



HORIZON

VOLUME 1, ISSUE 11, NOVEMBER 2023

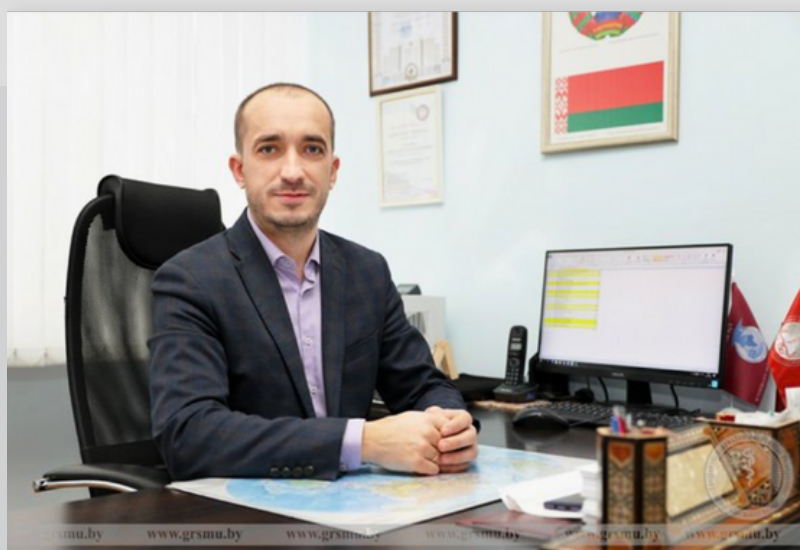
the
LIFESTYLE, PRODUCTIVITY, CULTURE & SO MUCH MORE.....

- The Transformative Power of Music and Content on Human Mood
- Herd Immunity
- How Hostel Life Affects Students: It's Pros and Cons
- Exercise for Body and Mind

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.

For inquiries and submissions.

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EDITOR'S DESK



“ Reading scientific articles is an integral part of the scientific process, contributing to the advancement of knowledge, informed decision-making, and the development of critical thinking skills. It is a fundamental practice for researchers, educators, medical students and anyone interested in the progress of science and technology.



DR. FATHIMATH NAUFA
EDITOR-IN-CHIEF (OCT-DEC, 2023)

I deeply value the contributions of our journal's authors and readers, and I am eager to facilitate the dissemination of the work to a wider audience. Your expertise and dedication are at the heart of our journal's success, and I am eager to support and promote your work. I am committed to fostering an inclusive environment where all articles, regardless of background, have the opportunity to be contributed and be heard.

”



CHAMATHI DE SILVA,
EDITOR-IN-CHIEF (OCT-DEC, 2023)

“

Reading lets us embark on journeys we can never reach in real life. It allows us to gain knowledge of incalculable value. Knowledge is the ultimate wealth which allows you to reach indestructible heights. Learning new things everyday will allow us to shape our life as we see is best.

I am honoured to introduce myself as the Editor-in-Chief of Horizon for Oct-Dec 2023. It is a great privilege to read all the blogs that will be published in Horizon and is a great pleasure to see the works of the fellow students and graduates.

I would like to invite all to read the blogs of your colleagues and share your own to help enrich the knowledge of each other.

”

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

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THE TRANSFORMATIVE POWER OF MUSIC AND CONTENT ON HUMAN MOOD

This blog is about the impact of music and content on the mood and emotions of humans and the therapeutic potential of music.

WRITTEN BY
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INTRODUCTION

Music and content have an undeniable influence on human mood, transcending boundaries of race, ethnicity, age, and gender. Whether through active music-making or passive listening, music has the ability to alter moods, relieve stress, and aid in emotional regulation. Meanwhile, the content we consume, be it movies, books, or social media, can evoke a wide range of emotions and leave a lasting impact on our well-being. In this article, we will explore the profound connection between music, content, and human mood, delving into the therapeutic benefits, emotional effects, and personal associations they provide.

BROADER ASPECT OF MUSIC

Music is a powerful tool that affects everyone regardless of race, ethnicity, age, or gender. It can alter moods, relieve stress, and help with emotional regulation. Music can evoke a range of emotions and can be matched to current moods or desired emotions using the Iso-principle.

