



INSIDE STORY[®]

NOVEMBER 2017



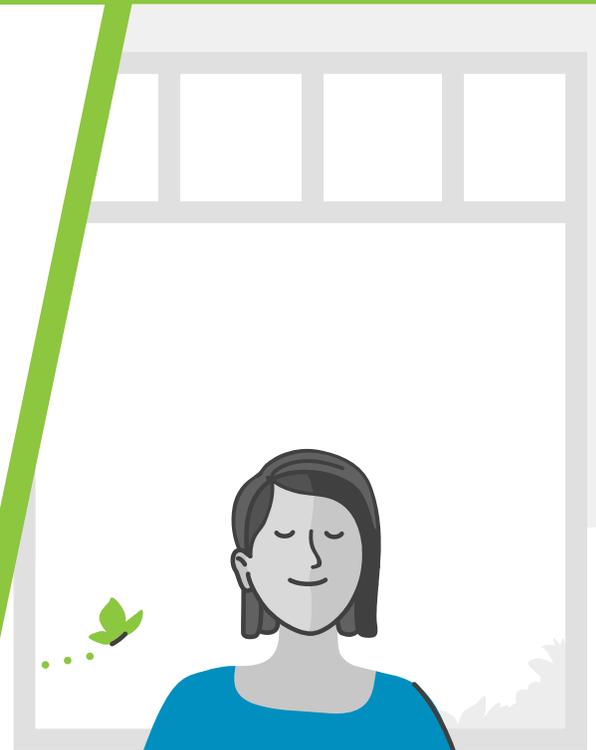
**TO TREAT AND PREVENT MENTAL HEALTH ISSUES
OPEN YOUR MIND TO MINDFULNESS**

PAGE 2

WHAT'S UP...

Exercise and the Prevention of Depression
Biosimilar Cost Savings in the United States
The Costs of Tobacco Use in Canada, 2012

PAGE 8



YOU ARE HERE



TO TREAT AND PREVENT MENTAL HEALTH ISSUES

...OPEN YOUR MIND TO MINDFULNESS

“Now that we have broken our silence on mental health, you may not be able to shut us up.”

True to our word in the June 2016 edition of *The Inside Story*, we’ve been busy (very busy!) sharing our concern that Canada’s approach to mental health is broken. At GSC, we wanted a fresh perspective regarding how to help plan members get effective mental health care. And of course, for GSC that means an evidence-based approach. We also need an approach that focuses on prevention so plan members don’t have to enter Canada’s broken system in the first place. Time to open our mind to mindfulness...

Getting your head around mindfulness and its value

Have you been seeing the word mindfulness popping up everywhere? There may be some misconceptions about what it really is and means. There is no chanting and incense. (Unless you really love incense.) And you do not have to sit and stare into space every day for hours. Mindfulness definitely needs a full explanation because the scientific evidence continues to reveal its health benefits.

In fact, mental health professionals are increasingly recommending mindfulness as an effective psychotherapy technique for treating people with depression and anxiety. Mindfulness has also entered the mainstream as a way for people with good mental health to prevent becoming anxious or depressed.

So what exactly is mindfulness? You can think of mindfulness as training your brain to pay attention to what is happening in the present moment by recognizing your thoughts and emotions—from moment to moment—without beating yourself up or dragging yourself down.

Practically, this means paying close attention to that little voice in your head that usually isn’t so little. It is constantly churning out thoughts as it chatters on and on... from wanting certain things while rejecting others... judging and comparing... not to mention often constant self-criticizing.



Our highly diverse thoughts all have one main thing in common—they are all automatic. And in turn, these automatic thoughts trigger automatic emotional reactions and physical behaviours, often not constructive or healthy ones.

Notice how this description doesn't include having to sit cross-legged or get into some sort of a trance. In fact, why not give mindfulness a whirl right now while reading this article? If you are like most people, your mind will start wandering (yes, even while reading these riveting words). Take note of your thoughts without judging them or yourself.

