

DEAN'S DESK



Dear students, we at Grodno State Medical University strive to provide students with top-quality education, but that's not it. GRSMU is also a hub for Scientific, Cultural, and Sports related activities. We wholeheartedly acknowledge that International students are an integral part of our university, and we take immense pride in that. Grodno State Medical University is glad to work with students from different countries and provide them with a stage to represent their nation and culture.



DEAN OF FACULTY OF INTERNATIONAL STUDENTS DR. ALEKSANDER ALEKSANDEROVICH STENKO

GRSMU celebrates its uniqueness in diversity, for in its true essence our university is a junction where students from various backgrounds and cultures come together as one big family. GRSMU has always encouraged students to explore further and beyond in every field they try their hands at. I hope that you like the novel concept of 'The Horizon' - a magazine that serves as a platform for the students to voice their opinions, share their takes and present their points of view.

'The Horizon' is a medium of extended communication where we can learn a lot from one another. I highly appreciate this initiative and personally support it. I look forward to reading the interesting blogs written by you.

WELCOME TO THE HORIZON



"We all have fascinating stories to share!" For the longest time, I have had this idea of starting a magazine. But not just any conventional magazine, one that shall serve as a platform for the students and alumni of International faculty at Grodno State Medical University to share their stories. A platform that enables students to share their takes on various curricular and extracurricular aspects of medicine. Thus, the idea of 'The Horizon', came to life.



DR. MEHUL H. SADADIWALA, FOUNDER, CLASS OF 2023

'The Horizon' will be a creative intersection where students can freely give commentaries about Lifestyle, Culture, Productivity tips, and more. Throughout the years, many individuals at GrSMU have inculcated valuable skills and gained experience with a fair share of success in various disciplines. Maybe you run a successful YouTube channel or an educational website, or maybe you are a successful student-researcher or an educator, and so much more. 'The Horizon' enables students to share their personal experiences. The insights that you share will encourage other students to take further strides and explore future possibilities.

'The Horizon' is supported directly by the Dean of the International Faculty, and it will operate under the supervision of the International Students' Scientific Committee. Students from 1st to 6th year, and even graduates, can submit their blogs to this magazine. The articles should directly or indirectly revolve around student life to share knowledge and the collective growth of students.

EDITOR'S DESK



Reading consistently and voraciously helps build knowledge, improve one's language, vocabulary and is a crucial driver of success. Accordingly, books, journals magazines etc plays a major role in moulding who we are. Whilst magazines are a mirror of our society "the Horizon" is tailored to give the reader a glimpse of artistry, wisdom and eloquence of the GrSMU students and alumni.

As a person who enjoys the world of words, I am indeed enthused to be the Editor-in-Chief of this magazine for Jul-Sep, 2023 and to read and fine-tune blogs authored by my fellow university students and alumni and publish an engaging series of informative and entertaining content, further raising the profile of the magazine.



ZAAKIYA GANEM ZAMZAM, EDITOR-IN-CHIEF (JUL-SEP, 2023)



DR. HARDIK B. MEVAWALA, EDITOR-IN-CHIEF (JUL-SEP, 2023)

66 Dear readers, it is with great pleasure that I introduce myself as the new Editor-in-Chief of our magazine. As a medical graduate, I have always been passionate about reading, and I am thrilled to have the opportunity to share my insights with all of you. The Horizon aims to provide content not only for medical professionals but to individuals from all backgrounds, including those who do not have formal medical education and it makes me glad to be a part of it.

I am excited to take on this role and work with our talented writers and editors to bring you engaging and informative content. I am committed to delivering high-quality blogs that will inform, entertain, and inspire our readers. I encourage you to share your thoughts with us and our readers through our magazine. Thank you for your support, and I can't wait to see what we will accomplish together!

And a message to our dearest readers, we would like to invite you all, students and alumni, to share with us the blogs that directly or indirectly revolve around student life, to share knowledge and experiences that has had an impact on your growth within and outside the bounds of our university.

