



# *The* **HORIZON**

VOLUME 1, ISSUE 2, FEBRUARY 2023

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

**Lactase Persistence, you might be a Mutant !**

**Study Tips for Pro-Procrastinators ..**

**Cold weather makes me Depressed !**

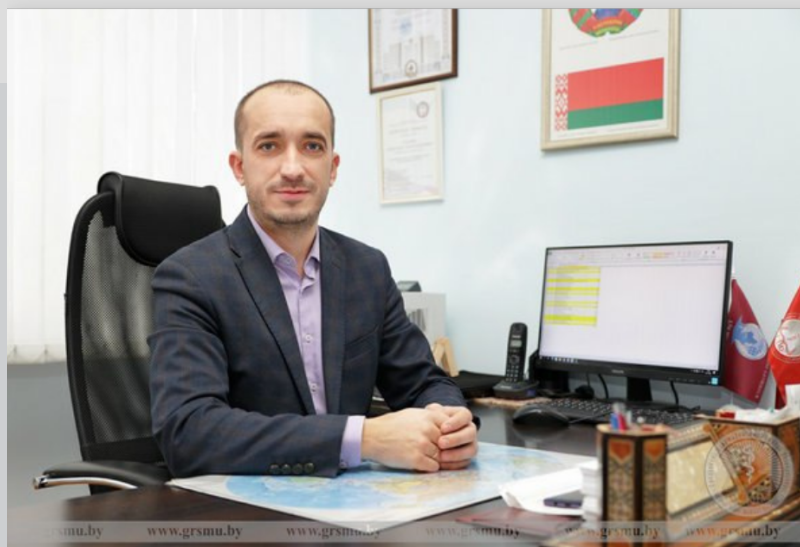
**A Good Doctor, Saves a Being**



# 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.





**MEHUL H. SADADIWALA, FOUNDER,  
EDITOR-IN-CHIEF (JAN-MAR, 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 enquiries and submissions.

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# LACTASE PERSISTENCE

## CAN YOU TOLERATE MILK ? IF SO, YOU MIGHT BE A MUTANT

The highlight of this blog is to understand the genetic diversities that exists within us, even with something as simple as drinking milk.

WRITTEN BY  
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CLASS OF 2023



Lactase is an enzyme that is found on the brush border of the small intestine in humans and various other mammals. This enzyme is crucial for the breakdown of Lactose, a major constituent of mammalian milk, into glucose and galactose.

The activity of lactase can be detected very early on in the development of the embryo and it peaks upon birth. However, for the majority of the human population the expression of lactase diminishes very early on in life. This downward sequence begins at 2-3 years of age and generally reaches cessation by 5-10 years of age. Thus, most adolescents have very minimal quantities of lactase and are unable to digest lactose and are said to have the trait of lactose non-persistence otherwise referred to as lactose intolerance.

If you take a look at the different types of lactase intolerance it can be either primary, secondary or congenital lactose intolerance. Primary lactose intolerance is the most common type, in which the people are able to digest lactose as children but lose the ability to do so once they reach adolescence i.e. the lactase expression gene turns off.

Secondary lactose intolerance is where a disease affecting the small intestine (inflammatory conditions, viral infections) can result in temporary lactase deficiency in individuals that are normally lactose tolerant. In this case the condition is reversible with treatment of underlying condition. Finally, Congenital Lactose Intolerance is a very rare disorder in which lactase is deficient from birth.

However, in certain human populations the activity of lactase remains constant throughout their life. This is called lactase persistence. Then the question arises why is it such? This is a very classical example of natural selection among humans. However, the reason as to why the ability to digest Lactose remains the superior gene is open to speculation.