But keep bringing your mind back to the here and now and the task of reading this article. And if any physical sensations arise—such as tension in your neck and shoulders—take notice of these sensations. Don't judge. Just observe.

Interestingly, by training your brain to take notice of your thoughts and feelings as effortlessly as possible, the power of your thoughts to trigger more automatic thoughts, feelings, or behaviours is reduced. Then by bringing your mind over and over again back into the present (rather than, for example, getting carried away by worrisome thoughts about the future or the past), you snap out of autopilot.

So what does all this have to do with depression and anxiety? Fortunately, advances in technology like sophisticated brain scanning continue to reveal the benefits of mindfulness as an effective psychotherapy.

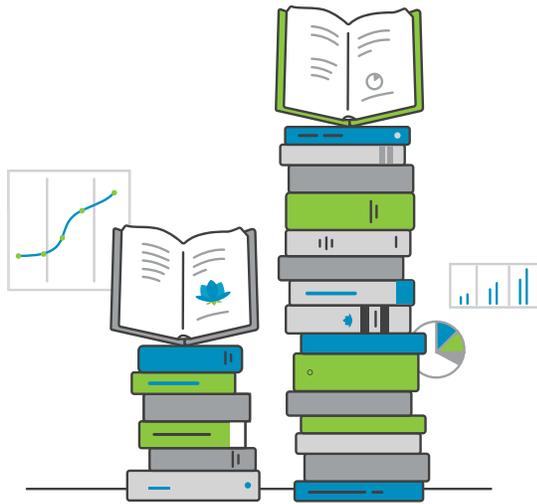
IN NEED OF A MAJOR FIX

When we say that Canada's approach to mental health is broken, specifically we mean the worrisome trend of prescribing antidepressants as first-line mental health therapy. Although there is strong evidence of the effectiveness of antidepressant medication for *severe depression*, GSC drug-claims data reveal that antidepressants are also prescribed in massive numbers to the *mild to moderate* depression population. However, instead of antidepressants, research indicates that the first-line therapy for these patients should be psychotherapy combined with healthy lifestyle habits. Psychotherapy involves counselling by a mental health professional. The type of psychotherapy depends on the patient's specific issues.

The GSC 2015 Health Study indicates that plan members with mild to moderate depression are prescribed an antidepressant frequently at a sub-therapeutic dose, and a large portion of them drops off the medication soon after therapy starts. This means plan sponsors are investing a lot of dollars in antidepressants, but these plan members are not getting the help they really need.

Even when psychotherapy is recommended, there are many challenges to accessing affordable, high-quality services. For instance, there is often a two-year wait to see a psychiatrist even in major urban settings, and possibly no mental health providers in remote areas. In addition, psychologists typically cost about \$200 per hour. And there is a major quality control issue; it seems that almost anybody can do psychotherapy, including those who took a half-day workshop. All part of the broken system.

Fortunately, psychotherapy for depression and anxiety increasingly includes mindfulness techniques. This is helping to decrease many of the traditional barriers to psychotherapy because patients can learn mindfulness techniques by reading books or via online information or apps where health care professionals guide them in becoming more mindful. This means enhanced access, low cost, and higher quality.



Goodbye flakey image!

When used as psychotherapy for treating depression, research shows that mindfulness is effective because it appears to help people disengage from the ingrained dysfunctional thoughts that are common with depression. This moment-by-moment observation of thoughts and feelings also may give the brain enough leeway to keep from dwelling on things or escalating into worst-case scenario thoughts, common with depression. Noticing how thoughts come and go may help gain perspective; thoughts are just thoughts, they cannot actually make you feel or behave in a certain way, and thoughts are not permanent.

Similarly, a prevailing theory as to how mindfulness helps people with anxiety is that it helps them deal with distracting or unrealistic thoughts to which they typically assign too much power. For example, it helps them distinguish between thoughts that will prove useful for problem solving versus thoughts that are simply overblown worry. And as with people who are depressed, learning that a thought is just a thought and nothing more, appears to have a calming effect.

And here comes the scientific-evidence kicker; recent studies reveal that mindfulness practices—including mindful meditation—actually change the structure of the brain. Good changes.

