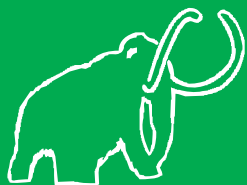


MAMMOUTH MAGAZINE

THE OFFICIAL
MAGAZINE
OF THE
CENTRE FOR
STUDIES
ON HUMAN
STRESS

The Centre for Studies on Human Stress is dedicated to improving the physical and mental health of individuals by empowering them with scientifically grounded information about the effects of stress on the brain and body.

MammothMagazine • Issue 18 • Autumn 2018



Anxiety: normal or abnormal?

Éditorial

Marie-France Marin, Ph. D.,

Sonia Lupien, Ph. D., Director of the Center for Studies on Human Stress

At the Center for Studies on Human Stress, we work at better understanding the multiple impacts of stress on the body and the brain. Beyond our scientific work, our mission is to make the content of this magazine accessible to the general public to provide the population with information on stress...afterall, stress is a subject that concerns us all! Being a window to the general public, we have had the chance to talk with several people from diverse backgrounds, including parents, teachers, workers and university students. It is largely due to our exchanges with people from various walks of life that brought us to talk about anxiety for this issue of the Mammoth Magazine. Anxiety became a more and more recurrent theme in our conversations with various members of not only the education community, but also the business community. If people talk about anxiety so frequently and have so many questions, it is because there is a need for a better understanding of the topic. Our choice became clear: this issue of the Mammoth Magazine would

focus on anxiety!

Stress and anxiety are two concepts that are often used interchangeably in our everyday lives. However, as you will see in this issue of the Mammoth Magazine, they refer to two distinct entities, though they do mutually influence one another. It is important to point out that anxiety does not necessarily refer to 'anxiety disorders' or 'psychopathology'. Anxiety is a normal emotion that should not be feared. It is perfectly normal to be anxious in certain situations. It is when anxiety becomes overloading, affects our functioning in various spheres of our lives and we feel distress, that we need to think about seeking help.

We are pleased to present this issue on anxiety which holds a large variety of articles which, without a doubt, will shed some light on this topic and also help you, if need be. The first article in this issue features Dr. Kieron O'Connor, a leader in the field of obsessive-compulsive disorders, ►

tics and compulsive accumulation disorder research. He was interviewed by Enzo Cipriani, research assistant at the Center for Studies on Human Stress. In the article, you will learn about the daily research activities as well as the endeavours of this world-renowned researcher. Next, Clémence Peyrot, doctoral student in Biomedical Sciences at the University of Montreal and Alexe Bilodeau-Houle, Master's student in Psychology will help us unravel the concepts of stress, anxiety and fear. They will also explain which regions of the brain are at work when we experience anxiety. Dr. Sonia Lupien, Director of the Center for Studies on Human Stress authors the issue's third article about performance anxiety, a phenomenon that is increasingly more observed in youth. In the fourth article, we were fortunate to have the testimony of a mother who witnessed her daughter's struggles with anxiety disorders.

This story sheds light on the reality of anxiety disorders and how some of the behaviours we, as parents, believe are helpful can actually foster anxiety in children. Next, Philippe Kerr, Master's student in Biomedical Sciences at the University of Montreal and member of the Center for Studies on Human Stress writes about the diverse manifestations of anxiety. Whether it is at the behavioural, affective, physiological or cognitive level, you will learn to identify anxiety and this will help you better judge when help is needed. Finally, Catherine Raymond, doctoral student in Neuroscience at the University of Montreal and member of the Centre for Studies on Human Stress authors the last article of this issue on the topic of anxiety. She interviewed Dr. Stéphane Guay, psychologist and researcher, who answered all of our ques-

tions on pharmacological and psychological treatments for anxiety. We sincerely hope that this issue will be illuminating and that it will allow you to better differentiate between stress and anxiety. Moreover, we hope that this issue will provide you with the tools to identify anxiety in yourself, as well as in others, and help you recognize the signs that indicate it is time to seek professional help. Have a great read!



Evolution and new approaches in obsessive-compulsive disorder

Researcher profile: Dr. Kieron O'Connor

Enzo Cipriani

Research Assistant, Center for Studies on Human Stress

For this issue of the Mammoth Magazine, we contacted Kieron O'Connor, Ph.D. in psychology, researcher at the Montreal University Mental Health Institute and director of the Obsessive-Compulsive Disorder and Tic Disorder Studies Centre. Dr. O'Connor specializes in obsessive-compulsive disorder (OCD), tics, Tourette's syndrome, compulsive accumulation disorder (CAD), repetitive behaviours directed towards the body (e.g. trichotilloma-

nia, in which the patient compulsively pulls their hair out) as well as other disorders involving habits and impulses.

