

PHYSIO

JULY 2018

Vivid

the future of
physiotherapy

Genomic science

Exergaming
training
Wii
Habilitation

APPS FOR LIFE
to support people with dementia

PARAPLEGICS
FROM
MY COUNTENANCE

Physio for
hurler syndrome

VOLUME 3
ISSUE 1

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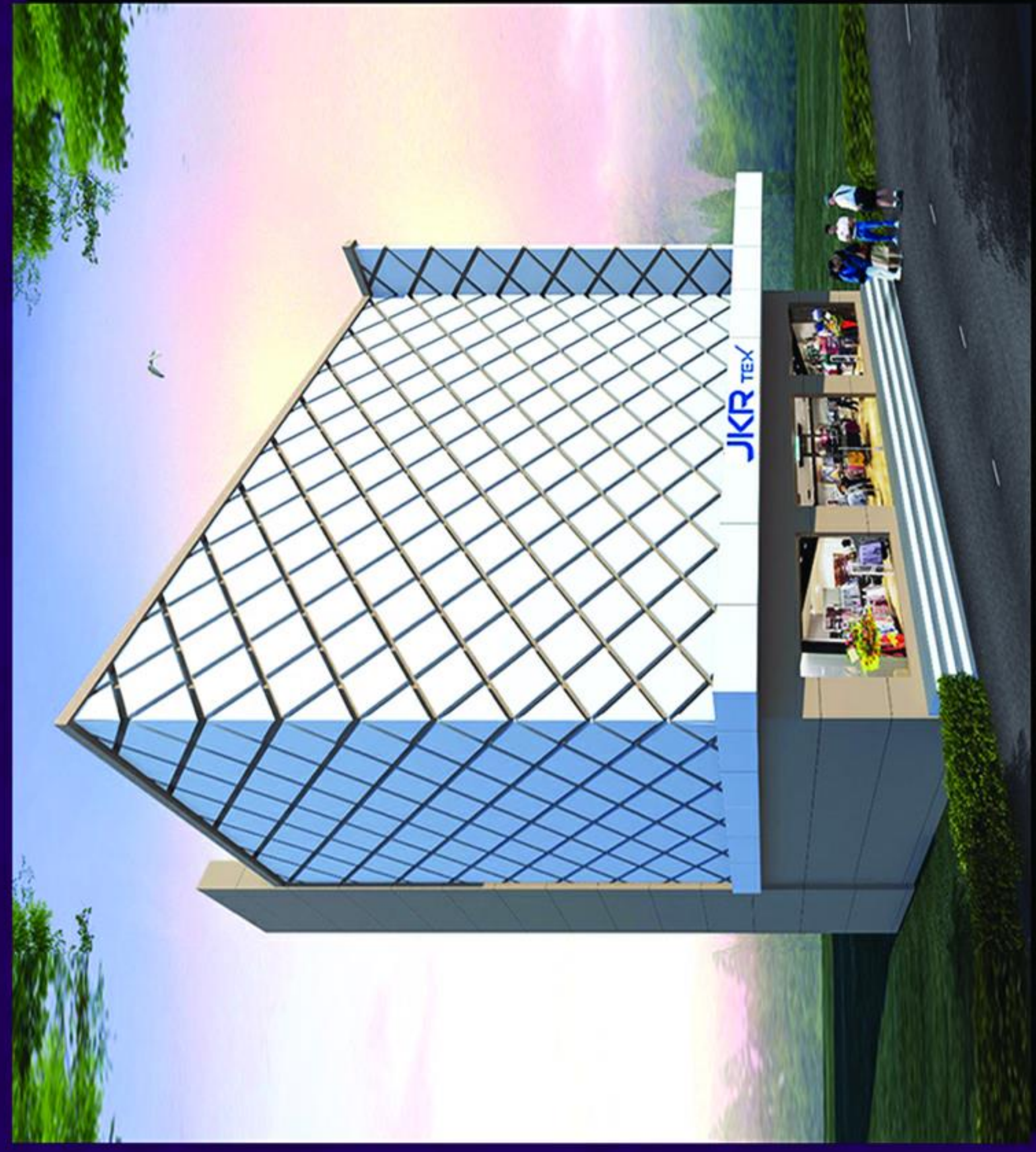
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*Best
Wishes*



JKR TEX

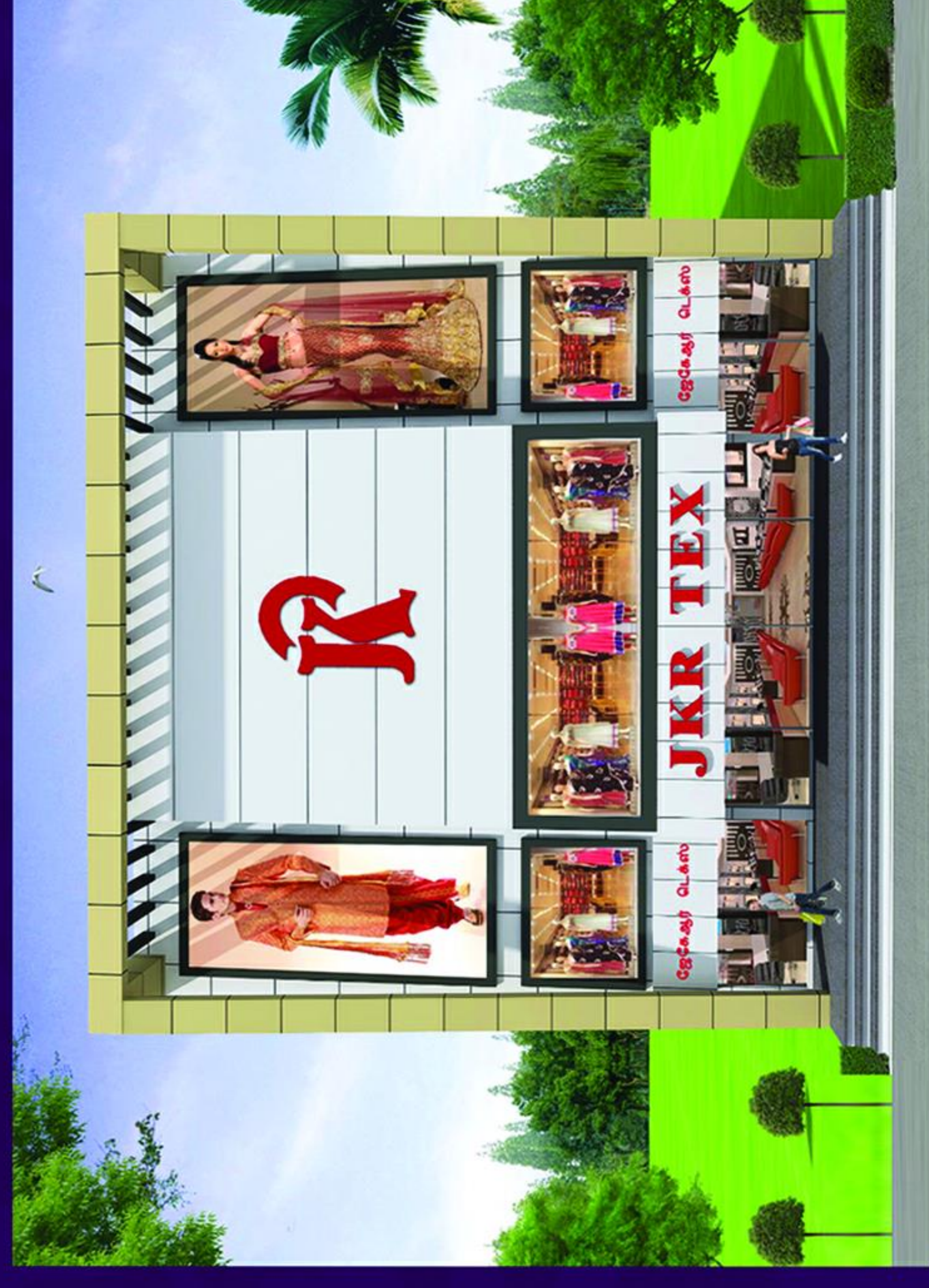
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From Chairman's Desk

