



AutoCalm
A Revolution in Relaxation

MANUAL AND QUICK START GUIDE

Warning and Disclaimer

This and all material included with your purchase is intended for informative purposes only and is not intended as medical or professional advice. Always consult your doctor or therapist before beginning treatment and to rule out any medical conditions. Please speak to your doctor about the use of medications. Anxiety, phobias, or fear brought on by medical conditions is a complicated science and not the intention of this program. The purpose of this program is to help healthy people with anxiety reach their goals by educating them about techniques that have been used by others to successfully overcome their fears. A thorough medical evaluation and clearance from a physician to participate in the activities presented in the program is recommended.

No health claims are made for this program. The author is not a physician, therapist, psychiatrist, or psychologist. The author and publisher shall have neither liability nor responsibility to any person or entity with respect to any of the information contained in this program. The user assumes all risk for any injury, loss or damage caused or alleged to be caused, directly or indirectly, by using any information described in this book or program.

Table of Contents

Quick Start Guide	1
Included Components	1
Using the Auto Calm System Daily Sessions	2
How and Why it Works	4
Additional Components	11
The Auto Calm Kids Edition	13
Introduction	14
An Introduction to Anxiety and Anxiety Disorders	15
What is Anxiety?	15
The Biological Basis of Anxiety	17
Sympathetic and Parasympathetic Nervous Systems	17
Brain Areas Involved in Anxiety	19
Other Factors That Contribute To Anxiety Disorders	20
Common Anxiety Disorders	21
Panic Attacks	21
Generalized Anxiety Disorder	22
Panic Disorder	23

Social Phobia	24
Specific Phobias	25
Obsessive-Compulsive Disorder	27
Post-Traumatic Stress Disorder	29
The Effects of Anxiety on Everyday Life	32
Why Do We Experience Anxiety?	32
Anxiety and Maladaptive Behaviors that Negatively Impact Your Recovery	34
Anxiety and Comorbid Depression	36
Anxiety in Children	37
Separation Anxiety	38
Selective Mutism	39
Straight Talk about Anxiety: Myths and Misconceptions	40
An Introduction to Mindfulness	45
Historical Roots of Mindfulness	45
Current Conceptualizations of Mindfulness-Based Therapy	46
Scott Bishop: A Two-Part Operational Definition	46
Marsha M. Linehan: Dialectical Behavior Therapy	47
Kirk Warren Brown and Richard Ryan: An Attentional Control Framework	49
Central Tenets of Mindfulness Meditation	50
The Benefits of Mindfulness-Based Therapy for Anxiety Disorders	53
Mindfulness-Based Stress Reduction	53
Mindfulness-Based Cognitive Therapy	54

Acceptance and Commitment Therapy	55
Brain Changes Associated with Mindfulness Techniques	56
Benefits and Effectiveness of Mindfulness-Based Therapy for Healthy Adults	57
Benefits and Effectiveness of Mindfulness-Based Therapy for Health Problems	59
Benefits and Effectiveness of Mindfulness-Based Therapy for Anxiety	61
Incorporating Mindfulness into Your Life	64
Getting Started with Mindfulness Meditation: A Beginner's Guide	64
Creating a Space Conducive to Mindfulness Meditation	64
Basic Meditation Postures	65
Beginning Mindfulness Meditation	66
Taking Mindfulness Meditation into the Real World	70
Other Mindfulness Techniques	71
Common Misconceptions about Mindfulness Meditation	72
Binaural Beats and Brain Wave Entrainment	77
Introduction to Binaural Beats: The Basics	77
Using Binaural Beats to Induce Brain Wave Entrainment	78
Research Support for the Use of Binaural Beats for Brain Wave Entrainment	79
Lifestyle Factors and Hidden Sources of Anxiety	81
Caffeine	82
Sugar	84
Nicotine	84
Alcohol	85

Exercise	87
Sleep	87
Children and Mindfulness	90
Wrapping Up	96
Bibliography	98

Quick Start Guide

Hi and welcome to the Auto Calm System!

Congratulations on making the commitment to take the steps necessary to dramatically reduce your anxiety and improve your life by teaching yourself a NEW WAY to respond to your strong emotions. Be proud of yourself!

The material and resources included with Auto Calm System was developed by an absolutely amazing team in addition to myself, including a licensed physician, an award winning neuropsychological researcher from the Department of Psychiatry at the University of Illinois at Chicago, a Doctor of Clinical Psychology, former Psychology Professor from the University of Miami and researcher at the Cognitive Brain Research Unit University of Helsinki, Finland, audio experts, and more. I wanted to put together this Quick Start Guide because I know you probably want to get started right away and I want to make sure you understand the essentials. You can learn more details about the concepts and strategies used in the development of the system, along with their supporting research, by reading the complete manual, but doing so isn't required. What we'll cover in this Quick Start Guide will be sufficient for you to understand and implement the system components in a way I think will be effective.

Included Components

Let's start by taking a look at what components you have included with the Auto Calm System.

Since you're reading this, you know you have the Manual and Quick Start Guide. So far so good.

Next, the core of the System are the Daily Sessions in audio format. The sessions are organized by week, for eight weeks total. Each week contains five sessions for a total of 40 individual tracks.

You also have the following audio components:

The Auto Calm 7 Minute Miracle Meditation audio track.

The Auto Calm Sleep Solution audio track.

The Anxiety Evolution Sessions, which consists of four individual audio tracks.

The Mind Spark Collection, which consists of three individual tracks.

You have also been provided the The Auto Calm Kids Edition, which is a version of the System specially developed for use with children with anxiety. Additional instructions for this version are included later in this guide. If you do not plan on using the System with a child, you will not need to concern yourself with this version of the material.

All of the audio components are compatible with iPhones, iPads, and other media players. Please refer to the user manual for your device for instructions on how to import audio files into your music library.

Using the Auto Calm System Daily Sessions

The Auto Calm System was developed to be structured, yet flexible.

The overall design is such that you have a new session to listen to every weekday, Monday through Friday, and a new folder of sessions each week, for eight weeks total.

All sessions during that week are the same length, but each will focus on a different skill, allowing you to experience a multi-dimensional practice.

Every week, the sessions will remain the same in content, so you can develop a deep level of familiarity and expertise with each skill. However, the length of the daily sessions will increase on a weekly basis as your abilities improve.

As an example, during Week One you will have five individual sessions, each being approximately six minutes long. During Week Two, you will again have five individual sessions of the same practice, but they will be nine minutes long. The practice will remain the same during the course of the System, but you will gradually build in length to a peak of thirty minutes per session.

The Daily Sessions are not labeled for any particular day, you can feel free to use them in whatever order you want. If you want to listen to “Body Awareness” on Monday one week and on Friday the next, that is perfectly fine.

Although that is the structure we envisioned during the development of the System and what we consider optimal, you also have the flexibility to use it however works best in your life. If you can only manage to set aside time for three sessions a week and not five, that is far better than none. If you feel you need to practice more with sessions of a particular length before increasing the duration, that is fine. If you have a busy day and only have time for a nine minute session even though your current week's sessions are fifteen minutes, just do the shorter session you have time for! It's always better to do some practice rather than none.

Instructions for using the other included components are covered later in the guide. Remember, the core of the Auto Calm System is the daily sessions, so please make that your focus before the other components which should be considered optional.

Remember, these sessions are designed to guide you into states of deep relaxation, so please use them safely and not while driving, taming lions, or working on a crab boat. Always wear shoes when mowing the grass and don't go swimming right after you eat. You get the idea.

How and Why it Works

As I talked about earlier, you can feel free to read the entire manual for an in-depth discussion, but to get you started right away, I will summarize the foundation behind The Auto Calm in this Quick Start Guide as well.

The Auto Calm System combines guided mindfulness meditation practice with brain wave entrainment technology to enhance your results and ability to learn the new skills until they become your new, automatic response.

To get a sense of what that means, let's take a look at what mindfulness is, what it isn't, and why it's helpful.

Mindfulness is really nothing more than training to become more aware and open to your life.

It's not a trance or an escape from reality as some would have you believe, but rather, a complete immersion in it. It doesn't take you away, it brings you back to where you should have been all along.

How mindfulness is accomplished is simple, but not easy. All you need to do is pay attention. That's it.

What makes it so challenging and what has made it often take years or even decades of practice to master, is that paying attention is ALL you do. You pick something to place

all your attention on, and then that's what you attend to. Everything under the sun will try to pull you away, but you simply return your attention to whatever it is you decided to attend to. Again. And again. And again.

We'll call it meditation, but that's just a word we both understand, so don't place too much importance on that. The word "meditation" conjures up all sorts of preconceptions for most people, myself included. Maybe when you think of meditation you think of monks with shaved heads on a mountaintop, or a hippie who smokes pot, or burning incense and chanting and ringing gongs.

Meditation and mindfulness requires NONE of that.

Any time you're fully engaged in the present moment on purpose, you're meditating. You can meditate when you're walking, when you're washing the dishes, when you're at the grocery store, and when you sit on the floor.

There's many different kinds of meditation that use different things as the object of focus. One of the most common is "Breathing Meditation" because your breathe makes a great object of focus, it's always there. Let's look at how you would go about a session of breathe meditation...

First, find a time in your day when you can step away and in all likelihood not be disturbed. If you can meditate in the same spot every time, I think that's great, it will become your little oasis and just being there will help slow you down and prime you to be mindful.

Then sit down and let yourself relax for a moment or two. If you want to sit on a pillow or cushion of some sort, that's fine, it can be more comfortable to have your hips above your feet, but it's not necessary. You can cross your legs if you want to, that's probably the most comfortable, but there's no special poses you need to do. If you're more comfortable sitting in a chair, that's fine too.

You want to sit up straight, but relaxed. If you slouch too much you might fall asleep while meditating which isn't a huge problem and at least indicates that you're relaxed, but not really the intent of the practice. Slouching over also compresses your lungs which can effect your breathing you'll be focusing on, so just sit up naturally and comfortably.

You can put your hands wherever you want. On your thighs, knees, together, up, down, it makes no difference. You'll find what is most natural for you.

Relax your mouth and jaw, it's amazing how tense your face can get. I've found it helpful to put my tongue gently against the back of my top teeth.

You can keep your eyes open or leave them closed, it's up to you. You can even do some of your meditating with them closed, then some open, or closed when you're just starting out and then when you're more familiar with meditating open them up, it's your call. What I will say is that the purpose of this practice isn't to get better at living life sitting on the floor, but in real life, so since you probably live life with your eyes open like I do, you may want to at least do some practice with them open.

Now that's you're settled, find your breath. Just bring your attention gently to your breathing and see what sensation is predominant in your awareness. Is it the feeling of the breath moving into your nostrils? The flowing of air into your lungs? The expansion and contraction of your belly? Just see what sensation stands out at this moment in time and place your attention on that one thing.

Study that one thing. Learn as much about it as possible. Discover every single sensation and feeling that's there, from the very beginning of the breath to the end of it, then start again.

You're going to find this extraordinarily difficult. Your busy mind will bombard you with thousands of other things to think about and pay attention to, trying to get you out of the moment you're in. Things you SHOULD be doing, what you need to do later, what's for lunch, the itch on your nose, you'll get it all.

Now here comes the meditation part. This is what makes it different than just sitting on the floor...

When that happens, and every time it happens, you acknowledge the thought, and gently bring your attention back to your breath,

Easy, huh?

Not so much.

You don't get frustrated and criticize yourself for having the thought, or ask yourself why you suck so bad at meditation. You simply notice the thought for a moment, let go of it, and then return to your breath until it happens again (which will probably take about 1 second).

Here comes an important part, ready?

The practice is NOT about getting "good" at keeping the thoughts out. The practice is getting good at the gently coming back.

Even if you have to come back a thousand times, THAT is the practice.

What's the Point?

Yes, meditating is relaxing, but its benefit extends way beyond that. It not only gives your mind a break, but TRAINS you to let go of thoughts and return to your life in the

present moment. With practice, you can take this skill “off the cushion” and into the real world where you can use it to take yourself out of your anxious storyline and back into the present moment.

Speaking of off the cushion practice, meditation and mindfulness practice has two parts, what’s usually referred to as formal and informal practice. Formal practice is the kind we’ve been talking about. You set aside time, sit down someplace where it’s quiet and you won’t get interrupted, and you practice. Formal practice is where you gain and master your skills, and it’s important. However, informal practice is equally critical, but frequently overlooked.

Informal practice is when you bring your mindfulness practice out of the quiet room and into the world whenever you have the opportunity to. No cushion, not necessarily quiet, and lots of other stuff going on. You know, LIFE.

Of course the goal of you doing all this is to be able to do this when you’re anxious so you can overcome those feelings, but before you can be mindful during anxiety, you need to practice being mindful in line at the bank, or when driving to work, or when kissing your kids goodnight. Just pause a moment, take a breath, and wake up! Get out of your head and into the moment. Feel yourself breathe, pay attention to what you’re experiencing at that particular moment in time, and just be wherever you are and not inside your own head.

As I mentioned earlier, traditional meditation and mindfulness training was a long process. REAL long. There’s been many occasions where I’ve heard an instructor explain a meditation technique and then say, “Just try it for a year and see what you think”.

The Auto Calm System uses modern technology to help make the process easier, less frustrating, faster, and more beneficial. There’s no reason to still meditate and learn to relax like people did 2,000 years ago when we have science that research has shown can help.

Brain entrainment is a complicated science that The Auto Calm System utilizes, but it can be summed up rather easily. Your brain constantly has varying amount of electrical activity occurring, and those electrical frequencies or “waves” can be measured. Your brain isn’t the only organ whose electrical activity can be measured, I’m sure you’ve seen a heartbeat frequency on a machine in a hospital, or at least on tv. The brain is no different, and the electrical frequencies it produces fall into different wavelengths, which correlate to increased or decreased neural activity. The higher the frequency of the wavelength, the more brain activity that’s occurring.

Scientists learned this long ago and have since classified those frequencies into different ranges, Gamma, Beta, Alpha, Theta, and Delta. When you are living your everyday life, your brain is typically in the Beta range of 13-39Hz. When you’re anxious your brain may shoot up into the Gamma range of above 40Hz, and when you’re in a deep sleep it can slow all the way down to the Delta range of 4Hz or below.

So far this is basic psychology and neuroscience and nothing we haven’t known since the 1920’s when Hans Berger first measured electrical brain activity. A neuroscientist can predict your emotional state simply by reading the results of your EEG!

Neuroscience got a lot more interesting about forty years AFTER the invention of the EEG when studies began to show that certain audio signals, which are also frequencies and wavelengths, could influence those brain waves through a process known as “entrainment” or “synchronization”.

When these audio signals were played in such a way that they produced a signal in the spectrum of brainwaves, researchers discovered that the brainwaves would “follow” or mimic the produced frequency. It gets significantly more complex because the frequency range of brainwaves is well below what the human ear is capable of hearing, so the frequency must be produced by delivering two DIFFERENT frequencies in each ear which

results in the desired NET frequency. For example, a 495 Hz tone and 505 Hz tone will produce a subsonic 10 Hz beat, roughly in the middle of the alpha range.

The reason this research was so important was because it meant that we could influence the brainwaves and therefore the state of the individual. Instead of simply measuring an Alpha wave when a person was relaxed and calm, we could use this science to synchronize the brain with the frequency we specify and PRODUCE a relaxed state, a highly alert state, or anything in between!

Since those early discoveries these synchronization effects have been studied and researched at Universities around the world and the results published in dozens of peer reviewed medical journals. They've been used for not only the treatment of anxiety, but depression, sleep disorders, pain management, and more.

So why bother with the whole meditation thing then?

Well, because you can't listen to an audio signal all day, right? As soon as the audio is stopped, the synchronization can no longer occur, there's no permanent effects. However, we CAN use it as a tool to aid in meditation and mindfulness training to allow you to easily and quickly achieve a meditative state conducive to the learning and skill development we desire.

The Auto Calm System uses these frequencies, which sounds like a "hum" in the background, to greatly enhance your practice by giving your brain the opportunity to synchronize with its signal. Because of this and the way the tones are designed to work, it is important the sessions be listened to while wearing headphones and not simply played through a stereo or speaker.

Additionally, The Auto Calm System uses Medi-Cadence, which is a slow and subtle underlying audio beat that recent research is also showing may further enhance relaxation. Lastly, all remaining background audio has been carefully assessed using our multi-point

Mind Acoustics process before being selected and approved for use throughout the sessions.

As you go through the daily sessions in The Auto Calm System, you'll be guided through several different types of meditation in addition to breath meditation so you learn to be aware of and attend to different aspects of yourself, physical, emotional, and more.

No matter what you do, you can't enjoy a calmer and less anxious life if you're constantly making choices that don't support your goal and increase your stress levels, so The Auto Calm Manual also includes advice from professionals about important steps you can take to decrease the amount of stress and anxiety in your life overall to better support the changes you'll be making throughout your journey with the System.

You can read the entire manual to learn a lot more about mindfulness, meditation, and brain entrainment technologies and the supported research, but what I've covered in this Quick Start Guide is certainly enough to get you started and arguably, all you ever need to really know to reap the benefits. The results are not in the knowing, but the doing. So stop reading, go pick out a daily session from Week 1, and get started, it only take a few minutes. Keep with it and believe me, before you know it, everything can change.

Additional Components

Now let's take a look at the additional supporting components and how they can be used. Remember, the core of the System are the Daily Sessions, so please make those your primary focus and use the optional components below in addition to the daily sessions, on your days off from the daily sessions, or after you've completed the initial eight weeks of training.

7 Minute Miracle Meditation - This powerful audio session is designed to guide you into a state of calm confidence very quickly and effectively. It's a wonderful way to take

a brief time out during your day to relax and recharge, or if you find your stress or anxiety levels building. Use it wherever and whenever you want...during a break from work, while running errands, when traveling...you can always find 7 minutes to bring yourself back to the present moment and break your old patterns of anxiety!

Anxiety Evolution Audio Series - This series of audios are absolutely amazing for anyone that struggles with anxiety, fear, or even panic attacks. The Anxiety Evolution audio series is four individual sessions totaling over an hour of advanced guided imagery and visualization training developed to help you shatter your anxious thought patterns and behaviors and replace them with new automatic responses of courage and belief in yourself. These sessions are NOT enhanced with any brain entrainment technology, so they can be enjoyed with or without headphones.

Sleep Solution - Sometimes the concerns of the day can make getting a good night's sleep a challenge, and if that's something you can relate to, you're going to LOVE The Auto Calm Sleep Solution Audio Session! This 20 minute track contains no spoken words at all, so you can just let yourself go and allow the soothing audio and NeuroCalm technology to carry you away into a deep and restful sleep. The Sleep Solution audio is configured with a variable frequency that slowly slows all the way down to Delta (deep sleep).

Mind Spark Collection - Sometimes you need to become more alert and focused rather than relaxed, and the Mind Spark Collection has been engineered to help you do exactly that, without making you MORE stressed! The collection includes three audio sessions totaling over TWO HOURS to be used whenever you need to clear your head, focus, and enhance your concentration. These sessions include no spoken word that may distract you from what you need to accomplish, just a wonderfully energizing yet relaxing background track from our Mind Acoustics library masterfully combined with a higher frequency NeuroCalm signal. Listening to the Mind Spark sessions has been described as being like "coffee without the jitters"!

The Auto Calm Kids Edition

It's an unfortunate fact that children are struggling with anxiety and even panic on an ever increasing basis, and what they can learn in the Auto Calm System, like many critical life skills, simply isn't taught in school! We've included a version of the Auto Calm System specially designed for use with children ages 3-15 to help them develop and practice the important techniques and habits that can make the difference between a lifelong battle with anxiety, and one spent focus on the joy, happiness, and freedom life can offer. Always check with your child's doctor before beginning this or any program, therapy, or treatment.