A few definitions

Before we begin our interview with Dr. O'Connor, we should define a few key terms: **OCD** is defined as a mental illness that manifests itself as obsessions and compulsions (behaviours/rituals). Obsessions are thoughts or mental images that occur repetitively and are hard to get rid of. Obsessions can generate

distress, fear, discomfort and/or disgust. On the other hand, compulsions are behaviours or repetitive mental acts that aim to prevent a feared situation or diminish the anxiety created by the obsession.

Tics are involuntary movements or vocalizations that usually happen suddenly, rapidly, recurrently and in a stereotypical fashion.

CAD is a disorder that is characterized by hoarding and storing a large quantity of objects.

Dr. O'Connor's work

When we asked Dr. O'Connor which study he was the most proud of in his journey as a researcher, the answer was hard to determine. After a career span-

a person has smoked in this room, which would be well-founded. In the case of OCD, inferences originate from an exaggerated or non-founded source. The example provided by Dr. O'Connor is the following: "A person walking into an office could think that even if the room seems clean at first glance, a sick individual could have walked into the office

an anxiety disorder. In fact, when patients consulted a psychologist, the disorder was already advanced and anxiety had taken up a big role, which made it difficult to identify the origin of the disorder. In a condition like OCD, obsessive thoughts are the source of distress and anxiety. However, can we look at the problem the other way around? Can anxiety contribute to the development of obsessive thoughts? It is the famous question of which came first - the chicken or the egg? What comes first, anxiety or obsessive thoughts? According to Dr. O'Connor, obsessive thoughts precede anxiety. This means that anxiety stems from obsessive thoughts. As previously mentioned, obsession is fuelled by personal fragility, which means that it will take up increasingly more space until it becomes unbearable and unseparable from the person's functioning. Imagine someone who, every 5 minutes, thinks they forgot to turn off the stove. It is clearly extremely anxiety-inducing since it is difficult, if not impossible, to live peacefully with the fear of an explosion every 5 minutes.



ning over 20-year, it is rather difficult to have a fair opinion on such a large volume of work. Nonetheless, Dr. O'Connor takes pride in the diversity and the tangible impact of his work. In addition to contributing to the advancement of scientific knowledge in his area of interest, Dr. O'Connor and his laboratory are working to develop prevention and health promotion programs in order to improve the treatment of these disorders. They have also developed a new approach to the currently used cognitive-behavioural therapy (CBT), which is called the inference-based approach.

After having identified that it was not every patient who benefited equally from CBT (especially those who have a very strong belief in the validity of their obsessions), Dr. O'Connor and his team developed this new approach based on the reasoning behind these obsessive thoughts. Applied reasoning refers to the fact that obsessive ideas do not appear out of the blue. Instead, they are a consequence of inferential reasoning. This means that they are based on many ideas, which, when linked together, brings the person to draw a conclusion. For example, if there is an ashtray and a cigarette odor in a room, one might conclude that

and contaminated the room. Therefore, there is a risk of contamination for this person."

Quite often, thoughts that become obsessive are linked to individual fragility. While some events might be mundane for the majority of individuals, these same events might be interpreted by the person as a problem and hence reinforce this fragility. Such reinforcement can become a vicious cycle that fosters obsessions and helps perpetuate the cycle. The new approach developed by Dr. O'Connor's and his colleagues

New treatment approaches

Are there other therapeutic avenues?

Dr. O'Connor and his team are actually testing the efficacy of something we often hear about, mindfulness. Preliminary results suggest that patients suffering from OCD benefit from this approach. After all, this form of meditation stems from the Buddhist philosophy of accepting the present moment, letting go... But, these are only preliminary results,

Quite often, thoughts that become obsessive are linked to individual fragility

is, therefore, aimed at asking the client whether the arguments that contribute to the obsessions are justified or whether they emanate from the imaginary or errors in reasoning. At a first glance, this might seem very simple, but it is not that straightforward.

And what about its link to anxiety?

Until recently, OCD was categorized as

so we will have to wait a little longer to draw any conclusions. Nevertheless, there are great discoveries to come! To learn more about Dr. O'Connor and his colleagues' work, please visit the Obsessive-Compulsive Disorders and Tic Disorder Studies Centre's website: www.iusmm.ca/obsessive-compulsive-disorder-tic-studies-centre.html or www.tictactoc.org.



Fear, anxiety and stress... how can we distinguish between them?

Clémence Peyrot, Doctoral student in Biomedical Sciences, University of Montreal
Alexe Bilodeau-Houle, Master's student in Psychology, University of Montreal

Fear, anxiety and stress are terms that are often confounded. In this article, we will explain each of these concepts and, with the help of this piece, you will be able to understand the main differences and similarities between these terms. We will also present the major regions of the brain that are involved in these different processes.