I am glad to glean about the 3rd annual release of the vivid magazine 2018. The periodical updation and the circulation of professional stuffs is indeed a great job which could promote the students conceptual knowledge.

This magazine continuously provides an opportunity to all the students of respective discipline, to showcase their talent and explore their creative potential. Alongside academic and curricular inputs, co-curricular and extra-curricular activities further moulds the overall personality of the students.

I congratulate the Principal, College of Physiotherapy for his incessant effort as well as the support given to the faculties. I also congratulate the entire team of SVCOPT for their determined attempt in bringing out the VIVID magazine 2018.

SHRI.B. RAMACHANDHIRAN
Sri Venkateshwaraa Group of Institutions
(SVGI)



From Director's Desk

On Behalf of Sri Venkateshwaraa Group of Institution, I do congratulate all the dynamic faculties and the enthusiastic students of Physiotherapy for their successful release of 3rd Annual Physio VIVID Magazine-2k18.

I especially wish Prof. A Pahinian, Principal, College of Physiotherapy for the firm determination in bringing up the Physio VIVID Magazine periodically.

Nowadays the scope of Physiotherapy are distending as the chances of disabling disease/ disorders are getting increased. Each and every individual realizes the importance of Physiotherapy which improves the quality of life.

In this concern the role and responsibility of Physiotherapists are also expanded. The regular updation and their scientific research activities are seriously needed to be addressed.

I believe that this Physio Vivid fulfills all the essential needs of the budding as well as blooming Physiotherapist in near future.

Once again, I whole heartfully Congratulate the SVCOPTians for their team works as per the signing quotation.....

"If you want to go fast, walk alone ..If you want to go far, walk together"

DR. SUBHASH CHANDRA PARIJA
Sri Venkateshwaraa Group of Institutions
(SVGI)



From Principal's Desk

I am exceedingly glad to release our 3rd annual "Physio Vivid – 2018". I do appreciate the entire vivid team for their ceaseless efforts to bring up this annual Physio magazine every consecutive years.

I must thank our Chairman and the management for all their grant and support given without any hesitance & restrictions. I also congratulate the Editor, Co-editors and all the editorial members for their herculean efforts invested.

Only by the harmonious effort of our students this could transpire. There is a healthy competition prevails among our students in the contribution of qualitative stuffs. I whole heartedly appreciate their interest to publish the articles as well.

I can ensure that this kind of student's participation will definitely improve the overall quality of our vivid in upcoming releases also. Currently students are very keen over the evidence based practice which results in increase in research activities. Just a ignition of knowledge yields lava of professional outcomes.

I also extend my thanks to each and every sponsors for their service minded grants. I once again congratulate and greet all the individuals for the successful release of this physio vivid 2018.

**PROF. A. PAHINIAN
SVCOPT**



From Dean's Desk

I appreciate the efforts made by the faculty and students of Sri Venkateshwaraa College of Physiotherapy to release the Vivid Magazine on their 3rd Graduation day function consistently.

The Physiotherapists are competent health professionals, who provide good health care services to the patients. They are concerned with disease prevention, injury management and rehabilitation. They are also treating chronic illness in joints in order to reduce the pain and to provide more range of movements as well as in sports injuries to get immediate relief.

This Vivid Magazine is used by the students to express their talents both in curricular as well as in extracurricular activities. This Magazine helps the students to get vast knowledge as well as to acquire soft skills within the shortest duration for the preparation of this Magazine and it may be considered as a mind blowing exercise to motivate the students in right pathway.

I congratulate the Principal, faculty members & Students for their untiring efforts for their preparation of this Magazine in a grand manner. So that the students community will be highly benefitted.

**Dr. S. RATNASAMY
SVMCH & RC**



*From
Medical superintendent's
Desk*

I congratulate the Principal, Faculties, Students and Non-Teaching Members of the College of Physiotherapy, Sri Venkateshwaraa College of Paramedical Sciences for creating "VIVID Magazine - 2018".

I am sure that it will reflect the recreation of their thoughts and experience in Academic and Extra-curricular activities of the Faculties and Students of the Physiotherapy College.

All the contents of this Magazine will carry out the message and inspire the other college Faculties and Students in their respective field. This VIVID Magazine-2018 will popularize about their talents, knowledge and experiences of SVCOPTians.

This Magazine is unique by its style and model. It is another feather in their Crown and i wish them for the success in future endeavour.

**Dr. K.MUNIAPPAN
SVMCH & RC**

Editor's Desk

I feel privileged to be the editor of our most prestigious Physio vivid magazine which has been publishing every academic year, since 2016. This is our 3rd annual release of physio vivid– 2018. Firstly, I would like to thank our chairman for being the pillar of support in all our accomplishments.

The mind and thoughts of our SVCOPTians will always springs out with innovations & aspires to be fruitful because of our Principal, who always motivates and continuously shows us a path towards professional victory.

This Physio Vivid 2018 is a sum of result of many dedicated minds. Therefore, I am indeed very thankful to each and every member of my entire team for the job done with extreme passion, especially the Co-editors Mr. K. Anand Babu, Associate Professor and Miss. B. simulia Dhinju, Assistant Professor, Faculty members, Student secretaries and the organizing batch. And to the generosity of our sponsors who continue to believe in our mission, I extend a most heartfelt thanks to them.

What could be so blissful than sharing the knowledge? I hope all the professional expectations of our physio vivid readers will be met out.

Warm Regards

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Assistant Professor

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"Knowledge and experiences are constantly changing in our field, that reflects here"

T.BHARANEEDHARAN, MPT
ASSOCIATE PROFESSOR



"Embodied with splendid articles that render food for your thought"

K.ANAND BABU MPT
ASSOCIATE PROFESSOR



"Nothing is so healing as the realization that we updated in our own province"

G.PREM KUMARI MPT
ASSOCIATE PROFESSOR



To produce a mighty magazine, you must choose the mighty articles - VIVID deserves.