The overall instructions for this version of the System are the same, but it is slightly less structured because even small differences in age and emotional development in children or adolescents can significantly impact the duration that would be appropriate for the daily sessions.

The Auto Calm Kids Edition includes six daily audio sessions, all approximately thirty minutes in length, as well as a version of the 7 Minute Miracle Meditation session. We recommend letting the child dictate the duration of the sessions, and starting gradually with shorter sessions. Remember, relaxation is often a skill that needs to be developed in anxious children and you can't force internal calm and confidence, so use their feedback and direction along with your judgement for determining the duration of the sessions. You may also want to start by using the sessions on a less frequent basis, such as three times a week or even less, and then possibly building up to more.

Again, remember the purpose of the material is to help your child let go, relax, and learn to cultivate more happiness in their life, so don't make the sessions something else for them (or you) to get stressed about!

Introduction

Most of us are affected by anxiety at some point or another, and nearly one-third of adults experience an anxiety disorder during their lifetimes. Anxious thoughts, panic attacks, or phobias can severely affect every aspect of your day-to-day life. From fighting off intrusive thoughts when preparing to go to work each morning – What should I wear for the important meeting with my new client? What if I don't get there on time? – to sleepless nights replaying an argument with your sister in your head, anxiety can be extremely disruptive. For those who suffer from anxiety disorders, the anxiety hovers like a cloud over each word spoken and action taken.

If your personal experience of anxiety prevents you from taking action and living each day to the fullest, it is time to address the problem. Many individuals turn to pharmaceutical interventions or self-medication to cope with anxiety disorders. Although pharmaceutical treatment options can be helpful in the short term, many people experience unwanted side effects that make medications an unappealing long-term solution.

For those seeking an effective long-term way to cope with anxiety, psychotherapy can be extraordinarily helpful. However, not all psychotherapy approaches are created equal. Talking to a therapist about your childhood relationship with your father may be insightful, but it is unlikely to help you deal with day-to-day anxiety problems. When choosing an anti-anxiety program, it is important to find an approach that relies on sound scientific theories and validated methodologies.

Mindfulness-based cognitive therapy is a scientifically-validated approach to reducing symptoms of anxiety disorders. The idea of mindfulness is an old one, originating in ancient Buddhist traditions. In a modern psychological framework, mindfulness refers to the practice of bringing your complete attention to the present moment and accepting events in an open, non-judgmental fashion. As you become more practiced at mindfulness

techniques, they can help you reduce anxiety in your day-to-day life. While the practice of mindfulness takes some work, it can be developed through daily training.

Many people are wary to try mindfulness-based methods to reduce anxiety, thinking that mindfulness is a New Age fad or that it isn't an effective method to use in the real world. This manual is designed to break through these myths and present clear, scientifically-validated information about the use of mindfulness-based training for anxiety. It is designed as an accompaniment to your guided mindfulness meditation program. The text will discuss common anxiety disorders, the biological basis of anxiety, how anxiety can negatively affect your life, and why you may have difficulty coping with anxious thoughts or feelings. You will also learn about the scientific basis of mindfulness meditation, types of meditation, basic tips and techniques to improve your mindfulness practice, and research supporting the use of binaural beats to reduce anxiety.

Whether you've been coping with an anxiety disorder for many years or have recently developed symptoms of anxiety, this manual can help you better understand your condition. It offers practical, relevant tips for bringing the practice of mindfulness into your day-to-day life. With a strong understanding of anxiety and mindfulness-based techniques, you can control your anxiety instead of letting it control you.

An Introduction to Anxiety and Anxiety Disorders

What is Anxiety?

Anxiety is a blanket term that describes a state of nervousness, worrying, apprehension, or fear. Although some people dismiss anxiety as something that is "just in your head," it can cause very real physical and behavioral symptoms. Common physical symptoms of anxiety include the following:

- Heart palpitations and increased heart rate
- Muscle weakness or muscle tension
- Fatigue

- Nausea
- Headaches
- Stomachaches
- Shortness of breath
- Chest pain
- Sweating
- Trembling
- Paleness
- Trouble falling asleep or staying asleep through the night
- Frequent need to use the bathroom

Anxiety is also characterized by a host of emotional, cognitive, and psychological symptoms, including the following:

- Feelings of apprehension or dread
- Inability to concentrate
- Feeling jittery or tense
- Irritability
- Restlessness
- Nightmares or bad dreams
- Feeling trapped in your mind or as if something bad is going to happen
- Intense feelings of fear
- Recurring negative thoughts

The subjective experience of anxiety differs from individual to individual. In some people, anxiety takes a highly somatic, or physical, form. Someone with somatic anxiety symptoms might feel as though she is having a heart attack, with shortness of breath, chest pain, muscle weakness, and heart palpitations. Other symptoms may include a twisted feeling in your stomach, sweating, tiredness, and headaches. Many people mistake somatic symptoms of anxiety for another chronic medical condition. They may go

months or years without an accurate diagnosis, which can be an especially scary and isolating experience.

Other individuals exhibit anxiety symptoms that are more cognitive or emotional in nature. For example, you may be unable to shake an uneasy feeling of dread, become more irritable, have difficulty concentrating at work, or feel tense. People with predominantly psychological symptoms of anxiety often report intense, negative recurring thoughts that they cannot “switch off” in their minds.

Of course, the subjective experiences of anxiety are not limited to wholly somatic or wholly psychological forms. Many people have a mixture of somatic and psychological symptoms or experience different symptoms in different situations. With the extraordinary variety of symptoms of anxiety, no two people have the same subjective experience. However, some basic biological processes underlie all anxiety disorders.

The Biological Basis of Anxiety

Your nervous system is a finely tuned network that depends on precisely calibrated levels of brain chemicals, the ability of neurons to fire almost instantaneously, and connections between distant areas of your body. With an adult brain containing over 10 billion neurons communicating with each other through trillions of synapses, or neural connections, it is no surprise that your nervous system may not always work the way it should. Relatively minor changes in brain chemistry or altered activity in key brain areas can be incredibly disruptive to your subjective experiences.

Sympathetic and Parasympathetic Nervous Systems

To understand the biological basis of anxiety, it is necessary to have a basic grasp of the nervous system structure and function. The somatic nervous system controls voluntary movement of your muscles, allowing you to reach for a glass on a high shelf or to go for a run. The autonomic nervous system regulates involuntary processes such as digestion, cardiac activity, sweating, breathing, and salivation. The autonomic nervous system is

© Auto Calm

further divided into two subcomponents: the sympathetic nervous system and parasympathetic nervous system.

The sympathetic nervous system controls your body's "fight or flight" response. When confronted with danger or stress, your body prepares itself to fight or run away. Imagine you are on a hike and see a bear. Immediately, your heart rate increases, you begin to sweat, and you breathe heavily. Although you do not notice it, your pupils dilate, your blood vessels constrict, and your digestive system shuts down. All of these processes are governed by the sympathetic nervous system, which channels your body's energy into the survival response. The sympathetic nervous system actually acts before you become consciously aware of the danger.

When the bear lumbers away into the woods, your parasympathetic nervous system takes over. Sometimes called the "rest and digest" system, the parasympathetic nervous system reduces your heart rate, slows your breathing, resumes digestive processes, and regulates other activities not deemed essential to survival. The sympathetic and parasympathetic nervous systems work in tandem to devote your energy resources to the most important task at hand, whether that be escaping a threatening situation or digesting your lunch.

How, then, do the parasympathetic and sympathetic nervous systems relate to anxiety? Some evidence suggests that misregulation of these processes leads to symptoms of anxiety. Imagine, after seeing the bear walk away into the woods, that your parasympathetic nervous system does not take over as it should. Instead, your heart continues to race, you sweat profusely, your breathing is rapid, and you get clammy hands as blood flow is diverted to your core. In short, you maintain a "fight or flight" response long after the danger has passed. This inability of your parasympathetic nervous system to counteract the "fight or flight" response causes anxiety. Your anxious feelings may last for hours or days, depending on your parasympathetic nervous system activity.

Brain Areas Involved in Anxiety

Researchers are actively pursuing the questions of why certain people are more likely to develop anxiety problems and how anxiety affects the brain. By studying which brain areas are more or less active in individuals with anxiety disorders, scientists can determine the cause of anxiety and how to prevent it.

The amygdala is a very small brain region that plays a key role in anxiety. Located deep in the medial temporal lobe, the amygdala is part of the limbic system, which regulates emotional activity. In healthy adults, the amygdala processes emotional reactions and contributes to emotional memories. This is the brain area that oversees your body's "flight or fight" response, leading to feelings of anxiety. The amygdala is more active in individuals with anxiety disorders, causing emotional turmoil and triggering anxious reactions. Because the amygdala also helps to consolidate emotionally-charged memories, it links a stressful memory with the resulting anxious response. In the future, a stressful situation or highly emotional event activates the amygdala and leads to even greater feelings of anxiety. Fortunately, this destructive pattern can be reversed through mindfulness training.

The hippocampus, which is your primary memory structure, is also central to the anxiety response. The hippocampus consolidates memories and forms associations between events. Thus, when a future situation resembles a past stressful event, the hippocampus draws upon previous memories and sends a signal to the amygdala to trigger an anxiety response. Part of the prefrontal cortex is also involved in anxiety. A 2012 study by researchers at the National Institute of Mental Health found that people with anxiety disorders have impaired activity in the dorsal anterior cingulate cortex. This area governs attentional processes and brain networks that regulate emotions.

Levels of neurotransmitters, or chemicals that allow inter-neuronal communication, are often imbalanced in people with anxiety problems. Gamma-aminobutyric acid, or GABA, is a neurotransmitter found throughout your brain. In a healthy brain, GABA reduces neural activity and inhibits neuronal firing. People with anxiety disorders may have too little

GABA, preventing their emotional responses from being properly inhibited. The result of this disinhibition is over-activation of the limbic system, causing an anxiety response.

Anxiety may also be caused by an imbalance in serotonin levels. Changes in your serotonin levels affect energy, mood, cognitive functioning, and other physiological processes implicated in anxiety disorders. The dorsal and median raphe nuclei produce much of the brain's serotonin and are connected to areas of the limbic system. If these serotonin-producing nuclei are damaged or compromised, the resulting drop in serotonin levels can trigger an anxiety reaction. Some researchers hypothesize that mindfulness meditation may alter serotonin receptor activity, restoring balance to neurotransmitter levels and alleviating anxiety.

Other Factors That Contribute To Anxiety Disorders

While altered brain chemistry and functioning plays a key role in anxiety disorders, other factors also contribute to the experience of anxiety. Several anxiety conditions have strong genetic components, meaning that some people are simply predisposed to be more anxious than others. Environmental factors, such as a challenging childhood or traumatic life events, also trigger anxiety disorders. People with a family history of anxiety problems or a biological vulnerability are especially susceptible to developing an anxiety disorder after a stressful life event.

Age is another risk factor for anxiety disorders, with many conditions developing in early childhood or the teenage years. According to the University of Maryland Medical Center, women are twice as likely as men to develop an anxiety disorder. Certain medical conditions, including migraines, mitral valve prolapse, chronic fatigue syndrome, premenstrual syndrome, irritable bowel syndrome, and obstructive sleep apnea increase your risk of panic disorder.

Common Anxiety Disorders

Anxiety disorders are the most common type of mental health problem facing both children and adults. Approximately 40 million American adults have an anxiety disorder, according to the Anxiety and Depression Association of America. Although therapeutic interventions such as mindfulness-based training can be very beneficial, fewer than one-third of people with anxiety disorders seek help for their condition. Understanding more about common anxiety disorders can help you recognize your symptoms and gain the tools you need to overcome anxiety.

Panic Attacks

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR), is the recognized authority for diagnosing mental health problems. The manual outlines key features of anxiety disorders and other conditions. Although panic attacks are not recognized as an anxiety disorder in and of themselves, they are commonly experienced by individuals with anxiety conditions. The DSM defines a panic attack as “a discrete period of intense fear or discomfort” that begins abruptly and peaks within 10 minutes. To qualify as a panic attack, an episode must include at least four of the following symptoms:

1. Palpitations, pounding heart, or accelerated heart rate
2. Sweating
3. Trembling or shaking
4. Sensations of shortness of breath or smothering
5. Feeling of choking
6. Chest pain or discomfort
7. Nausea or abdominal distress
8. Feeling dizzy, unsteady, lightheaded, or faint
9. Feelings of unreality (derealization) or being detached from oneself (depersonalization)
10. Fear of losing control or going crazy

11. Fear of dying
12. Numbness or tingling sensations
13. Chills or hot flushes

When you experience a panic attack, you may feel an impending sense of doom or imminent danger. These feelings begin to subside within 10 minutes, and the entire panic attack may last from several seconds to over 30 minutes. Panic attacks can be uncued (completely unexpected) or cued, meaning that they are associated with a particular situational trigger (e.g., seeing a spider or having to speak in front of a crowd). Panic attacks are commonly associated with the following anxiety disorders listed in the DSM-IV-TR.

Generalized Anxiety Disorder

Approximately 3.8 million Americans suffer from generalized anxiety disorder, according to the National Institute of Mental Health. The lifetime prevalence of this condition is 5%, making it one of the most common mental health problems. The key characteristic of generalized anxiety disorder is excessive worry occurring most days for several months on end. The DSM outlines several diagnostic criteria for generalized anxiety disorder:

1. Excessive anxiety and worry occurring more days than not for at least six months. This anxiety persists about a number of events or activities, such as work, interpersonal interactions, or school.
2. You find it very difficult to control your feelings of worry.
3. The anxiety and worry are associated with at least three of the following symptoms:
 - a. Restlessness, feelings of being keyed up or on edge
 - b. Being easily fatigued
 - c. Difficulty concentrating or your mind going blank
 - d. Irritability
 - e. Muscle tension

- f. Sleep disturbance, including difficulty falling asleep, difficulty staying asleep, or restless and unsatisfying sleep
- 4. Your worry or anxiety is not about another anxiety disorder, such as being embarrassed in public (social anxiety disorder) or being contaminated (obsessive-compulsive disorder)
- 5. Your anxiety and worry cause significant distress and impairment in your day-to-day life

Generalized anxiety may include somatic symptoms (sweating, diarrhea, nausea), cognitive symptoms (inability to concentrate, irritability), or both. Women are slightly more likely than men to experience generalized anxiety disorder, and this condition typically begins in childhood or early adolescence. If you feel very anxious nearly every day, discuss your symptoms with a doctor or psychologist to determine whether you have generalized anxiety disorder. Mindfulness-based therapy can help you overcome your anxiety and reduce the impact of excessive worry on your everyday life.

Panic Disorder

The DSM outlines two defining criteria that must be met to receive a diagnosis of panic disorder:

- 1. Experiencing unexpected, recurrent panic attacks
- 2. Experiencing one of the following symptoms for at least one month:
 - a. Persistent concern about having another panic attack
 - b. Worry about the consequences of another panic attack, such as going crazy or losing control
 - c. A significant change in behavior related to the attacks, such as a change in routine or withdrawal from activities you enjoy

To qualify as panic disorder, the panic attacks cannot be due to a physiological condition or medication, and they cannot be caused by another anxiety disorder such as social pho-

bia or post-traumatic stress disorder. Although only two panic attacks are required to receive a diagnosis of panic disorder, most people experience considerably more than two attacks. Some people regularly have one or two panic attacks per week. Others may go months without a panic attack and then experience several in a short spurt of time. Most individuals develop panic disorder during late adolescence or their mid-30s, and it is very common for people with panic disorder to have relatives with the same condition.

Panic disorder can present with or without agoraphobia. Agoraphobia refers to anxiety about being in a situation in which you cannot escape or get help. People with agoraphobia may feel anxious about travelling on a bus or train, being on bridges, being in crowds, or venturing outside the home alone. They avoid these situations by restricting travel or cutting back on their social schedules. Individuals with panic disorder with agoraphobia are likely to engage in maladaptive behaviors that restrict their ability to cope with anxiety; mindfulness training may be especially helpful in these cases.

Social Phobia

Social phobia, also known as social anxiety disorder, affects from 3% to 13% of people over the course of their lifetimes. This anxiety condition can be incredibly debilitating, making it difficult to interact with others in daily life. The DSM sets forth several criteria that must be met to receive a diagnosis of social phobia:

1. A marked and persistent fear of one or more social or performance situations in which you are exposed to unfamiliar people or scrutiny by others. You may fear that you will show anxiety symptoms or act in a way that is embarrassing.
2. Exposure to the feared social situation almost invariably causes anxiety, which may take the form of a cued panic attack.
3. You recognize that the fear is excessive or unreasonable.
4. You avoid the feared social or performance situation or endure it with intense distress.

5. The avoidance, anticipation, or distress regarding the phobic stimulus causes significant disruption in your daily life. This might include inability to function at work, difficulty making friends and socializing with others, or experiencing marked distress about your social phobia.
6. The duration must be at least six months.
7. The fear is not caused by or related to another medical condition, such as fear of stuttering or anxiety about trembling if you have Parkinson's disease.

The hallmark characteristic of social phobia is worrying that you will embarrass yourself or other people will think you are weak or stupid. Being anxious about public speaking is a classic form of social phobia, but some people also avoid eating, drinking, or writing in public so that others do not notice their trembling hands. It is important to note that the social phobia is different from simply being nervous for an upcoming speech or presentation. Most of us feel mild anxiety before speaking in front of a group, but social phobia extends beyond mild feelings of worry and severely hampers your ability to function.

Social phobia can be particular to one type of situation (e.g., giving a presentation in front of your superiors at work, socializing at a party, or going on a first date) or can be generalized, extending to a wide range of social situations. Men and women are equally likely to develop social phobia, which typically begins to manifest in the mid-teens. The course of the condition fluctuates over time; it may become more severe during periods of severe life stress and remit during more relaxing times. Like many anxiety disorders, social phobia appears to have a genetic component and tends to run in families.

Specific Phobias

In short, a specific phobia is excessive fear of a particular object or situation. Common phobias include flying, animals, seeing blood, receiving an injection, heights, or crowded spaces. The DSM outlines several key features that are diagnostic of a specific phobia:

1. Marked and persistent fear that is excessive or unreasonable. This fear is cued by the presence or anticipation of a specific object or situation.
2. Exposure to the phobic stimulus invariably provokes an immediate anxiety response. This may be a full-blown panic attack or some other anxiety response.
3. You must recognize that the fear is excessive or unreasonable.
4. You avoid the phobic situation or endure it with intense anxiety.
5. The avoidance, anticipation, or distress regarding the phobic stimulus causes significant disruption in your daily life. This might include poor academic functioning, problems in relationships, or difficulty performing everyday tasks.
6. The duration must be at least six months.

There are several subtypes of specific phobias. The animal subtype includes phobias of animals or insects; these phobias often develop in childhood after a scary situation. The natural environment subtype refers to a specific phobia of water, heights, storms, or other natural events. A third subtype, the blood-injection-injury subtype, is very common and tends to run in families. The situational subtype refers to a specific phobia about elevators, flying, tunnels, public transportation, enclosed places, and other specific situations. The catch-all “other type” category includes fears of choking, contracting an illness, vomiting, or other objects or situations that do not fall into the other categories.

People with a specific phobia have a high likelihood of having another mental health problem, such as a mood disorder, anxiety disorder, or substance abuse problem. Approximately two times as many women as men have specific phobias, and women are more likely to have a phobia of animals, natural environments, and situations. In many cases, symptoms of specific phobia develop in childhood or early adolescence. Other individuals begin to present with a specific phobia during their mid-20s.

