstrated that mindfulness training results in actual cortical changes in particular in regions that are involved in body awareness (Lazar et al 2005; Gard et al 2012). The fMRI studies suggest that pain reduction that occurs following mindfulness meditation training is likely a result of increased sensory processing (Gard et al., 2012).

It has been suggested that at a neuro-biological level, pain perception is closely linked to body awareness such that “*the enhancement of specific styles or dimensions of body awareness may facilitate the self-regulation of pain.*” (De Jong et al 2016)

In summary, thoughts have the ability to affect every molecule in the body and have the ability to either positively or negatively alter our bodies’ and our brains’ chemical composition. If we learn the skill of controlling our thoughts and being in the present more often, we may, to some degree, control our health and through enhanced body awareness help our patients to be better at pain self-management. **Mindfulness can be applied to breathing, showering, eating, walking or any movement.**

I hope it can be appreciated that mindfulness is not something that one “does”, it is a way of *being*. The next time you are at a touristy place or a beautiful scenic view, before reaching for your camera to take a picture, stop and pause; focus 100% of your attention on the moment that is right there in front of you. There is no need to plan for the future or think about the past. Mindfulness is experiencing the moment that exists right there in front of you. There is now good evidence to support the simple phenomenon called mindfulness in improving health and quality of life. Once you have fully experienced the moment to your satisfaction... alright fine, take a selfie!



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If you wish to learn more on the topic, I recommend the book “*The Mindfulness solution to Pain*”, by Dr. Jackie Gardner-Nix, MD