M.PAUL RAJ MPT
ASSISTANT PROFESSOR



"Enlightened thoughts unravelled as words in VIVID"

T.PADMA PRIYA MPT
ASSISTANT PROFESSOR



"Optimism is the faith that leads to achievement"

JALPA S. SHAH MPT
ASSISTANT PROFESSOR



"VIVID is the showcase of all recent picturesque professional informations in relation to the field of physiotherapy"

B.SIMULIA DHINJU
ASSISTANT PROFESSOR



"Failure is not fatal & success is not final; it is courage to continue that counts"

M.MALARVIZHI MPT
ASSISTANT PROFESSOR



"Colourful, faithful, interesting, synchronized effort is VIVID"

K.JEEVANTHANI BPT
TUTOR



"Best of best articles were selected & published in this Magazine VIVID"

B.KANIMOZHI BPT
TUTOR



"Team work never fails = VIVID Magazine, Hence proved"

M.VIJAYARANGAN BPT
TUTOR



"Make someone to learn is more rapture than learning ourself"

R.PRABAKARAN BPT
TUTOR



Accomplishments



Graduation Day: 2012 -2013 Batch



Alumni Meet: 2017



Disability - Inclusion Awareness Programme



Dry Needling Symposium



Research Methodology Symposium



Flair 2017 - Overall Champion



World Physiotherapy Day - Sports & Fitness Camp, Cheyyar



Neuro Rehabilitation Training @ Pain & Stroke Rehab Centre

Accomplishments



Won Second Prize For Paper Presentation @ Jipmer



Won Third Prize For Poster Presentation @ Jipmer



Won Third Prize For Poster Presentation @ Jipmer



Won Second Prize For Poster Presentation @ Salem Conference



Won Third Prize For Poster Presentation @ Salem Conference



Won First Prize For Paper Presentation @ UCA College



Our PG Final year students nominated as a "on field physiotherapist for the foot ball team who participated in INDIAN WOMEN'S LEAGUE 2018



Won First Price for Face Painting @ Saveetha College

COLLEGE TOPPERS



FIRST & SECOND YEAR MPT



2013 - 2014 BATCH



2015 - 2016 BATCH



2016 - 2017 BATCH



2017 - 2018 BATCH



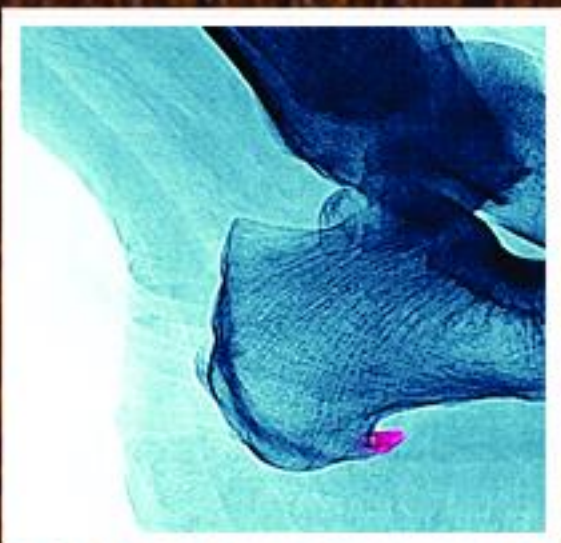
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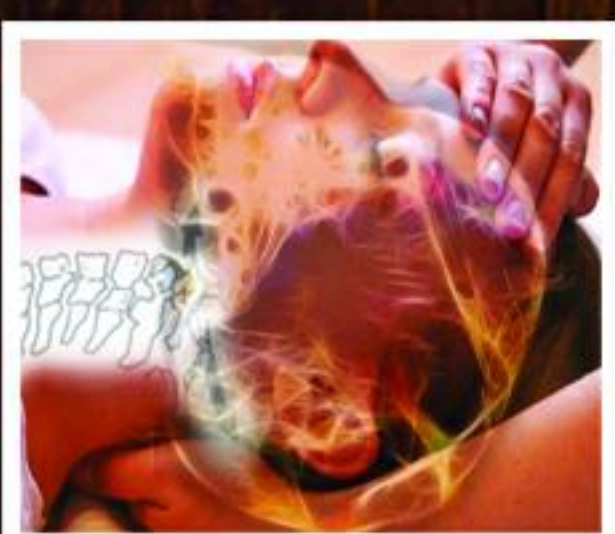
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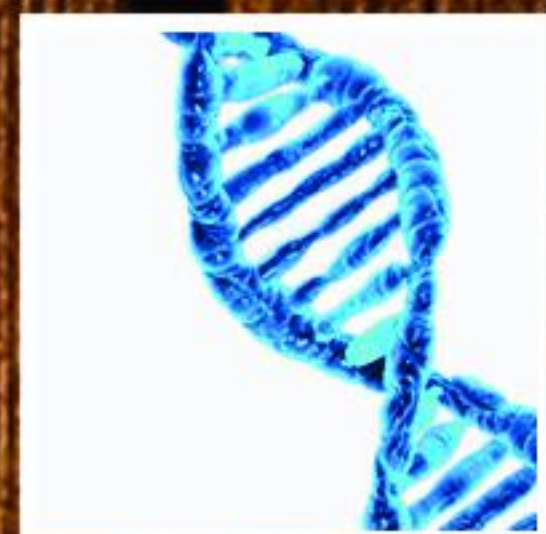
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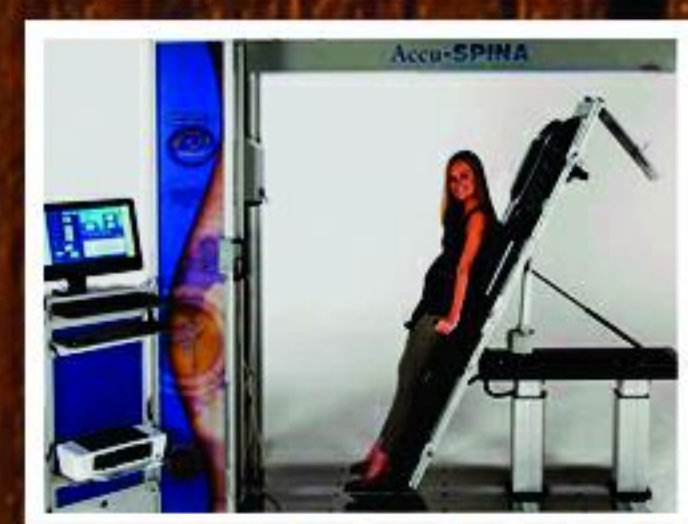
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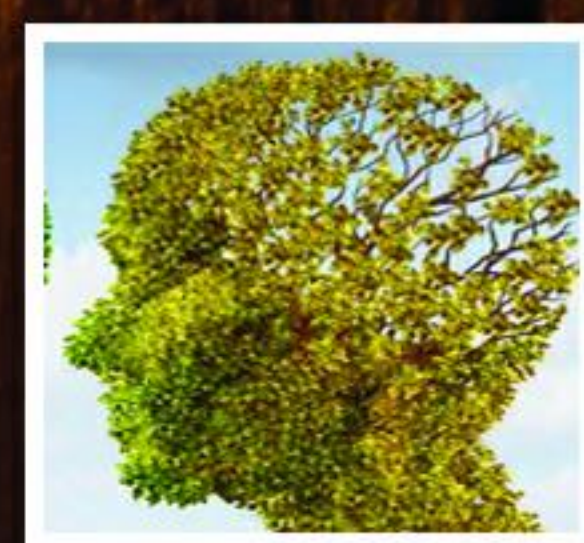
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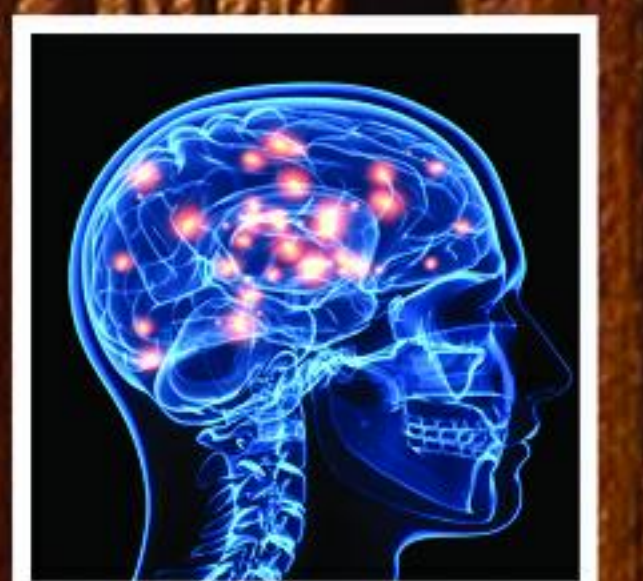
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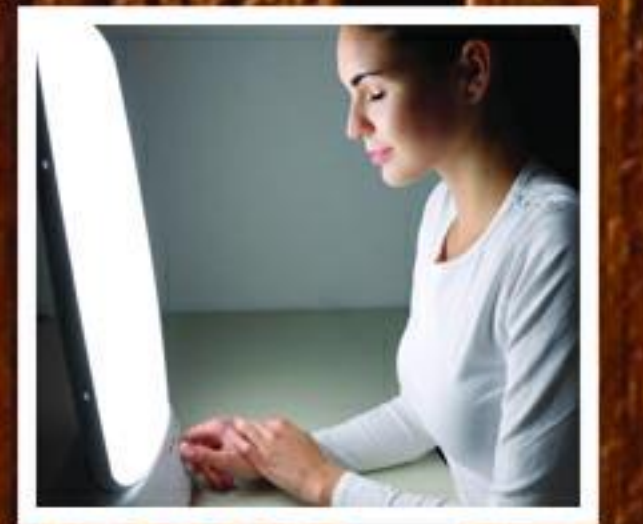
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T. Padmapriya
Assistant Professor, SVC OPT