Several different situations can trigger a specific phobia. Traumatic childhood events, such as being attacked by a snake or being locked in a closet, often lead to phobias. Undergoing an unexpected panic attack while on a bus or on a bridge may also cause you to develop a phobia triggered by those particular situations. Although many childhood pho-

bias fade as the individual progresses into adulthood, many retain their strength throughout the lifespan. Practicing mindfulness can be an excellent way to manage anxiety symptoms related to a specific phobia.

Obsessive-Compulsive Disorder

Obsessive-compulsive disorder is often caricatured in movies, television shows, and other popular media. Many people casually use the phrase, “I’m OCD,” when they really mean that they like to keep things neat and clean. In actuality, obsessive-compulsive disorder is a very serious anxiety condition that causes severe problems in day-to-day life.

Individuals with obsessive-compulsive disorder may have obsessions, compulsions, or both. Obsessions are persistent thoughts or ideas that cause significant anxiety. Compulsions are repetitive behaviors used in an attempt to reduce this anxiety. The DSM lays out several diagnostic criteria for obsessive-compulsive disorder.

1. You have either obsessions or compulsions (or both).
 - a. Obsessions are defined by the four following criteria:
 - i. Recurrent and persistent thoughts, impulses, or images that are experienced as intrusive and inappropriate; these cause significant anxiety or distress.
 - ii. The thoughts, impulses, or images are not simply excessive worries about real-life problems.
 - iii. You attempt to ignore or suppress these impulses or neutralize them through other thoughts and actions.
 - iv. You recognize that the obsessional thoughts or images are a product of your own mind (i.e., you do not believe that someone else has inserted them into your mind, which would be a hallmark of psychosis).
 - b. Compulsions are defined by the two following criteria:

- i. Repetitive behaviors (e.g., ordering, checking, hand-washing) or mental acts (e.g., counting, repeating words over and over, praying) that you feel driven to perform in response to an obsession. These behaviors may follow rules that must be rigidly applied.
 - ii. The behaviors or mental acts are aimed at reducing distress or preventing a dreaded situation; however, they are not realistically connected to the event or are excessive.
- 2. You recognize that the obsessions or compulsions are excessive or unreasonable.
- 3. The obsessions or compulsions cause significant distress or interfere with your everyday life.

Obsessive-compulsive disorder affects 2.5% of people over the course of their lifetimes and is one of the most distressing anxiety disorders to cope with. Obsessions often feel as though they are outside of your control and are extraordinarily intrusive. Common obsessions include thinking about contamination (such as shaking someone's hand), doubts about having completed a task such as locking the doors, needing to have things in an ordered pattern, strong impulses to do violence or perform socially-inappropriate behaviors, and sexual imagery.

You may try to cope with these obsessions by engaging in compulsive behaviors. These might include repeated hand-washing, checking the locks on your doors three times before you leave the home, rearranging the items on your coffee table so they are symmetrical, or counting to 100 and back for each intrusive thought. Although you may think that these compulsive behaviors help you cope with obsessive thoughts, they are either unrealistic or excessive.

Obsessive-compulsive disorder is more common in men than women during childhood, but rates of the condition are approximately equal between the sexes by adulthood. The onset of the condition is often gradual, with friends and family noticing a steady change in your behavior. While obsessive-compulsive disorder can be very difficult to treat,

mindfulness training is a helpful tool to deal with obsessive thoughts and reduce compulsive behaviors.

Post-Traumatic Stress Disorder

Post-traumatic stress disorder (PTSD) is popularly conceptualized as a mental health problem that affects soldiers who have been to war. In reality, anyone can develop post-traumatic stress disorder after experiencing a highly stressful event. Scientists are actively researching why some people are resilient after traumatic events while others develop anxiety problems. The DSM criteria for post-traumatic stress disorder are relatively complex but are helpful in describing the range of subjective experiences that individuals with PTSD have.

1. You have been exposed to a traumatic event including both of the following:
 - a. Experiencing, witnessing, or being confronted with an event that involved death, threatened death, serious injury, or a threat to your or others' physical integrity
 - b. Your response involved intense fear, helplessness, or horror
2. You re-experience the traumatic event in one or more of the following ways:
 - a. Recurrent distressing recollections of the event, such as images, thoughts or perceptions
 - b. Recurrent distressing dreams of the event
 - c. Acting or feeling as if the event were recurring (including hallucinations or flashbacks)
 - d. Intense psychological distress when exposed to cues that resemble an aspect of the traumatic event (such as panicking when you see someone who resembles your rapist)
 - e. Physiological reaction when exposed to cues that resemble an aspect of the traumatic event (such as feeling as though you will vomit when you see someone who resembles your rapist)

3. You persistently avoid stimuli associated with the trauma and experience numbed general responsiveness, as indicated by at least three of the following:
 - a. Efforts to avoid thoughts, feelings, or conversations associated with the event
 - b. Efforts to avoid activities, places, or people that arouse recollections of the trauma
 - c. Inability to recall important aspects of the trauma
 - d. Markedly diminished interest or participation in significant activities
 - e. Feelings of detachment or estrangement from others
 - f. Restricted range of affect (e.g., being unable to feel affection toward others)
 - g. Sense of foreshortened future (e.g., you do not expect to get married, have a career, or live a long life)
4. Persistent symptoms of increased arousal, including at least two of the following:
 - a. Difficulty falling or staying asleep
 - b. Irritability or outbursts of anger
 - c. Difficulty concentrating
 - d. Hypervigilance
 - e. Exaggerated startle response
5. Duration of these experiences is longer than one month.

Although the DSM criteria for PTSD are complicated, there are a few key hallmarks of the condition. People with PTSD must have witnessed or experienced a traumatic event, persistently re-live the event, and experience considerable distress surrounding thoughts of the trauma. Common causes of PTSD are military combat, sexual assault, robbery, kidnapping, torture, automobile accidents, or natural disasters.

Your subjective experience of PTSD and course of illness may vary dramatically from someone else's. Some people experience acute PTSD that lasts less than three months, while others have chronic PTSD that may extend for years. It is not uncommon for symp-

toms of PTSD to manifest immediately after the traumatic event, although some people do not begin to experience PTSD until six months or more afterward. No matter what your personal experience of PTSD, mindfulness training can be a helpful way to cope with the traumatic event and its continued disruption of your everyday life.

The Effects of Anxiety on Everyday Life

It is important to remember that worry and mild anxiety are perfectly normal human experiences. Everyone feels anxious from time to time, and worry can be a healthy response in certain situations. It is when anxiety consumes most of your day or causes problems in activities of daily living that it becomes a serious problem. Understanding why you experience anxiety and how it affects everyday life can help you address your anxiety problem.

Why Do We Experience Anxiety?

The human ability to experience emotions arose through evolutionary processes operating tens of thousands of years ago. Early humans faced a variety of adaptive problems – procuring food, escaping predators, attracting potential mates, locating shelter, and developing kinship ties. Each of these problems required a specific set of behaviors or actions. Some evolutionary theorists believe that emotions developed to quickly synchronize cognitive functioning to cope with adaptive problems. For example, when interacting with your child or close family member, you may feel the emotions of love and tenderness. These emotions organize your thoughts and behaviors, causing you to act in a way that strengthens kinship ties. This process is often subconscious; you may find yourself offering food to a relative without thinking explicitly about your need to build kinship with the person.

How, then, does anxiety fit into this framework? Anxiety is closely related to the emotion fear. Anxiety is the emotion we feel when anticipating a threatening situation, while fear is the emotion we experience when actually confronted with danger. From an evolutionary psychology perspective, feeling fear is an adaptive trait because it increases your chances of surviving in a dangerous world. Take the example of stumbling upon a bear in the woods. The sudden jolt of fear you feel diverts your entire attention to the potential threat. This allows you to immediately mobilize your cognitive resources and determine whether to fight the predator or flee.

The related feeling of anxiety provides similar advantages to the ability to feel fear. Anticipating a harmful situation or negative outcome helps you make better choices in your day-to-day life. For example, perhaps you were once confronted by a poisonous snake and now feel anxious about walking through tall grass. In terms of evolutionary biology, your anxious response is adaptive. Avoiding grassy fields decreases your risk of getting bitten by a snake. Feeling anxious about a potential threat causes you to avoid unnecessary risks, focus carefully on completing a task correctly, find a safe place, or seek the help of your kin. These actions improve your chances of surviving and passing on your genetic material to offspring, making them evolutionarily advantageous.

While mild worrying can actually be a helpful response to a stressful situation, anxiety can be very debilitating in the modern world. The very traits that helped your ancestors survive in the African savannah may cause considerable challenges in your day-to-day life. In our postindustrial society, we confront few predators that our ancestors would recognize. Fear of snakes, insects, and wild animals is deeply ingrained, but we rarely face these threats in daily life. For those with a genetic predisposition to experience heightened anxiety, their anxious feelings find another target. Social events, work deadlines, a busy personal schedule, illness, or myriad other situations may trigger a fearful, anxious reaction. Instead of helping you avoid a dangerous situation, anxiety in the modern world often makes it difficult to cope with stress and respond appropriately.

Occasionally feeling worried about an important upcoming interview or how your child will succeed in a new school can be helpful. In these situations, briefly worrying may help you stay attuned to your child's needs or develop a strategy to succeed on the interview. When you find yourself feeling worried more frequently, however, it ceases to be adaptive. Chronic worrying does not help you focus your thoughts or solve a problem. Worry does not prevent a negative outcome or protect you from a harmful event. In most situations, anxiety is a waste of your cognitive resources and energy. Only taking action can help you change the course of events.

Anxiety disorders are also commonly linked to the concept of secondary gain. A secondary gain is an external motivator for you to report symptoms of anxiety. Although anxiety can be frustrating and difficult to deal with, secondary gains refer to the ways in which it can be beneficial in your everyday life. For example, having severe anxiety may cause you to miss work, receive the sympathy of your spouse, avoid difficult tasks, or have a ready excuse when you make a mistake. Receiving secondary gains due to your anxiety disorder makes it that much more difficult to treat the condition. You may wonder, “If I don’t struggle with anxiety anymore, what if I still can’t handle that tough project at work?” “Will my husband still give me attention if I don’t get panic attacks anymore?”

It is important to note that secondary gains are not always a component of an anxiety disorder. Some people do not receive any secondary benefit by displaying symptoms of anxiety. For others, secondary gain may be a totally subconscious part of their experience. You may not realize that gaining sympathy from a loved one may be a subtle motivator to experience anxiety. Recognizing and acknowledging secondary gains that are part of your anxiety disorder can be incredibly empowering during the treatment process. Do not feel ashamed if you recognize secondary gains as part of your condition. They are a normal part of any disease; by confronting these thoughts or feelings, you can further diminish the negative role of anxiety in your life.

Anxiety and Maladaptive Behaviors that Negatively Impact Your Recovery

Although worry may have been adaptive from an evolutionary perspective, it makes modern life very difficult for individuals with anxiety disorders. The common symptoms of anxiety – sweating, racing heart, racing thoughts, self-criticism, difficulty concentrating – make it hard to perform everyday activities. You may struggle at your job or find yourself unable to sleep at night. Chronic anxiety also causes many individuals to develop maladaptive behaviors that perpetuate their anxiety problems. A maladaptive behavior is something that you do to alleviate anxiety that has an unproductive or dysfunc-

tional outcome. You may begin engaging in maladaptive behaviors unconsciously and fail to notice their negative effects on your life.

A classic maladaptive behavior for individuals with anxiety disorders is avoidance. Perhaps you had your first panic attack when you were flying on an airplane. In response, you swear off plane travel and go to great lengths to use other transportation options. Your next bout of anxiety comes when you are out to dinner with your spouse. To avoid a repeat of the scary, embarrassing experience, you decide not to go out to eat anymore. Soon, you construct rigid rules to avoid any situations that may trigger anxiety. You only drive on specific roads, call in sick to work, refuse to go out with friends, and always sit near an exit. Although these responses may seem as though they are helping you cope with your condition in the short term, they are dysfunctional behaviors that will not benefit you in the long run. In fact, avoidance behaviors may actually make your experience of anxiety worse.

Another maladaptive behavior is withdrawal. Many activities in life involve the potential to fail; ideally, we should regroup after failing at a task and try it again. Individuals with anxiety disorders who seek treatment may find it challenging to conquer their feelings of anxiety. When they encounter a minor setback, they withdraw from the challenge and accept failure. Withdrawing and seeing anxiety as something that you have no control over is incompatible with recovery from your condition. There may be speed bumps along the road, but withdrawal is a maladaptive behavior that will not benefit you in the long term.

A third common maladaptive behavior for people with anxiety disorders is converting anxiety into anger. Having an anxiety disorder is incredibly frustrating, and it is normal to sometimes feel upset about your condition. However, some people develop severe anger problems stemming from anxiety. They may lash out at loved ones, get unreasonably upset in social situations, or feel uncontrollable anger about their life situation. In some cases, this anger is directed inward and manifests as self-loathing. Converting anxiety into anger can be very destructive and unhealthy. In many circumstances, anger intensifies feelings of anxiety and makes symptoms worse, making it a maladaptive behavior.

One of the most destructive maladaptive behaviors common to individuals with anxiety problems is substance abuse. The prevalence of an anxiety disorder and comorbid substance use disorder in a 12-month period is 33% to 45%. This means that a substantial minority of individuals with anxiety problems also abuse drugs or alcohol. Tobacco, alcohol, and marijuana are the most commonly used substances for people with anxiety disorders. For many individuals, their substance abuse problem starts gradually. Perhaps you begin drinking a glass of wine or two after work to relax and feel less anxious. Over time, you drink more and more to diminish your anxiety symptoms.

Use of drugs or alcohol to alleviate anxiety symptoms is called self-medication. In the short term, drinking a few beers or smoking a joint may make you feel less anxious. However, self-medicating is dangerous because it does not provide long-term benefits, causes negative side effects, and does not address the root cause of your anxiety. Using mind-altering substances may make you feel more relaxed and less anxious, but the effects will soon wear off. And as your substance abuse problem progresses, you may require more alcohol or drugs to get the same effects. Even if you do not meet criteria for substance abuse or dependence, using mind-altering substances to alleviate anxiety is maladaptive. Before you can confront your anxiety problem and use mindfulness-based therapy to improve your symptoms, it is important to stop self-medicating. Removing the influence of drugs or alcohol allows you to meet your anxiety disorder head-on and reduce its control.

Anxiety and Comorbid Depression

Many individuals with anxiety disorders have another comorbid mood disorder. Although a mood disorder is not considered a maladaptive behavior, it can profoundly affect your subjective experiences and quality of treatment. Up to 90% of individuals with an anxiety disorder also report depressive symptoms, according to research by J.M. Gorman of the New York State Psychiatric Institute. People with comorbid anxiety and depression typically have a more severe course of illness. They are also less likely to respond positively

to therapy. If you experience depressed mood, changes in your sleeping habits, decreased energy, changes in your appetite, or thoughts of suicide, you may have depression. Talk to your doctor to find treatment strategies to improve your mood. Alleviating depressive symptoms can help you focus on mindfulness-based strategies to reduce your anxiety.

Anxiety in Children

Approximately 1 in 8 children suffers from an anxiety disorder, according to the Anxiety and Depression Association of America. As teachers, parents, and pediatricians become better aware of the symptoms of anxiety in children, this number may continue to rise. Childhood anxiety is associated with poor school performance, adult anxiety disorders, major depression, and low-paying jobs in adulthood. These long-term effects make it incredibly important to treat childhood anxiety when it first manifests. Mindfulness training can be beneficial for children suffering from anxiety disorders. This form of therapy has the potential to improve attention and focus, boost self-acceptance, and enhance anxiety management.

Mild anxiety is a normal part of childhood life. Your child might be anxious about turning the lights off after watching a scary movie or cry when you have to leave on a business trip. However, some children experience an abnormally high level of anxiety that disrupts day-to-day life. Children can be affected by the same anxiety disorders as adults, including generalized anxiety disorder, panic disorder, social anxiety disorder, specific phobias, obsessive-compulsive disorder, and post-traumatic stress disorder. Symptoms of these conditions are similar to adult anxiety disorder symptoms, although children are more likely to become worried about school work and other childhood-specific situations. They may also have less insight into their anxious feelings being excessive or inappropriate given the situation. In addition to manifesting adult anxiety disorder, there are several anxiety disorders that are unique to childhood.

Separation Anxiety

While most children become somewhat anxious upon leaving their parents for the first time, for some children this problem reaches clinical significance. Mild anxiety when a child is separated from her parents can be a sign of a strong, secure attachment. When this anxiety reaches moderate or severe levels, however, it is given the clinical diagnosis separation anxiety disorder. Children with separation anxiety disorder meet the following criteria:

1. Developmentally inappropriate and excessive anxiety concerning separation from home or from those to whom the child is attached, as evidenced by at least three of the following:
 - a. Recurrent excessive distress when separation occurs or is anticipated
 - b. Persistent and excessive worry about losing, or about possible harm befalling, major attachment figures
 - c. Persistent and excessive worry that an untoward event will lead to separation (e.g., getting lost in the grocery store or being kidnapped)
 - d. Persistent reluctance or refusal to go to school or elsewhere because of fear of separation
 - e. Persistent and excessive fear or reluctance to be alone or without major attachment figures at home or in other settings
 - f. Persistent reluctance or refusal to go to sleep without being near a major attachment figure, or refusal to sleep away from home.
 - g. Repeated nightmares involving the theme of separation
 - h. Repeated complaints of physical symptoms (e.g., headaches, stomachaches, nausea, vomiting) when separation from major attachment figures occurs or is anticipated
2. The duration of the disturbance is at least four weeks.
3. The onset is before age 18.
4. The disturbance causes significant distress or impairment in social, academic, or other areas of functioning.

Separation anxiety disorder affects approximately 4% of children. Sometimes, this disorder arises after a traumatic experience such as the death of a pet, change of schools, or move to a new neighborhood. In general, symptoms decrease in severity as time goes on and the child enters late adolescence. During the course of the illness, however, it can be extraordinarily disruptive for both the child and other family members. Mindfulness meditation can be a helpful technique to teach to a child, allowing him to cope with feelings of separation anxiety.

Selective Mutism

Another mental health problem found in children is selective mutism, or failure to speak in particular situations. Again, selective mutism differs from general shyness, which is completely normal and to be expected in certain social situations. To meet DSM criteria for selective mutism, a child must exhibit the following:

1. Consistent failure to speak in specific social situations in which there is an expectation for speaking (e.g., school) despite speaking in other situations
2. The disturbance interferes with academic success or social communication.
3. The duration of the disturbance is at least one month (not limited to the first month of school).
4. The failure to speak is not due to a lack of knowledge of, or comfort with, the spoken language required in the social situation.

As is demonstrated by the DSM criteria, selective mutism extends beyond simple shyness. Discovering what is making the child anxious about speaking and addressing that underlying anxiety is very helpful in improving symptoms of selective mutism. Again, mindfulness meditation is a beneficial strategy to help children with this condition.

Straight Talk about Anxiety: Myths and Misconceptions

Anxiety can be very scary and confusing, causing some people to feel isolated by their condition. When you are dealing with the effects of anxiety every day, you may feel as though no one understands what you are going through. It is important to know the facts about anxiety and how it affects you before beginning a treatment program. Breaking down common misconceptions about anxiety is a good first step before you begin mindfulness training.

Misconception #1: Anxiety is inherently dangerous. When you are battling anxiety every day, it is easy to fall into the trap of thinking of anxiety as something inherently dangerous. Framing anxiety as the enemy can actually be harmful to your ability to cope with your anxious feelings. Anxiety itself isn't dangerous; the way in which you react to anxiety can be.