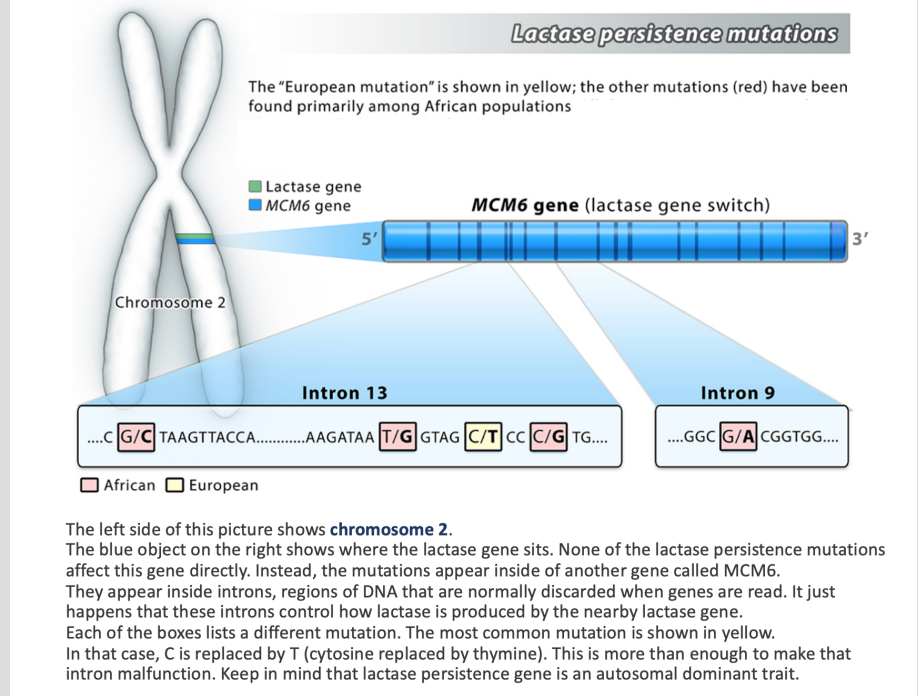
The main hypothesis which explains the reason for the positive selection of the lactase persistence gene is the Gene-Culture Coevolution Hypothesis. It is based on the observation that pastoralist populations presented with high frequency of lactase persistence.

For Individuals who are lactase persistent, ability to digest lactose would prove to be more nutritionally advantageous as milk would have been a faster means of nutrition rather than raising animals and then slaughtering them and repeating the cycle. This would have been especially advantageous during periods famines and starvation as it would have provided for an alternative means of nutrition.

Two scenarios have been proposed for the Gene-Culture Coevolution Hypothesis. That is Culture-Historical Hypothesis and Reverse-Cause Hypothesis. According to Culture-Historical Hypothesis, the main reason for lactase persistence would be the introduction of dairy farming meaning lactase persistence developed and was selected positively with the onset of pastoralism. For Reverse-Cause Hypothesis, it argues that pastoralism was embraced within societies that already had high frequency of lactase persistence.

Contrary to this for populations independent of pastoralism, no selective advantage was present and hence, any mutations present within these populations would have been simply neutral mutations.

Thus, if you look at the frequency of lactase persistence (from image below) you can see a distribution pattern of this trait been predominantly seen in individuals with northern European ancestry, especially Scandinavian, and in certain other populations, including some of the nomadic peoples of the middle east and Africa. Lactose non-persistence is observed in a majority of the world's populations, including most of those with Asian or African forebearers.



## Why are lactase persistent people referred to as the mutants?

This is because our forefathers were extremely lactose intolerant. This theory was proved by the sequencing of DNA from skeletal remains of eight neolithic individuals who lived across Europe between 5800 and 5000 years BC, which revealed that they all were homozygous for the lactase non-persistence allele. Furthermore, other genetic studies conducted indicate that the oldest mutations associated with lactase persistence only reached substantial levels in the last 10,000 years.

Not only that, via various extensive studies, so called Gain of Function mutation have been identified in people with Lactase Persistence. Gain of Function Mutation means that through small changes in the DNA sequence there is new unique beneficial characteristics. In this case the ability to digest Lactose.

## Are there any benefits of lactase persistence?

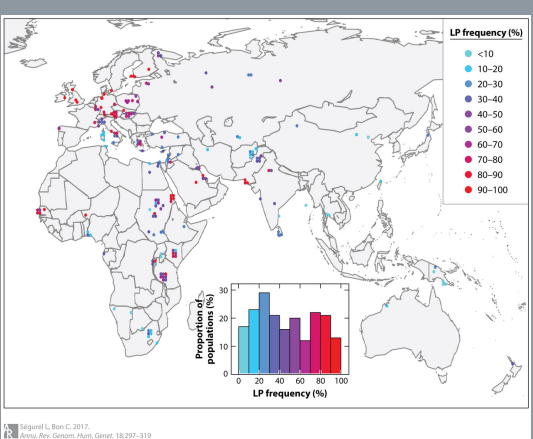
The 2009 British Women's Heart and Health Study researched the effects of the alleles on women's health that coded for lactase persistence. In the study C allele indicated lactase non-persistence and the T allele indicated lactase persistence. It was found that women who were homozygous for the C allele presented worse health, than women with a C and a T allele, and women with two T alleles. Not only that, women who were CC reported more hip and wrist fractures, more osteoporosis,

,and more cataracts than others. Moreover, they also were on average 4–6 mm shorter as well as slightly lighter in weight. In addition, influences such as metabolic traits, socioeconomic status, lifestyle, and fertility were found to be isolated to the findings. Hence, from this study it proved that lactase persistence benefited the health of these women.