The equipment was invented by Robert Whalen, a biomechanics researcher at NASA Ames Research Centre in 1990. It encloses a treadmill and the patient's lower body in an airtight container. The technology takes the weight off to rehabilitate the patients recovering from leg and foot injuries.

The patient has to step onto the treadmill, inside a hole in its plastic casing and zipper in so that, from the waist down, they are encased in an airtight plastic bag.

It works on unweighting technology, the moment we step on it, the treadmill measures our weight and the intensity of workout has to be entered in the machine. The machine inflates the plastic bag around the lower body.

How it works:

The precise unweighting technology allows to push our physical therapy rehabilitation and training further than ever before. We can reduce gravity's impact by selecting any weight between 20% and 100% of our body weight by 1% increments. It employs air pressure to adjust the user's body weight on the treadmill.

People benefitted by this technology:

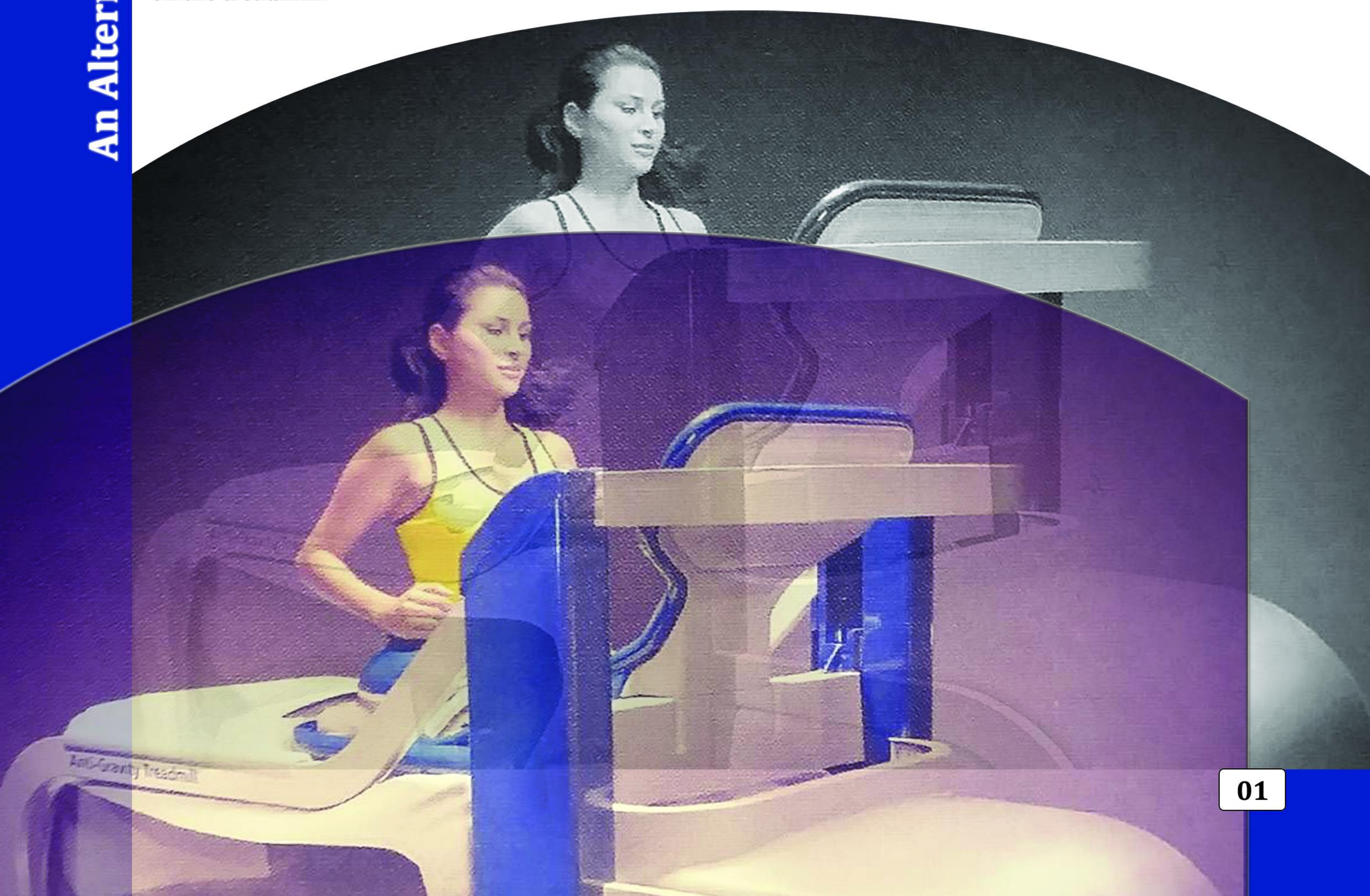
- * Helps a broad spectrum of people including active level athletes, orthopedic and neurologic patients, pediatric, geriatric, obese patients and post-operative patients.
- * Professional athlete training and conditioning is possible with its top speed of 18 mph.

