

2020-2021

# physio vivid

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**SURFER'S NECK**

CRITICAL  
**THINKING**

A DAY WITH  
**TRANSWOMENS JOURNEY**

B O S U  
**BALL**

**ASTYM**  
therapy

**VOLUME 5**  
**ISSUE 1**

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**SRI VENKATESHWARAA**  
**COLLEGE OF PHYSIOTHERAPY**  
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**From**  
*Chairman's Desk*

Following the huge success of Physio Vivid 2019, I'm overjoyed to hear about the launching of Physio Vivid 20-21. This publication provides its readers with valuable information about current trends in the field of physiotherapy. I'd like to congratulate everyone who will be a part of making this vision a reality. This might be a watershed moment in their career.

I am convinced that education is more than merely following a prescribed course of study. It entails more than just preparing for life as it is now. True education has a lot to do with the full duration of existence that mankind has been given. Our SVCOPT-ians has invested a lot of effort to follow the above concept, which would result in a joy of a holistic service to the world.

I also guarantee that my physiotherapy students will thrive in their area in a unique way, providing passionate and committed service which is the most pressing demand of the hour. I also appreciate the Principal, Editor, Co-editors and the reviewers for their generous support and timely direction for students, alumni/budding professionals achieving greater heights.

**Shri. B. Ramachandhiran,**  
**CHAIRMAN, SVGI.**



**From**  
*Managing*  
*Director's Desk*

I whole heartedly congratulate the entire team for the 5th annual release of physio magazine - VIVID 20-21, successfully. The finest part of this is the opportunity provided to manifest the skills of our aspiring students, alumni concealed within.

Moreover this magazine contains many essential particulars on current trends in physiotherapy. Such periodical updation on assessment and treatment strategies will definitely mould one another to become a versatile professionals.

I appreciate the Editor and co-editors for their steadfastness in making this happen every academic year. I once again congratulate Principal and the entire vivid team. My special mention to the recipients of this magazine to have a best experience of exploration.

**Shri. A. R. Rajiv Krishna,  
MANAGING DIRECTOR, SVGI.**

**From**  
*Chief Operating  
Officer's Desk*



It's my enormous pleasure to give notes on "Physio-VIVID 20-21". Since 2016 our Sri Venkateshwaraa college of Physiotherapy release VIVID, where we go through several important literature and new terminology related to Physiotherapy.

It's not an easy way to release a yearly magazine in this pandemic situation. I really appreciate the work done by our Principal, faculty and beloved students and I also applaud the Editor and Co-Editors for their exertion. Each and every time this magazine is an attractive not only by the cover page, the whole content makes it very interesting and description Pictures added extra engrossing to wait for the upcoming magazine. In this way I waited for the "Physio-VIVID 20-21" like others.

**Dr. B. Vidhya,**  
**CHIEF OPERATING OFFICER, SVGI.**



**From**

## *The Desk of Dean*

I am very much delighted to visualize the Physiotherapy College Magazine VIVID 2021 which will be released during the Graduation day ceremony. The college magazine reflects the identity of the educational Institutions through the writings by the teachers and students.

I appreciate the sincere efforts taken up by the editorial board members for the release of this magazine in a elegant manner in all aspects. This magazine provides an opportunity for the students to express their imagination power and creativity. This potentiality should be explored and properly channelized by the teachers.

The college magazine provides a platform for the young students to exhibit their talents there by promoting them as writers which directly motivates the readers to read and write much more. Students are empowered to express their original ideas in a different languages through these magazines. The contents may be in the form of stories, poems, puzzles etc. etc., but the articles in the magazine give self - confidence and self - satisfaction to the students.

I congratulate the editorial board members for bringing this college magazine in a grand manner and I am sure that this is very much useful to the student community.

**Dr. S. Ratnasamy, B.Sc., M.S.,  
DEAN, SVMCH & RC.**



**From**

# *The Desk of Dean PG & Research*

Certain segment of health care professional tends to be better at talking, but physiotherapists are adept at listening, observing and encouraging the science and art of Physiotherapy is silent. Silence is more than simply absence of words; silence signifies. The silent efforts of team physiotherapy of SVCOPT under the leadership of Dr. A. Pahinian in bringing out this VIVID Magazine as a Graduation Day release, over many years, is noteworthy and commendable.

"Physio- VIVID 20-21" is a collection of Techniques, Modalities, Tools in Physiotherapy reflecting the updates and recent trends. This is bound to strengthen the outgoing Graduates and Internees in terms of novel ideas and creativity.

Physiotherapist does improve the quality of life in healthy and challenged population. I am indeed delighted to go through this well illustrated and critically thought out magazine. It reflects the essence of their science, commitment and patience congratulations Team Physiotherapy of SVCOPT.

**Prof. Dr. S. Mahadevan, M.D., PhD  
DEAN (Research & PG Studies) SVMCH & RC.**

**From**  
*The Desk of*  
*Principal*



It gives me immense pleasure to present our college's magazine - vivid 20-21. It is a stepping stone for our students to showcase their abilities and aspirations towards profession. This vivid also aims towards bringing the latent talent of our students and alumni via sharing articles and their Professional experiences.

Nora Robert's has rightly said, If you don't go after what you want, you will never have it, if you don't step forward, you will always in the same place. This magazine reflects the entire relentless effort of the student as well as faculty. Congratulations for the pioneering effort invested by our faculties who have been a part for the periodical release of it every academic year.

Moreover, this particular issue is special because while covid pandemic halted working environment of the college, our students actively involved in unfolding the vivid.

Like every year, vivid has several novel articles which will enable us to receive lot of applauds and appreciations from the entire community.

Enjoy the insights of vivid that would become a milestone in physiotherapy profession. I must thank our beloved chairman for the constant support and the given prerogative towards the path of pursuing our desire. I really appreciate the Editorial team - Mr. K. ANAND BABU, Editor and Co Editors Mr. K.Karunakaran and Ms. B. Simulia Dhinju for taking such a lead to publish this magazine which would provide new horizon to explore, expand and experience.

Once again a Warm wishes to all the team members for launching vivid" a glory in the field of physiotherapy.

**Prof Dr. A.Pahinian MPT (Neuro), MBA., PhD.,  
PRINCIPAL, SVCOPT.**



### EDITOR'S VIEW

"Great things are never done by a single person, they are done by a team of people" – Steve Jobs.

Covid shatters every one's life so do ours. The fifth issue of our physiotherapy magazine PHYSIO VIVID\_20&21 accentuates the need to restore & rejuvenate the profession after pandemic outbreak. The contents of this magazine are creative, referral and refurbished topics selected by our students under the guidance of adept faculties and also a specimen of their passion in the profession. My debt of gratitude to my principal who opted me as the editor of this illustrious magazine. "no building stands without the support of pillars", credit of this magazine will be shared to my co-Editors Mr. K. Karunakaran & Ms. B. Simulia Dhinju. Finally, a Hat tip to Mr. M. Paulraj, Editor of VIVID for the past four years for his guidance and reinforcement. I avow that our VIVID 20-21 magazine will never discontent the reader's trust.

**K. Anand Babu**  
EDITOR

"Hello all !!!! A fond greetings to you from my side. We are glad to present the various flavors in the field of physiotherapy from our student's perspective. I can assure that you will definitely enjoy the articles compiled together here. Moreover, you need not to be a bibliophile rather just have a glance at it for an enticing reading experience !!!!"

**B. Simulia Dhinju**  
CO - EDITOR

"It's my Gratitude to wish all those who share their Hands of Knowledge to make this magazine in a Beautiful thought which converts imaginary to reality. I also convey my thanks to Principal, Editor and colleagues for their support as papers of this magazine. I'm pretty sure this will fulfill all the needy."

**K. Karunakaran**  
CO - EDITOR





Sri Venkateshwaraa College of physiotherapy was established in the academic year 2010 -2011. It is the first self financing physiotherapy college in the union territory of Puducherry to provide Bachelor degree in the field of physiotherapy. The college is affiliated to Pondicherry University. We have started this college to yield the most eminent physiotherapists to serve society and working tirelessly towards a definite goal. "Education is not just a pursuance of a certain course of study, It means more than a preparation for the life than now is. Indeed a true education has to do a lot with the entire period of existence made possible to mankind".

In keeping with the above principle we have provided the best study environment replete with all facilities. We are inculcating among our students a greater value for humanity as well. As a result of this many of our students have passed out with flying colors and our alumni have reached great heights in their professional journey. As they tread the path of success they are dedicated to serving the needy. They are working towards achieving the goal of our institution – **"Creating a Healthier Society"**.

So far, our college has seven undergraduate passed out batches and four post graduate batches. From second batch of UG onwards, our college was creating a bench mark of University topper (Gold medal in Physiotherapy field 2017 – till now) in Pondicherry University. Our students were trained during their internship period with our medical college attached 860 bedded super specialty hospital. And apart from, we have MOU with various reputed hospitals in giving good clinical exposure to the students and to enhance their skills and confidence. Our faculty and students are publishing their research paper in various journals and presenting their research work also in the conferences, periodically.

SVCOPT provides a great educational experience that enables you to reach your career objectives. We are here to help ambitious students excel and attain their professional heights in the field of physiotherapy. So join us with a commitment to excel.