Fear and stress

Fear is an emotion that occurs quickly when we are exposed to a real and imminent danger or threat. It is essential to increase our chances of survival. In fact, when you perceive danger, different mechanisms are activated in your brain and body that allow you to fight or flee. Let us take an example: you are sitting quietly at the dinner table with your friend. Suddenly, you hear a loud noise coming from the front door. It seems like someone is trying to break in! Immediately, your amygdala, an area of the brain involved in emotional processing, is activated. It sounds the alarm and indicates the presence of danger. Rapidly, your brain triggers a stress response.

Your sympathetic nervous system, which manages many of the body's automatic activities (such as heart rate), produces adrenaline and noradrenaline. Among other things, these hormones help to increase your heart rate and dilate your pupils. Moreover, your hypothalamus, the part of the brain that takes care of the body's basic functions (such as regulating appetite and body temperature), triggers the release of other hormones that activate the adrenal glands located just above the kidneys. The adrenal glands then release cortisol, an important stress hormone. Cortisol helps mobilize energy that allows you to make a sustained effort. The stress response induced by the secretion of adrenaline, noradrenaline and cortisol allows you to fight or flee when faced with a threat.

Suppose that the noise coming from the front door is actually just your local postal carrier dropping letters in your mailbox. You must be able to reduce, even stop, your feelings of fear and stress. In this case, two brain structures are going to help you do this. The hippocampus, a brain region involved in memory and

contextualization, tells you that hearing the postal carrier deliver letters in the context you are in (in your house at the usual time the postal carrier passes) is totally normal and thus helps decreasing the activation of the amygdala. Furthermore, the prefrontal cortex, an important region of the brain in controlling emotions, plays a similar role. The feeling of fear is thus attenuated, but it is also essential to reduce the production of stress hormones. The hippocampus, the prefrontal cortex and the amygdala are all involved in the regulation of the stress response. That being said, the hippocampus and the prefrontal cortex send a stop signal to the hypothalamus. Given that the amygdala is less active (since fear is decreased), it sends fewer excitation signals to the hypothalamus. Ultimately, these signals converge and indicate to the hypothalamus that there is an absence of danger, which then decreases the production of stress hormones.

What about anxiety?

While fear is evoked by a real and immediate threat, anxiety manifests itself in anticipation of a potential threat. Let us take the previous example: when you calmed down, you noticed that your friend was not scared at all. You then ask yourself: why did not my friend react? It could be that you are more anxious than him/her. In fact, there are important individual differences with regards to anxiety levels. In the scientific literature, we talk about trait anxiety, which refers to a personality trait. People with higher trait anxiety tend to see situations more often as threatening. In the context of this example, given that you have more trait anxiety than your friend, you perceived the noise coming from the front door as a potential threat more easily than your friend. Your threat radar is thus more sensitive, you detect more threats, even if they are not real or not there yet! You triggered a feeling of fear and a stress response more easily and rapidly than your friend. Normal anxiety can manifest itself as an increased heart rate, difficulty breathing, muscular tensions, nausea, fatigue, abdominal pain, headaches and difficulty concentrating on other tasks (since you direct your attention to the threat ahead). Anxiety is an adaptive emotion but it can also become pathological and impair normal functioning. These are called anxiety disorders.

What happens in your brain when you feel anxious? The brain regions involved in anxiety are less known than those of fear and stress. Studies that have examined anxiety focused mostly on pathological anxiety. As in fear, the amygdala seems to play an important role in anxiety. It was in fact shown that people suffering from pathological anxiety have a hyperactive amygdala. A hyperactive amygdala seems to be involved in symptoms of hypervigilance often found in many anxiety disorders. For example, if you are constantly on the lookout for a possible break-in when you are at home, you are in a state of hypervigilance. Other studies have also shown a weaker activation of the prefrontal cortex in people with an anxiety disorder.

This result suggests that the prefrontal cortex also plays a role in the regulation of anxiety. In people suffering from anxiety disorders, the prefrontal cortex would not be able to sufficiently slow down the amygdala. Moreover, in people with pathological anxiety, the hippocampus would be less able to contextualize the threatening situation. This means that people who suffer from anxiety disorders activate more areas of the brain that are important for detecting threats and less of the areas that are essential for slowing fear and regulating our emotions. The few studies conducted on individuals who do not suffer from anxiety disorders but who have high levels of trait anxiety suggest similar results. A study conducted on healthy individuals (who do not have

consider the origin of the threat. Fear arises when faced with an immediate threat in the environment, while anxiety refers to a potential threat that is distant or uncertain. It is important to underline that while the amygdala, hippocampus and prefrontal cortex are the main structures that have been studied, many other structures are involved in the neural circuitry of fear, anxiety and stress. Now you have all the tools in hand to differentiate between these three concepts!



pathological anxiety) showed that those with high levels of trait anxiety activate their amygdala more when faced with particular fearful situations compared to individuals with lower levels of trait anxiety.

In conclusion, fear, stress and anxiety are concepts with many similarities. In particular, these three processes are essential to survival and are generated by similar brain structures. Fear and anxiety are emotions, while stress is a body's physiological response. To differentiate between them, it is crucial to



Performance anxiety in youth

Sonia Lupien, Ph. D.