ANTIGRAVITY TREADMILL

Advanced technology:

Apart from these effects when objective data measurements are added to the Anti-Gravity technology. It plays a vital role in recording the weight bearing symmetry, cadence, step length symmetry and stance time symmetry. It serves as an advanced tool for gait analytics by integrating gait and video analytics into therapy to identify gait disorders. It provides with objective data and visual monitoring to optimize recovery after injury or surgery and prevent injuries using data. It also records gait in great speed and this can be showed to patients in slow motion, which serves as a visual feedback.

By using this technology, we can quantify the impact of varying body weight percentage on gait symmetry and cadence. Hope with this recent advancement, we will be able to serve people in a better way.



Three simple tests predict physical function difficulties in patients with OA knee

KNEE OSTEOARTHRITIS (OA) IS THE ELEVENTH HIGHEST CONTRIBUTOR TO GLOBAL DISABILITY AND THE MOST COMMON CAUSE OF FUNCTIONAL LIMITATION IN OLDER ADULTS .PEOPLE WITH KNEE OA OFTEN HAVE LOW LEVELS OF PHYSICAL ACTIVITY. PHYSICAL ACTIVITY IS DEFINED AS ANY ENERGY EXPENDITURE ABOVE A RESTING LEVEL. LOW LEVELS OF PHYSICAL ACTIVITY IS A MAJOR PROBLEM SINCE REGULAR PARTICIPATION IN PHYSICAL ACTIVITY LOWERS THE RISK OF DEVELOPING FUTURE MORBIDITIES, SUCH AS CARDIOVASCULAR DISEASE, DIABETES, AND CANCER. DAILY WALKING IS A MOST COMMON TYPE OF UNSTRUCTURED PHYSICAL ACTIVITY IN OLDER ADULTS AND IS RECOMMENDED FOR PEOPLE WITH KNEE OA.



1. Five times sit to stand test: Participants were instructed to stand from a chair (straight back, flat, level firm seat and seat height of 45cm in front) and return to sitting five times as quickly as possible with arms folded across the chest. Total time (sec) was measured with a digital stopwatch, and started with initial movement to stand on the first repetition and ended after returning to sitting on the fifth repetition. The five times sit to stand was recorded as the average of two trials. Longer time to perform the test was an indication of worse physical function.



2. Walking speed: The 20-meter walk test was used to calculate self-selected walking speed. The subjects were instructed to walk at their usual speed over a marked 20-meter course in an unobstructed and dedicated corridor. Timing with a digital stopwatch began at the initial movement from standing at the start and stopped when they crossed the 20-meter mark. Time to complete the walk (sec) was divided by distance (20 meters) to obtain walking speed in meters/second (meters/sec). The average of two trials was recorded, with slower walking speed indicating worse physical function.



3. 400-meter walk test. 400-meter walk test was administered to quantify the walking endurance. The test was conducted on the same course as the 20-meter walk test. Subjects were instructed to complete 10 laps in a clockwise direction at their usual walking pace. Timing begin from the initial movement of standing until 10 laps were completed. Total time (sec) was recorded with longer time indicating worse physical function. Three tests identified the preliminary thresholds for the performance of clinical tests on physical function that may indicate inadequate physical ability to walk at least 6,000 steps/day, which is an important benchmark for OA knee.

Do you Know?

- ☒ The hand and feet make up more than half the bones in the human body. There are 206 bones in the human body; 106 of these are in the hands and feet.
- ☒ Without your pinky finger you would loss about 50% of your hand strength.

Guillian Barre Syndrome is also known as Landry's paralysis. It is an immune mediated disorder of nervous system of acute or sub-acute onset characterized commonly by generalized progressive weakness of arms and legs, limb paraesthesias and relative or complete areflexia. GBS patients often develop cranial nerve weakness, usually in the form of fascial or pharyngeal weakness. The usual pattern follows the flaccid paralysis typically ascending in nature evolving over a few days to a few weeks. Autonomic dysfunctions are common with usual manifestations as loss of vasomotor control with wide fluctuation in blood pressure, postural hypotension and cardiac arrhythmias. Respiratory failure and oropharyngeal weakness may require ventilator assistance in about one third of hospitalized patients making it a disease of vital importance for early management. The GBS is predominant in male than in female, the reported incidence rates of GBS range from 0.6/4.0/100,000 population. Though etiology of GBS is not clearly known, studies have found about 70% cases to be preceded 1 to 3 weeks before the onset of symptoms by acute infections processes mostly viral.

A CURIOUS CASE OF A GIRL WITH GBS



S.LATHA
MPT I Year



Varshitha is a 8 years old girl who came to our physiotherapy department of Venkateshwara College of Physiotherapy with diagnosed condition of GBS- AMAN type, on December 26, 2017. She came for the treatment with the muscle power of 2/5, she was in wheel chair. Initially she was admitted in Rajiv Gandhi Hospital with complaints of weakness in both lower limb and its gradually progressed to both upper limb, trunk and neck muscle, and she was unable to swallow food. After that patient got treatment in intensive care unit with intravenous IvIg 8gm over 6 hrs for 5 days, her condition has improved which the muscle power of 2/5. In our department, we assessed the clinical manifestations, electro diagnostic test, functional status and treatment instituted. Her GBS disability scale was 4, (i.e.) (confined to bed or chair bound).

Physical therapy intervention:

A progressive programmed causing functional exercise was used. Exercise progressed from passive ROM to gravity eliminated AROM and antigravity AROM to resisted functional exercises. Exercises were performed for the upper extremity, lower extremity and trunk for 5 to 10 repetitions.