# Bode index

Chronic obstructive pulmonary disease (COPD) is a progressive life threatening lung disease that causes breathlessness and predisposes to exacerbations and serious illness. Today globally the prevalence of COPD is increasing and this article will introduce you to an amazing Multi-dimensional tool - THE BODE INDEX - which is an easy and cost effective way to diagnose COPD.

## The Rise of a Great tool - The Bode index

The BODE index, for Body-mass index, airflow Obstruction, Dyspnea, and Exercise capacity, is a multidimensional scoring system and capacity index used to test patients who have been diagnosed with chronic obstructive pulmonary disease (COPD) and to predict long-term outcomes for them.

The Variables in BODE Index are easy and economical - it has become a reliable method to classify COPD patients and in treating them accordingly

The index uses the four key factors to predict risk of death from the disease.

The BODE index will result in a score of zero to ten dependent upon

- FEV1 or "forced expiratory volume in one second" (the greatest volume of air that can be breathed out in the first second of a breath),
- body-mass index,

- the distance walked in six minutes (6MWD test),
- and the modified MRC dyspnea scale.

These factors can help to predict Mortality, Hospitalization and reflect disease modification LVRS (Lung volume reduction surgery), Non-Surgical Volume reduction and Pulmonary rehabilitation. It can also reflect the deleterious effects of exacerbations and hospitalizations.

## EVIDENCE:

### HOSPITALIZATIONS

BODE index is a very good predictor of hospitalization as in certain studies a positive correlation between higher BODE index and longer period of hospitalization.

### PHYSICAL ACTIVITY

Researches shows a significant decrease in BMI as BODE score increases.

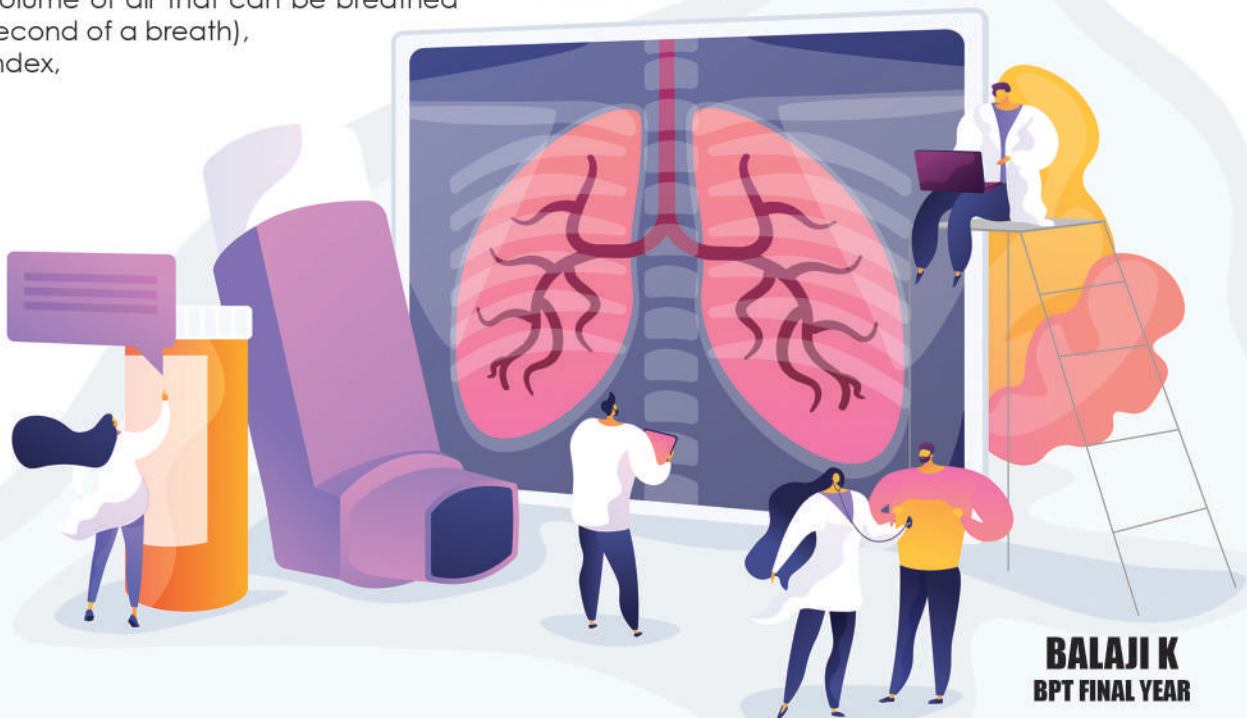
### SMOKING

There was a significant increase in the BODE index in patients with a longer duration of smoking.

## CONCLUSION:

The BODE index is an easily calculated multidimensional grading system for evaluating COPD patients in pulmonary clinics and it is better than the FEV1 at predicting the risk of death from any cause and from respiratory causes among patients with COPD. It not only provides information about the pulmonary aspects of the disease such as airflow limitation, it also evaluates the systemic clinical manifestations.

## IF THIS SPACE IS NOT ENOUGH REMOVE THE YELLOW MARKING LINES



**BALAJI K**  
BPT FINAL YEAR

# BOSU BALL

BOSU (BOTH SIDES UTILIZED) ball is a semi-circular half physio ball which can be used for professional sports and athletes for the balance, stability & mobility training to a great extent. The bosu ball is made with a burst resistant material, or an inflatable rubber, latex or PVC material. It consists of half ball with the flat side being attached to a hard plastic platform. The flat surface can be used upside down like a wobble board for balance training or the half ball can be used for balance and proprioceptive training. Bosu ball have different weight limits (i.e) its withstanding forces was about 350lbs.

## Types of bosu ball

BOSU ELITE BALANCE BALL  
BOSU PRO BALANCE BALL  
RIT FIT BALANCE BALL  
WITH RESISTANCES BANDS  
GIANTEX BOSU BALL  
BOSU HOME BALANCE BALL

## Types of Bosu ball exercise

### 1. Bosu ball upper body exercises

- Push up
- One arm push up
- Triceps dips
- Chest press
- Bunch press
- Mountain climbers

### 2. Bosu ball core exercises

- Crunch crunch oblique
- Full plank
- Fore arm plank
- Situps

### 3. Bosu ball lower body exercises

- Single leg balance
- Squats
- Bosu lunge
- Jump squat
- Bosu knee extension
- Pelvic bridge
- Gluteal raise

## Bosu ball's uses in physiotherapy

In physiotherapy a bosu ball used to balance, fall preventions, postural correction, coordination & in various strength trainings such as stability, stretching, mobility, Agility training, Aerobics exercises and yoga training. Bosu ball training is effective for elderly people to improve their standing balance. A bosu ball is a great tool to help with core stabilization and strengthening. Having a strong core is essential for good functional activity and injury prevention.

## Evidences:

Studies have also shown that the use of a bosu ball 3 times a week can reduce risk of falls in the elderly population.



Study found that a 40 minutes session on a bosu ball could improve the proprioception ankle sense and balance ability in those with functionally unstable ankles.

## BENEFITS OF THE BOSU BALL

A bosu ball is a very piece of workout equipment that comes with many benefits

Any floor based exercises such as push up, planks, lunges situp, burpress, squat, jump squat, hip rise and multitude of other exercises can all be performed on bosu ball

You not only have to focus on working out you muscles but have to focus on keeping your balance as well. The unstable platform which you exercise on make your body compensate for positional changes thus helping to improve your balance

At the same time the unstable nature of the bosu ball also forced your muscles to work a lot harder to do any exercises therefore helping to increase your strength

Bosu ball can also be used to help increase your flexibility and range of motion

Bosu ball improve stability and prevent fall down. Whether you workouts at home or in the gym. Bosu ball is incredible easy to use by their own, not big and bulky super expensive.

**SURIYANARAYANAN K**  
BPT INTERN

# CRITICAL THINKING

The brain is our universal tool and greatest strength but the brain is also strangely deceptive and root for many of our flaws and weaknesses.

In this article, I have hinted some of the flaws and fallacies which occurs because of lack of critical thinking.

## CRITICAL THINKING

Critical thinking is a learned skill which gives a way to examine all the facts that we are assuming or that we think as true. Critical thinking, in fact, a defence mechanism against all the mechinations that are trying to deceive us.

## MEMORY

Human memory is utterly flawed. We use to recall the things through memory but sometimes our experiences never consolidate from short term memory to long term memory which means our memories also degrade, fuse and morph over time.

For example, when we blink, we miss a tiny bit of visual information, and our brain stitch those visual informations together to have one continuous stream. Thus we cognitively stitch different bits of things that we perceive about an event. This process is known as Confabulation which in further may leads to False Memory Syndrome. So, we therapist must be cautious while asking the history of chronic trauma conditions as anyone may create false memories and false experiences.

## LOGICAL FALLACIES

The inherent tendency of humans is to make many errors in thinking. One example is logical fallacy in which there are flaws in reasoning and we tend to make logical connections that are not valid or real.