Director, Center for Studies on Human Stress

Over the last three years, the Center for Studies on Human Stress has witnessed an important rise in the number of calls from parents and education professionals seeking information on performance anxiety. Parents and professors tell us that they have seen an increase in cases of performance anxiety in children and adolescents and they want to understand the role that stress plays in the development and/or the fostering of performance anxiety in youth.

Here is a summary of the scientific literature on the subject. However, it is important to note that performance anxiety is not a psychiatric condition in itself and very few studies actually exist on this subject. However, below is a summary of what scientists have learned over the last 10 years.

Differences between stress and anxiety

Most people know the kind of stress that can be generated by an upcoming exam or competition. Scientific papers even use these to study environmental stress.

Researchers measure stress hormones in children, adolescents or young university students that have an upcoming exam and it has generally been shown that stress hormone levels increase significantly in this situation.

However, being successful at an exam or a competition can be so important to someone that it generates extremely high levels of stress. This is what we call 'performance anxiety'.

As mentioned in the previous article, stress and anxiety are two concepts that do not refer to the same thing. Stress occurs when an individual faces, here and now, a threat detected by the brain. When the brain detects a threat, it produces stress hormones which allow us to fight or escape from the threat. Anxiety is the anticipation of an imagined threat. However, the brain reacts the same way to a real or imagined threat - it produces stress hormones. This explains why anxious individuals tend to produce higher amounts of stress hormones, given that they constantly anticipate imaginary threats.

To this day, scientists suggest that performance anxiety develops when an 'estimation problem' of the brain occurs. This means that the child has a tendency to overestimate threats and risks associated with a situation and underestimate their capacity to fight them. This gives rise to harassing thoughts such as: **'If I fail this test, I will fail my school year, I will have to drop out, I will never attend CEGEP, I will not have a job later, no family...'** Whoa! It is easy to see how in the longer-term, such imaginary threats can become overwhelming and cause anxiety!

The problem with the important stress response generated by these catastrophic thoughts is that it diminishes performance! When performance drops because of the stress generated by this anxious state, it 'confirms' the child's catastrophic thoughts about the situation. This creates what I call the 'vicious cycle of stress and performance anxiety'. I describe what this cycle entails below.

Step 1: A situation is stressful, our brain detects a threat

As I mentioned at the beginning of this article, most people know what kind of stress can be generated by an upcoming exam or competition. At this point, it is important to distinguish two types of stress: absolute stress and relative stress.

Absolute stress consists of a real threat for everyone. If someone enters a class and screams 'fire!', every student will have a very robust stress response and will run out of the school. And that is perfectly fine. However, there are not many absolute stressors nowadays as we live in far safer times than our ancestors who hunted mammoths!

Today, we are primarily surrounded by '**relative stressors**', This means we produce a physiological stress response (stress hormone secretion) if we interpret a situation as having one or more of the four characteristics of stress that you know well:

- Novelty
- Unpredictability
- Threat to ego
- Sense of low control

Step 2: Constant stress modifies our way of interpreting a threat

Every time our brain detects an absolute or relative stressor, it will produce stress hormones that rapidly access the brain. As long as it is an acute stressor (here and now), our biological system will work admirably well. Problems occur when stress becomes chronic. When stress hormones are produced repeatedly and chronically, they modify our ability to discriminate between threatening and non-threatening information and in the long term, what can happen is that 'everything becomes threatening'...It is at this moment in time that individuals begin to anticipate imaginary threats when there are none!

This is what we call anxiety.

The brain turns into 'super-threat detection' mode and so, catastrophic thoughts are generated when we are faced with situations that are, in sum, non-threatening.

It is important to differentiate between three types of anxiety:

- **State anxiety** : We can all be in an 'anxious state'. For example, before an important exam, it is normal to feel anxious. This anxious state is temporary and generally disappears when the particular stressful situation is over.

- **Trait anxiety**: We can also have an 'anxious personality'. Individuals who have an anxious personality have a tendency to worry about little things or they desire to have complete control over every aspect of their lives.

- **Anxiety disorders**: Anxiety, when uncontrolled, can develop into a mental health condition called 'anxiety disorder'. There are many types of anxiety disorders such as phobias, generalized anxiety disorder and social anxiety disorder. As mentioned previously, performance anxiety is not a mental health condition in itself, but it is a part of the broader category of 'anxiety disorders'

Can we treat or control performance anxiety?

A child suffering from performance anxiety fears any form of evaluation in which he/she might fail, feel judged

or criticized. When confronted with a threat, our biological system has two choices: to fight or flee the situation. A child with performance anxiety will systematically choose to flee, which we call avoidance. For example, the child could ask not to go to school or to their sports practice.