Also, since Lactose favors the intestinal absorption of calcium, it is advantageous in regions of low sunlight exposure where Vitamin D, necessary for the transport of calcium, is a restrictive factor and thereby prevent conditions such as rickets and osteomalacia.

A hypothesis for arid climates proposed suggested using milk to be advantageous during epidemics such as cholera where water is contaminated. In these situations, milk can become a source of hydration.

Even though, lactase persistence is a mutation there is no reason to be alarmed if you think you have it. There is a so-called stigma surrounding the word mutation as to always have a negative connotation but in this case this mutation can be beneficial for you. It just means that you will be able to enjoy more variety of foods compared to others that are lactose non-persistent.



# ARE YOU A PRO-PROCRASTINATING STUDENT WHO REALLY NEEDS TO STUDY?

The highlight of this blog is study tips that actually work when you feel like you really cannot study and procrastination seems to be your best friend.

WRITTEN BY  
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CLASS OF 2025

Then, this post is for you. I am sure we have all been at a point in our lives where absolutely nothing seems to make you want to study. Unfortunately, there is no easy fix to feeling motivated.

Feynman's technique, pomodoro method, active recall, spaced repetition, are probably some words you may be familiar with as medical students. We are always trying to find a solution to making studying easier but it just ends in procrastination and last-minute cramming.

After doing a bit of research and testing them out during the exam seasons, here are some of the main methods I believe will help you when you are the average, demotivated student. Before we dive into discussing study methods, we must first acknowledge the necessary changes we must make in our lives.

Discipline & Consistency. Even something as simple as waking up the same time everyday can help us discipline ourselves to work harder. Consistency is another important factor. Even if it is only an hour of studying a day, pushing ourselves to do it will work wonders.

Now let's get into the study tips.

## 1. Planning

This is definitely the first thing you need to do. Even if 24 hours is all you have, you must plan your work. Make a plan and try your best to stick to it. I think we cannot let the phrase 'but I can't follow timetables' make the decisions for us as medical students. That's how important planning your work is. It's the key to efficiency.

Take your time to make a good plan. Planning in itself is one of the best ways to motivate yourself to work. I do this trick during my exam season where, let's say I have 100 questions to go through in 11 days, I leave the last day for complete revision and split the questions equally accordingly; 10 questions a day. This way the content you have for a day is controlled and you will not feel overwhelmed. So, in short, even if it is only a day, make a plan.

## 2. Group Study

I cannot emphasize the absolute significance of group study. It will help you so much.

But the thing with group study is, it is NOT a last-minute resort for exams. It's something students should do on a regular basis even if its casual. Revising topics, teaching each other, discussions. anything. There is absolutely no other method that works better than group study.

Find the right people, make a plan and work! And perhaps to top it off have a small session afterwards when you all can just chill and relax before finishing. This will make the whole ordeal of studying so much more fun.

For the students who are not comfortable with working with other people, try working, it will change your life but if it still seems to be a bother my personal favorite is working with 'study with me' YouTube video/lives.

There are many students who make these videos and you can find one that suits you and work with them.

### **3. Doing easy work first**

This might come off as controversial but it's true. It's an age-old tradition of medical students to tell us to do the hard thing first, but it does not work. What actually happens is we get frustrated trying to understand the difficult content hence leading us to go back into the cycle of procrastinate and demotivation.

Instead, it's better to start off with easy. For example, you can keep a note book while studying and go through your content as usual. every time you come to a topic or even a sentence that you find you need time to grasp it completely, jot it down. As you go through your content you will have a few topics or points you don't understand but now, you have a structure. You went through the whole chapter for example, and now maybe the ones you did not understand previously make sense to you or it will feel much easier to actually study the difficult ones now. It's basically like going back to basics.