MEDITATION VERSUS MINDFULNESS

In trying to understand what mindfulness actually is, what seems to add confusion is that meditation and mindfulness are often used interchangeably. However, they are not the same thing.

Meditation is an umbrella term that encompasses all the ways in which you can aim to become more conscious. For example, meditation comes in many forms. Heart-centered meditation involves trying to bring your awareness to your heart as an energy centre, and transcendental meditation involves repeating a word, phrase, or sound (known as a mantra) to quiet your thoughts.

Then there's mindfulness meditation, where you try to practise awareness of the present moment by focusing on your breathing and the physical sensations you are experiencing while not judging your thoughts or feelings. As your mind inevitably wanders, you try to bring it back to the present moment and your breathing.

In addition to mindful meditation, there are a variety of structured mindfulness practices—but you don't have to do anything formal to be mindful. You can be mindful in any situation. For example, you can be mindful while drinking a cup of coffee or eating lunch or walking somewhere.

No matter what you are doing—formally meditating or just doing the dishes—if you notice your mind drifting off in other directions, and then you bring it back to the present moment, you are being mindful! (Also remember to notice physical sensations like perhaps the coffee's aroma, the spiciness of your lunch, the trees turning colour, the warm sink water. All of those things are better than dwelling on your neighbour at work who talks too loud.)

Mind-bending brain research, literally

Scientists used to believe that in adulthood the brain reaches its peak and doesn't change again until it starts to decline into old age. Not so! Neuroscience has evolved to reveal that everything we do and every experience we have actually changes the brain throughout our entire lifespans. It is showing that mental behaviour—or how we train our brains—can change our state of mind because it actually remodels the structure of the brain.

For example, a study scanned the brain activity of participants suffering from anxiety before and after they took a mindfulness-based stress reduction (MBSR) program. This is a standardized program that teaches techniques like mindful meditation. The program consists of eight weekly classes (about two and a half hours each class) with daily homework throughout the program. Also, between weeks six and seven, there is an all-day retreat focused on practicing mindfulness techniques.

While having their brains scanned, participants were asked to reflect on different statements about themselves. Having a brain scan done can be anxiety provoking in itself, and although some of the statements were positive, others were negative, like “something is wrong with me.”

The scans after the course showed that the participants paid more attention to the negative statements than they did before it. But the scans also showed decreased activation in the amygdala—the region of the brain associated with stress and anxiety. The participants also verbally reported less anxiety after the course. Interestingly, most people either push away unpleasant thoughts or the opposite, they obsess over them. Both of these approaches end up causing more anxiety. However, these study findings suggest that becoming mindful helps people with anxiety handle distressing thoughts and feelings without being overwhelmed by them.²

Regarding stress, previous research findings include that trauma and chronic stress can enlarge the amygdala and make it more connected to other areas of the brain, leading to greater stress and anxiety.³ However, in a brain-scan study—this time with highly stressed adults who took an MBSR program—scans after the course showed changes in the amygdala going the other way. Participants who reported decreased stress showed less gray-matter density in the amygdala; suggesting they are becoming less reactive and more resilient.⁴

CHANGING THE BRAIN FOR PAIN MANAGEMENT...

Mindfulness techniques were first explored as a way to help people suffering from chronic pain. Research continues to confirm its effectiveness for pain management. And now studies are revealing how the brain actually changes in people suffering from chronic pain who practice mindfulness.

Two regions of the brain that are normally connected, the anterior cingulate cortex—which is associated with the unpleasantness of pain—and parts of the prefrontal cortex, appear to become disconnected in study participants with chronic pain who practice mindful meditation.

This structural change in the brain doesn't appear to block the experience of pain. However, the people suffering pain appear to not engage in the thought processes that make the experience painful. As a result, the unpleasantness associated with pain is less or is not present at all.¹



MINDFULNESS IN ACTION

In terms of everyday life, mindfulness should help plan members respond to stress in a healthier way than common reactions that can contribute to anxiety and depression.