When you are in the midst of an anxiety attack, it may feel like an emergency situation. Anxiety is a series of habitual “what if” thoughts that intrudes into your daily life. Dwelling on these thoughts causes you to pull away from important experiences in your life. The “what if” scenarios you spend time thinking about rarely, if ever, come true. And being anxious about an upcoming event or scary situation cannot prevent bad things from happening. Even after your feelings of anxiety subside, you may find yourself worrying about your next anxious episode. In order to break free of this cycle, you must accept anxiety as a part of your experience. Anxiety is neither good nor bad; it is something that you must accept and deal with in the moment.

Misconception #2: People with anxiety disorders should be careful to avoid any stress. It may be tempting to restructure your life to avoid stressful situations that may trigger a panic attack. You may stop travelling, avoid public places, or maintain a rigid routine to prevent major stressors. Or perhaps your friends and loved ones try to protect you by refusing to tell you bad news or discouraging you from taking risks. Although avoiding

situations that cause you stress may seem like a productive strategy to manage your anxiety, it can actually have the opposite effect. Rearranging your schedule around potential anxious episodes reinforces the idea that you are fragile and unable to cope with your condition. Furthermore, avoiding anxiety-provoking situations tends to reinforce feelings of anxiety.

Instead of rearranging your life around potentially stressful situations, you must accept that anxiety will be part of your life regardless of what you do to avoid it. Talk firmly to well-meaning friends and family to keep them from treating you as though you are too fragile to handle stress. Although they are reacting out of love and concern for you, they may be inadvertently causing you to maintain your fears instead of facing them. Stress is a normal part of life, and learning to effectively manage stress is a more productive strategy than trying to avoid it.

Misconception #3: If I weren't so weak-willed, anxiety wouldn't be a problem for me.

When your anxiety condition causes significant disruption in your day-to-day life, it can be difficult to avoid comparing your experiences to those of healthy people. Many people with anxiety disorders begin to think that there is something wrong with them for being unable to control anxious thoughts and feelings. You may wonder if you simply lack the willpower or inner strength that others seem to have. However, suffering from an anxiety disorder has nothing to do with willpower. Anxiety has a strong genetic component and can arise as a result of environmental factors outside of your control. While it may take willpower to handle your anxiety and face challenges in your day-to-day life, your anxiety condition did not arise through any failing of your own.

Misconception #4: Only medication can help me with my anxiety problem. Having an anxiety disorder causes significant disruption to your day-to-day life, and it is tempting to seek a pharmaceutical fix to the problem. Television advertisements for anti-anxiety medications paint a rosy picture in which you feel wonderful and never have to worry about anxiety again after just a few days on medication. Your doctor may recommend anti-anxiety medication as a popular way to combat an anxiety disorder. Many people

find it easier to take a pill every day than to step up to the challenge of confronting their anxiety problem through therapy. Although therapeutic interventions require considerable commitment and effort, they teach you specific tools to deal with anxiety in your everyday life.

Scientific research demonstrates that cognitive-behavior therapy, which is strongly related to mindfulness-based cognitive training, is just as effective as or more effective than medication to combat anxiety disorders. Furthermore, mindfulness therapy teaches you the skills to cope with anxiety on a day-to-day basis. These skills will be with you for the rest of your life, which provides a greater long-term benefit than medication.

This is not to say that medication cannot be a helpful part of your anxiety disorder treatment. Several medications for anxiety disorders are highly effective and non-addictive. Combining pharmaceutical treatment with mindfulness therapy can be an excellent way to manage your anxiety symptoms. Before beginning any pharmaceutical treatment, discuss possible risks and side effects with your doctor. Common side effects may include headache, confusion, nightmares, dizziness, nervousness, trouble sleeping, fatigue, or weakness.

Misconception #5: I don't really need treatment; I can deal with anxiety just fine on my own. Some people are able to function reasonably well without therapy or pharmaceutical treatment. However, these individuals may have unconsciously developed unhealthy coping mechanisms to deal with anxiety symptoms. Often, people who claim they have their anxiety under control without any treatment are simply ignoring or avoiding the problem. This unhealthy pattern causes anxiety to become more acute over time, causing long-term problems.

Dr. Risa Weisberg, a researcher and co-director of the Brown University Program for Anxiety Research at Alpert Medical School, has found that approximately half of primary care patients with anxiety disorders are not in therapy or using pharmaceutical treatments.

Instead, many of them report that they do not believe that treatment is helpful for emotional problems and that they are coping fine on their own.

While some people can cope with an anxiety disorder on their own, treatment can be tremendously helpful for anyone with an anxiety condition. What you have been doing in response to your anxiety likely has not helped and may even have made your anxiety worse. Common coping mechanisms such as escape or avoidance of anxiety may make anxious responses more ingrained and habitual. If you want a different outcome to your anxiety attacks, you must learn something new. Mindfulness-based therapy teaches you to accept your anxious thoughts and allow yourself to feel anxious without judgment. This form of treatment can be very helpful for people with anxiety disorders, even those who think their anxiety is under control.

Misconception #6: I might pass out, die, or go crazy during my next anxiety attack. The subjective experience of an anxiety attack is extraordinarily frightening. Each year, thousands of people rush to the emergency room, thinking they are having a heart attack. After doctors perform some tests, the patient is told he or she had a panic attack and is sent home. Symptoms of a panic attack are alarming; you may feel as though your heart will pound out of your chest, begin to sweat, experience shortness of breath, feel faint, and experience chest pains. Another common feeling during panic attacks is that you may lose control or go crazy.

Despite the terrifying experience of an anxiety attack, you will not pass out, die, go crazy, or lose control. During the panic attack, your brain is tricked into thinking that you are in danger. The misfiring in your brain leads you to feel as though you may lose control or go crazy, but there is no danger of this actually happening. Furthermore, you may feel lightheaded or as though you will faint during a panic attack. Fainting occurs when you experience a rapid drop in blood pressure. During a panic attack, your blood pressure actually increases slightly, making it highly unlikely that you will pass out or stop breathing. Mindfulness training can help you cope with the scary experience of a panic attack, al-

lowing you to work through your feelings of anxiety without worrying that you will go crazy or die.

An Introduction to Mindfulness

Researchers and theorists have defined mindfulness in dozens of ways. Each captures a slightly different nuance of the practice of mindfulness, and it can be helpful to examine several definitions to gain a fuller understanding of this rich practice. Consider the following definitions:

1. “Keeping one’s consciousness alive to the present reality,” (Hanh, 1976).
2. “Paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994).
3. “Psychological and behavioral versions of meditation skills usually taught in Eastern spiritual practices...[usually focused on] observing, describing, participating, taking a non-judgmental stance, focusing on one thing in the moment, being effective,” (Linehan, 1993).
4. “Mindfulness captures a quality of consciousness that is characterized by clarity and vividness of current experience and functioning and thus stands in contrast to the mindless, less ‘awake’ states of habitual or automatic functioning that may be chronic for many individuals” (Brown & Ryan, 2003).

Each of these definitions highlights a different aspect of mindfulness. Mindfulness can be broadly conceptualized as a state of open, non-judgmental attention to the present moment. It is a state of mind that is achieved through continual practice and meditation.

Historical Roots of Mindfulness

Mindfulness has been practiced in various cultures for thousands of years. Most modern mindfulness meditation practices trace their roots to Buddhism. Siddhartha Gautama, known as The Buddha, founded this spiritual tradition nearly 2,500 years ago. The Buddha set forth the Noble Eightfold Path as a way to alleviate suffering and promote self-awakening. The seventh element of the Noble Eightfold Path is *samyak-smṛti*, or “right mindfulness.” Practitioners of right mindfulness try to increase their mental alertness to

© Auto Calm

all phenomena that affect the body and mind. They focus on their bodies, feelings, minds, and mental qualities while setting aside concerns about the outside world. This practice is meant to lead to insight, dispassion, and letting go of attachments.

Mindfulness became popularized in the United States through the work of Thich Nhat Hanh, a Vietnamese Buddhist monk and author of *The Miracle of Mindfulness*. Nhat Hanh came to the United States during the 1960s and lectured at Cornell University and Columbia University. He was a strong influence on public thinkers and the American doctor Jon Kabat-Zinn, who is credited with developing mindfulness therapy as an evidence-based medical treatment. Kabat-Zinn founded the Mindfulness-Based Stress Reduction program at the University of Massachusetts in 1979. Since that time, he and other scientists have performed extensive research on mindfulness-based therapy to alleviate symptoms of anxiety.

Current Conceptualizations of Mindfulness-Based Therapy

The long tradition of mindfulness practice in other cultures combined with its relatively recent popularization in modern Western psychological science has led to numerous conceptualizations of mindfulness-based interventions. Scientists continue to research mindfulness to determine exactly *why* it is so effective at reducing anxiety and improving other mental health conditions. Leading researchers in the field have proposed several frameworks through which to consider mindfulness-based therapies. Examining these scientific frameworks may help you to understand what components of mindfulness meditation are beneficial in alleviating anxiety.

Scott Bishop: A Two-Part Operational Definition

In 2004, an interdisciplinary team of researchers led by Scott Bishop, a scientist at the Centre for Addictions and Mental Health at the University of Toronto, proposed a two-part framework for understanding mindfulness. The first component of this model is self-regulation of attention. This means that you deliberately control your attentional proc-

esses to draw your attention to your immediate moment. Sustaining your attention on the present, rather than past memories or potential future events, requires cognitive effort.

Self-regulation of attention also refers to the ability to focus your attention the subjective experience of events, rather than disparate thought streams passing through your mind. For example, when trying to focus on the here and now, you might think, “I feel uneasy about stepping onto this airplane.” Under normal circumstances, that thought may lead to, “This airplane is terrifying. What if the pilot doesn’t know what he’s doing? How does this thing even stay up in the air? What if we hit turbulence and start to go into a tail-spin?” It takes sustained, focused attention to inhibit this elaborative processing and stay in the present moment. Research has demonstrated that mindfulness training is associated with improved ability to inhibit this type of processing. Inhibiting elaborative processing frees up cognitive resources to focus on other aspects of the present experience, giving you a broader perspective. This aspect of mindfulness may be especially important in controlling symptoms of anxiety.

The second part of Bishop’s mindfulness framework is adopting a particular orientation to experience that is characterized by curiosity and openness. Acceptance of your current experience as valuable and important is central to this orientation. Bishop and colleagues predict that adopting an attitude of acceptance will reduce the maladaptive behavior of avoidance. It will also make negative emotions seem less scary and threatening. Although research is ongoing to determine the exact impact of an open, accepting orientation to experience, these predictions suggest that it may be key to coping with anxiety.

Marsha M. Linehan: Dialectical Behavior Therapy

In the early 1990s, Marsha M. Linehan, a psychologist at the University of Washington, designed a new type of therapy called dialectical-behavioral therapy (DBT). DBT combines elements of cognitive-behavioral therapy – such as standardized techniques to regulate emotions – with elements of mindfulness. Although originally designed to treat borderline personality disorder, this therapeutic intervention has been applied to a variety of

other mental health problems, including anxiety. Lineman's dialectical-behavioral therapy offers another helpful framework for understanding mindfulness.

DBT includes the two components of Bishop's conceptualization of mindfulness: self-regulation of attention and maintaining an orientation of open acceptance. It also includes four additional elements.

1. The first element, describing your experience with words, encourages you to identify the emotions you are feeling them and label them. This can be important for individuals who feel overwhelmed or swept along by their emotional experiences. Describing the experience in non-judgmental terms forces you to use neutral assessments of your experiences and allows you to describe them to others.

2. The second element, fully participating in the experience, requires you to be a participant rather than a distant observer. During the practice of mindfulness, you do not want to push your emotions away; rather, you experience them fully while observing them dispassionately.

3. The third element outlined in DBT is completing activities "one-mindfully." One-mindfulness refers to the ability to limit your attention to one activity or feeling at a time. During an anxiety attack or stressful situation, you may experience racing thoughts and a multitude of emotions washing over you. Limiting your attention to just one activity or feeling at a time makes coping with anxiety more manageable.

4. The fourth additional element of mindfulness in a DBT framework is focusing on effective behavior. Quite simply, this refers to the ability to focus on what works. Rather than thinking of actions as "fair" or "unfair," being effective allows you to let go of your desire to be correct and instead do whatever works. For people with anxiety disorders, this may mean accepting that you cannot control the situations in which anxiety arises. Rather than trying to exert control over the situation, you may need to simply do what is needed to cope with your anxiety.

Kirk Warren Brown and Richard Ryan: An Attentional Control Framework

In 2003, researchers Kirk Warren Brown and Richard Ryan, psychologists at the University of Rochester, proposed a different framework for understanding the therapeutic benefit of mindfulness. They developed a psychological measurement called the Mindful Attention Awareness Scale (MAAS). This scale separates mindfulness practitioners from non-practitioners and seems to capture the unique quality of mindfulness. Examples of statements from the MAAS include, “I find it difficult to stay focused on what’s happening in the present.” “It seems I am ‘running on automatic,’ without much awareness of what I’m doing.” “I could be experiencing some emotion and not be conscious of it until some time later.”

Brown and Ryan found that one subcomponent of the MAAS measurement reliably correlated with well-being. In several correlational and laboratory studies, the factor of presence, or being aware of and immersed in the present moment, was highly important. This presence factor was found to contribute to improved symptoms and greater well-being. A separate factor, acceptance and openness to experience, did not reliably correlate with better outcomes.

Based on these research findings, Brown and Ryan proposed a framework for understanding mindfulness that has just one key factor: cultivating the ability to sustain your attention on the present moment. They discard the second factor of Scott Bishop’s model, acceptance, arguing that it does not meaningfully contribute to the positive outcomes of mindfulness training.

Other researchers have proposed additional frameworks for conceptualizing mindfulness, but these remain the central paradigms used by researchers. Future studies designed to test the various aspects of mindfulness training may tease apart which are most necessary to alleviate symptoms of anxiety and other mental health problems.

Central Tenets of Mindfulness Meditation

Mindfulness meditation is one of many meditation techniques. Although scientists and practitioners are still debating which particular aspects of mindfulness meditation are most helpful in improving anxiety, there are several factors that set mindfulness apart from other meditative traditions. Mindfulness is a cognitive process that must be cultivated and practiced. The process of developing your mindfulness faculties occurs over months and years, but even novice practitioners can see extraordinary benefits. Understanding the central tenets of mindfulness meditation is essential before attempting to practice mindfulness in your own daily life.

Be Present

One of the key features of mindfulness meditation is the concept of being present. We spend much of our lives ruminating about past events or thinking about the future. For people who suffer from an anxiety disorder, reliving the past or worrying about the future may be especially pervasive. When practicing mindfulness, it is important to immerse yourself in the present moment. Use all five of your senses to experience the sights, smells, tastes, sounds, and feelings of the present moment. When you become more present, you are fully attuned to your moment-to-moment emotions and thoughts. This intentional practice gives you the freedom to fully experience the richness of each passing moment.

Cultivate a Non-Judgmental Attitude

In everyday life, we judge our actions all the time. Some of these judgments are positive -- “I made really great chocolate chip cookies today. I should keep that recipe.” “I’m proud of myself for holding my tongue and being the bigger person when Lisa insulted me.” More often, especially for individuals with an anxiety disorder, these judgments are negative -- “Why did I just say that to my boss? She’s going to think I’m so stupid.” “I can’t believe I didn’t realize that I needed get off the highway there. Now I’m going to be late for my appointment.” Our interior monologues can be intensely critical and negative, creating a pattern in which we interpret future events through this negative filter.

Practicing mindfulness pushes us to cultivate a non-judgmental attitude. Non-judgment is a central tenet of mindfulness meditation. When you are being mindful, a thought or feeling may enter your consciousness. Rather than attaching a positive or negative value to that thought, you are encouraged to allow yourself to experience it without judgment. This non-judgmental attitude can be highly beneficial for people with anxiety disorders who tend to be hyper-judgmental of their thoughts, feelings and actions.

Practice Self-Compassion

Self-compassion is a psychological construct based on the Buddhist ideas of *karuna*, or compassion. Mindfulness and self-compassion are deeply intertwined, and each relies on the other. Self-compassion includes feelings of warmth and kindness toward ourselves as well as a recognition of suffering and disappointment as part of our shared human experience. Research by John Forsyth, director of the Anxiety Disorders Research Program at the University of Albany, State University of New York, examines the role of self-compassion in anxiety disorders. Dr. Forsyth has found that low self-compassion is a strong predictor of anxiety symptoms, difficulty coping with an anxiety disorder, and poor overall quality of life.

People with low self-compassion tend to agree with the following statements: “When I’m feeling down I tend to obsess and fixate on everything that is going wrong.” “When I think about my inadequacies, I feel more separate and cut off from the rest of the world.” “I’m intolerant and impatient towards those aspects of my personality that I don’t like.” Conversely, people with high self-compassion are likely to endorse the following statements: “When I’m feeling down, I remind myself that there are lots of other people in the world who feel like I do.” “When I’m going through a hard time, I give myself the caring and tenderness I need.” “When something upsets me, I try to keep my emotions in balance.”

Mindfulness meditation encourages an attitude of self-compassion. It provides a framework for you to deal with feelings of anxiety, despair, confusion, or stress and respond

with self-love and understanding. Self-compassion also allows you to become aware of negative emotions and accept them as part of the universal human experience.

Maintain Openness

One of the core characteristics of mindfulness is cultivating an attitude of openness. Our instinct when feeling sad, anxious, or unhappy is to push those feelings away and close our minds to them. Mindfulness-based therapies call us to remain open to all of our experiences, whether positive or negative. A calm, open demeanor allows us to experience each thought or emotion without judgment or negativity. For beginning practitioners of mindfulness meditation, fostering a sense of openness can be one of the biggest challenges. Overcoming the instinct to close your mind to negativity takes diligence and practice.

When you achieve an attitude of openness, you may be surprised by the things you observe in your own mind. Openness to thoughts and experiences allows you to bring your unconscious mind into consciousness. You will begin to notice patterns between thoughts and observe how certain thoughts lead to others. This open awareness is one of the key benefits of practicing mindfulness.

Letting Go

Another central tenet of mindfulness is the concept of detachment, or letting go. The subjective experience of anxiety often includes becoming deeply immersed in one's own thoughts. You may replay an embarrassing incident over and over in your mind or continue to re-analyze a negative conversation with a friend. The principle of detachment, or letting go, calls us to separate ourselves from our thoughts and feelings. When we do this, they cease to have power over us.

In the Buddhist tradition, practicing detachment during meditation means to observe your mind with complete disinterest. Think of this disinterested attitude as the way you might watch grass growing or paint dry. When you apply this detachment to your own mental activity, you simply observe the thoughts, feelings, emotions, worries, and other events

passing through your mind. Letting go allows you to create a separation between yourself and your mental activity, reducing the potential harm your thoughts and emotions can cause. As an observer of your thoughts rather than a helpless victim to them, you cease to allow your anxiety to control you.

The Benefits of Mindfulness-Based Therapy for Anxiety Disorders

When mindfulness-based interventions began to be popularized in the late 1970s, they were introduced as an effective way to reduce stress. As more researchers and clinicians joined the mindfulness movement, this type of therapy was applied to anxiety disorders, depression, chronic pain, smoking cessation, brain injuries, and many more health conditions. Numerous research studies have examined the effects of mindfulness training on anxiety disorder outcomes. Exploring these research findings may give you a better idea of what results to expect following your own mindfulness training.

Structured Mindfulness-Based Therapies

The construct of mindfulness is a broad one that can be employed in a variety of situations. Researchers and clinicians have developed several structured mindfulness-based therapies, which teach mindfulness techniques in a formalized way. When conducting research studies to examine the effectiveness of mindfulness meditation for anxiety disorders, most researchers use one of these structured therapeutic approaches. This ensures that all of the research participants receive the same type of training. However, it does not mean that these structured therapies are the only effective way to learn mindfulness meditation for anxiety. Other methodologies and training programs use the same basic strategies to teach mindfulness practices. Understanding these common standardized therapies can help you become an informed consumer of the scientific research regarding mindfulness and anxiety.