Initially we followed the guidelines of exercise prescription of "Bensman" in 1970 for Guillian Barre Syndrome; we used short periods of non-fatiguing exercise, low repetitions and short, frequent bouts of exercises. Later as neuron recovery takes place, we proceeded for strength training activities provided that she receives proper instruction and supervision. We applied ACSM guidelines for resistance training, as 8 to 15 repetitions of an exercise to the point of moderate fatigue with good mechanical form before the resistance is increased. We gradually increased the frequency and time of physical activity to achieve our goal. We prescribed "Tailored-made" exercises, and we took effort to decrease sedentary activities at home. We formulated a protocol for exercise training according to the ability of the child, including more Aerobic Activities,



Balance Training in Swiss Ball, and Mat Activities with less resistance training up to the fatigue level. Within 4-6 weeks we achieved Berg Balance Score of 50/56, and TUG testing of <10 seconds with least restriction assistive device, and gait >500 feet over even and uneven surface with LRAD. After 10 wks patient performed Tandem stance with eyes closed for at least 30 sec. The significance of this case report was the rare opportunity to document the outcome of a PT intervention for GBS in children. At the time of discharge, the patient achieved all goals and was able to return to her prior functional status with minimal weakness. Therefore the use of functionally based interventions during PT management of this patient with GBS in children proved to be beneficial.

FACET JOINT SPRAIN



M.MALARVIZHI
Assistant Professor

What is a facet joint sprain?

Each facet joint comprises of smooth cartilage which lies between the bony joint surfaces that cushioning the impact of one bone on another. Strong connective tissue also wraps around the bony ends providing support to the joint. During certain movements of the spine, stretching or compressive forces are placed on the facet joint. Injury to the facet joint may occur due to the excessive forces and load. This may involve damage to the cartilage or tearing to the connective tissue surrounding the joint. This condition is known as a facet joint sprain.

How does it occurs?

Facet joint sprains typically occur during excessive bending (i.e. forwards, backwards or sideways), lifting or twisting movements. It may also occur due to traumatic or repetitive or prolonged forces.

What does the condition feels like?

Patients with a facet joint sprain may experience a sudden onset of back pain during the causative activity. However, it is also common for patients with pain and stiffness after provocative activity, particularly in the next morning. Symptoms are typically felt on one side of the spine and muscle spasm may be experienced around the affected joint. Occasionally pain may be referred into the buttock or lower limb on the affected side. Symptoms are generally exacerbated with activities that involve twisting, lifting, arching backwards, bending forwards or sideways or sitting for prolonged periods of time.

Contributing factors

There are several factors that may contribute to the development of a facet joint sprain and to be assessed and corrected with direction of a physiotherapist. It may includes:

- poor posture
- lumbar spine stiffness
- sedentary lifestyle
- poor core stability
- muscle weakness or tightness
- muscle imbalances
- inappropriate lifting technique
- being overweight
- biomechanical abnormalities
- prolonged sitting, bending or lifting

Exercises for a facet joint sprain

Transversus Abdominus Retraining

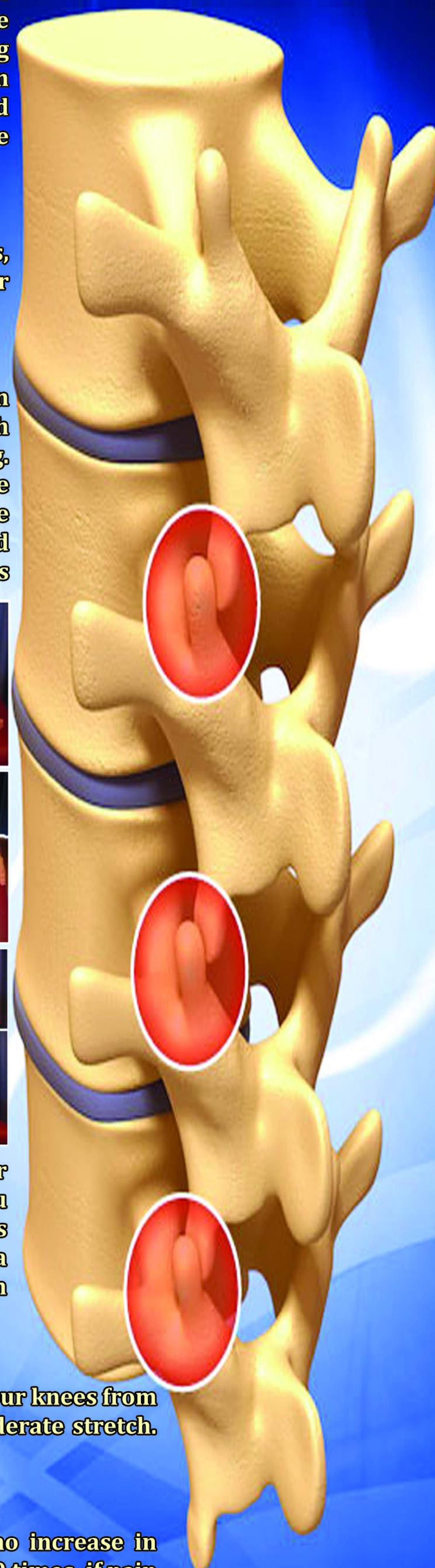
Slowly pull your belly button away from your belt line and breath normally. Your rib cage should remain relaxed and should not elevate during this process. You should feel the muscle contraction if you press deeply 2cm from the bony process at the front of your pelvis (figure 1). Practice holding this muscle at one third of a maximal contraction for as long as possible during everyday activity (e.g. when walking etc.). Repeat it three times daily.

Rotation in Lying

Begin this exercise lying on your back as demonstrated (figure 2). Slowly take your knees from side to side as far as you can go without pain and it feels not more than moderate stretch. Repeat it 10 times if there is no increase in symptoms.

Elbow Prop

Begin lying on your front (figure 3). Slowly move your elbows if there is no increase in symptoms. Hold this position for 2 seconds and return to flat position. Repeat 10 times if pain free.



ROCKER BOTTOM SHOES FOR CHRONIC LOW BACK PAIN



G. PREMKUMARI
ASSISTANT PROFESSOR



Low back pain (LBP) is a very common health problem. It is also a very common complaint among hospital workers and healthcare professionals. The annual prevalence has been reported between 40 and 50% among hospital employees that too observed in health professionals who suffer from back pain have 30% higher rate of absenteeism from work compared to the rest of the workforce resulting in an important societal burden. Exercise training to strengthen spine muscles is frequently prescribed for LBP and is widely recommended.

A new treatment to emphasize the effect of shoes to reduce LBP that is rocker bottom shoes. It has a thicker sole than normal with rounded bottom to increase instability in antero-posterior direction which improves posture and balance, and can be used in daily life activities. It delivers greater excursion, center of pressure and an increased muscle activity of ankle muscles during standing.

During walking, it increases dorsiflexion angle at initial contact, an increased spine movement, shift in pressure towards the front of the foot, an increased muscle activity of ankle muscles and low back muscles. Therefore, this unstable shoes modify biomechanical gait and posture parameters at the lower limb and spine.

Patients with chronic low back pain are usually advised to perform exercises to strengthen the muscles in their backs, which improves stability of the spine in the lower back area, although it is always hard to comply with this type of exercises.

The use of unstable shoes for several hours without any other specific exercises may contribute to the muscular strengthening of the back, improves the degree of curvature of the spine in the lumbar area and helps to reduce chronic pain.

Researchers found that after a few session of intervention, more degree of activation of the back muscles that stabilize the lumbar area, specifically, the rectus abdominis, external oblique and internal oblique of the abdomen, as well as the erector spinae.