Active music-making, such as singing in a group, can positively impact neurotransmitters and promote relaxation. Music also has an impact on memory, as music memories are stored in the hippocampus and are less likely to be affected by age or disease. Music can improve pain tolerance and overall well-being through the release of endorphins. It can also influence behaviour as a motivator, timer, or mood enhancer. Music is used in advertising to encourage brand as a motivator, timer, or mood enhancer. Music is used in advertising to encourage brand recognition and create positive associations.

THE THERAPEUTIC POTENTIAL OF MUSIC

Music has been recognized as a powerful tool for enhancing mental well-being. Active music-making, such as singing or playing instruments, positively affects neurotransmitters like dopamine and serotonin, which influence focus, relaxation, and mood. Music therapy programs have proven effective in managing mental stress, boosting memory, and reducing pain.

It was discovered that music can release dopamine in two main places in the brain, the dorsal and ventral striatum. When you are having a mental breakdown . Moreover, music's impact on memory is significant, as music memories are stored in the hippocampus and remain resilient against age-related decline . By releasing endorphins, music improves pain tolerance and contributes to overall well-being

Music therapy programs are effective in managing mental stress, boosting memory, and reducing pain. Music can be beneficial for various conditions, including dementia, stroke, Parkinson's disease, and multiple sclerosis. Music is safe, non-invasive, easily accessible, and inexpensive, making it an ideal option for improving mental health. Music can also boost our mood, improve self-confidence, and release dopamine in the brain. Additionally, music can change the way we perceive the world and evoke old memories and emotions.

THE EMOTIONAL IMPACT OF MUSIC

Listening to music can have a profound effect on human emotions and mood. Happy and upbeat music has been found to enhance overall happiness and improve mood .The dopamine release triggered by music, particularly in the dorsal and ventral striatum regions of the brain, contributes to these positive emotional experiences .Additionally, music can evoke old memories and emotions, changing the way we perceive the world. Whether through its ability to motivate, act as a mood enhancer, or serve as a timer, music has a powerful influence on behaviour.

THE INFLUENCE OF CONTENT ON MOOD

Beyond music, the content we consume in various forms can deeply impact our emotional well-being. Engaging stories, relatable characters, and meaningful themes have the potential to elicit empathy, joy, sadness, or fear. From books to movies to social media, content leaves an imprint on our thoughts and emotions long after we've experienced it. Memorable moments, thought-provoking dialogues, and captivating visuals can shape our mood and contribute to a lasting emotional connection.

ESCAPISM AND CATHARSIS

Both music and the content we consume can serve as a form of escapism or catharsis. They offer a temporary reprieve from reality, allowing us to immerse ourselves in different worlds and stories. Whether it's through catchy melodies or gripping narratives, they provide an outlet for emotional release and a means to process our own feelings and experiences.

THE ROLE OF SOCIAL MEDIA

In the digital age, social media plays a significant role in shaping human mood. The constant exposure to curated content can lead to social comparisons, feelings of inadequacy, and anxiety. However, positive and uplifting content, such as motivational quotes, inspiring stories, or humorous videos, can counteract these negative effects and improve overall well-being. By consciously curating our social media feed, we can create a positive and supportive digital environment that enhances our mood and emotional health.

THE PERSONALIZED EXPERIENCE

While general trends exist in how music and content impact human mood, personal preference remains crucial. Every individual has unique tastes, experiences, and emotional responses to different stimuli. Recognizing and respecting these differences allows individuals to curate their different stimuli. Recognizing and respecting these differences allows individuals to curate their own content consumption based on what positively resonates with them. By embracing personal preferences, we can optimize the emotional benefits derived from music and content, tailoring them to our individual needs.

CONCLUSION

Music and content possess an innate ability to shape human mood and emotions. Through active music-making or passive listening, music acts as a therapeutic tool, improving mental well-being, memory, and pain tolerance. Meanwhile, the content we consume, from movies to books to social media, has a profound impact on our emotional state. By understanding the transformative power of music and content, we can harness their potential to create a more harmonious and emotionally fulfilling life. It is through this conscious consumption and appreciation that we can truly unlock the transformative influence of music and content on human mood.