Mindfulness-Based Stress Reduction

In 1979, Jon Kabat-Zinn, currently Professor of Medicine Emeritus at the University of Massachusetts Medical School, became interested in integrating Buddhist teachings with

© Auto Calm

modern Western medicine. He developed a structured program called mindfulness-based stress reduction (MBSR) to teach individuals how to use mindfulness meditation to cope with stress and anxiety. Because of the success of mindfulness meditation in reducing stress, Kabat-Zinn went on to found the Center for Mindfulness in Medicine, Health Care, and Society as well as a Stress Reduction Clinic at the University of Massachusetts Medical School.

Since the development of the program, over 18,000 people have completed the structured MBSR program. The official MBSR course sequence involves eight weekly classes lasting 2.5 hours, as well as one full-day class. Other clinicians and researchers have developed additional courses based on MBSR that teach mindfulness meditation as a tool to reduce the effects of stress on day-to-day life.

Bob Stahl and Elish Goldstein, authors of “A Mindfulness-Based Stress Reduction Workbook,” developed the acronym RAIN for mindfulness practitioners to remember. “R” stands for recognizing when a strong emotion is present. “A” is acknowledging that the emotion is there and allowing its presence. “I” refers to investigating emotions, bodily sensations, and thoughts. “N” stands for non-identifying with the emotion and not letting it control you. MBSR appeals to many individuals with anxiety conditions because it provides a structured, non-threatening environment in which to explore their thoughts and emotions.

Mindfulness-Based Cognitive Therapy

Researchers Zindel Segal, John Teasdale, and Mark Williams developed mindfulness-based cognitive therapy (MBCT) in the early 1990s. Based on MBSR, this structured form of therapy combined mindfulness meditation with elements of cognitive-behavioral therapy. MBCT draws upon elements of Philip Barnard and John Teasdale’s proposed theoretical model of mind, “Interacting Cognitive Subsystems,” or ICS.

Despite its complicated name, ICS is fairly straightforward. The model claims that we have two different modes of mind: a “doing” mode and a “being” mode. When your goal-oriented “doing” mode is overactive, you spend more time thinking about the discrepancies between your goals and real life situation. You may begin to become stressed or anxious because your career is stagnating or you won’t make it on time to an event. To counteract these anxious tendencies, you must strengthen your “being” mode. This mode emphasizes accepting the current situation and allowing what is, rather than what should be.

MBCT trains individuals to develop their “being” mode to cope with feelings of anxiety. In addition to teaching mindfulness meditation, MBCT challenges practitioners to recognize faulty assumptions or beliefs about themselves. For example, you may think, “I am just too weak to handle riding in an elevator.” Recognizing this false self-belief and reassessing it – “Riding in an elevator makes me feel trapped, but that is not because I am weak-willed” – is central to MBCT. The combination of cognitive therapy and mindfulness meditation can be a powerful way to treat anxiety conditions.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT), developed by Steven C. Hayes, teaches people to notice, accept, and embrace their thoughts, feelings, and memories. The goal is not to control those private events, but rather to recognize and clarify them. According to the ACT framework, anxiety arises when your self-worth is too tied to your thoughts, you judge your experiences, avoid certain aspects of your experience, or provide excuses for behavior. Instead, ACT practitioners are taught to accept their reactions, be present, choose a behavior that aligns with their values, and take positive action.

Empirical Research Supporting the Use of Mindfulness-Based Therapy

Mindfulness-based therapies are compelling in their apparent simplicity. It makes intuitive sense that cultivating a mental state characterized by openness, self-acceptance, and experiencing the present moment is beneficial to your mental health. When considering the symptoms experienced by individuals with an anxiety disorder, mindfulness-based

approaches seem uniquely equipped to reduce the negative effects of anxiety in everyday life. When evaluating mental health treatments, it is important to rigorously examine the scientific literature to ensure that an approach is valid and effective. A thorough review of existing research demonstrates that mindfulness-based therapies can be a very effective treatment for a variety of mental health problems, including anxiety disorders.

Brain Changes Associated with Mindfulness Techniques

As mindfulness meditation has become more popular as a stress-reduction technique as well as a treatment for anxiety and other mental health problems, researchers have become keenly interested in the ways in which mindfulness affects brain activity. Researchers at Radboud University in The Netherlands have found that practitioners of mindfulness meditation demonstrate more efficient allocation of attentional resources. A 2012 study by a research team at Liverpool John Moores University reported that mindfulness meditation caused brain changes recorded by electroencephalography (EEG). The EEG recordings showed that mindfulness practitioners are able to allocate their cognitive resources more efficiently than non-practitioners. This leads to improved ability to regulate attention.

Brain changes can also be seen by magnetic resonance imaging (MRI) techniques. A 2010 study by Sara Lazar, a researcher at Harvard Medical School, found that after just 8 weeks of mindfulness meditation training, participants had changes in brain gray matter associated with learning and memory, empathy, and emotion regulation. Not only does mindfulness meditation cause changes in brain activity, but it can actually change the structure of the brain itself. Other brain changes were demonstrated in a 2011 study conducted by researchers at the University of California - Los Angeles. After an 8-week MBSR course, connectivity between numerous brain networks was strengthened. Sensory (e.g., auditory and visual) networks and attentional networks became more strongly connected after the mindfulness training. Future research will address further brain changes associated with the everyday practice of mindfulness.

Benefits and Effectiveness of Mindfulness-Based Therapy for Healthy Adults

Before evaluating the use of mindfulness-based treatments for anxiety disorders, researchers must explore the more general effects of mindfulness on health. A 2008 study by Shauna Shapiro and colleagues at Santa Clara University sought to determine experimentally whether mindfulness is a cognitive faculty that can be cultivated. The researchers randomly sorted participants into a group that underwent Mindfulness-Based Stress Reduction training, a group that completed a concentration-based mindfulness program called Easwaran's Eight Point Program, and a third group that underwent no cognitive training. They used the Mindful Attention and Awareness Scale (MAAS) to assess whether participants were truly able to become more mindful over the 8-week training period. The study found that people in both types of training programs showed dramatic increases in mindfulness, indicating that this type of structured cognitive training can be an effective way to cultivate mindfulness.

Shapiro and colleagues then went on to explore how mindfulness training affected overall well-being. The researchers used three measurements to quantify well-being. The Perceived Stress Scale assessed participants' current stress burden and the effects of stress on their everyday lives. The Rumination and Reflection Questionnaire measured how much they dwell on events or replay events in their minds. A subscale of the Heartland Forgiveness Scale assessed readiness and willingness to forgive others for perceived slights. After the eight weeks of mindfulness training, participants experienced significant reductions in perceived stress and rumination. These findings provide empirical evidence that cultivating mindfulness increases overall well-being in healthy adults. People trained to become more mindful experience reduced feelings of stress and spend less time mentally dwelling on negative events. The study also demonstrates that an official Mindfulness-Based Stress Reduction program is not the only training program that leads to positive results. Other mindfulness training programs can be equally effective in increasing well-being.

In 2009, physicians Alberto Chiesa and Alessandro Serretti of the Institute of Psychiatry at the University of Bologna in Italy conducted a literature review of the use of

Mindfulness-Based Stress Reduction for healthy adults. They performed a meta-analysis, a statistical technique used to analyze the results of numerous scientific studies at once. The meta-analysis included 10 studies exploring the effectiveness of MBSR in healthy adults. The authors used the meta-analysis to determine the effectiveness of MBSR in reducing stress, improving empathy, increasing self-compassion, reducing rumination, and decreasing anxiety. They found that people who underwent MBSR training experienced a significant reduction in stress compared to control participants who were not taught mindfulness techniques. Furthermore, MBSR training was found to lead to increased spirituality (although not an association with a particular religious tradition), reduced rumination, increased empathy for others, and greater self-compassion.

Some skeptics argue that the positive results associated with MBSR training have nothing to do with the program itself and everything to do with instructor attention, relaxation training, and other aspects not specific to mindfulness. These people believe that any intensive program involving relaxation and positive instructor feedback would be beneficial. Chiesa and Serretti's meta-analysis refutes this assertion. The results suggest that MBSR training is more effective in reducing stress than a nonspecific treatment program that is similar in structure to MBSR.

A 2007 study by Shamini Jain and her colleagues at the San Diego State University/University of California-San Diego Joint Doctoral Program in Clinical Psychology lends further support to the hypothesis that mindfulness-based training has a unique ability to lead to positive outcomes. The study randomly sorted participants into three groups: one group completed a 1-month mindfulness meditation program, another group underwent somatic relaxation training, and a third group received no training at all. While both the mindfulness meditation and relaxation training led to reductions in distress and improvements in mood, the mindfulness meditation training caused greater improvements overall. Mindfulness training also led to specific benefits not seen in the relaxation training group. Participants who cultivated mindfulness were less likely to be distracted by their thoughts and experienced decreases in ruminative thinking. These specific effects of mindfulness training may be particularly potent for individuals with anxiety.

Benefits and Effectiveness of Mindfulness-Based Therapy for Health Problems

Numerous scientific studies have demonstrated that mindfulness-based therapy reduces stress and improves overall well-being in healthy adults. Scientists have also examined the effectiveness of mindfulness training in improving health care outcomes. Many health problems, such as cancer or chronic illness, are characterized by stress, dwelling on negative events, and anxiety. Health psychologists and health care providers must seek ways to alleviate these negative psychological effects of illness, and mindfulness meditation may provide a way for them to do so.

A 2003 study by Kirk Warren Brown and Richard Ryan evaluated the use of mindfulness-based training as an intervention for cancer patients. The researchers found that increases in mindfulness (as assessed by the Mindful Attention Awareness Scale) are associated with decreased stress and improved mood regulation. Cancer patients who practice mindfulness meditation may have better treatment outcomes because of the relationship between overall mental well-being and physical health.

Mindfulness-based therapy may have the power to affect your physiology in addition to psychological states. A 2004 study by Linda Ellen Carlson and her colleagues at the Tom Baker Cancer Centre in Calgary, Canada, explored the relationship between mindfulness training and quality of life in cancer patients more deeply. The study included breast cancer and prostate cancer patients who completed an 8-week MBSR program. The patients reported improved quality of life, decreased stress, and better sleep quality. The improvements in quality of life were associated with changes in patients' levels of cortisol, a stress hormone. Another study by Kathryn Bernie and colleagues at the Tom Baker Cancer Centre found that cancer patients who underwent mindfulness training showed specific reductions in muscle tension, upper respiratory symptoms of stress (e.g., colds, nasal stuffiness, sinus headaches), and neurological stress symptoms (e.g., feeling faint or weak, dizziness, nausea, stomach pain).

A novel 2008 study of early-stage breast cancer patients looked more deeply at the ways in which mindfulness training may affect physical health. Patients who received mindfulness training were more optimistic, demonstrated more effective coping strategies, and reported higher quality of life, supporting the findings of earlier research. Interestingly, mindfulness training had a significant effect on the immune system. Breast cancer patients who did not receive mindfulness training had lower immune cell activity and dysregulated levels of cytokines, small signaling molecules involved in immune system activity. Those patients who underwent mindfulness training had higher immune system activity and normal cytokine levels. The results of these studies suggest that mindfulness training may cause significant physiological changes that result in decreased stress, increased immune response, and improved quality of life.

Several randomized clinical trials have more carefully examined the effects of mindfulness training on psychosocial outcomes in patients with medical conditions. A 2009 clinical trial conducted by S.Y. Wong of the School of Public Health at the Chinese University of Hong Kong examined the use of mindfulness training for patients with chronic pain. Participants who received mindfulness training experienced significant improvements in chronic pain, which were sustained at a follow-up visit six months after the training sessions ceased. They also showed improvements in overall quality of life and mood.

A 2012 clinical trial conducted by researchers at the University of South Carolina School of Medicine studied the use of MBSR in early-stage breast cancer patients. Researchers found that patients experienced greater acceptance of emotional states, reduced depression and hostility, improved emotional control, and better coping strategies. Mindfulness training also increased patients' sense of meaning and spirituality as it related to personal health and recovery. These clinical trials suggest that mindfulness-based therapy can be a potent tool in recovery from cancer, chronic pain, and other medical conditions.

Benefits and Effectiveness of Mindfulness-Based Therapy for Anxiety

Although the benefits of mindfulness training for healthy adults, individuals with high stress, and medical patients are well-documented, researchers are only beginning to explore the uses of mindfulness-based therapy for mental health problems. Mindfulness meditation is a natural fit for the treatment of anxiety, and numerous studies have demonstrated significant reductions in anxiety symptoms after mindfulness training. While researchers continue to explore the biological mechanisms underlying the treatment process, mindfulness-based therapy for anxiety is well-validated by the scientific literature.

A 2008 study conducted by Susan Evans and her colleagues at the Department of Psychiatry in the Weill Cornell Medical College explored the use of mindfulness-based cognitive therapy (MBCT) as a treatment for generalized anxiety disorder. The researchers recruited 12 participants with generalized anxiety disorder who completed an 8-week MBCT course. Participants showed a significant drop in their anxiety symptoms after practicing mindfulness. They also had improvements in depressive symptomatology and levels of worry. The majority of participants also reported positive changes in their day-to-day lives, from improved relationships to greater self-acceptance.

A group of researchers at the Pochon CHA University College of Medicine in Korea studied individuals with symptoms of anxiety and panic that persisted after six months of pharmacological treatment. Following a MBCT training program, these participants experienced significant improvements in anxiety symptoms, rumination, levels of worry, and quality of sleep. These data suggest that even when medications cannot improve symptoms, mindfulness training can be an effective treatment for anxiety.

Several studies have examined the efficacy of MBSR for social anxiety disorder. In a 2012 study by Hooria Jazaieri and colleagues at Stanford University, 56 adults with social anxiety were studied. Half received MBSR training, while the other half completed an aerobic exercise program to use as a comparison group. People who completed the MBSR training showed significant decreases in symptoms of social anxiety. They also reported less depressive symptomatology and higher subjective well-being. A follow-up

study from the same group used functional magnetic resonance imaging (fMRI) to measure the brain activity of people who completed MBSR versus those who performed aerobic exercise. The researchers found that mindfulness meditation was associated with decreased negative emotion and increased activation of areas of the parietal cortex controlling attentional processes. This study suggests that performing mindfulness meditation reduces anxiety by improving attentional control. Learning to control your attention and prevent yourself from ruminating about negative events or self-beliefs improves symptoms of anxiety.

In 2011, researchers from the Department of Clinical Psychology at the University of Bergen in Norway conducted a randomized controlled clinical trial to assess the efficacy of MBSR for patients with anxiety disorders. A randomized controlled trial is the gold standard in medical science for determining whether a treatment is effective. In this trial, 76 individuals who met DSM-IV-TR criteria for panic disorder, social anxiety disorder, or generalized anxiety disorder were randomly sorted into two groups: one group completed an 8-week MBSR program, while the other was put on a wait list for the treatment. Researchers administered a variety of tests and questionnaires before and after treatment, including assessments of anxiety symptoms, depression symptoms, worry, insomnia, and mindfulness. After completing the MBSR course, participants showed a significant decrease in symptoms of anxiety as well as symptoms of depression. They also reported less worry and lower trait anxiety (the long-term tendency to respond to situations with anxiety). Importantly, these effects were still seen six months after completion of the treatment program, indicating that mindfulness training can have long-lasting effects on anxiety symptoms.

The traditional treatments for anxiety disorders include pharmaceutical intervention and cognitive-behavioral therapy (CBT). However, CBT tends to have limited success in reducing anxiety symptoms to a healthy level, and many people relapse after treatment. Researchers are keen to find an alternative therapy for anxiety disorders that is highly effective and long-lasting. A wealth of scientific data supports the use of mindfulness-based treatments for anxiety disorders. Laboratory studies as well as controlled clinical

trials have demonstrated that a relatively short mindfulness training program can result in enormous improvements in anxiety symptoms. Most importantly, these robust effects last long after training ceases, indicating that learning mindfulness is a helpful long-term treatment for anxiety disorders. Mindfulness training has the potential to treat specific symptoms of anxiety disorders that persist after traditional interventions such as pharmaceuticals and CBT. Scientific research will continue to explore the biological underpinnings of the treatment of anxiety with mindfulness training, but the technique has been well-validated in the scientific literature and determined to be effective.

Incorporating Mindfulness into Your Life

Although becoming more mindful sounds great in theory, you may be wondering how to incorporate mindfulness into your everyday life. How, exactly, does the average person begin to practice mindfulness? And how will mindfulness-based therapy help you reduce your everyday symptoms of anxiety? Following some basic, practical guidelines can help you in your first forays into the world of mindfulness-based treatment for anxiety.

Getting Started with Mindfulness Meditation: A Beginner's Guide

As with any new practice or technique, there is one important thing to keep in mind when beginning mindfulness training: mindfulness takes practice. Lots of practice. Over the many years of your life, you have become accustomed to thinking and acting in a certain way. Often times, this includes analyzing your emotions, getting caught up in a complex train of thoughts, making connections to past events or thinking about things that may happen in the future, and judging yourself as you perform everyday actions. You have unconsciously reinforced certain thought patterns and behaviors, teaching your brain to operate in a particular fashion. Undoing those habits and patterns takes time, patience, and practice. Don't expect yourself to successfully quiet your mind during your first meditation session. As you continue to practice, you will gradually make progress and cultivate a more mindful attitude. Having realistic expectations from the beginning makes the process easier.

Creating a Space Conducive to Mindfulness Meditation

When you are first beginning mindfulness training, it can be helpful to have a dedicated space for your meditation practice. This doesn't have to be an entire meditation room; setting aside a quiet corner in your home is sufficient. Choose a place that is reasonably comfortable and free from distraction. Sitting in your living room in front of the television may be pleasant, but it is likely to distract you and pull you away from your mindfulness practice. Similarly, it is a good idea to stay away from your desk, workspace, or

any other place that reminds you of the stressors of daily life. Many practitioners like to sit in front of a bare wall to prevent distraction. Some people choose to decorate their space, while others do not. This does not affect the quality or experience of your mindfulness training. If you find it helpful to set up a small altar with photographs or sacred objects from your faith tradition, feel free to do so. Some individuals find it helpful to light scented candles or incense during their meditation. None of these decorations are essential to mindfulness training, but they do help some practitioners.

Next, think carefully about how and where you would like to sit. Again, much of this is determined by personal preference. There are several postures that are helpful for mindfulness meditation, but there is no one “right way” to do it. Some people like to sit on a cushion or folded blanket on the floor. Others prefer a chair with a comfortable, flat seat. If you use a chair, find a seat that allows you to sit comfortably for long periods of time. If you start to feel numbness or pain, it will distract from your mindfulness practice.

Many practitioners enjoy having a dedicated space for mindfulness meditation. When you are first beginning mindfulness training, this can be especially helpful. Eventually, however, the goal is to take your practice into the real world. Panic attacks or anxiety symptoms are unlikely to trouble you when you are sitting in a quiet corner of your home. Once you learn the basics of mindfulness meditation, you can use the techniques to cope with anxiety no matter where you are. As you become more comfortable with mindfulness in your daily life, the particular space you are in becomes less important.

Basic Meditation Postures

Adopting a comfortable meditation posture is a helpful way to get yourself in the proper mindset to perform mindfulness meditation. One of the simplest postures is to sit cross-legged on a pillow or mat. Making sure that your hips are slightly more elevated than your knees will reduce tension on your spine. Other cross-legged positions include full lotus and half lotus. In the full lotus position, you sit with your legs crossed and your feet resting on the opposite thighs (i.e., left foot on your right thigh, right foot on your left

thigh) with soles upward. The half lotus position allows you to rest one foot on your opposite thigh while the other remains relaxed on the floor. If the full lotus or half lotus positions cause ankle pain, try a different meditative position.