## COMMON FALLACIES

### 1. Overgeneralization:

Which means extending conclusions beyond logical limits i.e making universal judgement from limited observation. Eg: *Two patients complaints of increased pain after manual therapy, so there's something wrong with this technique- this kind of misconception is Overgeneralization fallacy.*

### 2. Post hoc (After this, therefore, because of this):

Assuming that one thing follows another, the

first thing is the cause of the second, without supporting evidence. Eg: *After swimming, the patient assumes to have low back pain, though the exact reason of that particular pain is something else.*

### 3. Slippery slope:

Assuming that one action will lead to a chain of events ending in disaster, without supporting evidence. Eg: *If the patient with bilateral lumbar radiculopathy do lumbar extension, then it will leads to severe nerve compression and end up in paraplegia.*

### 4. False dichotomy:

Multiple choices are reduced artificially to only a binary choice. Eg: *Drawing a conclusion ,that the condition is periarthritis if the patient has shoulder pain & responds negative for Neer's impingement test.*

### 5. Appeal to ignorance:

Arguing that a belief is true because evidence is not clear. Eg: *Covid-19 is punishment to all human sins.*

## HEURISTICS

A heuristic is a mental shortcut that allows people to solve problems and make judgements quickly and efficiently. These rule of thumb strategies shorten decision making time but they can also leads to cognitive biases.

## COGNITIVE BIAS:

A Cognitive bias is a systematic error in thinking that occurs when people process information only from the world around them. The most common type of cognitive bias is Confirmation bias.

### COGNITIVE BIAS Vs LOGICAL FALLACY:

*A logical fallacy stems from an error in a logical argument, while a cognitive bias is rooted in thought processing errors often arising from problems with memory, attention, attribution, and other mental mistakes.*

Therefore, Critical thinking also improves Clinical Reasoning and Decision Making skills. So, we therapist should enhance critical thinking skills inorder to increase the accuracy of assessment, diagnosis and treatment plan.

**SASIKALA**  
ALUMNI



As the corona virus (COVID-19) pandemic sweeps across the earth, But in India the main impact of depression starts from children under the age of above 10years, being reception can place some child protection incidents make them witness to interpersonal violence, if their home is not a secure place. This is often something that's very concerning.

Although all children have different perceptive, young children may find the changes that have taken place difficult to understand, and both young and older children may express irritability and anger. There will be a simple strategies which can address this may include giving children the love and a spotlight that they need to resolve their fears.

Here I'm accompany an answer to form them active feel them free,

#### **GAMES THAT THEY LOVE:**

1) Teaching your child to read is one among the foremost wonderful gifts you'll ever give them.

2) Writing may be a skill your kids will use throughout their life. Teach them to write down. It also encourages gross motor skills. At the same time, you're helping them develop their fine motor skills by letting them devour the tiny objects.

3) Play a game that lets them physically touch the objects they're counting. As another bonus, research shows that hands-on projects activate kids' brains and help them learn better.

4) Preschoolers will enjoy simple science experiments that do not require much of an attempt on your part (use gumdrops and toothpicks to make a shape), yet are full of fun learning opportunities.

5) There's more to planting a garden than sticking a seed within the ground and expecting something to grow. Gardens are ecosystem in our life it gives nutrition, and patience all rolled into one plot of dirt in your backyard.

6) Put down the textbook. a touch creativity can assist you teach your child about world cultures during a way which will make learning fun while enriching their awareness of other people's traditions and ways of life. The planet will never look an equivalent to him again.

“Every parent may be a teacher, every child need an honest parenting “

# ASTYM

## therapy

### What is Astym Therapy?

Astym stands for a stimulation : Astym treatment is a physical therapy treatment that regenerate healthy soft tissue, muscles, tendon etc., and eliminates or reduces unwanted scar tissue that may be causing pain or movement restrictions.

Astym treatment is highly effective for restoring movement and reducing pain for soft

tissue injury/dysfunctions. One of the main reason for this that astym was designed to target the underlying cause of many soft tissue problems, rather than just trying to relieve symptoms.

### Here are some of the diagnose where patients have demonstrated excellent clinical result when treated with Astym



- Lateral epicondylitis
- Carpal tunnel syndrome
- De Quervain's tenosynovitis
- Wrist pain
- Plantar fasciitis
- Joint contracture
- Overuse injuries
- Pain or loss of motion

### How it works?

Astym therapy is non – invasive, which means there are no injections or incisions. Instruments are applied topically on top of the skin to locate dysfunctional unhealthy tissue and to transfer mild to moderate pressure to the underlying soft tissue structure. Astym treatment stimulates tissue turnover, scar tissue resorption and regeneration of tendons, muscle and other soft tissue structure.

Astym treatment is typically provided twice weekly for four to two weeks. Astym process actually makes the tissues of body strong and allow patient's body to become adapted to greater stress without injury.

### Physical therapy exercise?

Your PT will provide you with stretches and exercise that will promote smooth and parallel muscle fibers to strengthen and reduce pain after your Astym treatment.

### What do you expect after treatment?

Muscle soreness is a common sign that the body is absorbing the broken up tissue and laying down healthy new tissue. Immediately, you will notice short term redness along the skin which indicates increased blood flow, necessary for the healing process. It is essential to drink lots of water to flush the old toxins out of the body and facilitate the healing process. After Astym treatment, you will notice reduced pain and increased flexibility in your muscles.



# THE TRIAD OF HEALTH

EXERCISE - NUTRITION - MENTAL HEALTH

## EXERCISE

REGULAR EXERCISE IS ONE OF THE BEST THINGS YOU CAN DO FOR YOUR HEALTH. IT HAS MANY BENEFITS INCLUDING IMPROVING YOUR OVERALL HEALTH AND FITNESS, AND REDUCING YOUR RISK FOR MANY CHRONIC DISEASES.

ENDURANCE or AEROBIC activities increases your breathing and heart rate. For example brisk walking, jogging, swimming, and biking.

STRENGTH or RESISTANCE training exercises make your muscles stronger.

BALANCE exercises can make it easier to walk on uneven surface and help prevent fall.

FLEXIBILITY exercises stretch your muscles and can help your body stay limber.

## NUTRITION

NUTRIENTS PROVIDES NOURISHMENT. PROTEINS, CARBOHYDRATES, FAT, VITAMINS, MINERALS, FIBRE AND WATER ARE ALL NUTRIENTS

WATER the adult human body is up to 60% water, and it needs water for many processes FATS are essential for, lubricating joints, helping organs to produce hormones, enabling the body to absorb certain vitamins, reducing inflammation, preserving brain health.

CARBOHYDRATES The main role of carbohydrate is to provide energy and fuel to the body.

PROTEINS Amino acids are the building house of proteins which are needs for growth, development and repair and maintenance of body tissues, it provides structure to muscle and bone.

VITAMINS & MINERALS Vitamin A helps the eyes to see. Calcium and magnesium help muscles and blood vessels relax, preventing cramps and high blood pressure. Vitamin C helps wounds heal and body's ability to fight off germs. Iron helps the blood transport Oxygen throughout the body and prevents anemia.

## MENTAL HEALTH

MENTAL HEALTH REFERS TO COGNITIVE, BEHAVIORAL AND EMOTIONAL WELL BEING. IT'S ALL ABOUT HOW PEOPLE THINK, FEEL AND BEHAVE

Improper mental health can affect daily living, relationships and physical health. Mental health conditions such as stress, depression, and anxiety may develop due to underlying, life changing physical health problems such as cancer, diabetes, and chronic pain.

### How to take care of your mental health?

- Talk about your feelings
- Eat proper
- Taking proper break
- Care for others
- Keep yourself active.
- Keep in touch
- Accept who you are

## FACTS

- EXERCISE IS THE

MOST UNDER

-UTILIZED

'ANTIDEPRESSANT'.

- AVOCADOS BOOST

SEROTONIN LEVELS

EATING THEM IS A

GOOD WAY TO

IMPROVE YOUR

MOOD AND RELIEVE

DEPRESSION

- EACH DAY HUMAN

MIND SPEND OVER

70% OF ITS TIME

OVER THINKING

AND WORRYING

**HYFA REEHAM AND VARSHA S**  
3RD YEAR BPT



# *How a Sneeze Leads to* **BACKPAIN**

## **HOW A SNEEZE LEADS TO BACKPAIN?**

- The sudden tensing of your abdominal muscles during a forceful sneeze can cause a strain in your back muscles.
- A violent sneeze can also injure the ligaments, nerves, and discs between your vertebrae.

## **IS BACKPAIN REALLY NOTHING TO SNEEZE AT?**

- The idea that a sneeze can actually injure your back is not as farfetched as it seems. It's a fact that sneezes trigger back pain misery and in some cases, may be the first step in the painful journey wrought by an inclusive condition we call a 'BAD BACK'.
- If you experience sudden shock pain down the spine after a forceful sneeze, including slipped or herniated disc, upper and lower back spasms that may lead to back injury as well as in extreme cases, paralysis of the limbs.
- You are already safer from musculoskeletal issues, sneezing can make matters worse so you report the accidents and injury center, maintaining the neutral arch of your back.

## **LOADING OF LOW BACK WHEN SNEEZING?**

- Although sneezing is known to induce low back pain, there is an objective data of load generated when sneezing. Moreover, the approaches often recommended for reducing low back pain.

## **INTERPRETATION**

- When sneezing, body posture in the stand or table condition can reduce load on the low back compared with body posture in the normal sneezing condition. Thus, placing both hands on a table or otherwise maintain an upright body posture appears to be beneficial for reducing low back load when sneezing.