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HERD IMMUNITY

This blog addresses about herd immunity, how to achieve it, challenges faced during COVID -19 and the importance of herd immunity microbiologically.

WRITTEN BY
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WHAT IS HERD IMMUNITY?

Herd immunity or community immunity is when majority part of public is immune to a specific disease. If majority of people are resistant to the cause of the disease such as corona virus, herd immunity saves patients who are immunologically weak and can't resist by themselves.

HOW DO YOU ACHIEVE HERD IMMUNITY?

There are 2 ways to achieve herd immunity.

- You can build resistance organically when your body comes in contact with bacteria or virus. This makes antibodies to survive the infection. Your body will defend against another infection as well. This is how zika virus outbreak stopped in Brazil, two years after the outbreak began. 63% of the population were exposed to zika virus.
- By using effective vaccines which would induce herd immunity. This decreases disease prevalence and also decreases its mortality and morbidity. Herd immunity not only protects immunologically weak individuals but the community in a majority is protected.

WHAT WERE THE CHALLENGES TO DEVELOP HERD IMMUNITY FOR COVID -19?

Main obstacle to develop herd immunity was that the virus which caused the disease was novel, which meant nobody had gotten infected from this. Another potential barrier to researchers were determining how strong the immune system should be to survive this virus and how long it lasts.

According to WHO, herd immunity against COVID-19 should be achieved by protecting the community through vaccination, not by exposing them to the virus that causes the disease.

Controlling SARS-CoV-2 and its new variants presents a much more formidable challenge. Like influenza, SARS-CoV-2 mutated continuously into its modified new variants that can escape the immunity which was derived from infections and vaccines. It can also be transmitted asymptotically and without pathognomonic signs which would be impeding public health control.

SARS-CoV-2 appears not to substantially engage the systemic immune system, as do viruses such as smallpox, measles, and rubella that consistently have a pronounced viremic phase. Moreover, no vaccination or infection appears to promote a prolonged protection against SARS-CoV-2 in majority of the people. Substantially, the public health community has found substantial resistance to take measures to control the pandemic of SARS-CoV-2 by wearing mask, vaccination, maintaining distance and other interventions.

MECHANISM:

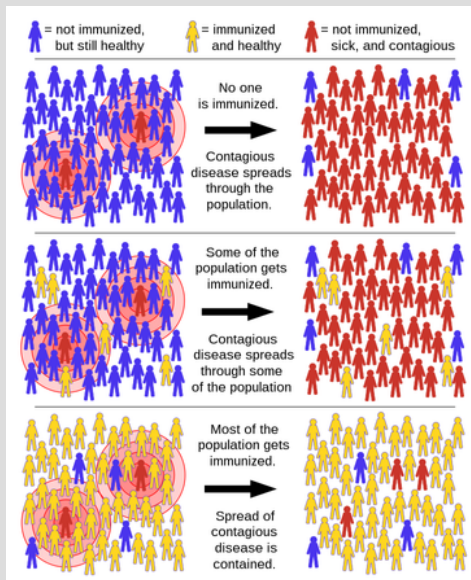
Individuals who are immune or who are immunologically strong serves as a barrier in the transmission of disease, reducing or preventing the transmission of disease to others. A person's immunity could be adaptive (through natural infection) or artificial (such as vaccination).

When the majority of the population becomes immunized it is termed as herd immunity threshold (HIT) or herd immunity level (HIL).

The disease can no longer make any existence in the population, ceasing the transmission and becoming endemic.

Herd immunity works on the principle that within a population not each individual needs to be immune to cease disease transmission. In a community where critical part of population are immune, those who are not immune are indirectly saved or protected. Here's how it works:

- Infected individual will dominantly come into contact with immune person.
- This disrupts path of transmission of disease
- Hence the disease has very less chances to transmit to non-immune beings or immunologically weak person.



Mathematically community immunity threshold (HIT) is calculated by the formula:

$$HIT = 1 - 1/R_0$$

R₀:- It is the basic reproduction number indicating the average number of infections caused by the infected person in a whole susceptible population.

The effectiveness of herd immunity majorly depending on the disease having ability to spread - vaccine efficacy
Virulence of disease - it is population dynamics and density.