### **4. Working in Blocks of time with Breaks**

The importance of having breaks cannot be emphasized, your brain needs a rest every 45 minutes. Working in blocks of 4 or 8 hours works best with a break every 45 or 50 minutes. (remember breaks must be short, the procrastinator's brain is easily distracted so, tops 10 minutes) After that do something that is not relevant to studies like going to the gym , hang out with friends, etc.

### **5. Active Recall**

This is something that took me a good while to figure out. What does it actually mean? Do I rewrite? Or do I reread? Teach?

Its basically recalling what you learnt from memory. The best way to do this is to study your content first, close your book and then write whatever you remember. Then open your book and correct your work (a little trick to make it stick more to your brain is to actually use a red pen to add points you have missed)

### **6. No white noise or music when studying**

This is another controversial point but you need to understand that your brain automatically focuses on the music or white noise. The science behind it is, its repetitive, there's a rhythm that the brain will quickly fall into and due to this when you go to the exam, your brain will not remember the content as much as it remembers the white noise you used while studying. It's actually better to either study in a quiet setting because, noise in that case does not always fall into a rhythm or work in places like a library or cafe. Sometimes moving around when demotivated helps you feel motivated.

A method I use is playing a random podcast on Spotify on low volume and working. This actually helped me focus more (but it might not work for everyone)

### **7. Making short notes and Flash cards**

Rereading/rewriting a hundred times does not work when you are close to the exam. If you want to make short notes and flash cards they have to be made during your semester and not during your study week. It's not effective. the best way to do this is to make them as you learn a topic. This will save you time during the exams that you can utilize for actual revision.

### **8. Remove all Distractions**

I think I don't really need to explain this. Lock your phone in a cupboard and give the key to a friend if you have to.

These are just some of the tips I think will really help with studying when you are a Pro-procrastinator. If I should tell you what the most important tip is, it'shaving discipline and consistency in your work.

I hope these help some of you learn better and come out of the vicious cycle of being demotivated.

## **SUMMARY**

### **1. Planning**

### **2. Group Study**

### **3. Doing easy work first**

### **4. Working in Blocks of time with Breaks**

### **5. Active Recall**

### **6. No white noise or music when studying**

### **7. Making short notes and Flash cards**

### **8. Remove all Distractions**

# SEASONAL AFFECTIVE DISORDER

The highlight of this blog is understanding the effects of dark and gloomy winter days on our mood and productivity, and how to combat the winter blues.

WRITTEN BY  
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The consulting room of the Psychologist is located in Hostel No. 4 at Kurchatova str. 10, 1st Floor, Office No. 2.

Immediately seek professional help if you happen to notice any symptom.

## What is Seasonal Affective Disorder (SAD)?

Seasonal affective disorder (SAD) is a type of depression that's related to changes in seasons. SAD begins and ends at about the same times every year. If you're like most people with SAD, your symptoms start in the fall and continue into the winter months; sapping your energy and making you feel moody. Less often, SAD causes depression in the spring or early summer.

## What are the symptoms of SAD?

- Feeling depressed most of the day, nearly every day
- Losing interest in activities you once enjoyed
- Having low energy
- Having problems with sleeping
- Experiencing changes in your appetite or weight
- Feeling sluggish or agitated
- Having difficulty concentrating
- Feeling hopeless, worthless or guilty
- Having frequent thoughts of death or suicide

## What are the causes for SAD?

The specific cause of seasonal affective disorder remains unknown. Some factors that may come into play include:

- Your biological clock (circadian rhythm). The reduced level of sunlight in fall and winter may cause winter-onset SAD. This decrease in sunlight may disrupt your body's internal clock and lead to feelings of depression.
- Serotonin levels. A drop in serotonin, a brain chemical (neurotransmitter) that affects mood, might play a role in SAD. Reduced sunlight can cause a drop in serotonin that may trigger depression.
- Melatonin levels. The change in season can disrupt the balance of the body's level of melatonin, which plays a role in sleep patterns and mood.

## When to see a doctor?

It's normal to have some days when you feel down. But if you feel down for days at a time and you can't get motivated to do activities you normally enjoy, see your doctor. This is especially important if your sleep patterns and appetite have changed, you turn to alcohol for comfort or relaxation, or you feel hopeless or think about suicide.