If you prefer to sit in a chair during meditation, it is helpful to sit with your feet flat on the floor. Prop your feet up with a pillow if they dangle from the chair. Leaning forward slightly keeps your back away from the chair and encourages you to maintain an erect posture. Another common seated pose is kneeling and shifting your weight back onto your lower legs, keeping your back straight. Allow your arms to relax, and rest your hands on your thighs.

Some meditation practitioners find seated or kneeling poses to be painful after a few minutes. If you find these poses difficult, consider a prone pose. The most common prone pose is lying on your back with your legs extended and arms to your sides. Consider putting a rolled towel underneath your lower spine to prevent back pain. No matter what meditative pose you choose, remember to keep your spine straight, shoulders back, and head and neck relaxed. This prevents muscle tension or pain from interfering with your mindfulness training.

Beginning Mindfulness Meditation

After creating a pleasant space and assuming a comfortable posture, you are ready to begin meditating. Do not set rigid expectations for yourself as you begin. Simply sit quietly, allowing yourself to experience your body and environment. Your attention will begin to wander, and thoughts will likely intrude – “This is stupid.” “What do I need to get from the grocery store?” “This is never going to work.” When this happens, do not judge yourself or get upset. Simply draw your attention back to your body and environment. Do this gently to keep yourself in a calm, meditative framework. At first, you may only be able to sit for a minute or even 10 seconds without your attention wandering. As your practice continues, you will become more adept at sustaining your attention. For now, if your attention is pulled away 1,000 times, come back gently 1,000 times.

As you relax, take note of your bodily sensations. Allow yourself to experience each of your five senses: sight, hearing, smell, taste, and touch. If you find it too distracting to have your eyes open, it is fine to keep them closed. Eventually, however, it is a good idea to keep your eyes open during at least part of your formal meditation practice. We live with our eyes open in the real world, so it is helpful to incorporate this sensory experience into your formal mindfulness practice. As you pay attention to your senses, it is important to resist the urge to attach labels to your sensory experiences. Simply allow the sensations to wash over you, fully experiencing the present moment and remaining aware of your body and surroundings.

When you become comfortable attending to your body and environment, begin to focus on the breath. Breathing meditation is an important part of mindfulness, but it should not consume 100% of your focus. It is simply a way to quiet the mind and allow you to enter a calm, meditative state. Begin by lightly resting your attention on your breath. Feel your breath as it enters your body and goes out as you exhale. Let yourself relax, feeling the rhythm of your breath going in and out, in and out, in and out. Do your best not to *think* about your breath, but *feel* it as though you are riding the waves of your breath in your body. Allow yourself to breathe as naturally as possible, but do not worry or become distracted if your breath changes as you become aware of it. Simply observe and feel each breath as it enters and exits your body. Some mindfulness practitioners recommend focusing approximately 25% of your attention on your breath, with the remaining 75% devoted to attending to your body and environment. Again, there are no hard rules with this type of meditation, but this can be a helpful guideline to remind yourself not to focus solely on your breath.

After feeling your breathing and attending to your surroundings, turn your attention to your thoughts. The key here is to be a dispassionate observer of your own thoughts. This part of mindfulness meditation can be especially difficult for individuals with an anxiety disorder to master. When you struggle with anxiety, it may feel as though you cannot turn off your thoughts. You may find yourself criticizing your wandering attention, rac-

ing thoughts, or negative internal statements. These self-critical statements are antithetical to cultivating mindfulness.

When observing your thoughts, simply notice the fact that you are thinking by making a neutral observation. Instead of judging yourself – “I’m terrible at meditation because I can’t stop these thoughts” – simply acknowledge that a thought is occurring and gently return to your meditation. Resist the urge to immerse yourself in an emotional train of thoughts or analyze what is going on inside your head. If you find yourself doing this, return to your breathing until your mind calms.

The observation of your own thoughts is what makes mindfulness training so powerful for individuals with anxiety. The goal isn’t to stop thinking or make your mind completely blank. Instead, you must observe each thought without attaching a label to it. At first, it can be difficult to realize that your thoughts and emotions are two different things. Thoughts are neither positive nor negative; it is when we attach an affective label to a thought that it becomes emotionally charged. Take, for example, the thought “I am late for my meeting.” This thought is a neutral statement of fact. Anxiety kicks in when you attach a negative emotion to that thought: “I am late for my meeting. I feel so upset and stupid that I slept through my alarm this morning. I just know my boss is going to notice and get mad at me.” Mindfulness meditation teaches you to dissociate your neutral thoughts from their emotional labels. Many people find cloud-watching to be a helpful metaphor for how you should treat your thoughts during mindfulness meditation. Imagine your mind as the wide open blue sky, and your thoughts as clouds drifting past. The thoughts are just a fraction of what is going on in your mind, and you observe them as dispassionately as clouds passing in the sky. Without engaging the thoughts, you simply take note of them and allow them to drift through your mind before dissipating.

Although you may only be able to sustain mindfulness meditation for a few seconds at first, with continued practice you will find it easier to meditate for 10 minutes, a half-hour, or even a full hour! If you find it difficult to make time for meditation, start by meditating for 5 minutes each day. As it becomes a habit, you can increase your daily

meditation time to 10 or 15 minutes. In general, it is better to meditate for small amounts of time on a regular basis than to practice infrequently for a long block of time. A 2011 study by researchers at Harvard Medical School found that meditating for 8 weeks for less than 30 minutes per day led to changes in brain regions associated with learning and memory, emotion regulation, empathy, and taking the perspectives of others.

As you continue to meditate, you will eventually become uncomfortable. This could be physical discomfort from sitting in a particular position or mental anguish after observing a painful memory. How you deal with pain and discomfort is another important part of mindfulness training. Rather than trying to alleviate the discomfort, you must acknowledge it and accept its presence. This goes against your natural instinct to maintain your personal comfort, but it can be a powerful way to experience mindfulness. Allow the feeling of pain to wash over you and accept that it is painful without judging yourself or your experience. Somewhat paradoxically, accepting discomfort diminishes its power over you. If you tend to react with stress or nervousness in response to a painful thought, it grows in power because you go out of your way to avoid it. Accepting that painful thought and allowing yourself to fully experience the resulting discomfort reduces its hold on you.

Accepting uncomfortable thoughts is especially important for alleviating symptoms of anxiety. When you begin to feel anxious or experience a panic attack, your instinct is likely to push those thoughts and feelings away or try to suppress them. Mindfulness training encourages you to observe and experience your anxious thoughts, accepting the anxiety without judgment. When you can begin to accept anxious feelings as part of your everyday life, they will lose their power to upset you and control your behavior.

As you continue in your meditation, take note of the patterns of thoughts that emerge. You may observe that certain thoughts trigger a strong emotional response or anxious reaction. Or perhaps a neutral thought leads you to become self-critical or judgmental. Observing your thoughts from a neutral, dispassionate place allows you to draw your unconscious thoughts and feelings into your conscious mind. You might be surprised to

find out what you learn about yourself just by quietly observing. For example, observe which thoughts or feelings you gravitate toward and which ones you try to avoid. Perhaps you crave acceptance or avoid situations in which you are not in complete control. Observe what unconscious emotions are driving those decisions – *why* do you feel the way you do? As you examine what thought patterns emerge, note how you react to those thoughts. Many people find it helpful to keep a meditation journal to keep track of these thought patterns. After each session, write down brief notes about your experience and what you learned. Over time, you will be able to look back through this journal and see patterns emerge.

You must learn to recognize your typical thoughts, emotions, and reactions before you are able to change them. Once you observe a harmful pattern, you can make a difference choice or respond differently the next time. The more you observe your thoughts, the better you can recognize the things that trigger feelings of anxiety. This knowledge is invaluable in learning to cope with anxiety and panic attacks in the real world.

Taking Mindfulness Meditation into the Real World

Although practicing formal mindfulness meditation in your home is an excellent way to begin your practice, it is not the sole purpose of mindfulness training. Formal meditation allows you to dedicate time each day to becoming more mindful, which carries over into your everyday life. However, the goal of mindfulness training is to cultivate an orientation of mindfulness that you can use anywhere you are. Thus, it is important to take your practice “off the cushion” and incorporate informal mindfulness practice into your daily life.

The purpose of informal mindfulness practice is to train yourself to live in the present moment and cultivate an attitude of open acceptance. For example, when you find yourself in a situation that triggers anxiety, such as boarding an airplane, draw your attention to the present moment. Focus on your senses and how your body reacts to the situation, attending to your breath to center yourself. If you find your mind jumping into “what if”

mode, draw yourself gently back to the present moment. Rather than chastising yourself for feeling anxious or pushing your anxious feelings away, accept them as a part of your experience. Resist the urge to judge your thoughts, attach labels to them, or to compare your experiences to those of others. Seeking out feelings of anxiety and allowing yourself to fully experience anxiety without judgment reduces its power over you. Similarly, refusing to “do battle” with your anxiety makes it feel less powerful in your daily life.

Cultivating mindfulness in everyday life is challenging at first. Eventually, however, you will notice changes in your viewpoint. Instead of being controlled by anxious thoughts and feelings, you are in control. Once you notice destructive or unhelpful thought patterns, you have the power to choose how to react to a situation. When you become more mindful, you will find that thoughts are just that – thoughts. You are the one who decides to attach significant meaning to them, label them, or imbue them with emotion. Instead of someone who is anxious or disturbed by particular thoughts, you will come to identify yourself as an objective observer of these thoughts and feelings. This breaks the cycle of reacting with anxiety, anger, or other strong emotions in response to particular thoughts or situations.

Other Mindfulness Techniques

Mindfulness practitioners use a variety of techniques to bring their practice into everyday life. One helpful practice is to set an unobtrusive alarm on your watch or cell phone to go off every hour. Use the hourly alarm as a reminder to bring your thoughts into the present moment. Spend one or two minutes attending closely to what you are doing, noting your thoughts and sensations in the present moment. This is also a helpful technique to use before starting a new task. For example, before you begin working on a new project, spend two minutes monitoring your breathing and drawing your attention to the present moment. You will find yourself feeling more relaxed, centered, and ready to focus on the task at hand without stress or anxiety.

It is important to take time throughout the day to practice mindfulness informally. Whenever you have a few spare minutes, draw your attention to your breath, body, and surroundings. Observe your thoughts dispassionately and maintain your focus on the present moment. Do this during your morning commute, while walking your dog, or while cooking dinner. Eventually this mindset will become more habitual and you will easily slip into mindfulness.

Another technique that some mindfulness practitioners use is the body scan. It is easiest to first attempt this practice during formal meditation while in a seated or prone position. Begin by becoming attuned to the sensations of your body. Notice the feeling of your seat against your thighs and buttocks, the temperature of the room, and the feeling of your arms at your sides. Then, draw your attention to the tips of your toes. Note any feelings in your toes – pressure, tingling, comfort or discomfort, and warmth or coolness. Spend about 15 seconds focusing on your toes before moving to the soles and heels of your feet. Continue onward to attend to your ankles, calves, thighs, buttocks, stomach, upper torso, fingertips, wrists, forearms, upper arms, shoulders, neck, and head. Spend 15 to 20 seconds on each part of your body, relaxing your muscles and attending deeply to any bodily sensations. When you complete this body scan, return your attention to your breath for a few minutes before completing the meditation. Performing a brief body scan can be a great mindfulness technique to relax and center yourself in the present moment before attempting an anxiety-triggering activity.

Common Misconceptions about Mindfulness Meditation

Despite robust scientific findings supporting the use of mindfulness meditation for the treatment of anxiety, many people do not understand the basic tenets of mindfulness. Because of its Eastern origins, the concept of mindfulness may seem strange and foreign to many Westerners. In order for your personal practice of mindfulness to be successful, it is important to break down common misconceptions about mindfulness meditation and its use to treat anxiety disorders.

Misconception #1: Mindfulness is just like any other type of meditation. Upon hearing about mindfulness, many people dismiss it as “just another type of meditation.” There are hundreds of meditative practices associated with various religious traditions or secular groups. Although mindfulness meditation shares characteristics of other meditative traditions, it is a distinct practice that is well-suited for the treatment of anxiety. Mindfulness meditation is unique in its focus on staying in the present moment, non-judgment, self-compassion, and letting go. Additionally, mindfulness is about more than formal meditation. The practice of mindfulness encourages us to adopt a mindset of openness, self-compassion, and staying in the present moment. This mindset of mindfulness extends past formal meditation to every aspect of our everyday lives.

Misconception #2: Mindfulness is the same as relaxation or mood management training. Again, mindfulness shares some characteristics of training programs for relaxation or mood management. After practicing mindfulness training, you will certainly notice yourself becoming less stressed and more relaxed. You will also find that you are better able to cope with emotional situations, anger, and frustration. However, the focus of many mood management programs is to learn special techniques to relax and regulate your emotions. A key difference with mindfulness training is that it emphasizes awareness of your mental states and acceptance of your thoughts and emotions. Instead of trying to change or avoid certain emotions, mindfulness practice encourages you to experience them as a dispassionate observer and recognize that your emotions do not control you.

Misconception #3: Mindfulness is a religious practice. Mindfulness meditation originated with the teachings of the Buddha. Despite its ancient origins in Buddhism, however, mindfulness meditation is not associated with any particular religious practice. It differs from other meditative practices, many of which are associated with mystical branches of various world religions. Although it is not associated with a particular religion, mindfulness can be incorporated into any spiritual or religious practice – or practiced in an entirely secular context. Regardless of your faith tradition, mindfulness is an important psychological faculty that can be cultivated to help you manage your anxiety.

Misconception #4: There is a right and a wrong way to practice mindfulness. Cultivating mindfulness may not come naturally to many people from Western backgrounds. Initially, you may be filled with nervousness or self-doubt. If I fidget, am I doing it wrong? Is it okay if my mind wanders? What if I would rather keep my eyes closed? All of these doubts and questions are normal, but it is important to remember that *there is no wrong way to practice mindfulness*. If you approach your mindfulness practice with an attitude of openness, acceptance, and compassion, you cannot be “wrong.” The details of mindfulness practice vary from person to person, so try different things to determine what works best for you. As long as you are cultivating a mindset of self-compassion, acceptance of your thoughts and experiences, and dispassionate observation, you are doing it right.

Misconception #5: Mindfulness is just New Age nonsense for hippies and gurus. To many Westerners, any meditative practice may seem a little New Age-y or strange. We often associate meditation with hippies, gurus, and people who are a little “out there.” But mindfulness is more than just New Age mumbo jumbo. It provides a way to reduce stress and anxiety by changing your cognitive style. Plus, dozens of scientific studies have validated the use of mindfulness for anxiety disorders and other health problems. Few other New Age fads and meditation practices can say the same.

Misconception #6: If I can't set aside 30 to 45 minutes for mindfulness meditation every day, I will never make progress. When you first begin reading about and practicing mindfulness meditation, it may seem incredibly time-consuming. “I’m supposed to set aside time to meditate every day? And then spend even more time throughout the day trying to become more mindful? I just don’t have time for this!” If you approach your mindfulness practice with an open attitude, however, you will find that it blends seamlessly into your day.

If you have a busy schedule, there is no need to set aside a 30 minute block of time every day to practice formal meditation. Instead, meditating for 5 minutes once or twice a day might be more reasonable. Deliberately setting aside a chunk of time, even if it is a rela-

tively small amount, is important to make mindfulness a central part of your life. After the meditation becomes a regular part of your daily life, begin taking your practice into the real world. Remind yourself to be more mindful throughout the day, and take a couple of minutes to center yourself before beginning a task. It is better to practice for small amounts of time most days of the week than to only find the time to meditate once in a while. As you continue to practice mindfulness for several minutes each day, you will be astonished at the progress you make and your improved ability to cope with feelings of anxiety.

Misconception #7: Mindfulness is about shutting your mind off or going into a trance.

Meditation can conjure up images of monks sitting calmly, oblivious to the world around them. It is easy to misunderstand mindfulness meditation as a special technique that teaches you to shut off your mind. In fact, the word mindfulness implies exactly the opposite – becoming *more* aware of your mind, rather than shutting off all activity in it. For people with anxiety, learning a technique that allows you to shut off your mind might be tempting. Imagine not having to deal with racing thoughts, self-critical statements, and stress-inducing emotions! However, shutting off your thoughts is simply another way of avoiding them, something that actually increases their power over you. By practicing mindfulness, you can become more aware of your unconscious thoughts and emotions, giving you a greater understanding of how your mind works. You can use this knowledge to change your behaviors and responses to anxious thoughts and feelings. This might not seem as glamorous, but mindfulness is much more powerful than the ability to turn off your mind, which doesn't help you cope with anxiety at all.

Misconception #8: Dispassionately observing my thoughts means that I am trying to shut off my emotional experiences.

Many people initially misunderstand the meaning of dispassionate observation. To be dispassionate does not mean that you should detach yourself completely from your experience and disengage from your emotional life. If this were the case, mindfulness meditation would lead to apathy and a passionless life.

Rather, dispassionate observation of your thoughts means that you must approach your mental activity with a humble, non-judgmental attitude of open awareness. Mindfulness

requires you to remain open to the experience of your thoughts and feelings, but to set aside any preconceived notions, judgments, or attachments. This practice gives you better access to positive emotions and experiences, allowing you to put them into action in your life. Observing negative emotions such as anxiety as a dispassionate observer allows you to avoid the habitual reactions that have not worked in the past. Instead of automatically responding with anxiety to a potentially stressful situation, you will be able to observe harmful response patterns and work to change them. It is important to remember that the goal is not to become emotionally numb but to experience a range of emotions with openness and loving, compassionate acceptance. Fully experiencing anxiety is an important part of mindfulness treatment for anxiety disorders.

Misconception #9: After several weeks of practicing mindfulness meditation, my problems will go away and I will not struggle with anxiety any more. Because mindfulness-based therapy is such an exciting advancement in the treatment of anxiety, it is easy to overstate the benefits. It is true that many mindfulness practitioners who complete a relatively short (e.g., 8-week) mindfulness training course experience extraordinary improvements in anxiety symptoms. However, this is not because mindfulness magically “cures” their anxiety in a few short weeks. There is no instant cure for anxiety; anxiety is something that you will live with for the rest of your life. The key is to find a method of coping with anxiety so it does not interfere with your daily activities. After several weeks of mindfulness meditation, this is an entirely achievable goal. Becoming more mindful does not make your problems go away, nor does it remove anxiety from your basic mental experience. Rather, it gives you ways to stay in the present moment, accept your emotional experiences, and observe feelings of anxiety without reacting to them.

Binaural Beats and Brain Wave Entrainment

Mindfulness-based therapy provides a compelling way for individuals with anxiety disorders to reduce their everyday symptoms of anxiety. Becoming more mindful actually changes your brain structure as well as functional brain activity, demonstrating the technique's power to improve your anxiety symptoms at the physiological level. Anxiety researchers are excited about another technology called binaural beats. Although scientists have known about binaural beats since the mid-19th century, only recently have they discovered their power to alter mental activity and improve anxiety symptoms. Combined with mindfulness training, binaural beats technology has the potential to dramatically improve your anxiety symptoms and experience of daily life.