For an example measles outbreak occurred in a population or community. If 95% of the population is protected against measles (it is a highly transmissible disease) the measles spread will be significantly reduced. Because the 5% people who aren't protected or vaccinated or immunized will survive against the disease indirectly because the disease pathway had been disrupted for transmissibility.

IMPORTANCE OF HERD IMMUNITY IN MICROBIOLOGY

Under the view of lens of microbiology, the herd immunity majorly reduces the impact of survival and multiplying of the disease causing microorganisms, as hosts to infect are decreased. The spread of such microorganisms are reduced proportionally and thus ceasing the transmission of disease in a community.

The study of community immunity plays an important role to microbiology. It gives insights into the dynamics of contagious disease transmission which also influences the strategies of vaccine efficacy and development. Vaccines which make immunity without illness to a patient plays a major role in attain the herd immunity.

Microbiology and its lab research is important in producing vaccines against disease causing strains of microorganisms. Its microbiological surveillance and genetics permitting the identification of strains of circulating pathogens are necessary for the production of vaccines as in the cases recorded of Influenza vaccine.

So, elaborated herd immunity is important in the field of microbiology as this

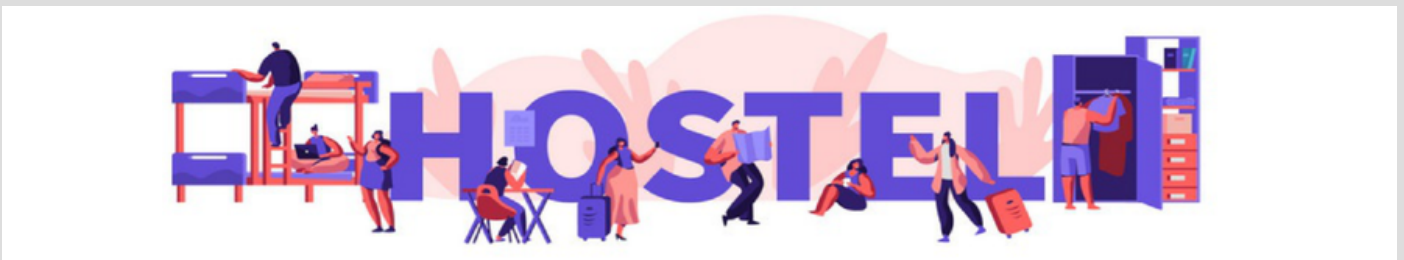
- Draws light on disease and its dynamics and influences the strategically development of vaccine
- This even allows the identification of disease causing strains.

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HOW HOSTEL LIFE AFFECTS STUDENTS

This blog addresses about the pros and cons of pros and cons of hostel life



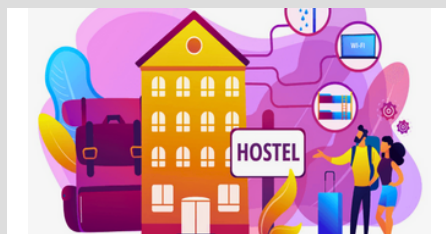
WRITTEN BY
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INTRODUCTION

Living in hostels with students from all over the world is one of the best things you can do. You can also learn about diverse countries and their cultures, customs and traditions. Most importantly, all of this will help you to become a more balanced person.

This allows you to enrich your knowledge of the curriculum through the analytical discussion among students living in hostels. It may also help in character building. When you live with your parents, sometimes it is difficult to create a sense of responsibility.

A lot of research has been done to emphasize the importance of hostel environment. You learn essential life learning qualities and skills like responsibilities, collaboration, assisting your roommates, togetherness, and adaptability from living in a hostel which helps in shaping the personality of an individual.



WHAT IS HOSTEL LIFE?

Students who want to pursue their official education away from home can stay at the hotel. However, a hostel is more than just a place to stay. A hostel serves as both a living quarter and a learning environment. The lifestyle of students and those at home diverge. Hostel life is the phrase used to describe this manner of life in a hostel.

It is a once-in-a-lifetime experience where you get to have an idea of what real life is, and if you want to have that then you shouldn't pass on hostel life, which gives you a sense of responsibility as well as independence.

WHAT HAPPENS IN HOSTEL AND HOW IT IMPACTS LIFE?