## **QUICK TIPS TO AVOID BACK PAIN WHEN COUGHING OR SNEEZING**

- Keep your back arched
- Support yourself
- Rest
- Lumbar chair support
- Back brace
- Cold therapy
- Heat therapy
- Stay mobile and stretch
- Wear insoles and appropriate footwear
- Maintain a healthy weight
- Always lift with your legs.



# SMALL NERVE STIMULATION

## THE FUTURE PROPRICEPTIVE TRAINING

### INTRODUCTION

- The PNS can be divided into sensory and motor nerves. If we look at The Tibial nerve, which is the major supply to the foot has many more sensory nerves than the motor nerves. In these sensory nerves, 4x branches are small nerves than large nerves.
- Researches have demonstrated that, nerve size matters in the response to stimuli and says that small nerves create a faster response. These small nerves are seen more in the plantar skin and play an important role in quite stance.
- Palms and sole are rich in small nerve proprioceptors and this is the main reason why barefoot stimulation is important in every individual especially to the people who suffers with the proprioceptive issues. It's been well accepted that foot wear changes the proprioceptive input between foot and ground.

### PROPRECEPTIVE RESPONSE TO TEXTURE:

Another feature of surface design that must be considered, especially when it comes to barefoot training, is texture.

Texture perception is one of the stimuli unique to the small nerve proprioceptors of the plantar foot.

**A key thing to remember when it comes to texture is that not all texture is the same!**

A 2011 study by Hatton et al. set out to find the most effective texture when it comes to improving proprioceptive feedback from the foot. Hatton et al. compared two different shapes and sizes of texture (pictured right).

What was fascinating is that Texture 1 improved balance and stability while Texture 2 actually threw off balance!

It is important to note that the greatest improvement in balance with Texture 1 was when the subject's eyes were closed. The reason for this observation is that when you take away one of the input systems (eyes, ears, joints, skin) the nervous system seeks out the other input systems. In this case it was the plantar foot that was over-recruited to maintain balance.

### APPLICATION OF PRACTICE

To recap some of the features you want to look for in a surface especially when barefoot training or during barefoot sports include:

- **STIFFNESS** – to allow optimal vibrations
- **DAMPING** – to offset the excess vibration during dynamic movement
- **TEXTURE** – to uniquely stimulate the small nerve proprioceptors in the plantar foot

### BIOHACKING :

as the name suggests, is "hacking" or finding a way to more efficiently manipulate human biology. This can include areas of sleep, nutrition, mental health, strength, recovery.

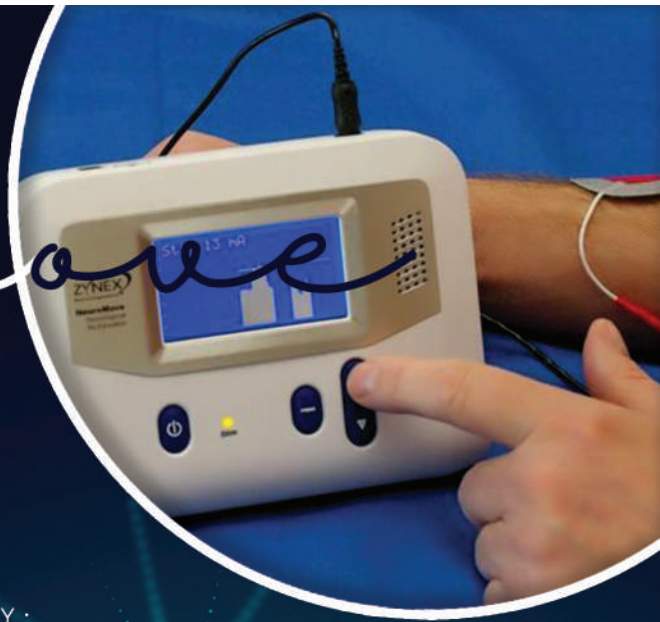
- Biohack #1 – Barefoot release to improve your balance
- Biohack #2 – Barefoot whole body vibration to enhance micro-circulation and tendon strength.
- Biohack #3 – Improve your core strength with barefoot foot to core sequencing..
- Biohack #4 – Improve your balance with small nerve proprioception

### CONCLUSION:

By integrating the barefoot stimulation with Small nerve bare foot stimulation, we are able to more effectively train and rehab the patients.

I believe that small nerve bare foot stimulation is the future of proprioceptive training!

# Neuromove



According to the study , nearly 1 in 50 people are affected with paralysis i.e approximately 5.4 million peoples are living with paralysis. In which stroke is the leading cause of paralysis followed by spinal cord injury, multiple sclerosis and cerebral palsy.

When I was searching , what we can do for these patients to regain their voluntary movement I came to know about a tool or an equipment called “**NEUROMOVE**”.

## What is NEUROMOVE ?

Neuromove is an EMG triggered neurological re-learning tool or an equipment used mainly for the patients with stroke and brain injury paralysis. In other words, it retrains the brain to regain voluntary movements.

## HOW IT WORKS?

Neuromove uses the patient's concentration and imagination to relearn the movements which has been lost. The Neuromove uses 3 sensors where the electrodes attached to the targeted muscle detects the signals sent from brain to the nerve supplying that group of muscle .This electrical activities are registered in Neuromove.

Lesser the activity in muscle, harder is to move the muscle. Increasing the electrical activity requires re-teaching the brain to send messages to the affected group of muscles. The sensor in Neuromove detects the amount of activity present in affected muscle which then set a higher standard of threshold accordingly that the patient should try to reach when they concentrates .When patient reaches the threshold they rewarded with an electrical impulse that makes the muscle to move for few seconds.

## PROCEDURE:

- Attach the electrodes in the targeted group of muscles
- Turn ON the unit

**CYCLE OF THERAPY** : The Neuromove includes four cycles of therapy

1. Relax 2. Ready 3. Reward 4. Relax

## 1.RELAX :

The processor in the Neuromove starts to detect the EMG and set the threshold where the threshold is adjusted in every 15 seconds automatically.

## 2.READY :

Patient makes a concentrated attempts to make the muscle exertion sensor detect the real attempts. Meanwhile, encourage the patient to imagine the movement and have their eyes closed ( ENGAGE THE BRAIN )

## 3.REWARD :

The patient's imagination and their attempt strikes the threshold and triggers the physical movement (a reward to patient)

## 4.RELAX :

Ask the patient to have the deliberate rest for 15 seconds (can be set for maximum of 60 seconds)

CYCLE IS REPEATED.

TREATMENT DURATION: 15-60 mins each session,once a day (can progress to 2 or 3 times a day)

## People benefits from Neuromove:

People who are affected with conditions which causes treatable paralysis such as

- 1.stroke
- 2.Traumatic brain injury
- 3.Spinal cord injury
- 4.palsy such as bell's palsy , erb's palsy etc.,
- 5.other congenital paralysis

## CONTRAINDICATION/PRECAUTIONS:

- 1.Implanted devices
- 2.Tumors
- 3.Epilepsy
- 4.Use only on muscles

## ADVANTAGES OF NEUROMOVE:

It utilizes the repetitive attempts and reward to stimulate neural re-mapping.

- Patients can experience the immediate results.
- It gives a hope and motivation to the patients
- It is simple enough even for home us

No One Is You

When,

P\_\_\_ is a challenge – Meet it !!

T\_\_\_ are tragedy- Face it !!

Indications are I \_\_\_\_\_ – Aquire it !!

F\_\_\_\_\_ is a feeling – Don't be tired !!

I\_\_\_\_\_ from accidents – Don't repeat,

Fr\_\_\_\_\_ are mysteries – Unfold it !!

P\_\_\_ is unexceptional – Weakness alert !!

S\_\_\_\_\_ equals contractivity – Ice it !!

When our P\_\_\_\_\_ is not in position ??

The remedy equalizes the Th\_\_\_\_\_ - The choice,

When M\_\_\_\_\_ are struck – Just a suggestion !!

“ WELCOME TO THE WORLD OF PHYSIOTHERAPY ”

P	A	I	N	Y	C	I	P	M	T
J	G	E	F	T	D	N	O	R	N
F	H	U	E	I	S	F	S	O	S
D	P	G	O	C	E	O	T	I	T
V	A	I	V	I	L	R	U	N	N
G	L	T	U	T	U	M	R	J	E
I	S	A	P	S	T	A	E	U	M
Q	Y	F	R	A	C	T	U	R	E
C	K	I	H	P	S	I	Q	Y	V
T	E	A	R	S	K	O	R	P	O
W	X	J	Y	Z	A	N	B	I	M
T	H	E	R	A	P	Y	J	K	L

Naveen Subapradha

# Cyclist Palsy

The common hassle confronted by the cyclist is "cyclist palsy" or "Handlebar palsy".

## What is cyclist palsy?

Cyclist palsy, is medically called ulnar neuritis or neuropathy. It is the overuse or repetitive pressure circumstance affecting cyclists. This results in direct stress of ulnar nerve on the hand and wrist – from the grip of a fingers on the handlebars.

## How the cyclist can prevent this ?

- Use hand gloves or padded handlebars which provides cushion to the stress factor and save you from the compression.
- The cyclist should try to avoid a hyperextended role of the wrist. Adapt a comfortable position during the cycling.
- The palms need to be relaxed. The elbows should be barely bent, not straight or locked. So that it'll act as a shock absorber for any bumps in the road
- Use an upright handlebar instead of drop model. This will decrease the stress on fingers.
- Adjust the height of the handlebars in line with the individuals.
- Change the hand positions regularly.