Research on anxiety disorders have shown that avoidance IS NOT the preferable option to choose when one suffers from an anxiety disorder. Children need to learn to fight their 'inner mammoths' so that their brains do not begin detecting threats when there are none (we invite you to read the next article which elaborates on avoidance).

Below, I describe a form of psychological therapy that was proven to treat anxiety disorders as well as 5 methods described in the scientific literature that have demonstrated their capacity to help young people deal with performance anxiety.

motivation
catastrophic
threat
psychologist
performance
Stress
therapy
anxiety
fight

When therapy becomes a necessity

Seeing a psychologist can possibly be a very good approach to helping young people deal with performance anxiety. Scientific literature suggests choosing a psychologist that uses 'cognitive-behavioural therapy' (CBT). CBT is a form of therapy that teaches young people to better discriminate between threats that are real and those that are not. When they are better able to make this distinction, anxiety greatly decreases and may even disappear. Therefore, every time a terrible thought comes to mind, we teach the person to control this thought. CBT is very effective in treating anxiety disorders, but there is one condition to the success of this type of therapy: the patient must be 100% invested in the therapy and do the homework required by the psychologist. No diligence, no results!

In issue 16 of the Mammoth Magazine, we outline the procedures to follow to locate a psychologist near you who uses the cognitive-behavioural approach. Do not hesitate to read this issue if you want to find psychological help for your child.

Interpreting stress as a challenge

Stress is necessary for survival and small stress responses help to increase alertness and therefore, attention and memory. In fact, we do not say it very often but a little stress increases memory! It is only in the case of very high acute stress or chronic stress that memory is decreased. Therefore, the curve linking stress and performance is an inverted-U shape (see diagram below).

A little stress increases performance (left

side of the curve), while too much stress decreases performance (right side of the curve). When we see a situation as being a huge stressor, we can easily find ourselves on the right side of the curve with decreased performance. However, if instead of telling ourselves "this is a stressor", we tell ourselves "this is a challenge", we modify our interpretation of the situation and we can increase our performance thanks to the low stress response that is generated by perceiving the situation as a challenge. Since we have to deal with relative stressors in our everyday lives, our interpretation of the situation can change everything when it comes to the positive or negative effects of stress on our brains!

The motivation that is generated by the idea that the situation is a challenge (rather than a stressor) has to be intrinsic and not extrinsic. The motivation to face the challenge has to come from the child (intrinsic) and not from their parents, coaches or teachers (extrinsic). Research has shown that when motivation is extrinsic (for example, the child wants to perform well to please their parents), this generates such high levels of stress that brings the child to the right side of the stress/performance curve and so, his/her performance decreases and this makes them believe that they are not able to combat the stress. When the motivation is intrinsic (the child wants to perform on their own), this generates less stress which brings them to the left side of the stress/performance curve and their performance increases.



Not trusting our inner voice when it screams out at a threat

The little voice we hear in our head (our famous little inner hamster), is our own voice (that is our voice we hear), and because of this we have a tendency to believe

everything this voice says. However, this voice is only the reflection of thousands of thoughts that pass through our brain every second. We have to see this constant babbling as 'brainwashing'. You do not believe all the dreams you have at night, and yet, you have your own voice in your dreams! So why always believe what your 'little inner hamster' says? In a great book called 'Le piège du bonheur' ("The Happiness Trap"), researchers suggest that we modify the voice in our head in order to reduce its impact on our lives. Every time your inner voice tells you you are afraid because there is a threat, change that voice to 'Dora the Explorer' or 'Bart Simpson'. You will notice that the impact of the little voice on your emotions will be less strong! And if this works for you, it will also work for your child.

Listening to music

When our inner voice annoys us too much, we listen to music! In fact, scientific studies have shown that listening to music (and if the music has lyrics, it is even better), interferes with the inner voice and decreases its importance!

Moving

When we are stressed out, we mobilize energy. If we do not lose this energy, it affects our brain and our performance. It is when we feel anxious and that our little inner hamster starts turning that we have to put on our running shoes and go play outside!

There are over 100,000 ways to move and play sports but one we often forget, which is often enjoyed by children, is dancing! What do you think mammoth hunters of the pre-historic age use to do around the fire come nighttime? They danced. By doing so, they got rid of the energy mobilized during their mammoth hunts!

To conclude, my message to young girls and boys who are 'super threat detectors': if you are a little anxious near exam time, it is not after the school year that you should have a party and dance... it is before!



When anxiety comes home

Testimony of a mother

Geneviève Dion, mom

Becoming a mother was my only certitude, my only desire. I was in the hospital for 3 days and something was already wrong. Our beautiful girl had all her toes, all her fingers and no arm coming out of her forehead, but she was inconsolable. When she was only 2 days old, nurses called her “Miss Caprice”. She refused to be anywhere but on me, night and day. Breastfeeding was a nightmare.