Concluding, let us alter the limitations of our individual efforts and collectively explore limitless Horizons.

Cover Credits

FASTING AS A MAJOR BREAKTHROUGH TOWARDS A HEALTHY LIFESTYLE

Discover the transformative power of fasting in achieving a healthier lifestyle. From weight management to improved cardiovascular health, fasting offers an array of benefits, including cellular autophagy and cognitive enhancement. Embrace this non-prescribed practice for a vital leap towards a healthier, more vibrant life.

WRITTEN BY

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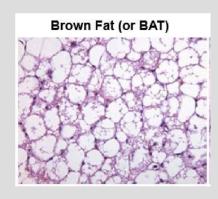
Fasting is a well-known term throughout the world. It can be elaborated as a self-refraining method from meals for a certain period of time. People frequently engage in fasting due to many different reasons. For instance, treatments and devotional aims have become most notable amongst. There are diverse varieties of fasting which depend on one's meal consumption frame while contemplating one's objective of fasting.



Accordina to certain experiments conducted on food restrictions, it has been confirmed that, the reaction of various organisms contradicts one another. In addition, it was ascertained the period of food limitation relies upon the species. Such demonstrations solidly exhibited that, yeast plunges into a hibernation state and animals such as bears and ground squirrels were noticed to be in this state while nematodes defeated this resting period. Besides, in mammals the liver and adipose tissue are represented as power stations.

The well-being of a person is determined through various factors such as nutrition fulfillment, regular exercise, daily way of living and one's stress management level. The ultimate goal of 'living a well-balanced healthy life' could be reached with the aid of fasting which is much more convenient and efficient.

It is a well-known fact that, an approved method to lose excess body weight which causes obesity and other cardiac risks is by fasting regularly. Recent studies done by some researchers including Fabbiano on turning the white adipose tissue (WAT) to brown adipose tissue (BAT) shows that the levels of WAT decrease due to the browning of WAT while restricting food. High amounts of WAT are unhealthy as they may lead to obesity. Thus, fasting could be used as a procedure to the drawback of excess weight.





In addition, through recent researches it has been proved that, there is an increment in levels of adiponectin hormone which is an adipose-secreting protein. This is a hormone which works against the body weight, adiposity as well as insulin resistance. It was also verified that, people who lived a long life tend to have numerally a high amount of this hormone. Thusly, it is noted that, fasting assists in one's longevity.

Cellular autophagy is a process in which the warped molecules and organelles that are diminished in the cells are removed. This process is favored during fasting by supplying energy to such cells vaguely and the energy used here is gained by the recycling materials. Besides, it aids to maintain the regeneration of the cells as well.

An essential organ in maintaining the sugar levels of a person by producing and releasing insulin as well as glucagon is the pancreas. Restriction of calory intake in other words suggests that, reduced intake of energy which subsequently clears the path for the decrement of pancreas apoptosis. Circulating glucose and insulin in the body were found to be reduced by 30% when a person follows a meal restriction plan for three consecutive days.

After several studies, it was found that there is a correlation between fasting and heart related diseases. This is because the oxidative stress decreases in the endothelial cells. Two monitored clinical trials conducted on people who engaged in fasting explicitize that, there was a stunted frequency of coronary artery disease.

Peculiarly, studies manifest that, fasting may intensify synaptic plasticity, neurogenesis and neuroprotection. This is done because Brain Derived Neurotrophic factor (BDNF) levels are increased when a person fasts. BDNF is a biomarker of aged cognitive shortfalls which could also be considered as a neurotrophic growth factor.

Apart from that, collected data proves that people who followed a meal restriction plan were capable to achieve quality time in sleeping, reduced midnight cravings and an endurable strength of energy.