## Physiotherapy management

### Exercises

#### • FINGER BENDING EXERCISE:

Bend the fingers of the affected hand from a stretched position to the proper attitude and keep for 10 seconds while keeping your arms straight withinside the proper attitude .Repeat this for five times.

#### • FINGER SQUEEZE EXERCISE

Place a small object (such as coin, pen, sheet of paper etc...) between the fingers of the affected hand and hold for 10 seconds .Repeat five times for each pair of the fingers.

#### • GRIP STRENGTHENING EXERCISE

Use a rubber ball and squeeze it with the affected hand. Hold for 10 seconds and repeat 10 times. Slowly progress to three sets of 10 repetitions.

#### • .WRIST RANGE OF MOTION EXERCISE

Bend the wrist front and back to the neutral position ,then bend the wrist backwards and back to the neutral position. Repeat 10 times and hold each position for five seconds. Place the rolled towel below the wrist for support.

**other methods to treat cyclist palsy include :** Cryotherapy, low level laser,ultrasound and electrical stimulation.

*We don't stop when we are tired,  
We stop when we are done...*

# Adrenoleukodystrophy

## SYNDROME



A panic situation is spreading among people about more disease. I'm also one of them!!!

### Can you Guess Me, Who I'm?

Yeah, I'm ADRENOLEUKODYSTROPHY SYNDROME

I'm a deadly rare genetic disease, I will affect mainly the Adrenal Glands, the Spinal Cord and the White matter (Myelin Sheath) of the Nervous system.

Mainly I will affect the X- Chromosomes in Male than Female. Nearly 2/3 rd of people around the World were affected by me. I was mostly found in Abroad.

### I was divided into

- Childhood Cerebral ALD
- Adrenomyeloneuropathy
- Addison's disease.

Mainly I will affect the childhood who were at the age between 4 to 10 yrs. Entirely, I will damage their organs and will cause death approximately at the age of 5 to 10 yrs.

### I'm the Reason for.....

- Hormonal imbalance
- Increase production of cytokines
- Impair the energy production process
- Destabilize mitochondrial membrane

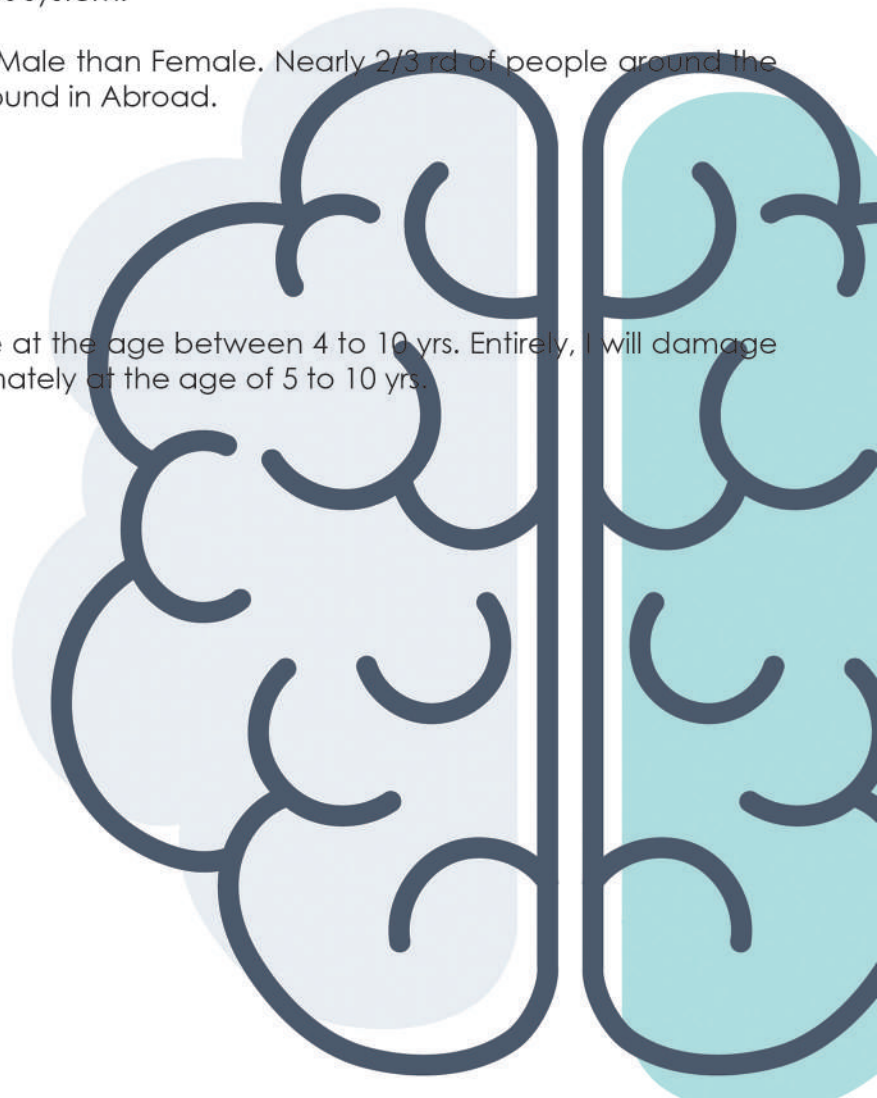
### My Allergic Partners are,

- When Poor control of urination
- Paralysis
- Loss of hearing'
- Vomiting
- Muscle weakness
- Dark area of skin colour
- Muscle spasms
- Crossed eyes.

### I'm afraid & avoidable by!!!

- Doing REGULAR EXERCISES.

- Squats, Lunges, Pull- ups, Crunches like high intensity exercises will cure Hormonal Imbalance and retain a steady flow of health.
- Walking and Biking exercises will stabilize mitochondrial membrane and boost immune system, keeps mind sharp and maintains muscle tone.
- Dumbbells Rubber Exercise will decrease the production of cytokines and reduce the body's inflammatory response.



# PHYSIO'S

## SIXTH VITAL SIGN

### the walking speed

It's my pleasure that you are here to read my article. Myself, Priya and I'm a final year student of bachelor of physiotherapy. Our college publishes VIVID magazine annually. In order to participate in it, I was searching for different articles and journals for my reference. That's when I found one article named "WALKING SPEED: The sixth vital sign".

I wondered, how come walking speed is used as a vital sign that denotes one's health condition. Then I started reading further and I came to know lots of information regarding walking speed test. I gained something new in that article and I like to share that with you.

AGE (YEARS)	GENDER	AVERAGE GAIT SPEED (m/s)
20-29	Men	1.36
	Women	1.34
30-39	Men	1.43
	Women	1.34
40-49	Men	1.43
	Women	1.39
50-59	Men	1.43
	Women	1.31
60-69	Men	1.34
	Women	1.24
70-79	Men	1.26
	Women	1.13
80-89	Men	0.97
	Women	0.94

Normal gait speed for healthy community - dwelling men and women.



### WALKING SPEED TEST

Walking speed test is "almost the perfect measure". It is also known as gait velocity which correlates functional ability, balance etc., Walking speed reflects both functional and physiological changes which helps in predicting potential for rehabilitation and aids in prediction of falls and fear of falling.

Walking speed (WS) cannot stand alone as the only predictor of functional ability, just like BP is not the only sign of heart disease. WS can be used as functional "Vital sign" helps to determine outcome such as *functional status, discharge location and need of rehabilitation.*

### PROCEDURE

- To perform 10m walking test, we need 20m straight pathway. In which 5m for acceleration and 5m for deceleration and 10m for steady state walk.
- Make markings at 5m and 15m along the pathway.

- Use a stop watch to measure the time taken by the patient to cross the steady state path.
  - Ask the patient to walk at their comfortable pace along the pathway.
  - As soon as the patient crosses first marking start the stopwatch and stops the timer as soon as the patient limb crosses the second marking.
- You can use shorter distance also depending upon your availability of the area.

### CONCLUSION:

Walking speed test helps in assessing individual's functional mobility. It is simple to perform and require minimal space and time. WS is very useful in geriatric and stroke patients rehabilitation assessment. So, We physical therapist, as a movement specialist can use WS as "Sixth vital sign" for all the patients. Hope you will gained something from this as I got enlightened from that article.

# KISSING SPINE

## **Baastrup Syndrome**

### **Definition :**

Baastrup's Disease, generally known as Kissing Spine, is characterised by degenerative changes of both the spinous processes and interspinous soft tissues of two neighbouring vertebrae. This syndrome was first diagnosed by Baastrup in 1933. Kissing Spine mainly affects the lumbar area of the spine, with L4-L5 being the most frequently affected level, but it has also been reported in the cervical spine. Kissing Spine has numerous consequences such as the formation of hypertrophic spinous processes, which can lead to mechanical back pain in combination with degenerative disc disease. In some cases, the syndrome can also evoke neuromuscular damage.