Students of similar ages and perspective often interact with one another in dorms. While living in a dorm, a student can pick up many positive traits from other friends but they can also be easily influenced negatively by others.

Hostel students are seen to possess a variety of positive personality traits, including being self-assured, responsible, social, realistic, compromising, and intelligent in many areas of life.

Hostel life also improves the students' level of patience and courage. It prepares students to accept challenges/difficulties in practical life such as financial crises, adjustment issues, personal helplessness, distress, changes in eating and sleeping habits, and many other issues.

ADVANTAGES OF LIVING IN A HOSTEL

- **Becoming more independent**
Students must be self-sufficient in order to begin careers and enjoy their lives as independently. Home is full of joy, and your parents provide all of your needs. However, dormitory living forces you to perform tasks on your own. Experiencing and living in a hostel teaches you important life lessons. The benefits of living in a hostel include getting used to a new environment and taking care of oneself.
- **It allows you to build friendships**
Students often think they are powerless because they are separated from their family. Certain friends, on the other hand, will have a huge impact on them. They often become close friends which are unbreakable for lifetime. You may discuss your life experiences, problems and express your concerns with them. You'd definitely form emotional bonds with your fellow hostel guests over time. After graduation, you will cherish these moments.
- **Having a sense of discipline in your life**

The best part about living in a hostel is that the institution's or university's authority is upheld and cannot be challenged by students. Everything has a set time, including getting up, dressing properly, attending classes, eating healthy, going to bed with breaks in between for exercises, playing and having fun all on a predetermined schedule.

DISADVANTAGES OF HOSTEL LIFE

- **Ragging**
Students in hostel life experience a lot of challenges, and one of the worst is ragging. Even though ragging is formally recognized as a cognizable offense, it is still practiced at many places.
- **Getting into a bad company**
Students come because many nasty people and establish bad habits that may turn into addictions in a hostel. Without our family members around to tell you what's good and what's not, you become more rash. The impact of poor students can be detrimental to other students. Smoking and drinking not only impair your health, but they also cause you to lose focus on your studies. One of the main concerns that parents and students have about living in a hostel is that they will not have good company.
- **Difficulty in adjusting to new surroundings**
Living in a small congested room with as many as 3-4 beds may make adjusting to a new surrounding difficult. Many students experience emotional challenges and mental distress when they move away from their parents. So, while living in a hostel provides independence and freedom, you may have to deal with the stress of being alone for an extended amount of time.

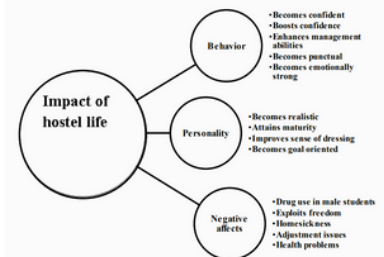
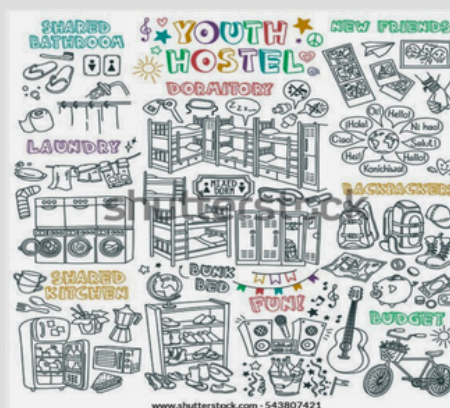


Figure 1. Impact of hostel life on students

- **Problems with diet**
One of the most significant difficulties the students contend with is their diet. Many of them have trouble digesting the typical food served in a mess. It is riskier for student's own health to frequently order food from restaurants and food outlets. In addition, parents frequently increase their spending when they worry about the safety of their kids.
- **Concentrating is more difficult**
It may be difficult to concentrate on schoolwork in an active college environment. Despite the fact that parents send their children to a dorm for academics, students don't focus on their studies and spend their time there having parties, smoking and becoming inebriated. Additionally, staying up late may make it difficult to concentrate in class the next day.

CONCLUSION

Everything in the world has two aspects, advantages and disadvantages. The ideal place for a student to live is in a hostel, and living in the hostel is the best experience for those who can minimize the drawbacks and maximize the benefits.