Fasting is of course considered to be a non-prescribed treatment in which people could take part in. This could be further explained as a simple day-to-day activity if a person intends to whirl towards a healthy active life. At the same time, this could be prescribed by doctors in certain cases. Prior to a surgery the doctors generally advice to fast so that it is possible to avoid the encounter between the food consumed and the anesthetic chloroform. Contrarily, this could make the patient vomit but patients were allowed to take clear fluids before several hours of the surgery as repeated experiments suggested that, predominantly solid matters must be absent in the stomach.

Even though, there are numerous benefits by restricting food in various recommended methodologies there are certain excluded categories. In fact, when stages of life of a person are considered, children and adolescents are major groups to not undergo fasting. Into the bargain, pregnant, breastfeeding women and elderly people substantially fall onto this category. The exclusion groups are people who require vital energy and enough nutrition to lead a healthy life.

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Overall, there are immense benefits in fasting. Nonetheless, it is conspicuous that, fasting only cannot aid in achieving a healthy life yet could provide a gigantic leap to reach the concept of a healthy life hereby, striking the vitality of food restriction.

HOW CAN I STOP OVERTHINKING?

This blog addresses the detrimental effects of overthinking, including its impact on mental and physical well-being. The blog identifies signs of overthinking and introduces cognitive defusion as a solution. Practical tips to stop overthinking are also provided, aiming to break the cycle and improve mental health.

WRITTEN BY
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FHave you ever been caught up at the same thought again and again, and you still can't get over it? Or are you always stuck on "What if's"? Then, you have simply been overthinking. Now, it's time to make some changes.

Overthinking as it says is thinking too much than what is necessary. It is a destructive pattern of repetitive thoughts. In other words, you dwell in the past, worry about the future and forget to live the present moment.

Researchers suggest that 79% of people at the age of 25-35 chronically overthink, along with 52% of people at the of age 45-55. Overthinkers ruminate each minor issue in to something bigger and much worser than it actually is. Since they tend to overlook the positive things around them.

Sometimes, it is quite normal to overthink. We all do it unmindful. However, it is not healthy when overthinking becomes a routine. On the outside, it might seem extremely harmless, because you think that "It is just you and your thoughts," but when it becomes a routine, you begin to develop negative thinking and self-doubt. It impacts your personality and hinders your life goals.



Although overthinking has not been recognized as a mental disorder, it affects both mental and physical well-being of a person. It is linked to health issues such as anxiety, depression, obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). Research has found that negative or intrusive thoughts are linked to poorer overall physical health.

5 Signs that you are an OVERTHINKER

1. You are bothered after saying something: This is one of the most common signs of overthinking. Anytime you have a conversation with someone, you end up replaying it in your mind. This is because you have the sense of regret that you might have said the wrong thing at the wrong time. But in fact, nothing has gone wrong.

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- 2. The habit of constantly looking for threats: Regardless of everything, you tend to look for threats. For instance; If your boss informs that he needs to meet you, you end up being anxious and recall all past interactions that you had with them, by doing so you have already decided the worst thing that could possibly happen. However on the contrary it might turn out to be a positive thing like a promotion.
- 3. Second-guessing decisions: You tend to overanalyse outcomes of a decision you've made. And most of the time you end up being indecisive.
- 4. You are always on the urge to seek reassurance: It is natural that we seek consolation from our close ones. However, if you fully depend on them, it is because you overthink, you totally rely on what they comfort you with.
- 5. The habit of Excessive planning: If you have the habit of scheming things on your mind before hand, you overthink a lot. This is not only about some upcoming event but also can be a simple conversation. You analyze each trivial thing in order to make sure nothing ever goes wrong.

The skill of coginitive defusion

When overthinking, we tend to look only through our thoughts. This is called "cognitive fusion". In other words, buying in to every thought that passes our mind. This way we tend to believe whatever we think is the truth. This is what makes overthinking depressive.

The skill of Cognitive defusion is the difference between having a thought and buying a thought. This separates yourself from your thoughts. So that you don't believe on every thought that passes by you, instead you realize "No, it is just a thought and not necessarily the truth". Thereby you understand how to be selective in your thoughts and decide whether you act on it or ignore it.