Introduction to Binaural Beats: The Basics

In 1839, a Prussian physicist named Heinrich Wilhelm Dove discovered a phenomenon called binaural beats. To understand binaural beats, it is helpful to know some basic physics. Your brain perceives a sound when a series of waves passes through the air to your ear. The sound wave causes tiny bones in your inner ear to vibrate. These vibrations are translated into nervous system activity that your brain registers as a sound. The pitch you hear is determined by the frequency of the wave; high-frequency waves, which have faster oscillations, result in a higher pitch. Dove discovered that when two auditory tones of slightly different frequencies are played, the brain registers the sound as a low-frequency pulsation, or beat. Instead of hearing two distinct tones, you hear one tone that seems to pulsate. To achieve this effect, one frequency must be played in the left ear and the other frequency in the right ear (it doesn't matter which ear receives the higher frequency tone).

Why does the brain perceive this stimulus as a pulsing frequency? If your brain were a perfect information processor, it would register the minute difference in tone between the left ear and right ear. With larger differences in tone frequency, such as the difference between playing two notes on a piano, your brain registers each tone separately. When the

© Auto Calm

difference in frequency is very low, however, the two slightly different sound waves produce interference. Your brain's auditory processing center perceives this interference and registers it as a low-frequency pulsation.

The brain only produces the binaural beats phenomenon under certain circumstances. The frequencies of each tone must be below 1,000 Hertz (similar to a high C on the piano). Additionally, the difference between the frequencies must be less than 30 Hz. If the difference is greater than 30 Hz, your brain is able to register the frequencies as two distinct tones. The single pulsating tone you hear has a particular frequency depending on the stimuli you are presented. For example, if you hear a 700 Hz tone in one ear and a 715 Hz tone in the other ear, the binaural beat will have a frequency of 15 Hz, the difference in frequency between the two individual tones.

Using Binaural Beats to Induce Brain Wave Entrainment

So what is so special about an auditory phenomenon that was discovered nearly 200 years ago? Scientists have discovered that binaural beats have the ability to alter your brain activity. Under normal circumstances, your brain naturally displays certain patterns of activity. These brain waves can be measured by an electroencephalogram, or EEG. For example, when you are experiencing REM sleep, your brain produces a regular pattern of “theta waves,” which are between 4 and 8 Hz. When you are awake and relaxed, you show an “alpha pattern,” with waves of 8 to 12 Hz. During alert wakefulness, your brain has “beta waves” from 13 to 30 Hz.

In physics, entrainment refers to a phenomenon by which two systems oscillating at different frequencies are synchronized. This phenomenon is relatively common in the natural world. For example, numerous independent frogs synchronize their activity to croak in common. The goal with brain wave entrainment is to synchronize your brain waves to oscillate at a particular frequency. Because binaural beats occur between 1 and 30 Hz, in a similar range as normal brain waves, they are perfectly suited to brain wave entrainment.

The theory of brain wave entrainment with binaural beats technology is that presenting an individual with binaural beats of a particular frequency will cause their brain waves to resonate at that frequency. For example, if you wanted to induce a more relaxed brain state, you could provide binaural beats at 8 to 12 Hz, the range of relaxed wakefulness. Binaural beats technology has the power to alter brain states and dramatically reduce anxiety symptoms. Unlike pharmaceutical interventions, binaural beats do not cause any harmful side effects. Because you are simply presenting your brain with an auditory stimulus, you do not need to worry about the negative effects binaural beats may have on your body. This makes the technology an even more compelling treatment for anxiety disorders.

Research Support for the Use of Binaural Beats for Brain Wave Entrainment

A 2005 study by researchers at the University of British Columbia found that presenting participants with binaural beats of a particular frequency induced their brain waves to adopt the same frequency, as measured by EEG. Other studies by researchers at the University of Washington have shown similar patterns of brain wave entrainment in response to the presentation of binaural beats. These peer-reviewed scientific studies lend support to the idea that binaural beat technology can be employed to induce particular mental states.

In 1985, Robert A. Monroe performed a study in which he used binaural beats between 16 to 24 Hz for brain wave entrainment. These binaural beats entrained brain waves to a frequency similar to beta waves. The study found that this brain wave entrainment was associated with increased alertness and ability to concentrate. Related studies have found that brain wave entrainment in the beta wave range results in improved memory for healthy adults and improved ability to focus attention in mentally retarded adults.

For individuals with anxiety disorders, it can be helpful to synchronize brain waves to a lower frequency resembling relaxed wakefulness or deep relaxation. In 1995, Chok C.

Hiew used binaural beats tapes in the theta range (4 to 8 Hz) on healthy younger participants. After exposure to the low-frequency binaural beats, the participants demonstrated increased creativity and improved relaxation. Another study by researchers at the Clinique Psyche in Montreal examined the use of binaural beats tapes for the treatment of anxiety. Individuals with mild to moderate anxiety listened to tapes with embedded binaural beats at least five days per week for one month. The binaural beats were a relatively low frequency in the delta/theta brain wave range. At the end of the month, those who listened to the tapes reported significant reductions in symptoms of anxiety.

A 2005 study performed at Sunderland Royal Hospital in the United Kingdom provided further support for the use of binaural beats technology to reduce anxiety. Researchers studied a group of patients with anxiety about an upcoming surgery. They divided patients into three groups: one group listened to audio with binaural beats, one group listened to music without binaural beats, and a third group received no intervention. The data showed that individuals who were exposed to binaural beats before surgery had a 26.3% reduction in reported anxiety. This was a dramatic drop in anxiety levels compared to those who listened to normal music or received no intervention. A similar 2011 study conducted by researchers at the Emergency Medicine Department of St. Vincent's Hospital and the University of Melbourne in Australia explored the use of binaural beats technology to reduce emergency room patients' anxiety levels. The researchers found that listening to a 20-minute audio tape with embedded binaural beats caused greater reductions in anxiety than listening to regular music.

These studies suggest that binaural beats have the power to cause brain wave entrainment, inducing a particular mood state. Using low-frequency binaural beats improves relaxation and reduces symptoms of anxiety. Binaural beats technology also has the ability to induce brain wave entrainment, facilitating a mood state conducive to mindfulness meditation. Together, mindfulness practice and binaural beats technology provide a potent treatment for anxiety disorders. These techniques can change both your brain structure and functional patterns of activity, reducing the hold of anxiety over your daily life and giving you the ability to cope with anxious thoughts and feelings.

Lifestyle Factors and Hidden Sources of Anxiety

If you suffer from anxiety, you might describe your symptoms in ways that sound something like fear, or the “fight or flight” reaction a person experiences when feeling threatened. Some people have a certain amount of anxiety all of the time, while it hits others during specific situations or during unexpected panic attacks. As many as 8.3% of the adults in the United States have some type of anxiety disorder.

If you give someone who doesn't drink coffee a couple of strong cups of coffee made with freshly ground beans, or a couple of Red Bulls®, they will experience a number of the same symptoms, especially the rapid heartbeat and shakiness. A person unaccustomed to taking in caffeine will not feel well after getting a large amount of it.

On the other hand, a person who works out regularly may experience some of these symptoms but not associate them with feeling bad. Aerobic exercise causes an elevated pulse, sweating and fast breathing (but not too fast). Most people who get the recommended amount of exercise for good health actually have less anxiety.

Other lifestyle factors influence the intensity of anxiety. If you do not get enough sleep regularly, you wind up more anxious. Regular and adequate sleep lessens anxiety. If you over-schedule yourself so you don't have time to relax, sleep, exercise, eat well and engage in activities that you don't find stressful, you will experience more anxiety.

While you may use alcohol to take the edge of your anxiety, alcohol can paradoxically cause difficulty sleeping and in the end, more anxiety. Constant drinking leads to its own set of serious health problems and is not a good way to handle anxiety.

The nicotine in cigarettes and in patches also activates certain stimulating receptors in the body. While people who smoke often say it relieves anxiety and gives them something to do with their hands, in the end nicotine worsens anxiety.

Finally, many of these substances cause dependence and withdrawal symptoms. Alcohol withdrawal is particularly dangerous and characterized by not only elevated heart rate and blood pressure but also a constellation of symptoms called delirium tremens, which includes anxiety.

Caffeine

The problem with caffeine for anxious people is easy to explain and understand. Caffeine actually activates a number of receptors in the brain by stimulating them. While it is completely legal, it is a psychoactive stimulant, much less potent but not totally unlike cocaine and methamphetamine.

In the brain, caffeine acts on certain receptors which ultimately cause:

Alertness, or reduced sleepiness

Improved mood (mild euphoria)

Improved clear thinking (called cognitive performance)

The release of catecholamines, substances involved in the fight-or-flight mechanism.

It can also reduce appetite and enhance the effect of pain medicines.

Caffeine is in many beverages and also medications that are not clearly labeled. One cup of coffee brewed from fresh beans can contain 100 to 200 mg of caffeine. A 12 ounce can of Coca Cola® has 54 mg of caffeine (Pepsi® has less, 38 mg); one 8.3 ounce serving of Red Bull® has 80 mg of caffeine. Surprising to some is the fact that chocolate contains caffeine. One 1.45 ounce Hershey's® Special Dark Chocolate bar has 31 mg of caffeine. Milk chocolate has less caffeine.

Many medications contain caffeine, including most Excedrin® products and Midol Complete® which are over the counter. Prescription medications, including Fioricet® and Fio-

rinal® contain caffeine. Many of the caffeine-containing medications are used to treat headache. While this may be effective, stopping caffeine can also cause headaches, making the symptom and the cure a vicious cycle.

Caffeine is consumed in greater quantities per person in other parts of the world besides the United States. Still, 90% of people in the USA take in caffeine; the average amount is about 200 mg a day. More than 1000 mg a day is ingested by approximately 10% of people.

It has been well documented that caffeine can cause sleep disturbances and worsen anxiety symptoms in people who are already anxious. It can bring on panic attacks. It can cause “caffeine-ism,” a group of symptoms which can include anxiety, agitation, rambling speech and thought, nervousness, trembling, nausea and insomnia.

It is true that people who drink coffee or colas regularly do develop tolerance to many of caffeine’s effects. These people often have symptom of withdrawal when they stop caffeine suddenly. Headache is prominent in caffeine withdrawal, as is lethargy or lack of energy.

Researchers are also discovering that the response to caffeine differs between individuals partially on a genetic basis. Some people do not react with symptoms of anxiety to caffeine and some do. You should be able to tell yourself how you react to caffeine. There is no blood test or any other way to tell at the current time.

If you are struggling with anxiety, you should not be drinking a lot of coffee or anything else with caffeine. If you routinely have a cup of coffee in the morning and it does not worsen your anxiety, you do not have to give that up. If you aren’t sure, stop the coffee and see what happens. If you drink more than that and are already tolerant and dependent on coffee, you have to cut down slowly. Once you eliminate caffeine (remember the chocolate bars and Exedrin®) you can see how you feel.

If you are episodically taking in lots of caffeine and you are anxious, you need to stop the caffeine. No matter what type of anxiety you have, caffeine will only make it worse.

Sugar

There are many people who believe that sugar, which is frequently found in the same beverages as caffeine, can cause increased anxiety and a sugar “high.” This is especially believed to be true about sugar and children. The research on the subject of sugar and anxiety or sugar and hyperactivity has not yet produced conclusive answers or results; there is evidence on both sides of the argument. It may depend on the individual, their age, and the rest of their diet.

If you are drinking highly-sugared beverages with caffeine you should stop them. If your drinks are just highly sugared, try cutting sodas out and drink flavored waters or plain water. You will be able to tell if you feel any different.

Sugar also contains what are called “empty calories.” Empty calories can lead to weight gain but have no nutritional value.

There is really no reason to drink sugary drinks. If you stop them and that reduces your anxiety, you will have the answer for you. In addition, you may be able to lose weight if that is something you want to do.

Nicotine

While you are stopping your coffee, stop your cigarettes as well. Nicotine is another legal psychoactive drug, but its actual effects are more complex. People who are anxious frequently smoke, and they also are more likely to fear the symptoms of withdrawal from quitting smoking as well as more likely to experience worse symptoms, including anxiety, when they stop smoking.

People with diagnoses like anxiety and depression are more likely to smoke than those without these diagnoses. It is difficult to say whether or not an anxious smoker is made worse or better by smoking at any given time, but cigarettes and nicotine do not actually relieve anxiety. They only relieve the anxiety related to stopping smoking.

People with certain types of anxiety are even more likely than the rest of the population to smoke, particularly those with panic disorder (with or without agoraphobia) or post-traumatic stress syndrome.

Research has shown that nicotine is actually a stimulant in terms of brain chemistry, but can be associated with reduction of anxiety symptoms in certain situations. For example, a smoker about to do something which provokes anxiety may gain a calming effect from smoking, even though nicotine acts as a stimulant in the brain.

Because of the complexity of these relationships, the many symptoms associated with smoking cessation, and the many illnesses caused or worsened by smoking, stopping smoking is both important and difficult. People are most successful when given a medical aide, such as a nicotine patch, along with some sort of counseling and support system.

Alcohol

Alcohol is a depressant and can reduce the symptoms of anxiety like certain prescription drugs. However, is available to adults without a prescription, and even young people who can't buy alcohol legally can usually find a way to get it.

Many anxious people self medicate with alcohol. This may work temporarily. Depending on how much a person drinks, they may have more than just a reduction in anxiety. Actually getting inebriated (drunk) results in dis-inhibition and can lead to poor judgment and dangerous behavior, such as driving drunk.

Too much alcohol at one time can be dangerous enough to kill a person. Too much alcohol on a regular basis damages the liver. There is no evidence, though, that regular consumption of a small amount of alcohol is bad for your general health.

However, people develop tolerance to the effects of alcohol and need increasing amounts for the same effect.

Anyone who becomes dependent on alcohol can develop withdrawal symptoms if they stop drinking. This is called delirium tremens and can be life threatening. Many of the symptoms are similar to those of anxiety except much worse.

Regular heavy drinkers are frequently shaky and nervous in the morning before they start drinking for the day. For anxious individuals, it may be very hard to separate an anxiety disorder from alcoholism. Are they anxious because of withdrawal or just anxious to begin with?

Because alcohol is legal and socially acceptable it is very easy for an anxious person to become a problem drinker and develop alcoholism as well as withdrawal symptoms when they don't drink. This makes alcohol use a very bad choice for anxious individuals.

Another problem is alcohol and sleep. While alcohol can make you sleepy, when it wears off in the middle of the night, some people wake up and cannot get back to sleep. Despite the common notion of a "nightcap," alcohol use frequently makes insomnia worse. This can in turn worsen anxiety.

There may actually be specific chemical in the brain that help explain why anxious people drink, why people trying to stop drinking get anxious, and why certain people are susceptible to both of these problems. Understanding these connections may make treatment of anxiety and alcohol overuse better in the future.

If you are anxious and you drink, you need to be very careful. The best choice would be not to drink at all. To separate this out, you need to stop drinking. If you are a heavy drinker, this may need to be done under a doctor's care or in a rehab facility.

Exercise

Most people have learned by now that regular aerobic exercise has a positive effect on health in many ways, from improving heart health to even lowering the risk of some kinds of cancer. Exercise is good for everyone. While not everyone can do the same kind of exercise, finding the right thing for you can only improve your general health.

What anxious people need to know is that regular aerobic exercise can reduce anxiety. Not only will you be making your heart healthier if you exercise, but you will be lowering your anxiety symptoms as a “side effect.”

This has been found to be especially helpful for people who have chronic medical problems in addition to anxiety.

There is evidence that regular exercise can be as effective as both counseling and medication in treating anxiety. Exercise can be used on its own or along with any other method to decrease anxiety.

In addition to aerobic exercise, yoga has been shown to decrease symptoms of anxiety.

People who do not take the time to do regular exercise, and cannot find room in their schedules for regular relaxation and “down time” will all tend to have more problems with anxiety.

Sleep

Anxiety and insomnia, or difficulty sleeping, frequently go together. It is often a case of the “chicken and the egg.” Do anxious people have more trouble sleeping, or do tired,

© Auto Calm

sleepless individuals feel more anxious? Whichever comes first, they interact with each other. Trouble sleeping definitely worsens symptoms of anxiety.

It is estimated that 40 million Americans may have an anxiety disorder, and as many have trouble sleeping. Some estimates indicate that 75% of people with generalized anxiety disorder (GAD) have insomnia. This can happen at any age, although there is some evidence that it is worse for adults 60 years of age and older.

All of the things that increase anxiety can disrupt sleep, especially caffeine use, but also alcohol use and lack of exercise.

Treatment of insomnia can include many different things. Identifying specifics that seem to trigger the trouble sleeping is important. Addressing all of these is important.

People with insomnia can be taught relaxation techniques that are also useful for people with anxiety. Exercise is important, but not in the evening. People with trouble sleeping should exercise in the morning or afternoon.

There are a group of behaviors that are called “good sleep hygiene.” To improve your sleep, you should:

- Go to bed and get up at the same time every day
- Use the bed only for sleeping and not for watching TV or reading
- Do something relaxing in another room before getting into bed, like reading
- Do not do something stressful like working or paying bills before bed
- Do not stay in bed more than 15 to 20 minutes if you are not sleepy – get up and do something else
- Do not nap
- Give yourself enough time to sleep

Keeping your bedroom cool and using a white noise machine to drown out bothersome sound can also improve sleep.

There are other more drastic measures that can be used to try and overcome insomnia. One involves staying in bed only as long as you sleep. If you only sleep 4 hours, then that is all you stay in the bed the next night. You do not increase time spent in bed unless you sleep longer.

There are also sleep labs where you spend a night sleeping and you are monitored to look for specific sleep problems.

One group studying the relationship of sleep disorders and anxiety stated in 2009, “While there are no formal recommendations for treatment of ...sleep problems in individuals with anxiety disorders at this time, recent data suggest that sleep-focused interventions may lead to improvement in anxiety disorder symptoms.”

You can consult with a therapist about difficulty sleeping. You can use sleep-inducing medication, but only on a very short-term basis just for insomnia. There are medications that treat depression and anxiety but are not tranquilizers and are not addicting. These are appropriate for some people and can improve sleep. Sometimes two medications are needed, one for anxiety and one for insomnia, used just until anxiety decreases. Eszopiclone (Lunesta®) can be used for insomnia along with a medicine like escitalopram (Lexapro®) for this purpose.

Children and Mindfulness

What is Mindfulness and MBSR?

Mindfulness finds its roots in Buddhist philosophy and meditation. The father of Buddhism, Siddhartha Gautama, established mindfulness as a constituent of the noble eight-fold path, one of his most important teachings. Mindfulness, at its very core, is simply focusing on a single thing at a time. The concept refers to extended awareness of the mind that doesn't seek to judge the items being contemplated. This moment-to-moment observation may extend to things like physical sensations, insights, emotional states, thoughts, and a whole host of other issues.

Mindfulness involves letting go of both the past and the future in order to concentrate on the things occurring in the immediate surroundings or within oneself. The aim of the practice is to achieve a state of mind where elements outside of the focal point being contemplated cease to matter completely. Since mindfulness relies on the ability to maintain focus on a single thing, eliminating distracting factors is vital in achieving meaningful sessions. This is usually done through isolating those partaking in the exercise in designated environments and focusing on breathing, listening to soothing music, or other such exercises.

Though mindfulness was inspired by Buddhist teachings, there isn't anything fundamentally religious about the practice. In the late 70s, Dr. Jon Kabat-Zinn, a professor at the University of Massachusetts, attended a retreat where he was first introduced to mindfulness. The experience led him to believe the practice could be medically beneficial. As a result, Dr. Kabat-Zinn created a program designed around mindfulness that would go on to aid chronically sick patients cope with the pain and changes occurring in their lives. The practice pioneered by Dr. Kabat-Zinn has since spread through much of the Western world where it has become a staple among complementary treatment for a wide range of ailments and conditions.