Once we arrived home, the marathon started; months of almost all-nighters. I slept on a rocking chair for weeks with my daughter on me. At 2 years old, she still did not sleep at night. She would get up many times and would resist sleeping. As for naps, do not get me started!

She started going to daycare and by the first week, I would arrive with a hysteric little girl who would throw up her breakfast at the front door. I would return home crying of guilt and would go pick her up early to avoid too much stress. I persevered in bringing her there since it was a question of survival to me. The lack of sleep was problematic.

That same year, she was hospitalized a few days for a virus that left as soon as it arrived. Getting back into a routine was really hard. She would refuse to leave the house. It was impossible to take a walk, go to the park or travel by car. This lasted weeks.

We ended up regaining our routine with a lot of patience. Soon enough, we decided to consult a professional since the quality of family life was impaired, and our daughter really seemed distressed. Although she had learned to talk and walk well before many children of her age, she refused to be separated from me and she had irrational fears. We consulted with a psychologist who was referred to us by the CLSC. She was a lovely woman with all the necessary diplomas, but she did not seem to understand our reality. To her, my husband and I were the cause of our daughter's suffering. She would analyze us from top to bottom while completely ignoring our daughter. We started doubting ourselves. Fragile and distraught, this experience was another reason to lose sleep. We stopped consulting with her after a few weeks since it had not resulted in any positive change thus far. We wanted

to take all the blame and become better parents, but our daughter still remained fragile and distressed. None of this was making our daily lives easier, nor did it make our child's permanent panic state go away.

Years passed and school began. Still no full nights. Irrational fears were accumulating. Fear of fire, elevators, tattooed individuals, thunderstorms and even a fear of the fox in the kid's TV show Dora. This fear was so irrational and disproportionate that my husband invented an ‘anti-fox’ spray. One night, as he was exhausted, he emptied the contents of a Windex bottle and filled it with water and changed the label. He had just invented the ‘anti-fox’ spray. The only way she could go to bed for a few hours was to spray the ‘product’ in the house.

All these years were spent trying to bypass the obstacles that would disrupt our daughter's life. We had avoided dozens of situations and places to ease our lives. It was a question of survival. Each day without a triggering event would guarantee us a better night and a less disturbed child. Gradually, she developed ►

worrying and unfounded behaviours - constant coughing, extremely slow eating, difficulties swallowing liquids and certain foods became impossible for her to swallow. She also developed an extreme fear of being sick or dying. Her biggest obsession was the fear of choking to death. She also had a fear of being pregnant, as she knew how babies were conceived. She practically stopped eating. She was about to finish her fourth year in primary school.

We sought help from a psychologist at school who evaluated her and the verdict was: our daughter was anxious. We had to find a qualified professional. We turned to a specialized clinic for anxiety disorders. During our first consultation, the psychologist explained that the therapy she wanted to undertake with our daughter would last over 12 weeks and that it was very effective. She was offering cognitive-behavioural therapy. I have to admit, I was quite sceptical. CBT aims to slightly increase the individual's anxiety to show that, at the end, nothing tragic happens. The feeling of panic experienced when faced with a particular situation does go down, and the more you face your fears, the less this feeling of anxiety rises. Anxiety kept her from being autonomous because her fear of death, sickness, strangers and so

many other things were taking so much space in her mind. This awareness was achieved by concrete exercises that were performed daily during those 12 weeks of therapy. These exercises targeted her greatest fears.

We learned that our daughter was born anxious and everything we had done to date was incorrect. With a non-anxious child, it would have been perfect. We had avoided, thinking we were doing her a favour, but on the contrary it made the anxiety worse. Our psychologist gave us

We sought help from a psychologist at school who evaluated her and the verdict was: our daughter was anxious.

tools to learn how to live with anxiety, this sneaky beast roaming through brains of those who have it. Anxious people's brains are constantly on alert, always in a state of panic. Everything becomes a threat and therefore nothing is rational. Moreover, the psychologist provided our child with tools to confront her anguish until the anxiety became tolerable and even sometimes disappeared! A miracle. We gained tools to counter it and prevent it from ruining our lives.

We understood now why our baby cried so much before, why everything seemed so difficult. Everything became clearer. Everything could be explained. Anxiety had led her life to this day and ours at the same time. We had acted properly 2 or 3 times in 10 years, like when we continued bringing our child to kindergarten despite her daily vomiting. Everything else we did, we had to rethink about! Woah! Each time we had avoided a place or a situation we had given rise to her fears and anguish without knowing it. Every time that I checked her ears to

make sure there was nothing in them, or I peeled apples so she could eat them... all of these actions sent the message that her fears were well founded.

We are convinced that CBT was the greatest gift we could offer her. She is equipped with the tools to detect the triggers herself. She can now laugh about it, lead a normal life and live her passions. Our anxious baby became a young, functioning adult who is articulate, sociable and who feels fulfilled.



Anxiety: how to recognize it and when do we act upon it?