Tips to identify ourselves apart from our thoughts

Tracking down your thoughts; write down your thoughts by putting these words in front of it "I'm having a thought of". Can you realize that you are just having a thought at the moment. Now you can rewrite it once more, but adding this phrase "I notice I'm having a thought of....". This makes you understand that the reality of you is different from your thoughts. This compels you to know that thoughts and emotions are experiences that we have for a moment. They aren't necessarily the reality.

Name your thought; whenever an intrusive thought pops up, take a step back and specify it by giving a name. For an example; you name it 'splash'. So, the next time when you are about to ruminate, you say: 'oh! That is a splash' thereby you immediately sense it is just another negative thought. And you avoid overthinking upon it.

Thank your mind. I know it sounds crazy. However, this is effective. By saying 'thank you mind for making that thought'. You once again realize that it is just a thought, not an actual fact.

Voice your thoughts weirdly. Once you do so, that terrible thought of yours may start to sound as weird as the voice. This makes it insignificant enough to let go.

By practicing the skill of cognitive defusion, you no longer serve your negative thoughts since you come to understand not every thought is true, you subconsciously break your patterns of overthinking.

Ways to STOP!

Self-awareness; notice your worries and identify situations that triggers you in to overthinking. Thereby you learn your triggers and avoid such situations next time.

Setting limits; whenever an intrusive thought pops up, you postpone it. You tell yourself "I'll think about it later." This makes you perceive that there are more noteworthy things that needs your attention. You can also set a time limit for your overthinking. Practice 5 by 5 rule which says; 'if it doesn't matter in 5 years don't spend more than 5 minutes worrying about it'.



Shift your attention; anytime you overthink, try to direct your thoughts on something better. This isn't easy as it sounds. Yet it is effectual. If you are fighting a compulsive thought, think about something you are grateful for.

Be attentive towards the present moment; do your best to focus on the task that you are presently engaged in, this avoids unnecessary thoughts.

Change abstract thinking in to concrete thinking; concrete thinking relates to objects and experiences that are observed directly, it involves interpreting things the way it is. Abstract thinking goes deeper and allows you to make reasoning without relying on concrete facts, by using your own imagination.

For example; if someone doesn't respond to your messages, don't go further thinking that this person doesn't care to respond or even worse that he or she may not like you, instead, just rely only on concrete facts. It is that he or she may perhaps be busy.

Above all, always remember that there is a way out for your endless loops of thinking, and that is when you no longer serve your thoughts!

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POWER OF MEDITATION

Harnessing the Power Within: Unleash Your Mind's Potential - Explore the extraordinary benefits of meditation, from experiencing deep calmness to becoming more mindful and transforming your learning abilities.

WRITTEN BY
ANMOL NIMAVAT
CLASS OF 2024

Have you ever wondered how you can feel calm and peaceful even when things around you are busy and noisy? Well, there's a special practice known as "meditation" that can help. Meditation is a mental exercise that can make us feel better inside and out. In this blog, we will explore the amazing power of meditation and how it can help us feel happy, peaceful, and focused.

What is Meditation?

Meditation is a special way of sitting quietly and taking a break for our mind. It's like when we rest our body, but instead, we rest our mind. We can sit comfortably, close our eyes, and take deep breaths. As we do this, we let go of thoughts and worries, and our mind becomes calm and peaceful. It's like giving our mind a little vacation!



Imagine your mind as a jar filled with water and sand, when we shake the jar, the water and sand gets all mixed up, and the mixture turns opaque. But when we let the jar sit still, the sand settles down, and the water becomes clear again. That's what meditation does to our mind. It helps the thoughts settle down, and our mind becomes calm and clear.

How to meditate properly?

In order to achieve this state of mind tranquility, it's important to know how to meditate properly.

First, find a quiet and comfortable place where you can sit or lie down. You can sit cross-legged on the floor. Close your eyes gently, just like when you're about to take a nap or play a fun game of hideand-seek.