### **Etiology :**

A few studies have investigated the influence of the age on Baastrup Syndrome. The average age of patients with Baastrup's disease is 75. Other risk factors include: Excessive lordosis which results in increased mechanical pressure, Repetitive strains of the interspinous ligament with subsequent degeneration and collapse, Incorrect posture, Traumatic injuries, Tuberculous spondylitis, Bilateral forms of congenital hip dislocation, Stiffening of the thoracic spine or the thoracolumbar transition.

### **Clinical presentation:**

- excessive lordosis
- back pain , more specifically midline pain that radiates distally and proximally, increasing in extension and reducing in flexion.
- level of pathologic interspinous ligament
- odema
- cystic lesion
- sclerosis
- flattening and enlargement of articulating surface
- bursitis

### **Differential Diagnosis :**

Lumbar Spondylosis, Spondylolisthesis

- Fracture of the spinous process
- Vertebral (e.g. lumbar) compression fractures
- Infectious etiologies of the spine
- Proliferative hyperostosis of the lumbar spinous processes

### **Diagnostic procedures :**

#### **Computed tomography :**

Radiography : X-rays are analogous to CT scans and show

- Close approximation and contact of opposed spinous processes with sclerosis of the articulating surfaces;

- Expansion of the articulating surfaces or articulation of the two affected spinous processes;
- General degenerative changes in the spine.

### **Examination :**

Diagnosis of Baastrup's disease is verified with clinical examination as well as imaging studies. The stork test is very beneficial in the examination of this disease. When the patient bends forward, relief is also gained.

### **Physiotherapy management :**

Strengthening of the spinal muscles: bridging, spine curl, leg lift, Back arch. Stretching of abdominal muscles: cobra pose abdominal stretch ,Cat-cow stretch, seated side straddle stretch .Hip flexor stretches: low lunge, Knee to chest stretch, Pigeon stretch, Frog pose. Strengthening of trunk muscle( trunk rotation) along with postural education.



# Gamified

## REHABILITATION THERAPY

### Gamified Rehabilitation therapy

In 2013, Stroke was the third greatest cause of disability, having been responsible for 113 million disability-adjusted life-years and it continues to remain as one of the leading cause of disability

Motor Rehab helps in overcoming many impairments marked by the stroke and thus it has gained a critical importance, as good control over the links are fundamental for insuring one's independence and quality of life. Instrumented devices are used for training and accessing hand dexterity and grip force control of a patient that enables both the use of augmented feedback and progress recording

The use of games in rehabilitation as the Gamified Rehabilitation therapy is One such intervention that consists of Mayo electrical computer interference focus which motivates the patients to accomplish the ADL activities

### Gamified Rehabilitation in a nutshell

- stroke survivors are regaining their upper limb functions after decades of immobility.
- The credit goes to a new video game LED training device - the Mayo electrical computer interference helps treating the stroke survivors' Upper limb muscles.
- Patient experiences increase in mobility and a reduction in arm stiffness and many retain their functions after finishing the training
- Stroke survivors cannot flex their arm forward with extended elbow as the muscles are abnormally arranged against each other - known as abnormal coactivation or abnormal coupling.
- Abnormal coupling of a muscle leaves many Stroke patients with a blunt elbow.
- This device identifies the muscle having abnormal coupling and aids the muscle for normal movements
- **it uses the electrical muscle activity of the patients to control a cursor in a customised video game**
- the more the muscle become decoupled - the higher the person scores in the game - thus the goal is to achieve the complete arm movement

### Results

- the patient can now extend their elbow a 11 degree more than before the intervention.
- This treatment requires a small amount of muscle power.
- it helps the patient who cannot move enough.
- it also give feedback to the patient on their muscle activity.
- The Participant attempts to reach out for various targets
- Therapist records electrical activity in Upper limb muscles
- To retain the muscles patient try to control the cursor
- Muscle with abnormal coupling moves either horizontally or vertically - where the goal is to move the cursor vertically/horizontally but not diagonally to get the highest score -which helps thepatient to decouple.



# Sports Nutrition

By a Physio



Sports physical therapists can direct athletes toward proper nutrition to prevent injury and to promote optimal performance. Here we are going to learn about nutritional strategies of five groups of athletes.

The ultimate goal of an athlete is to perform. Performance is complex and many factors contribute to success in sports, including psychological factors like commitment, drive, pain tolerance but also tactics, skills and external conditions.

Factors like strength, power, speed and endurance

Our body has 3 different energy systems

- Phosphagen system - which is immediately available.
- The Short term Anaerobic energy system.
- The Long term Aerobic or Oxidative energy system.

The five types of Athletes are

- The Weightlifter
- The Sprinter
- The Middle-distance athlete
- The Endurance athlete

## THE WEIGHTLIFTER

- The Weightlifter is an ultimate example of explosive power athlete.
- Performance of this athlete depends on strength.
- Performance takes place from only one to few seconds.
- Energy is available in muscle via the immediate Phosphagen system.

### Nutritional strategy

A Nutritional strategy of this athlete is Protein Intake.

## THE SPINTER

- A Sprinter also has to deliver a lot of power but in general over a longer time period.
- Muscle mass and size are also important for these athletes, although too much muscle mass can limit acceleration.
- The immediate Phosphagen system will supply most of the energy in particular via a compound called Phosphocreatine but only provide energy for up to 20 secs of exercise with the longer sprints so more than 20 secs the anaerobic system also contributes.

### Nutritional strategy

The Nutrition part is intaking protein to support muscle mass, increasing phosphocreatine stores in muscles by supplementation of creatine.

## THE MIDDLE-DISTANCE ATHLETE

- The athlete is active in intense exercise which exceeds the energy stored in phosphocreatine, which is limited to 20secs of high intensity exercise.
- At the same time energy costs also cannot be met by long-term anaerobic energy system as the intensity is too high for this system.
- So, the energy is typically derived from short-term anaerobic system.
- And this system stops by itself due to accumulation of lactate and acidification.

### Nutritional strategy

How nutrition could help these athletes? Optimizing the energy store via the diet is important but the middle-distance athlete can also benefit from increasing the buffer capacity of their body, by indigestion of the supplements, to tolerate the acidification.

## THE ENDURANCE ATHLETE

- But in general exercise of at least 10-15 minutes, up to multiple hours are considered as endurance exercise.
- The biochemical qualities of the muscle tissue, the ability of the cardiovascular and respiratory system to deliver O<sub>2</sub> and nutrition to muscle plays an important role in fatigue and performance.

### Nutritional strategy:

The Nutritional strategy of these athletes mainly focus on supply of energy either by optimizing stores before exercise or providing energy during exercise particularly Carbohydrates.

## THE GAME PLAYERS

- Characteristics of these sports are multiple sprints with limited recovery.
- This challenge all energy system of the body, the long-term aerobic system combined with the immediate, and short-term energy system to fuel the sprints.
- Fatigue is linked to the depletion of energy stores.

### Nutritional strategy

Nutritional focus is harder to define, Energy as well as protein to support the muscle or even phosphocreatine is relevant.

## AN ATHLETE'S DIET

Sports nutrition pyramid is used to build an athlete's diet.

The three layers are

- A balanced diet - to support an active and healthy lifestyle.
- Sports specific Nutrition - to optimize performance and recovery for competition and training.
- Supplements - the icing on the cake to give final winning edge.

Be sure the icing is proven effective and legal.

## A WELL-BALANCED DIET

A well-balanced diet should always be the foundation of an athlete's diet. Energy intake is the corner stone of such diet. Energy needs should be balanced if not Relative Energy Deficiency or Reason syndrome can develop.

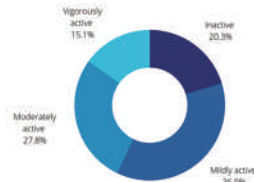


# PHYSICAL INACTIVITY

## THE BIGGEST QUARANTINE

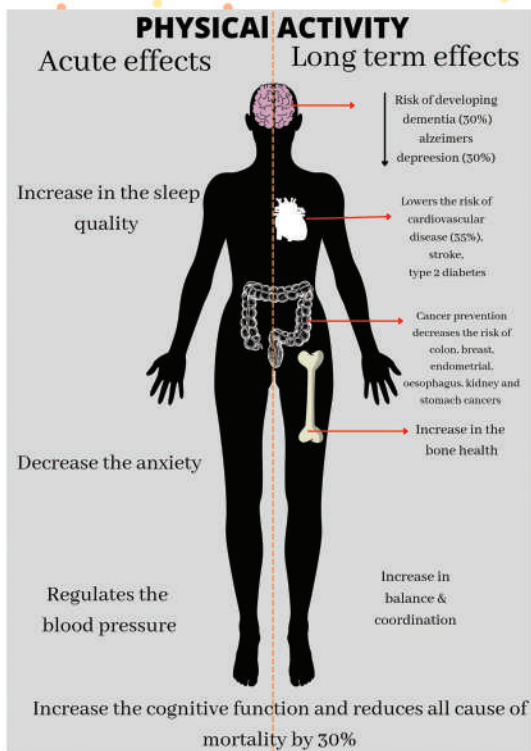
SARS COVID – 19 has already made the people physically inactive by the sudden shut down of all the public places, gyms. Resulting in a sedentary lifestyle.

20.3%	<b>INACTIVE</b>
36.9%	<b>MILDLY ACTIVE</b>
27.8%	<b>MODERATELY ACTIVE</b>
15.1%	<b>VIGOROUSLY ACTIVE</b>



It's not only about pandemic situation, but also the urbanization, motorization has also lead to physical inactivity, even when the effects of COVID have decreased globally. According to a survey on 12th May 2021, it is seen that 20.3% of Indian population are inactive.