BENEFITS OF ROCKER BOTTOM SHOES

Most RBS shoes are uniquely designed for walking in comfort. They have the ability to straighten your back and legs, and help improve your posture and gait when walking. You'll experience a reduction in back pain, so much that walking becomes effortless.

As you continue to wear these shoes, you'll notice your stride shortens and becomes quicker. You will experience a much natural walk with your back straight and stomach pulled in.

Tone and shape the body.

Promote effortless walking.

Ease stress on knee and hip joints.

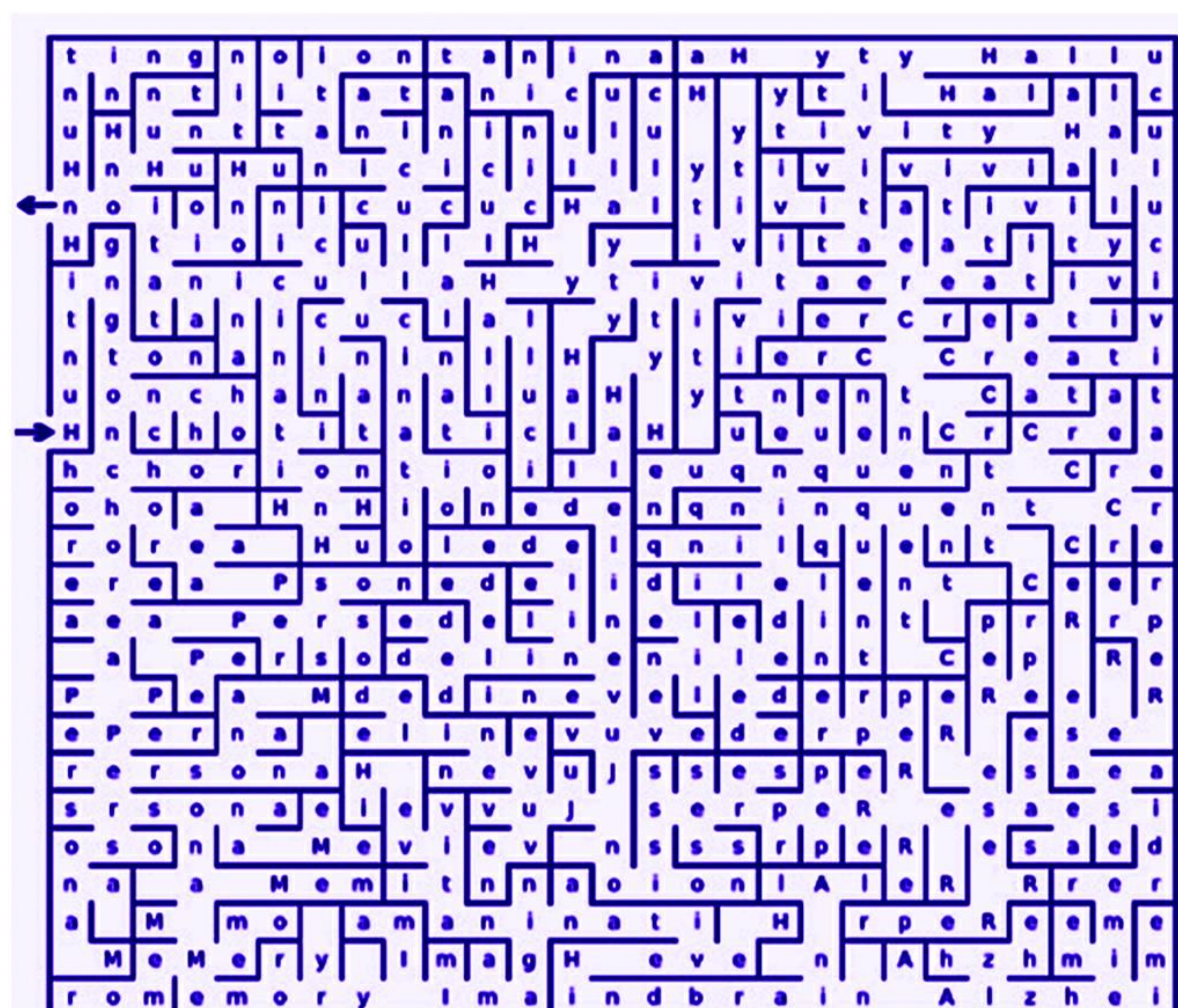
Alleviate back, hip, leg, and foot pain.

Minimal seams and overlays help prevent blisters.

Gentle rocker helps improve your balance, posture, and gait.

Pivot axis promotes an active rolling movement with every step.

SOLVE THE MAZE PUZZLE



FILL IN THE BLANKS USING MAZE PUZZLE:

- 1) Dementia is seen in all except.....
- 2) The word "personality" is derived from the word is.....
- 3) The rate of habituation is an indication of.....
- 4) Language of words is not necessary for what kind of thinking.....
- 5) The part of the brain that's develops first is the.....
- 6) Subcortical dementia seen in all except.....
- 7) Acting childishly is an example for.....
- 8) A 14 year old boy who runs away from school habitually without proper permission can be named as
- 9) The thinking process evolving in producing idea or concept that is new original and useful is termed as
- 10) False perception without any external stimulus



K. BALAJI
BPT II year

For Answer
See Page No:36



I. NAZRIN
BPT II year

Leg Dominance and Its Clinical Significance

- A Guide to Physical Therapist.



R.PRABAKARAN
Tutor, SVC OPT

Back Ground:

In lower limb injury rehabilitation especially in the field of sports the rehabilitating therapist thrives for leg symmetry in terms of strength and joint position sense. But not always every person exhibits symmetry in strength and limb control and there tends to be an element of asymmetry based on the leg preference. This asymmetry is purely based on the functional activity and preferred sports activity.

This paper discusses the possibility of leg dominance and its significance in clinical course of exercise selection, Prediction of injury and recovery process in return to sports.

Definition:

Leg dominance may be defined as the choice of the individual in carrying out his/her routine and sports activities and the preferred leg shows increase in strength, balance and control.

Hand dominance: Every individual has a hand dominance based on his/her own preference and this is controlled by the cortical representation on the opposite side. The cortical representation correlates with speech and language center along with the dominant hand.

Leg dominance in relation to hand: It's not clear whether the hand and leg dominance is presented on the same side (Symmetrical) or opposite (Asymmetrical) side. The crossed handedness and footedness were found to be prevalent out more studies are required to confirm this claim. Eventhough motor asymmetry exists in humans the symmetrical or asymmetrical footedness depends purely on preference and purposes.

Clinical significance:

Prediction of clinical course:

Based on the leg and hand dominance one could predict the clinical course and presentation of the disease. The center for speech and language is represented in the dominant cortex and predominantly it's opposite to that of the dominant handedness. The impact of disease and its manifestation can be predicted with the identification of handedness and footedness. It has been proved that the representation is variable based on the stimulus applied and the brain plasticity. In other words if the incidence is on the dominant side the chances of good prognosis is high when compared to the non-dominant side.