Then take in a deep breath through your nose, and then slowly breathe it out through your mouth. Feel your breath going in and out. Try to make your breaths slow and gentle.

You can also imagine a peaceful place in your mind, like a beautiful garden or a sunny beach. Picture yourself there, feeling relaxed and happy. This helps your mind feel even more peaceful and calm.

Try to do this for a few minutes each day, just like brushing your teeth.

BENIFITS

- > Feeling Calm and happy:
- When we meditate, it's like taking a break from all the things that make us feel worried or stressed. It's a time to be still and quiet, just like when we snuggle up in our bed at night. Our mind becomes calm, and all the happy feelings start to shine through.
- ➤ Becoming Mindful
- Another amazing thing about meditation is that it helps us become mindful. Being mindful means paying attention to what's happening right now, in this very moment. It's like being fully present and aware of what's going on around us.
- When we meditate, we learn to listen to our thoughts and feelings, just like we listen to our favorite song. We don't judge them or try to change them, we simply observe them. It's like watching clouds passing by in the sky without trying to catch them.

- > Helps to concentrate and study:
- Meditation helps us concentrate. When we meditate, we train our mind to pay attention to what we are doing. So, when you're reading a book or listening to your teacher, you can stay focused and understand everything better. It's like having a special tool that helps you absorb information like a sponge.
- Sometimes, studying can make us feel stressed or worried. But with meditation, we can calm those feelings down. We feel more relaxed and confident, which helps us perform better in tests or exams.
- ➤ Exercise of Brain:
- Meditation is exercise of our minds, it's like giving our brain a good stretch and making it stronger. It helps us remember things better. It's like having a super memory boost. When we meditate, we practice focusing our mind and paying attention. Our minds are like superheroes, and meditation is the secret power that makes them stronger and smarter!

CONCLUSION

Meditation is like a superpower that we all have within us. It's a special practice that can keep our minds calm, happy, and strong. It benefits our studies by helping us focus better, improves our memory power and aids to reduce stress. It's like having a magical tool that boosts our learning abilities.

Just like superheroes who use their powers for good, we can use the power of meditation to make our lives better. By practicing meditation regularly, we can become stronger, smarter, and more peaceful in the inside.

Remember, meditation is for everyone, young and old. It's a gift we can give ourselves to live a happier, healthier, and a more fulfilled life.

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THE HORIZON

JULY, 2023

CAN YOUR GUT HEALTH AFFECT YOUR MENTAL HEALTH?

The highlight of this blog is about the impact of gut microbes on mental health of an individual. The roles and functions of probiotics on our constitutive body system. Effects of probiotics on stress, anxiety, depression, and other aspects of mental health.

WRITTEN BY **DINITHI RANCHAGODA**

CLASS OF 2024

primary home for the microbiomes, the intestines, are lined with nerve cells that communicate with the central nervous system constantly and vice versa.

This bi-directional communication is known as the gut-brain axis, which plays a role in affecting our mental health according to several research.



Initially the microbiome is developed through placenta, meconium, and amniotic fluid. Animal studies have shown if the fetus is exposed to maternal stress, fetus' gut microbiota is developed with decreased Bifidobacterium. Likewise other studies have shown that infants who were delivered vaginally had higher gut microbiota in comparison with infants who were delivered through C-section. Also formula fed infants have underdeveloped microbiota when compared with breast fed infants.

Even though the children's microbiota is predominant in lactobacillus Bifidobacterium, in adults it's dominated by Bacteroidetes and firmicutes phyla.

Since a 'normal' microbiome for the average human population is impossible to define, researchers have found that every microbiome can be categorized into one of the following enterotypes depending on the diet they consume; Bacteroides, prevotella or ruminococcus.