The AHA recommended 30 – 60 min of aerobic exercises, 3 – 4 times a week to promote cardiovascular fitness.



Less activity leads to 30 – 50% of high blood pressure and cholesterol. A short span of 14 days of decreases physical activity (i.e. 10000 – 15000 steps per day) can have negative impact on insulin sensitivity. Cardiorespiratory fitness and increase in visceral fat. 4000 steps per day improve long term health.

### WHO GUIDELINES FOR CHILDREN AND ADULTS

18 – 64 years

**150 minutes of moderate intensity exercises (aerobic) throughout a week or 75 minutes of vigorous exercises.**

Physical literacy improves academic performance, cognitive skills, mental health, psychological wellness, social skills and healthy lifestyle habits. It is a fundamental and valuable human capability that can be described as a disposition acquired by human individuals encompassing the motivation, confidence, physical competence, knowledge and understanding that establishes powerful physical pursuits as an integral part of each person's lifestyle.

### PHYSICAL ACTIVITY PYRAMID



# PRONATOR TERES SYNDROME

## \*What is Pronator Teres Syndrome (PTS)?

-**Pronator Teres Syndrome**, also known as **Pronator Syndrome**. It occurs when the median nerve near the elbow gets compressed between the two sections of the pronator teres muscles in the forearm.

## \*How this Pronator Teres Syndrome is caused?

-The most common cause is entrapment of the median nerve between the two heads of the pronator teres muscle. Other causes are compression of the nerve from the fibrous arch of the flexor, superficial or the thickening of the **Bicipital Aponeurosis**.

## \*What are the Symptoms of Pronator Teres Syndrome?

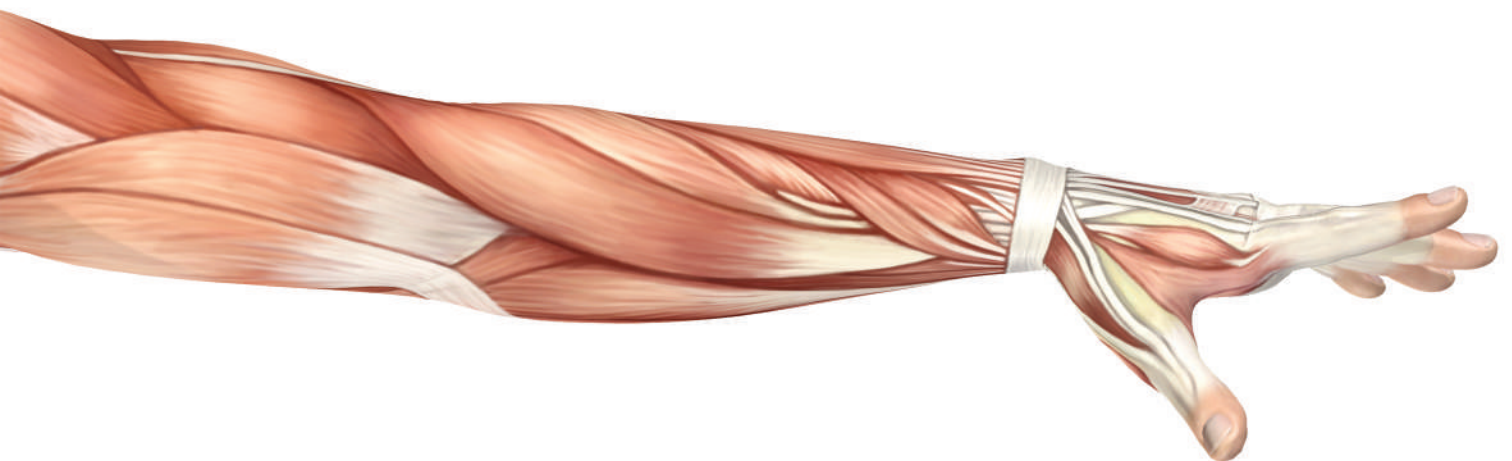
- Aching pain in the forearm.
- Numbness and tingling in the palm, thumb.  
(or)
- Tenderness in muscle.

## \*How is Pronator Teres Syndrome Diagnosed?

-Simple test can help Physicians to determine. If the pain is pronator teres syndrome, carpal tunnel syndrome. This test involves Resisted Pronation.

## \*Which Physiotherapy treatment is used to cure this disease?

- Stretching of the Pronator teres muscle.
- Nerve flossing Techniques for the median nerve.
- Strengthening of the Supination muscles.



# CHONDROPATHIA TUBEROSA

If u have a pain over a small area of the Chest ? Then you think it of Heart attack ? No.. Its not because of Heart attack it because of Chondropathia Tuberosa..Heart attack causes pain in the whole area of the Chest.Now let's we discuss about it.

Chondropathia Tuberosa is a benign inflammation of one or more costal cartilage.It is commonly known as Teitze Syndrome and Costochondral Junction Syndrome.

Teitze syndrome usually affects the third, fourth and fifth costochondral joint and it is supported by an elevated erythrocyte rate and more morning stiffness.

The etiology of Tietze syndrome is unknown but it is often associated with viral respiratory tract infections.

Tietze syndrome can occur in children, infants, and adults. The ratio of men to women is 1:1.

## **CLINICAL PRESENTATION :**

The cartilage connects sternum with costae and clavicle which makes the movement of the thorax possible while breathing. The inflammation of the cartilage of one or more costae causes a red,warm,swelling of the cartilage.

This will be both visible and palpable. There is pain with a varying intensity in the chest wall and this pain aggravated by movements of the torso, deep breathing, coughing and exertion. From inflammation, the pain and the normal movement in joints is disrupted, the movements of the shoulder crepitates and pain may occur.Patients with Tietze syndrome may experience functional limitations. The activity of the trunk and upper limb can be restricted. Daily activities like ironing, brushing hair, lifting something may be difficult.

## **PHYSICAL THERAPY MANAGEMENT :**

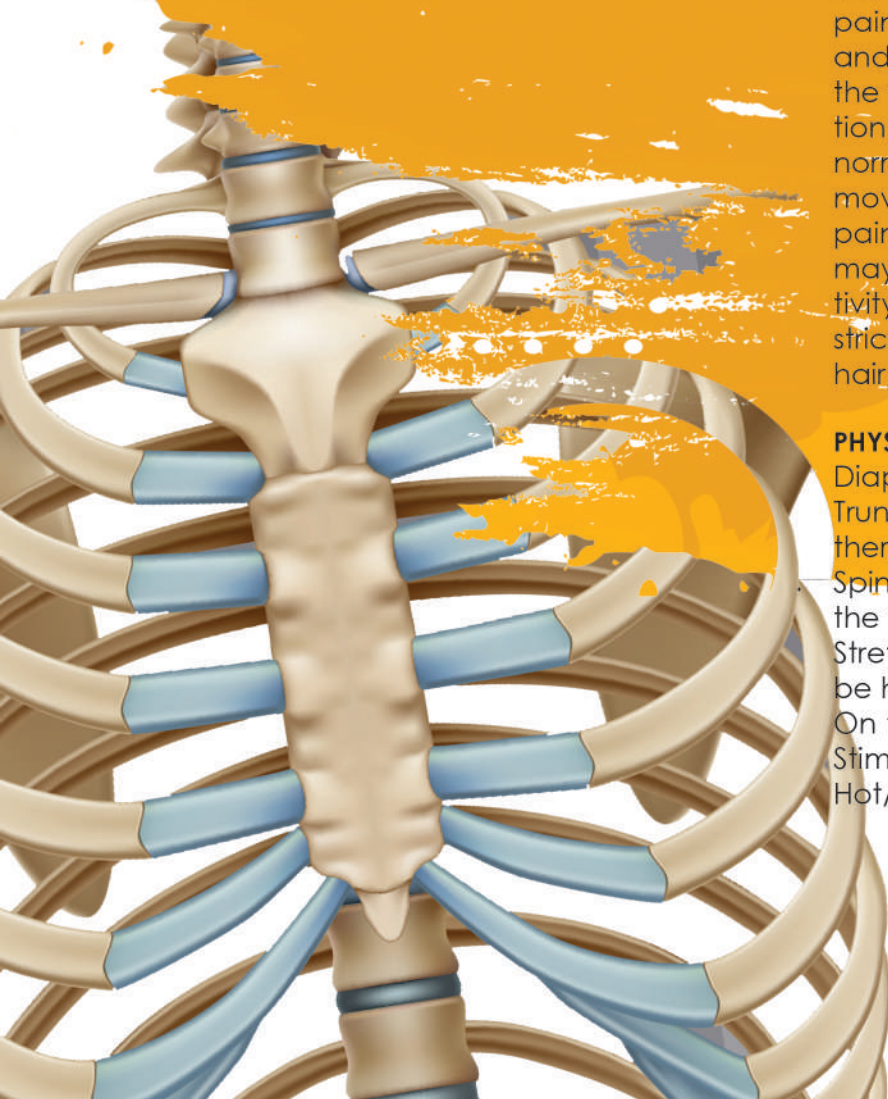
Diaphragm mobilization, Breathing training, Trunk rotation exercises will be given by the therapist.