Our knee-jerk, often negative, reactions are due to the evolution of the human brain and primal automatic brain response—fight, flight, or freeze. These autopilot responses served the caveman well when faced with a stressful situation like being chased by a lion. But of course, today there are no actual lions lurking, so these responses are no longer necessary—or desirable—because they elevate stress hormones.

Let's take the example of what is likely a daily occurrence for many plan members: an important deadline is looming. Deadlines tend to produce anxious thoughts like "What if I can't do it in time" and "What if my work isn't good enough?" Before taking a mindfulness approach, typical autopilot reactions to all the "what if" thoughts include:

- **Fight:** Hostile approach like harsh words or poison-pen emails (maybe followed by a spiral into doom and gloom like fearing job loss).
- **Flight:** "Run for the hills" approach like literally running around the office doing other things as an excuse for not getting the work done (all the while feeling on the edge, worried that excuses won't cut it, then what?).
- **Freeze:** "Duck and cover" approach like becoming literally stuck numbly staring at the computer or stumbling around pushing papers (as the stress escalates leading to more freezing).



Different reactions, but all automatic, and all result in more stress. After taking a more mindful approach, the automatic reactions are replaced with focusing on the present moment and what needs to be done to meet the deadline. Becoming aware of thoughts and feelings helps make much of the stress go away. Ideally, positive behaviours now intervene, like increased concentration and motivation. No more fight, flight, or freeze—and no longer on the road to anxiety and depression issues.

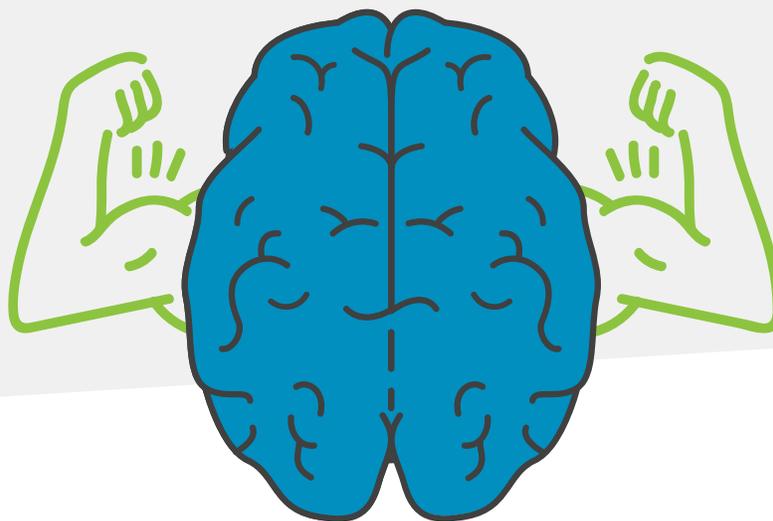
Then there's prevention...

And there's more good news—really good news in fact—research is revealing that for people with good mental health, mindfulness techniques can help keep them that way.

One of the most recent discoveries in the neuroscience associated with mindfulness is a study that looked at healthy people who had never meditated before. The study involved an experimental group that took an MBSR program and a control group that didn't take the program. The researchers conducted brain scans of the experimental group before and after the MBSR program.

The scans after the MBSR program revealed that the experimental group had changes in the brain. Based on the functions that the changed areas of the brain are responsible for, findings include that after the MBSR program, participants had more focus, empathy, compassion, and emotional regulation. In addition, they appeared to have less fear and perceived stress. In comparison to the control group, the experimental group reported decreased stress, anxiety, mind-wandering, and insomnia, as well as increased quality of life.⁵

And it gets better and better. Research continues to show that a little bit of mindfulness goes a long way. A lot of the findings of the benefits of mindfulness are based on participants taking an MBSR program. So just eight weeks to change the brain and arm it with some tools to keep depression and anxiety at bay. And in terms of daily commitment, being mindful even ten minutes a day can make a difference!⁶



Exercise for your plan members' brains

So how can your plan members become more mindful? Just as they can lift weights to get stronger or maintain their physical fitness, they can start adopting mindfulness techniques to do the same for their mental health. Peter Gove, GSC's innovation leader, health management, sums it up this way, "To help plan members with mild to moderate depression we need to raise awareness of the need to shift prescribing patterns so that antidepressants are not the focus. We also need to find a way for those with mild to moderate depression to easily access affordable, high-quality interventions. And we need to find ways to help plan members proactively prevent mental health issues in the first place. Mindfulness may be a key component of interventions that accomplish both these goals."