In a hostel, a new life begins where we make new friends and learn to appreciate the little things. When they reflect on those times, they will see that those were the best parts of their lives.

Hostel life is a priceless experience for lifetime!

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EXERCISE FOR BODY AND MIND

This blog shows us the benefits of exercise on body and mind as well as how to incorporate it into our busy life.



WRITTEN BY
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CLASS OF 2025

WHAT IS EXERCISE?

Engaging in intentional physical activity with an increase in the heart rate beyond resting levels is exercising. The intention behind exercising can be to enhance or maintain fitness and overall health of a person. It can be considered as an expenditure of energy by increasing the metabolism of the body and movement of the skeletal muscles.

TYPES OF EXERCISE AND BENEFITS

- Aerobic exercises; it is any type of activity that involves cardiovascular conditioning or 'cardio'. It causes an increase in heart rate and breathing rate over a period of time. It uses the large muscle groups. A normal aerobic exercise session should include a warm up, at least 20 minutes of exercising and then cooling down. Aerobic exercises provide the benefits of strengthening muscles in the lungs, heart and the large muscles of body, lowers blood pressure, improves blood circulation to lungs, heart and muscles.

It is also shown to reduce the risk of stroke and cardiovascular disease in the long term as well as increase overall life expectancy and improves sleep hygiene. Examples for aerobic exercises include; Jumping rope, cycling, jogging. Anaerobic exercises; unlike aerobic exercise this involves short, fast high intensity exercises that does not make your body use oxygen. This leads to break down of glucose already present in the muscles but also leads to lactic acid buildup due to the lack of oxygen. Calisthenics like jump squats, box jumps, sprinting, high-intensity interval training and strength training are examples of anaerobic exercises. Benefits of anaerobic exercises include fat burning, muscle building and maintain of muscle mass as well as strengthening of bones.

HOW DOES EXERCISE AFFECT THE BRAIN?

Exercise stimulates several physiological changes in the body such as encouraging the production of growth factors – chemicals that affect the growth of new blood vessels in the brain as well as help in the increase in abundance, survival and overall health of new brain cells.



Many studies conducted over time have suggested there is a larger volume in the parts of the brain that control thinking and memory in people who exercise than in those who do not. Even a small period of time with regular exercise has shown to increase the blood supply and volume in the brain.

With the increase in blood flow to the brain delivery of nutrient to the brain will increase thereby increasing production of molecules important to brain function including memory. Exercise also improves memory by increasing molecular targets like the brain-derived neurotrophic factors (BDNF). This molecule increases formation of new synapses that mediate learning and memory, making it easier to absorb and retain information and also formation of long-term memories. It is said to improve brain capacity.

Although exercise is not a direct solution to stress, the action of exercising has been shown to pacify the experience of stress. It does not reduce the stress hormones released but does decrease the number of stress receptors in the hippocampus. Reducing stress receptors minimizes the effect of stress hormones on the brain, thereby decreasing the impact of stressful experiences.

FINDING TIME TO EXERCISE

As students we lead a very busy life. Fitting exercises into this busy schedule can make us face a road block to a successful regime. However, even if we are unable to have a strict time slot for exercise we can fit some physical activity into our daily schedule.

- o Replace car journeys. If the distance is not too long and you can start earlier try walking or cycling to class. If the distance is long, get off the taxi a half mile away and walk the final bit.
- o Consider walking up and down the stairs at the dormitory or in the hospital or any place.
- o Avoid binge – watching TV shows. While watching you can engage in light exercises like stomach crunches or jumping jacks.
- o Vigorous housework, gardening and going up and down the stairs while doing chores.
- o Go for an evening brisk 30 minute brisk walk to a nearby café.
- o Join some exercise class or a gym.

While exercising is important, a healthy diet is also needed. Also ensure that you drink plenty of water throughout the day and when you exercise. If you have existing health conditions it is recommended to go to your doctor first prior to engaging in any strenuous physical activity. While a combination of aerobic and anaerobic exercise provides the most benefit, any exercise is better than non for people who currently have a sedentary lifestyle.



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- 3 Zaakiya Ganem Zamzam (Jul-Sep, 2023)
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