Spine and ribs are mobilized to avoid rigidity of the thorax.

Stretching of the pectoralis major muscle can be helpful.

On the painful area Transcutaneous Electrical Stimulation can be given.

Hot/cold packs can be used to reduce pain.



# SURFER'S NECK

## SURFER'S NECK- clinically relevant anatomy

• Surfing involves dynamic moves on an unstable surface needing good body strength, coordination and balance. A common problem for surfers is Surfer's neck.

• The muscle, facet joints, foramina of vertebrae, nerves and fascia are some of the structures that may be involved in the pain mechanism. Fortunately these niggles can often be rectified with some good manual therapy techniques, correction of surfing technique and a good rehabilitation program incorporating stretches, strengthening and co-ordination and postural training.

## MECHANISM OF INJURY/PATHOLOGICAL PROCESS

Common causes may be attributed to

- Large amount of time spent in the prone position with neck in extension. Prolonged extension of the cervical facet joints in a closed packed position (whilst paddling) increases the demands on the structures of the upper spine and associated soft tissues.
- Inadequate extension in the thoracic, increasing the demands of extension on the cervical spine.
- Turning, cutting, and twisting movements of the spine and neck predispose the neck to overuse injury.
- Insufficient flexibility and strength of muscles in upper kinetic chain and spine.
- Poor surfing technique e.g. with paddling.
- Poor postural alignment predisposing injury.
- Poor breathing technique i.e. upper chest, neck muscle breathing pattern not diaphragm breathing.

## CLINICAL PRESENTATION

- Neck pain
- Soreness
- Spasm of neck muscles
- Restricted ROM
- Muscular tension
- Excessive cervical extension is seen
- Muscular shortening in back of neck, upper back & lower back

## OUTCOME MEASURES

- Neck Disability Index
- Neck Pain and Disability Scale
- Tragus to Wall Test (if postural changes noted)
- Hi-Low Breathing Assessment

## MANAGEMENT-PT TREATMENT

### 1. MANUAL THERAPY

- Maitland mobilisations
- Massage ball techniques (a ball release exercises on the upper torso can help alleviate the tension in the area around the neck)
- Soft tissue release (Trigger point release)
- Kaltenborn techniques
- Active Release Techniques
- Stretching including PNF (Contract relax and reciprocal inhibition)

### 2. STRETCHES

- Sternocleidomastoid
- Upper and middle trapezius
- Suboccipital extensors
- Cervical spine flexors and extensors (chin tucks, neck flexor stretches)
- Anterior chest muscles and thoracic spine
- Teach how to engage whole upper spine when extending neck not just cervical spine.
- Check that muscles have sufficient flexibility, strength and co-ordination for surfing postures.

### 5. BREATHING PATTERN

- Teach correct diaphragm breathing and control instead of upper chest and neck muscle activation with breathing.
- Upper chest breathing creates excess tension in the cervical muscles.

### 6. POSTURAL EDUCATION

- Check for postural abnormalities e.g. head forward posture, thoracic kyphosis
- If the classic head forward, thoracic kyphosis posture exists surfing will easily cause an injuries/pain to neck.
- Train the client in proper alignment and mobilise thoracic spine and strengthen cervical spine .

# The Exercise Prescription for Depression

## COMPELLING RESEARCHES

A recent study at the Harvard T.H. Chan School of Public Health found that running for 15 minutes a day or walking for an hour reduces the risk of major depression by 26%. The SEEDS study showed that exercise was an effective add-on to antidepressant drugs for mild to moderate depression due to an increased release of  $\beta$ -endorphins following exercise. (Endorphins - Neurotransmitters that are related to a positive mood and an overall enhanced sense of well-being.)

Based on the meta-analytic findings, an exercise prescription of 20 minutes per day, 3 times per week, at moderate intensity is sufficient to significantly reduce symptoms of depression. It is highly alarming that only half of the population currently meets this criteria as per **Centers for Disease Control and Prevention (CDC), 2013.**

In another study, 30 community-dwelling moderately depressed men and women were randomly assigned to an exercise intervention group, a social support group, or a wait-list control group. The exercise intervention consisted of walking 20 to 40 minutes 3 times per week for 6 weeks. The authors reported that the exercise program alleviated overall symptoms of depression and was more effective than the other 2 groups in reducing somatic symptoms of depression.

A study on resistance and aerobic exercise training in women with generalised anxiety disorder (often comorbid with primary mood disorders) found that participants reported improved sleep initiation and continuation after six weeks.

**"Usually within five minutes after moderate exercise you get a mood-enhancement effect." - says Michael Otto, PhD, a professor of psychology at Boston University.**

In nine of the 12 studies reviewed, an increase in BDNF (Brain-Derived Nerve growth factor) was reported in the period following aerobic exercise. These data seem to agree with the premise that exercise contributes to the promotion and maintenance of Neurone functions through a mechanism mediated by neurotrophins.

## NEGLECTED THIS PRESCRIPTION? - START TODAY

"Exercise is something that psychologists have been very slow to attend to," agrees Michael Otto, PhD - "People know that exercise helps physical outcomes. There is much less awareness of mental health outcomes — and much, much less ability to translate this awareness into exercise action."

## Are you one among them?

In a study conducted by WHO it was found that India has a whopping 200 million people suffering from Depression. While the figures for India seem to be alarming, depression is not just a major health problem in India, it is a leading cause for major diseases and now declared as a global health crisis.

## Is there a prescription that has been overlooked?

There are several different ways of intervening Depression. However, Exercise is a behavioural intervention that has shown great promise in alleviating symptoms of depression. Various studies suggest that exercise can improve the outcome for many patients as early as less than 2 weeks.

According to a research conducted, it was found that depressed people are less physically fit, have reduced oxygen capacity and have a decreased or low physical capacity that makes them more susceptible to physical health problems.

Regular exercise can have a tremendously positive impact on depression, anxiety, ADHD, and many more physical and mental illnesses as well. It relieves stress, improves memory, helps you sleep better, and boosts your overall mood. Studies show that exercise can treat mild to moderate depression as

# A DAY WITH TRANSWOMENS JOURNEY

Recently I dropped in” **SAHODHARAN COMMUNITY ORIENTED HEALTH DEVELOPMENT SOCIETY**” AT PUDUCHERRY . which was a group of 1200 transgender population . Transgender whose gender identity is the discomfort of their anatomical sex. Usually transwomen where doing a surgery Orchiectomy , facial feminization vaginoplasty and feminizing agumentation mammoplasty are the surgeries which will changing their anatomical appearance.

Where vaginoplasty is the final stage of their transition from men to women journey. In vaginoplasty surgical construction of neovagina dissection of penile inversion and superficial and deep pelvic floor structure, the neo vaginl space is created.

I had a discussion with them about their lifestyle after vaginoplasty and the difficulties overcome by them, most of them had a query that unable to control the flow of urine , faeces and some had a complaint of absence of urine after vaginoplasty .so I had conducted a gathering with them and asses with a quality of life questionnaire to know the status of their difficulties after vaginoplasty.

These are the complaints which arised after vaginoplasty because of pelvic floor dysfunction. Physical therapy plays a role to reduce their symptoms and improve their quality of life. I conducted a awareness physical therapy exercise program to the transwomen who had a difficulty after gender affirming surgery.

In physical therapy exercise program I provide them a set of excises which includes kegels exercise, pelvic bridging , deep squat , bird dog , plank and the knack manoeuvre. This exercise will helpful for them to overcome from their symptoms by doing this exercise programme.

It was a maginificent experience for me to know about the journey of transwomens life and I ended with a wonderfull quote

“ I believe that transgender people are living out real, authentic lives

Those lives should be celebrated not questioned”

- Gloria steinem



**SAMSHIYA**







# sri venkateshwarraa

CREATING HEALTHIER SOCIETY

Ariyur, Puducherry.



## SRI VENKATESHWARAA MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE

(Recognised by Medical Council of India, New Delhi)

**M.B.B.S. M.D / M.S.**



## SRI VENKATESHWARAA DENTAL COLLEGE

(Recognised by Dental Council of India)

**B.D.S.**



## INDIRANI COLLEGE OF NURSING

(Approved by Indian Nursing Council)

**ANM | DGNM | B.Sc | P.B.B.Sc |**

**M.Sc Paediatric, Medical-Surgical, Psychology, Obstetrics & Gynaecology, Community Medicine**



## SRI VENKATESHWARAA COLLEGE OF PHYSIOTHERAPY

Mob: 98439 86422

**BPT/MPT**



## SRI VENKATESHWARAA COLLEGE OF PARAMEDICAL SCIENCES

Mob: 95855 51160

**B.Sc. MLT**

**Diploma** - Certified Radiological Assistant - Cardiac Care Technology  
- Dialysis Technology



## SHRI VENKATESHWARA COLLEGE OF PHARMACY

(Approved by Pharmacy Council of India)

**D.Pharm | B.Pharm**



## SRI VENKATESHWARAA COLLEGE OF ENGINEERING & TECHNOLOGY

(Approved by AICTE, Affiliated to Pondicherry University)

**B.Tech. (Mechanical Engg | Electrical & Electronics Engg |**

**Electronics & Communication Engg. Computer Science Engg | Biomedical Engg )**

**For Admission enquiry**

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