To that end, we're excited to spread the word about GSC's new mindfulness training program to be available on the Change4Life® health portal in December. Plan members can easily access the training on all their personal devices at no cost. Encourage your plan members to try it out—it's like a bicep curl for the brain!

¹"What Does Mindfulness Meditation Do to Your Brain," Tom Ireland, *Scientific American*, June 12, 2014. Retrieved October 2017: <https://blogs.scientificamerican.com/guest-blog/what-does-mindfulness-meditation-do-to-your-brain/> and "Mindfulness meditation-related pain relief: Evidence for unique brain mechanisms in the regulation of pain," F. Zeidan, J.A. Grant, C.A. Brown, J.G. McHaffie, R.C. Coghill, *Elsevier Science Direct*, volume 520, issue 2, June 29, 2012. Retrieved October 2017: <http://www.sciencedirect.com/science/article/pii/S0304394012004806>.

²"More than just relaxing, meditation helps improve self-image of anxiety sufferers," Casey Lindberg, *Stanford News*, June 3, 2009. Retrieved October 2017: <https://news.stanford.edu/news/2009/june3/meditate-060309.html> and "Mindfulness Meditation Training and Self-Referential Processing in Social Anxiety Disorder: Behavioral and Neural Effects," Phillippe Goldin, Wiveka Ramel, James Gross, *Journal of Cognitive Psychotherapy*, August 23, 2009, US National Library of Medicine, National Institutes of Health. Retrieved October 2017: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4283801/>.

³"Stress reduction correlates with structural changes in the amygdala," Britta K. Hölzel, James Carmody, Karleyton C. Evans, Elizabeth A. Hoge, Jeffery A. Dusek, Lucas Morgan, Roger K. Pitman, Sara W. Lazar, *Social Cognitive and Affective Neuroscience*, March 1, 2010, Oxford Academic. Retrieved October 2017: <https://academic.oup.com/scan/article/5/1/11/1728269/Stress-reduction-correlates-with-structural>.

⁵"Harvard neuroscientist: Meditation not only reduces stress, here's how it changes your brain," Brigid Schulte, *The Washington Post*, May 26, 2015. Retrieved October 2017: https://www.washingtonpost.com/news/inspired-life/wp/2015/05/26/harvard-neuroscientist-meditation-not-only-reduces-stress-it-literally-changes-your-brain/?utm_term=.2dd906a8f338 and "Mindfulness practice leads to increases in regional brain gray matter density," Britta K. Hölzel, James Carmody, Mark Vangel, Christina Congleton, Sita M. Yerramsetti, Tim Gard, Sara W. Lazar, *Psychiatry Research*, January 30, 2011, US National Library of Medicine, National Institutes of Health. Retrieved October 2017: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3004979/>.

⁶"Regular, brief mindfulness meditation practice improves electrophysiological markers of attentional control," Adam Moore, Thomas Gruber, Jennifer Derose, Peter Malinowski, *Frontiers in Human Neuroscience*, June 18, 2012, US National Library of Medicine, National Institutes of Health. Retrieved October 2017: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3277272/>.



VALIDATION FROM NEW SCIENTIFIC EVIDENCE

An important aspect of relying on scientific evidence is recognizing the evolving nature of science. Accordingly, at GSC we're always on high alert keeping abreast of the latest and greatest scientific developments. This enables us to confirm strategic direction or adapt our approach as the science evolves. Recent research findings continue to validate some GSC initiatives:

Exercise and the Prevention of Depression: Results of the HUNT Cohort Study

As discussed in this month's feature article, the scientific evidence about depression indicates that adopting healthy lifestyle habits can be beneficial. This study published in the *American Journal of Psychology* adds to that body of evidence as its findings include that regular exercise may not only prevent future depression, but also as little as one hour of exercise a week can make a real difference.