*Philippe Kerr, B.Sc., Master's student in Biomedical Sciences,
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Recent statistics suggest that 16% of people suffer from anxiety disorders. This means anxiety disorders are the most frequently observed mental health conditions in the population. Therefore, it is not so surprising that we hear more and more about anxiety disorders in the media.

As mentioned previously, anxiety is not necessarily our enemy. It can also serve as a great ally! For example, at the right dose, anxiety can motivate us to prepare for a future event by inciting us to anticipate difficulties and make plans to face this event. Anxiety can also push people to surpass themselves in their work, in a competition, in their studies and it can even facilitate concentration! This being said, even if anxiety is a normal emotion to feel in certain situations, it can sometimes be a nuisance and can also become pathological. Anxiety is considered a nuisance when instead of serving as a mobilizing force for an individual, it becomes immobilizing, impairing concentration and causing the individual to avoid the situation rather than face it. When anxiety becomes too intense, is chronic and causes psychological distress and suffering to an individual, we speak of pathological anxiety and anxiety disorders. At this point, it becomes crucial to seek help, in particular from health professionals such as a psychologist.

Manifestations of anxiety

Science is clear on one point: anxiety is a very complex phenomenon that can be observed from many angles. Anxiety can be viewed as a physiological, behavioural, cognitive (thoughts) and affective (emotions) response.

Physiologically, anxiety most notably manifests itself through an increase in heart rate and breathing, a tightening of

the chest, moist hands, sweating, a feeling of having a lump in the throat and trouble sleeping.

Behaviourally, anxiety can often be seen by means of agitation or a decrease in movement, verbal hesitation or increased speech delivery, stereotyped movements (we all know someone who becomes a drummer at the table when they are feeling anxious!) and finally by avoiding situations that can cause anxiety. However, it is well known that when we are faced with an anxiety-inducing situation, we are better off acting on it than running away from it!

Cognitively, it is in the way one perceives a situation that anxiety can be observed. Remember, the main function of anxiety is to help the individual detect potential threats. But if an individual perceives threats when they are non-existent or when they are irrational, some problems can arise.

Affectively, anxiety is typically associated with nervousness, worry, irritability and anger.

Every characteristic of pathological anxiety mentioned above is sufficient alone to consult a health professional. That being said, it is with the help of a psychologist that a complete evaluation of anxiety can be done to receive (or not) a diagnosis of an anxiety disorder.

The main anxiety disorders

Pathological anxiety is a common characteristic to many mental health disorders found in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), which is the gold standard used by clinicians to diagnose and classify mental disorders in North America.

However, the most frequent and known anxiety disorders are specific phobia, panic disorder, social anxiety disorder, and generalized anxiety disorder. A phobia is an excessive and irrational fear of an object or of a precise situation. An example of a specific phobia would be arachnophobia (the fear of spiders). The phobia can also be less specific, like in the case of agoraphobia, where the patient is afraid of crowds and public settings. As for panic disorder, it is characterized by the onset of an unexpected panic attack (often referred to as anxiety attack). As such, a panic attack corresponds to a delimited time during which anxiety becomes really intense. It is unexpected and tends to resolve itself in about ten minutes. Anxiety disorders can also be of a social nature (social anxiety disorder), caused by being exposed to situations where the person feels watched. Finally, generalized anxiety disorder (GAD) is characterized by persistent and excessive worries that lead to significant emotional distress. Take note that obsessive-compulsive disorder as well as post-traumatic stress disorder (for more information, see Mammoth Magazine issue 12), are no longer part of the broad category of anxious disorders since the release of DSM-5. However, as you have read in the previous article, symptoms of obsessive-compulsive disorder (and of post-traumatic stress disorder) contain some elements of anxiety.

It is important to remember that the DSM-5 (known as the “psychiatrist’s bible”) contains many symptoms we can easily identify. However, only a psychologist or a psychiatrist is capable of interpreting the diagnostic criteria present in the manual. We must, therefore, avoid self-diagnosis and instead seek help when the need arises.

Stigmatization and mental health

While there is an ongoing effort in our society to raise awareness on mental health disorders, there still exists a major stigmatization associated with men-

tal health. This has important implications for people who have mental health disorders, who often tend to isolate themselves in fear of being judged and misunderstood by their peers. Anxiety disorders are no exception to this rule. Pathological anxiety is not to be taken lightly since it can be severely debilitat-

ing and painful for individuals. We must not hesitate to break free of stigma and seek help when anxiety becomes too much and compromises our daily functioning.