In the Western medical world, mindfulness is usually referred to as mindfulness-based stress reduction, or MBSR. This technique refines and applies mindfulness for therapeutic treatment purposes. This treatment is based around the calming effects of MBSR. Though Dr. Kabat-Zinn originally created his program to treat illnesses, MBSR can be used for an incredibly diverse range of things, the simplest of which is basic stress relief.

MBSR in Adults

There exists a wealth of documented proof that mindfulness-based treatment benefits people suffering from an exceeding array of conditions. MBSR is frequently subjected to meta-analysis, a type of study that looks at available research and forms evaluations and conclusions based on the findings of these studies. These analyses concerning MBSR and its usefulness in treating psychological conditions conclude that the usage of MBSR is beneficial for the management of depression, chronic pain, stress, anxiety, eating disorders, psoriasis, fibromyalgia, substance abuse, and cancer.

Despite of the wide range of applications for MBSR, the technique remains commonly used for alleviating depression, anxiety, and psychological distress. A meta-analytical study found that of these three, MBSR was most useful in treating psychological distress. Though less effective for those suffering from anxiety and depression MBSR was still found to be beneficial. MBSR has also been found to aid individuals suffering from substance abuse problems. A study published in the Journal of Cognitive Psychotherapy found mindfulness to be particularly useful in relapse prevention, a cornerstone in ensuring lasting benefits from substance abuse treatment. Another study published in The Journal of Alternative and Complementary Medicine found a link between MBSR and an increase in natural killer cells. This greatly benefitted the immune systems of the participants in the study.

Another thing to note about MBSR is that it is often paired up with other forms of treatment. Since MBSR often only takes a small window of time, it goes well as a complement to other forms of treatment. Cognitive therapy is a common partner of MBSR. Together, they provide greater relief than when provided separately.

How can MBSR Help my Child?

MBSR has an exceedingly long history of helping adults. There are, however, only a handful of studies that show that this method is useful for children simply due to how new the idea is. Nevertheless, It is , highly unlikely that the results experienced by children after successful MBSR therapy would be any different from those felt by adults. It may take longer for children to learn the vital concepts of mindfulness such as remaining calm, being acutely aware, and focusing on a single issue because such concepts are seldom taught to children. Once children learn the skillset necessary for MBSR, this practice might benefit them even more than adults: Since so many negative effects and alignments are linked to stress, possessing the capacity to quickly eliminate stress at a young age will likely reduce the risk of developing such chronic, stress related conditions as hypertension later in life.

Much like in adults, MBSR can help children achieve many things. Possibly the most important of these is basic stress relief. Though simply worrying about school may sound simple for adults, children can get incredibly worked up over exams and keeping their grades up. This is especially true for high-achieving students that are being pressured to maintain their record. Trouble with friends or facing bullying can also have a deep impact on how appreciated and safe a child feels at school. The responses we exhibit to stress during childhood will likely follow children in to their adult life. A child that gets worked up over peer-pressure, for example, is at risk for having similar responses towards colleagues and friends later on. Though regular MBSR exercises can help alleviate much of this unwanted stress, it can also help improve a child's concentration.

Mindfulness also carries the benefit of allowing children to appreciate the moment-to-moment treasures of everyday life. Even children have regrets about the past and worry about the future. Children can build lots of anxiety over negative instances. Let's say a child was laughed at by his peers during a physical education class. Next week, he or she may feel anxious about partaking in the scheduled activities and has no feasible way of

avoiding the class. MBSR can help place instances and worries such as these in the past and allow children to truly view only the present.

Explaining MBSR to Children

One of the most important things to keep in mind while considering MBSR as a potential method of curbing your child's stress is that it was originally intended for adults. Concepts like focusing on oneself and trying to contemplate only a single item at a time can be demanding to children. Without proper guidance, it's likely that children would simply get distracted, bored, or annoyed and simply cease to focus on the therapy. These are important limitations that you must understand before attempting MBSR therapy on your child.

Fortunately, children are prone to getting excited over new things and generally love receiving attention from their parents. Using their natural desire for play and fun can turn into a useful avenue towards stress relief. The concepts involved in MBSR aren't too difficult even for children to understand. With the right preparations, you might be able to get your child not only to partake in MBSR but actually enjoying it.

In simple terms, explain to your child that the negative emotions and physical symptoms that they are experiencing are the result of stress and anxiety. Make sure they understand that there is something they can do to help themselves. This will make it likely they will be gravitated towards partaking in MBSR. Suggest trying the treatment for a week or two and explain it may seem very strange or even useless to them in the beginning and that it might take some time to get used to. Tell them that if they just stick with the program they are very likely to experience less negative stress symptoms such as headaches and stomach pain. When it comes to explaining concepts like awareness or being non-judgmental, proceed slowly. Most MBSR programs directed for children are identical to those used by adults. The only notable difference is that the sessions designed for children don't usually last longer than thirty minutes.

After your first session, ask your child how they feel and try to make them be as descriptive as possible. Be aware that children don't always have the capacity to vocalize these experiences. In fact, participating children in a study reported feeling dead to describe the stillness and calmness they felt. It's important you schedule MBSR sessions on a regular and consistent basis. Children like routines and are more likely to stick with the therapy and want to participate in it if they can anticipate sessions.

MBSR in Daily Life

Our daily lives impose all kinds of stressful things upon us. We must worry about our work, our children, our homes, making payments, and whole host of other issues. This list seems to stretch on with no end in sight. Living with a child suffering from anxiety or stress also adds to the pressure you feel. Even worse, the moment you start exhibiting stressful behavior around your children, their conditions may worsen. Luckily, MBSR is rather easy to squeeze into an already hectic lifestyle with proper planning.

Unlike adults, children aren't usually bombarded by stress-inducing factors. Instead, they are easily worked-up over certain issues. If you learn what is causing your child to behave anxiously, you can time the frequency and hour of your MBSR sessions to suit their needs. For example, if it's school-life that's stressing your child, you may want to hold sessions during the evenings. This way, your child will have had the time to become comfortable at home and should be preparing to go to sleep. Timing your sessions during the evenings will help your child calm down and attain much needed, stress-free sleep. This will make the effects of the session extend well after your child falls asleep and will help him face the troubles of tomorrow as they come. Most importantly, keep in mind your existing schedule. If you have to stress about making stress-relief sessions, chances are they won't have much of an effect. Plan around events by prioritizing and know that missing a day of MBSR won't collapse your child to total anxiety.

Because children often have a hard time keeping concentration, you may want to place them in the quietest room in the house. Make sure the TV is turned off, the dryer in the next room isn't banging, the door is closed, and that all possible sound is removed before

your session. It's also a good idea to remove your child from their own rooms. Their belongings, posters, and other items may serve to distract them. The ideal setting for MBSR sessions is a calm, non-threatening environment with all external distractions removed. This synergizes incredibly well with the focusing aspect of the therapy, as well as with the general idea of removing oneself from past regrets and worries about the future.

Wrapping Up

Although everyone feels anxious from time to time, some individuals are hard-wired to experience more frequent or severe anxiety attacks. Experiencing racing thoughts, rapid heartbeat, inability to concentrate, sweating, trembling, apprehension, dread, or recurring negative thoughts are common symptoms of an anxiety disorder. If anxious thoughts and feelings often disrupt your daily life, it is time to make a change. The mainstream media often portrays pharmaceutical interventions or intensive psychotherapy as the only treatments for anxiety disorders. While these can be very beneficial treatments for some individuals, others find that drugs and therapy have no effect.

Anxiety doesn't have to control every aspect of your life, causing you to worry about when your next panic attack might strike. Mindfulness-based therapy takes a different approach from pharmaceutical interventions and cognitive-behavioral therapy. Instead of trying to suppress feelings of anxiety or avoid triggering situations, mindfulness-based therapy encourages you to face your anxiety with open acceptance. By allowing yourself to feel stressed, worried, or anxious without judgment, anxiety loses its hold over you. Mindfulness meditation also provides a technique in which you can come to recognize harmful or destructive thought patterns. Bringing these unconscious thoughts into conscious awareness gives you the tools you need to change the way you think and react.

Although mindfulness is a powerful technique on its own, it becomes even more potent when used with binaural beats technology. Binaural beats are gaining a reputation in the scientific community as a safe, effective way to alter mood states. They are simple to administer, do not require extensive monitoring by a physician, and can rapidly produce results. This makes them a much more attractive treatment option for anxiety disorders than pharmaceutical interventions or psychotherapy. By inducing brain wave entrainment and causing synchronization of brain activity, binaural beats naturally coax your brain to enter a more relaxed state.

Together, mindfulness-based therapy and binaural beats technology offer a one-two punch against anxiety disorders. After following this treatment program, you will have the skills you need to cope with anxiety in your everyday life. Although mindfulness and binaural beats sound different than the anxiety treatments commonly promoted in Western medicine, they are well-validated in the scientific literature and are gaining in popularity. These safe, effective treatments for anxiety can transform your life, freeing you from the chains of anxiety that prevent you from achieving your fullest potential.

Bibliography

Anxiety and Depression Association of America (ADAA). Sleep Disorders. Accessed July 20, 2012.

<http://www.adaa.org/understanding-anxiety/related-illnesses/sleep-disorders>

Anxiety Disorders. *University of Maryland Medical Center*. Retrieved May 25, 2012, from http://www.umm.edu/patiented/articles/anxiety_disorders_000028.htm.

Barnard, P.J. & Teasdale, J.D. (1991). Interacting cognitive subsystems: A systemic approach to cognitive-affective interaction and change. *Cognition and Emotion* 5: 1-39.

Birnie, K., Garland, S.N., & Carlson, L.E. (2010). Psychological benefits for cancer patients and their partners participating in mindfulness-based stress reduction. *Psychooncology* 19(9): 1004-9.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., et al. (2004). Mindfulness: a proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230–241.

Blair, K.S., et al. (2012). Reduced dorsal anterior cingulate cortical activity during emotional regulation and top-down attentional control in generalized social phobia, generalized anxiety disorder, and comorbid generalized social phobia/generalized anxiety disorder. *Biological Psychiatry*.

Brady K.T., Tolliver B.K., Verduin M.L. Alcohol Use and Anxiety: Diagnostic and Management Issues. *American Journal of Psychiatry* 2007; 164: 217-221.

<http://ajp.psychiatryonline.org/article.aspx?articleID=97846>

Brenes G.A., Miller M.E., Stanley M.A., et al. Insomnia in Older Adults with Generalized Anxiety Disorder. *American Journal of Geriatric Psychiatry*. 2009 June; 17(6): 465–472.

Brown. K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84: 822-848.

Carlson, L.E., Speca, M., Patel, K.D., & Goodey, E. (2004). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (DHEAS) and melatonin in breast and prostate cancer outpatients. *Psychoneuroendocrinology* 29(4): 448-74.

Chiesa, A. & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *The Journal of Alternative Medicine* 15(5): 593-600.

Coffey, K.A., Hartmann, M., & Frederickson, B. (2010). Deconstructing mindfulness and constructing mental health: Understanding mindfulness and its mechanisms of action. *Mindfulness* 1: 235-253.

Cox, B.J., Norton, G.R., Swinson, R.P., & Endler, N.S. (1990). Substance abuse and panic-related anxiety: A critical review. *Behavior Research and Therapy* 28(5): 385-393.

David M. Buss, (1990). The evolution of anxiety and social exclusion. *Journal of Social and Clinical Psychology* 9(2): 196-201.

Dobie, R.A. & Norton, S.J. (1980). Binaural interaction in human auditory evoked potentials. *Electroencephalography and Clinical Neurophysiology* 49(3-4): 303-13.

Engin, E. & Treit, D. (2007). The role of the hippocampus in anxiety: Intracerebral infusion studies. *Behavioral Pharmacology* 18(5-6): 365-74.

Evans, S., Ferrando, S., Findler, M., Stowell, C., Smart, C., & Haglin, D. (2008). Mindfulness-based cognitive therapy for generalized anxiety disorder. *Journal of Anxiety Disorders* 22: 716-721.

Forgas, J.P. (2006). *Hearts and minds: Affective influences on social cognition and behavior*. London: Psychology Press.

Generalized Anxiety Disorder (GAD). *National Institute of Mental Health*. Retrieved June 6, 2012, from <http://www.nimh.nih.gov/>.

Goldin, P., Ziv, M., Jazaieri, H., Hahn, K., & Gross, J.J. (2012). MBSR vs. aerobic exercise in social anxiety: fMRI of emotion regulation of negative self-beliefs. *Social Cognitive and Affective Neuroscience*.

Hanh, T.N. (1976). *The miracle of mindfulness* (trans: Moby Ho). Boston: Beacon Press.

Henderson, V.P., Clemow, L., Massion, A.O., Hurley, T.G., Druker, S., & Hebert, J.R. (2012). The effects of mindfulness-based stress reduction on psychosocial outcomes and quality of life in early-stage breast cancer patients: A randomized trial. *Breast Cancer Research and Treatment* 131(1): 99-109.

Hiew, C.C. (1995). Hemi-Sync into creativity. *Hemi-Sync Journal* 18(1): 3-5.

Hirschfield, R.M.A. (2001). The comorbidity of major depression and anxiety disorders: Recognition and management in primary care. *Primary Care Companion to the Journal of Clinical Psychiatry* 3(6): 244-254.

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: a meta-analytic review. *Journal of Consulting and Clinical Psychology* 78: 169–183.

Holzel, B.K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S.M., Gard, T., & Lazar, S.W. (2011). Mindfulness practice leads to increases in regional brain gray matter density. *Psychiatry Research* 191(1): 36-43.

Hooker, K.E. & Fodor, I.E. (2008). Teaching mindfulness to children. *Gestalt Review* 12(1): 75-91.

Jain, S., Shapiro, S.L., Swanick, S., Roesch, S.C., Mills, P.J., Bell, I., & Schwartz, G.E. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine* 33(1): 11-21.

Jazaieri, H., Goldin, P.R., Wemer, K., Ziv, M., & Gross, J.J. (2012). A randomized trial of MBSR versus aerobic exercise for social anxiety disorder. *Journal of Clinical Psychology*.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation in everyday life*. New York: Hyperion Press.

Kristeller, J.L. (2007). Mindfulness meditation. In Lehrer, P., Woolfolk, R.L., & Sime, W.E. (Eds.), *Principles and Practice of Stress Management* (pp. 393-427). New York: Guilford Press.

Linehan, M.M. (1993a). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.

Monroe, R.A. (1985). *Far Journeys*. New York: Doubleday.

Moore, A., Gruber, T., Deroose, J., & Malinowski, P. (2012). Regular, brief mindfulness meditation practice improves electrophysiological markers of attentional control. *Frontiers in Human Neuroscience* 6: 18.

Morissette S.B., Tull M.T., Gulliver S.B., et al. Anxiety, Anxiety Disorders, Tobacco Use, and Nicotine: A Critical Review of Interrelationships. *Psychological Bulletin*. 2007; 133(2): 245–272.

Padmanabhan, R., Hildreth, A.J., & Laws, D. (2005). A prospective, randomised, controlled study examining binaural beat audio and pre-operative anxiety in patients undergoing general anaesthesia for day case surgery. *Anaesthesia* 60(9): 874-7.

Piacentini, J. & Roblek, T. (2002). Recognizing and treating childhood anxiety disorders. *The Western Journal of Medicine* 176(3):149-151.

Pohjavarra, P., Telaranta, T., & Vaisanen, E. (2003). The role of the sympathetic nervous system in anxiety: Is it possible to relieve anxiety with endoscopic sympathetic block? *Nordic Journal of Psychiatry* 57(1): 55-60.

Pollack M., Kinrys G., Krystal A., et al. Eszopiclone Coadministered With Escitalopram in Patients With Insomnia and Comorbid Generalized Anxiety Disorder. *Archives of General Psychiatry* 2008; 65(5): 551-562.

Ramsawh H.J., Stein M.B., Belik S., et al. Relationship of anxiety disorders, sleep quality, and functional impairment in a community sample. *Journal of Psychiatric Research*. 2009; (43): 926–933.

Saeed S.A., Antonacci D.J., Bloch R.M. Exercise, Yoga, and Meditation for Depressive and Anxiety Disorders. *American Family Physician*. 2010; 81(8): 981-986, 987.

Schwarz, D.W., & Taylor, P. (2005). Human auditory steady state responses to binaural and monaural beats. *Clinical Neurophysiology* 116(3): 658-68.

Scott, E.L. & Hulvershorn, L. (2011). Anxiety disorders with comorbid substance abuse. *Psychiatric Times* 28(9).

Shapiro, S.L., Oman, D., Thoresen, C.E., Plante, T.G., & Flinders, P. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology* 64(7): 840-862.

The New York Times. Health Guide. Stress and Anxiety. Tuesday, July 17, 2012.

Review Date: 10/14/2011. Reviewed By: Reviewed by: Harvey Simon, MD, Editor-in-Chief, Associate Professor of Medicine, Harvard Medical School; Physician, Massachusetts General Hospital. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc.

Understanding the Facts of Anxiety Disorders and Depression. *Anxiety and Depression Association of America*. Retrieved May 29, 2012, from <http://www.adaa.org/>.

University of Illinois at Chicago. Brain Chemistry Ties Anxiety And Alcoholism. ScienceDaily, March 4, 2008. Accessed July 16, 2012.

<http://www.sciencedaily.com/releases/2008/03/080304173356.htm>

VanDam, N., Sheppard, S., Forsyth, J.P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders* 25, 123-130.

Van den Hurk, P.A., Gionmi, F., Gielen, S.C., Speckens, A.E., & Barendregt, H.P. (2010). Greater efficiency in attentional processing related to mindfulness meditation. *Quarterly Journal of Experimental Psychology* 63(6): 1168-80.

Vilarim M.M., Araujo D.M.R., Nardi A.E. Caffeine challenge test and panic disorder: a systematic literature review. *Expert Review of Neurotherapeutics*. 2011; 11(8): 1185–1195.

Vollestad, J., Sivertsen, B., & Nielsen, G.H. (2011). Mindfulness-based stress reduction for patients with anxiety disorders: Evaluation in a randomized controlled trial. *Behavior Research and Therapy* 49: 281-288.

Weiland, T.J., Jelinek, G.A., Macarow, K.E., Samartzis, P., Brown, D.M., Grierson, E.M., & Winter, C. (2011). Original sound compositions reduce anxiety in emergency department patients: A randomised controlled trial. *Medical Journal of Australia* 195(11-12): 694-8.

Wipfli B.M., Rethorst C.D., Landers D.M. The Anxiolytic Effects of Exercise: A Meta-Analysis of Randomized Trials and Dose–Response Analysis. *Journal of Sport & Exercise Psychology*. 2008; 30: 392-410.

Witek-Janusek, L., Albuquerque, K., Chroniak, K.R., Chroniak, C., Durazo-Arvizu, R., & Mathews, H.L. (2008). Effect of mindfulness-based stress reduction on immune function, quality of life, and coping in women newly diagnosed with early stage breast cancer. *Brain, Behavior, and Immunity* 22(6): 969-81.

Wong, S.Y. (2009). Effect of mindfulness-based stress reduction programme on pain and quality of life in chronic pain patients: A randomised controlled clinical trial. *Hong Kong Medicine Journal* 15: 13-4.

Yang A., Palmer A. A., de Wit H. Genetics of caffeine consumption and responses to caffeine. *Psychopharmacology*. 2010; 211: 245–257.

Yook, K., Lee, S.H., Ryu, M., et al. Usefulness of mindfulness-based cognitive therapy for treating insomnia in patients with anxiety disorders: A pilot study. *Journal of Nervous and Mental Disease* 196(6): 501-503.

Young, S.N. (2011). Biologic effects of mindfulness meditation: Growing insights into neurobiologic aspects of the prevention of depression. *Journal of Psychiatry and Neuroscience* 36(2): 75-77.