The study followed more than 22,000 healthy adults for an average of 11 years. At both the beginning and end of the study, the researchers asked participants about their exercise habits, as well as whether they had any symptoms of depression and anxiety. The researchers found a link between exercise and later depression: Participants who didn't exercise at the study's start were 44% more likely to become depressed, compared to those who exercised at least one to two hours a week. No additional benefits were observed for participants who worked out more than this amount.

Although the study does not prove a definite cause-and-effect relationship between exercise and the risk of depression, it strongly suggests that exercise can help ward off depression. For more information and to access the study, visit <https://www.ncbi.nlm.nih.gov/pubmed/28969440>.

Biosimilar Cost Savings in the United States – Initial Experience and Future Potential

A main finding in a report by Rand Health—a large American independent health policy researcher—is that biosimilar drugs may reduce U.S. health spending by \$54 billion over the next ten years. The analysis indicates that potential savings will vary across classes of biologics based on factors like timing of market entry, sales, and degree of competition. The degree of potential savings will also depend on a number of variables like payment arrangements, regulatory policies, and patient and prescriber acceptance of biosimilars.

As described by Ned Pojskic, GSC's pharmacy strategy leader, "Although this study is a very high-level analysis of potential for savings with the uptake of biosimilars in the United States, it is certainly consistent with GSC's message that biosimilars are the key to future sustainability of drug plans." For more information and to see the analysis, visit <https://www.rand.org/pubs/perspectives/PE264.html>.

The Costs of Tobacco Use in Canada, 2012

A new report by the Conference Board of Canada and funded by Health Canada provides evidence that smoking is still a significant issue. The report uses 2012 data to summarize the number of deaths—and the direct and indirect economic costs—due to smoking. It is an update of the last estimate published in 2006 that was based on 2002 data.

Although smoking has been declining in Canada, more than 45,000 deaths were due to smoking in Canada in 2012. This represents 18% of all deaths in Canada in 2012; 125 Canadians died because of tobacco use every day in 2012. Regarding economic impact, smoking cost the Canadian society \$16.2 billion in 2012—or \$466 per Canadian. This includes costs associated with direct health care, fire, policing, research and prevention, as well as lost productivity due to disability and premature death.

Direct health costs increased from \$4.4 billion in 2002 to \$6.5 billion in 2012 made up of:

- \$1.7 billion for prescription drugs
- \$1.0 billion for physician care
- \$3.8 billion for hospital care

Productivity losses were \$9.5 billion made up of:

- \$2.5 billion associated with premature deaths
- \$7.0 billion associated with short- and long-term disability

Federal, provincial, and territorial governments spent \$122 million on tobacco control and associated law enforcement activities.

Overall, the report provides further evidence that more action is necessary to reduce tobacco use in Canada. The report's numbers speak for themselves—we need to keep promoting smoking cessation to plan members. Fortunately, GSC continues to offer the Smoking Cessation Program, and our Change4Life health portal encourages plan members to make healthy behaviour changes like quitting smoking.

For more information and to access the report, visit https://www.canada.ca/en/health-canada/news/2017/10/new_report_showsthattobaccousecostcanadians162billionin2012.html?wbdisable=true.

*November
Haiku*

Mindfulness is here
Reactive or proactive
It can help us all

FITBIT WINNER

Congratulations to **J. FRANCOEUR**, of **BLIND RIVER, ON**, the winner of our monthly draw for a Fitbit. Through this contest, one name will be drawn each month from plan members who have registered for Plan Member Online Services for that month.



greenshield.ca

London	1.800.265.4429	Vancouver	1.800.665.1494
Toronto	1.800.268.6613	Windsor	1.800.265.5615
Calgary	1.888.962.8533	Montreal	1.855.789.9214
Customer Service		1.888.711.1119	