How to fight anxiety? Interview with an expert clinical researcher on the matter

*Catherine Raymond, Doctoral Candidate in Neurosciences,
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There comes a time in everyone's life when we go through hard times, when anxiety takes over our desire to "rationalize". For certain people, these times are temporary and do not require an intervention by a health professional. For others, the anxiety interferes so much with their daily lives that the need to take action reveals itself. For more than 60 years, psychotherapy has been proven to treat anxiety. In this edition of the Mammoth Magazine, we interviewed Dr. Stéphane Guay, director of the Trauma Studies Centre and scientific director of the Institut universitaire en santé mentale de Montréal's Research Center, to learn more about ways to treat anxiety. Dr. Guay's research interest lies mainly in the validation of the efficacy

of different types of psychological treatments of post-traumatic stress disorder. In this article, you will find valuable answers to our questions for Dr. Guay when it comes to treating anxiety!

Where do we start if we want to reduce anxiety?

"The first thing to do when we feel anxious is to ask ourselves if this anxiety is momentary, that is, if it is temporary. Before embarking on a medical procedure or therapy, we must question ourselves on this aspect since it is normal to feel anxious at times without necessarily having to consult. If we notice that there are similarities between situations where we feel anxious, it will then be possible to establish a plan of action and the re-



Dr Stéphane Guay,

quired treatment. If necessary, the next step would be to consult a doctor or a psychologist."

Speaking of psychotherapy,

What are the therapeutic approaches recommended in the treatment of anxiety?

“Since the beginning of the 1980s, the most used approach in the treatment of anxiety is the cognitive-behavioural approach. This approach aims to modify one’s train of thoughts or the schemes that generate anxiety and avoidance, which contributes to maintain the disorder. This therapy is the one that has been the most proven scientifically and for which we have the most evidence. That being said, there are many new approaches (that we refer to as third wave approaches) that are starting to show their effectiveness in treating anxiety. These include, for example, acceptance and commitment therapy. While cognitive-behavioural therapy tends to teach us to control our thoughts and behaviours, acceptance and commitment therapy tends to favour the contemplation of our thoughts without judgement, particularly our undesirable thoughts. There is actually increasingly more scientific proof of the merits of this therapy. In the same vein, there also exists mindfulness therapy [approach of bringing our attention to the present moment, to our physical sensations, our thoughts and emotions, and this, without labeling]. Finally, a promising approach is the brief psychodynamic approach [a form of therapy where the clinician attempts to untangle the unconscious conflicts of their patient]. In fact, since most phobias are rooted during childhood, some studies have attempted to find out if this approach was promising and have found somewhat conclusive results. That being said, the effect of this approach is not as promising as cognitive-behavioural therapy.”

Should we combine psychotherapy and medication if we suffer from anxiety?

“Depending on the frequency and its severity, health care practitioners can prescribe medication to treat anxiety and ensure that the patient can begin therapy properly. Often, the medications prescribed are anxiolytics. This being said,

past studies have shown that psychotherapy has long lasting and more durable effects to medication. The most powerful effect is the combination of medication and psychotherapy. However, financial and geographical constraints can limit one’s access to a psychologist. Under these conditions, it may be beneficial to turn towards medication. It must be kept in mind, however that the rate of relapse is higher when discontinuing medication compared to stopping psychotherapy. Moreover, taking anxiolytics are highly addictive.

It is, therefore, important to consider these factors when we decide to turn over to medication.”

If I am “anti-medication” and my doctor prescribes a drug to reduce anxiety... what do I do?

“This is a decision that usually takes a long time to make. We already often wait too long to consult health professionals! We need to keep in mind that there are increasingly more non-pharmacological treatments that are available to us before deciding to take medication to reduce anxiety. From relaxation to self-management, and a plethora of applications available through new technologies, we have an unprecedented amount of options!”

Do you have any last words of advice you would like to convey to our readers?

“When in moderation, we do not have to worry about anxiety! We all experience anxiety at different degrees. It is not because we go through anxious times that we are abnormal. On the contrary, what is important is to identify the patterns, the similarities between these periods of anxiety, and to not be afraid to seek help if we feel the need!”

Toolbox

If you suffer from anxiety and are looking for resources on the subject, Dr. Guay suggests that you consult the webpage of the organization Revivre :

www.revivre.org/en/

If you are looking for a psychologist, we suggest that you consult the Mammoth Magazine Issue 16, which contains information and instructions on the how to find a psychologist near you via the Order of psychologists of Quebec website.

If you would like to consult a popular book on anxiety, we suggest that you read ‘La peur d’avoir peur’ written by Dr. André Marchand.

If you would like to have more information on acceptance and commitment therapy, we recommend the book ‘Le piège du bonheur’ (English version available: “The Happiness Trap”) by Russ Harris.

In the next issue of the MAMMOUTH MAGAZINE

Our next issue of the Mammoth Magazine will be on the links between stress and sleep. Does lack of sleep make us more vulnerable to stress or does stress affect our sleep? This next issue will also take a closer look at the influence of different environmental factors on our sleep, namely jetlag, luminosity and work schedule. It is surely going to be another interesting issue that that is bound to keep you awake.

Meet you back here for our Winter 2019 issue!

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