**It is important to take signs and symptoms of seasonal affective disorder seriously. As with other types of depression, SAD can get worse and lead to problems if it's not treated.**

### **These can include:**

- Social withdrawal
- School or work problems
- Substance abuse
- Other mental health disorders such as anxiety or eating disorders
- Suicidal thoughts or behaviour
- Treatment can help prevent complications, especially if SAD is diagnosed and treated before symptoms get bad.

### **Treatment and Therapy**

Treatment for seasonal affective disorder may include light therapy, medications and psychotherapy. If you have bipolar disorder, tell your doctor — this is critical to know when prescribing light therapy or an antidepressant. Both treatments can potentially trigger a manic episode.

- Light therapy
- Medications
- Psychotherapy
- Mind - Body Connection

### **What kind of lifestyle changes and home remedies can we use to combat this disorder?**

- Make your environment sunnier and brighter. Open blinds, trim tree branches that block sunlight or add skylights to your home.
- Go on a long walk, eat lunch at a nearby park, or simply sit on a bench and soak up the sun. Even on cold cloudy days, outdoor light can help, especially if you spend some time outside within two hours of getting up in the morning.
- Exercise and other physical activity help relieve stress and anxiety, both of which can increase SAD symptoms. Being more fit can make you feel better about yourself, too, which can lift your mood.

When someone experiences a monumental shift in their emotional and mental health during specific times or seasons, it is called Seasonal Affective Disorder (SAD). It is important to consider the role that weather plays in the onset of SAD symptoms and why, how, and when it happens. Primarily, SAD is highly common during the fall and winter seasons and affects a huge population every year. Moreover, this affliction can drastically impact someone's ability to function in normal life. As foreign students in our Medical University and since most of us are from tropical parts of the globe, we are at a higher risk.

When someone is affected by SAD, they can have symptoms that mimic depression – overwhelming sadness, sluggishness, disconnection, neglecting daily responsibilities, ignoring healthy habits, a feeling of melancholy, a lack of interest in engaging in activities, suicidal thoughts, and more. These symptoms correlate to SAD when they begin to prevent someone from fully participating in their life, and, unfortunately, they are directly related to changes in weather.

When the weather gets colder, people stay inside more. Consider times when the weather has drastically shifted or when the weather stays cold and gloomy for a significant time. You may have found yourself thinking, "the cold weather is making me depressed" or "this cloudy weather makes me depressed."

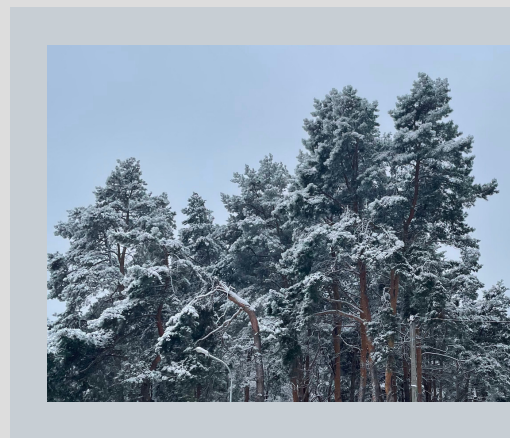
When you stay inside due to poor weather, this leads to a lack of fresh air and increased feelings of isolation and can induce symptoms of depression. These symptoms are often temporary and usually resolve when poor weather lifts or when you get increased sun exposure. Light deprivation depression is a very common affliction and can arise from not getting enough sun providing Vitamin D.

Knowing that this lack of exposure and isolating inside more frequently when it is not warm continues to beg the question: can cold weather cause depression or not? Surely, we have all felt an emotional or mental shift when the weather changes in some way.

“  
**THE COLD WEATHER IS MAKING ME DEPRESSED!**  
”

The role weather plays in our emotional and mental health is significant and can lead to the onset of SAD, which is a recognized affliction by medical professionals. While we cannot change the weather, we can implement strategies to improve our response and increase our defence against SAD symptoms. Ensure that a medical professional is aware of your symptoms so that you can develop a plan for how to respond to them. Identify your coping strategies, what makes your emotions heightened or resolved, as well as a social support system for when symptoms get overwhelming.

Cold weather, cloudy weather, shifting seasons, shorter days, and less light directly correlate to SAD, and it is critical to know that it is a common affliction. Even more important, you can do something about it to prepare yourself. Though SAD can significantly impact your ability to manage your daily responsibilities, there are tools and strategies to cope with the affliction and live a healthy life effectively.