Inflammation heavily impacts relationship between gut health and mental health. The gut microbiome should be diverse to keep our gut health balanced. If dysbiosis takes place it could lead to inflammation because of proliferation of opportunistic microbes. As a result, cytokines and neurotransmitters are released. Together with the increased intestinal permeability these molecules travel systemically, elevating the blood levels of cytokines TNF-a and MCP. This increases the permeability of the bloodbrain barrier by making it permeable to the rogue molecules. Their affect on the brains' function, leads to depression, anxiety and memory deficits.

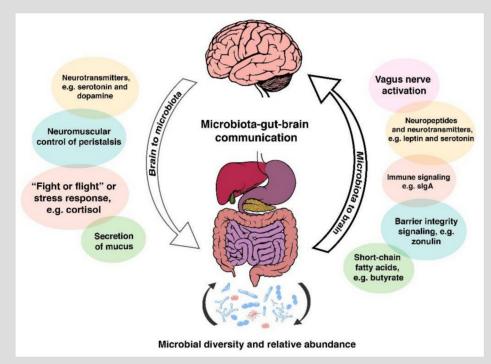
Hypothalamus-pituitary-adrenal axis can also be stimulated by these proinflammatory cytokines. Corticotropin releasing factor is released hypothalamus, which in return stimulates the pituitary gland to release ACTH. Adrenal glands are stimulated by ACTH releasing cortisol, a well-known stress hormone. Dysregulation or Hyperactivity of the hypothalamus-pituitary-adrenal axis is one of the key findings in major depression and anxiety.



Gut microbiota break down food, particularly dietary fiber and transform it into short-chain fatty acids (SCFA) which are detected by nerves and by sending signals to brain facilitate the regulation of digestive processes. If this does not happen properly, inflammation can take place. And also, these SCFAs indirectly take part in producing serotonin by stimulating the cells responsible for it. Serotonin regulates our mood, levels of anxiety and happiness.

Some probiotic bacteria can produce GABA which also regulates and improves mood by helping the nervous system to calm.

associations Several between gut microbiome and cognitive health were found. including connections Alzheimer's and Parkinson's diseases. In a study Alzheimer's patients who were given probiotics supplementation for 12 weeks showed significant improvements on mental state examinations compared to control group. Studies suggest certain chemicals, like phosphatidyl choline, which important for preventing dementia, can be turned into toxic compound TMAO, if harmful bacteria are present in the gut.



According to a study publishes in 2022, elevated levels of TMAO were found in patients with mild cognitive impairment and Alzheimer's.

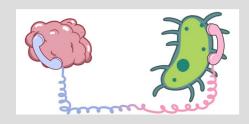
As for some pharmacological research patients with higher levels harmful gut bacteria such as Enterobacteriaceae and Alistipes, suffered from higher levels of depression while patients with higher levels of non-harmful bacteria or lower levels of Faecalibacterium had significantly lower levels of depression or depressive episodes. One of the largest cohort studies with the participation of over 3000 people belonging to six ethnicities also suggests a consistent association between the gut microbiota and depressive symptom levels.

Probiotics support the eco system of our gut by helping to keep it balanced, preventing dysbiosis. According to some research in psychobiotics, a field which investigates the effects of probiotics and mental health, lactobacillus species have been shown to improve stress resilience and anxiety. It was also shown that taking probiotics can help with decreasing the symptoms of depression and improving mental health.

Prebiotics are also crucial as probiotics for our gut health. Prebiotic fibres, resistant starches and polyphenols all nourish gut bacteria and as a result these are transformed into SCFAs and vitamins. And also, research has shown a reduction in anxiety-related behaviors in patients who consumed prebiotics.

Even though the mechanisms of how gut health and mental health correlate are not well explained, a link between the two was clearly identified during past medical research, opening more valuable areas for future research and medical practice.

There could be more than 1000 species of bacteria in the human gut microbiome alone, and because of this somehow or the other our gut microbiome could play an important role in our overall health including our mental health.



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- 1 Mehul Hitesh Sadadiwala (Jan-Mar, 2023)
- 2 Anjelo Leard (Apr-Jun, 2023)
- 2 Krisha K. Gandhi (Apr-Jun, 2023)
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