# A GOOD DOCTOR, SAVES A BEING

The highlight of this blog is value of the doctor-patient interaction, optimal communication that acts as a keystone during consultation as it influences patient experiences within healthcare system.

WRITTEN BY  
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CLASS OF 2023

In an era of increasingly individualised medicine and escalating clinical complexity, the effective conversation between doctor-patient is greater than ever. Building mutual relationship will help physician to have a closer look in patients lives. This ensures that the patient does not miss out with helpful values that might assist physician in their treatment.

In clinical practice, respect is base to the formation of genuine relationships, strengthening physician's duty, and encouraging authentic interactions. Effectively conveying respect may have positive effects on fair health outcomes, mutual trust and patient's satisfaction.

A supportive environment or a confidential place should be provided to a patient, as this would help them to speak openly about their potentially sensitive issues and if patient still covers up about their condition then by simply asking follow up question like 'what else can be effective.

All the necessary evidence based risk factors, benefits, values, appropriate care plan and other alternative options should put forward to patient for their better understanding.

The importance of being transparent and fully disclosure is, it will not mislead the patient, it will overcome gaps and needs, it will allow documenting successful strategies and plans to overpower barriers and challenges helping patient to evaluate and recreating better efforts for themselves for their better future.

Decision making partner is an ambiguous context-it can be referred to doctor-healthcare team to understand better about the disease, investigation and treatment while in contrast it can be between doctor and next of kin for the adults who lack capacity to decide.





Forming a continuous learning is another ace method to build a flexible relation by patient giving a regular feedback about challenges and progress in their health.

This enables forming an interpersonal connection and helps to penetrate a deeper level of care. Constant feedback can help physician in later circumstances by changing course correction and care strategy.

This feedback results in better healthcare outputs and long term sustainability of patient-care.

On the other hand one of the major concerns in being “Too caring” about the patient is the mindset of comforting the needs of patients at all cost. This comes due to the fear of offending the patient or out of the insecurity of losing the patient. It is at this point where doctors don’t even realise the problem of overprescribing the drugs, especially when dealing with patients with chronic diseases and patients with chronic pain problems. Then there are few spots where both physician and patient will trick each other.

Prescription drug abuse is one of the main global healthcare issues and doctors are at the helm of it. Often the doctors are scared that if they don’t address to the needs of their patients by providing them with surplus pain medicines, the patient might transfer their care to some other physician.

Physician will prescribe unneeded multiple medicines, ordering unnecessary advance level of report will help physicians funding themselves more.

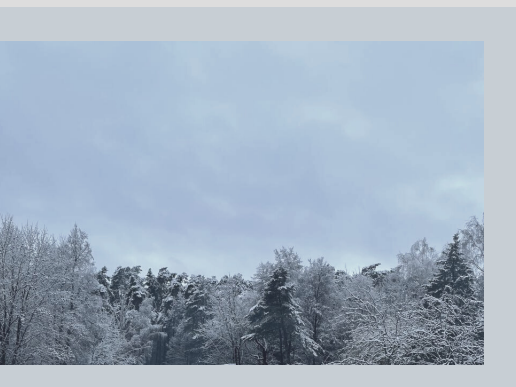
Gen Z’s are more likely to develop a substance abuse problem than a millennial. Thus, Gen Z’s are more probable to visit physician, fabricating about their condition receiving the pain medicine prescription such medicines are not available as OTC drugs and illegally selling those medicines.

Therefore, I’d like to conclude my discussion by saying that a physician should undertake various described communication strategies to bind better with the patients and establish a healthy doctor-patient relationship that exists on layers deeper than formal interactions without invading or risking their privacy at the same time. Simultaneously healthcare providers should be aware that whatever a patient says might not be true or accurate and realise that they also have moral and social responsibility associated with healthcare and rather should not be cornered by threats and blackmail or the insecurity that on denying the patient of unnecessary treatment might end up in losing the patient out of their care.

# Communication Strategies

1. Develop mutual respect.
2. Create harmonised goal.
3. Promote a secure environment.
4. Involve suitable decision making partner.
5. Provide correct information.
6. Fully disclose limitations.
7. Continuous learning.

In closing, a good communication of doctor-patient will lead the way to promoting desired results and in preventing adverse outcomes.



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