Incidence of injury:

Leg dominance may be a predictor for incidence of injury in sports and functional performance. Even though there are no strict consensus among leg dominance and injury few researches supports this claim and in particular among female population. In soccer it has a positive correlation and reported with a high probability among females. Also leg dominance has a role to play on static and dynamic postural control on ACL deficit individuals.

Recovery:

Road to recovery always goes with preference and hence leg dominance has a strong correlation. It has been observed that leg non dominance has a positive influence on the micro morphological level in response to the applied load. It has been found to have a differences in motor control between preferred and non-preferred leg kicks exist which goes with leg dominance. This provides the therapist amodusoperandi for designing the type of exercise approach in a clinical practice.

Conclusion:

It may be concluded that determining leg dominance can give the therapist an insight about the clinical course, Incidence of injury and prognosis. Hence it may be an of importance in clinical practice in sports injury and its rehabilitation

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APPS FOR LIFE

TO SUPPORT PEOPLE WITH DEMENTIA

Murthi Arjun
BPT Intern



By using Ipad to improve visual, tactile, memory, learning, orientation in people with dementia



My Life Story

This app allows people with Alzheimer's Disease and dementia to record their life stories and memories. This can be used for reminiscing, getting to know the person.

INSTALL



My Reef 3D Aquarium

This app is great as users can interact with the fish and enjoy life on a beautiful reef. In this app 14 types of vibrant tropical fish, you can individually select the inhabitants of your aquarium. This app has a very realistic appearance and it's very gentle and easy to use, making it ideal for individuals with advanced dementia.

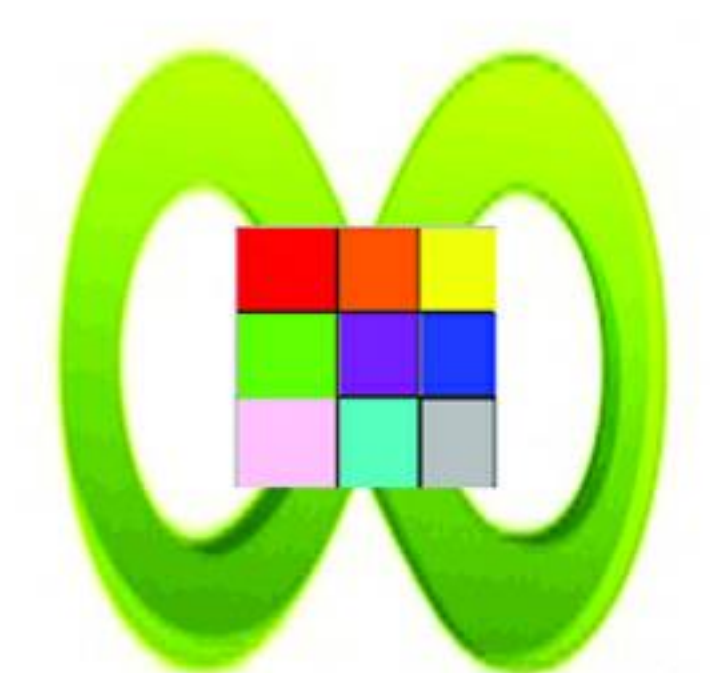
INSTALL



Memory box

This app that aims to serve as memory aid and conversation inspiration. In this app you will find written, visual and musical conversation from the 20th century history.

INSTALL



Dementia player 2

This app will have 9 colour boxes with flashing lights. It allows them to press one of 9 flashing squares and play different songs in mp3 format. The music stops and encourages the user to press another button. So, person gain confidence that they are in control of something.

INSTALL



Flow Free

Flow Free is a simple puzzle game. The idea is to connect the matching colored circles to each other with a "pipe" by tracing a path from one to the other, but watch out, pipes will break if they cross or overlap! It's a fun, colorful game that offers challenge but can be done successfully.

INSTALL



Spaced Retrieval Therapy

Spaced-retrieval training (SRT) is a technique to help people recall personally relevant information that has been previously presented to them. It uses an interval between recall attempts that increases with correct responses and decreases with incorrect ones. This method of recalling targets over increasingly long periods of time has been proven to result in learning in people with mild to moderate dementia.

INSTALL



MindMate

The MindMate App is not your ordinary Alzheimer's or Dementia App. It is like a friend and guardian angel always ready to help and always happy to entertain. It has a games section focusing on attention, memory, speed and problem solving. It can help medical staff and care givers know more about the person living with dementia and give reminders to brush your teeth and exercise and nutritional advice. And it's free.

INSTALL

Prokin System

Enabling Advanced Recovery

Prokin is an advanced technology that combines classic tilting platform connected to a monitor and speaker to create a visual and audio feedback in response to minimal movements of the platform on all plans; analysis and integration of on-screen tracks described by the patient is realized by special software in order to generate targeted rehabilitation paths where the proprioceptive impairment is clearer. The same system also includes the possibility to perform a proprioceptive multiaxial assessment.

When the patient is on tilting platform, he has to direct his concentration on the monitor in which the tracks that are targeted, the patient have to draw lines on the screen by moving his foots as much as possible and it must be superimposed with the fixed line of the system. The movement of the platform is faithfully reproduced on the screen so that the patient can see and correct it. The system produces beep with intensity and tone proportional to the deviation of the track drawn by the patient from the reference path.

The control system of the balance board, consisting essentially of a data acquiring board able to electronically translate all the minimum angular displacements made by the board and converts each movement into electrical signals which are then processed in the personal computer and displayed on screen.

The result is very much useful for both the patient and the therapist. The patient may have a continuous visual feedback that allows him to establish a comparison between what "feels" and what really produces.

The objective evaluation allows the therapist to understand the gradual recovery of the patient. The system is able to store the traces obtained from the patient and also automatically store in a personal folder. By this way, we can obtain a subsequent comparison between the paths.

TYPES OF PROKIN SYSTEM:

1. MONOPEDAL PROPRIOCEPTIVE (THE PROKIN TYPE M LINE):

Monopedal proprioceptive systems are often used for peripheral motor control and load control. Due to restricted size, the surface provides swif movements. It is the only motor skilled proprioceptive training carried out in monopedal stance mode.

2. BIPEDAL PROPRIOCEPTIVE (THE PRO-KIN TYPE B LINE)

Dynamic bipedal stance systems are used for a global type of proprioceptive control (postural destabilisation). Proprioceptive control in static position may altered in dynamic situations. The primary function of a proprioceptive bipedal system is to understand and quantify how the patient globally manages instability.

The importance of the mutual interaction by three systems is now consolidated: i.e. peripheral (mechanoreceptors), intermediate (afferent vestibular) and central system (afferent visual).

3. STABILOMETRIC (THE STABILITY LINE)

Static stabilometric systems are aimed to assess the patient's postural control in static mode (positioning and oscillation of the centre of pressure).



The new advanced porkin system may be suitable to rehabilitate the patients with orthopaedic, neurological, geriatric problems and other sports related problems. It provides evidence based guidelines to get back the patients to the community confidently.



D. Dhanalakshmi
MPT Ilyear, SVCOPT

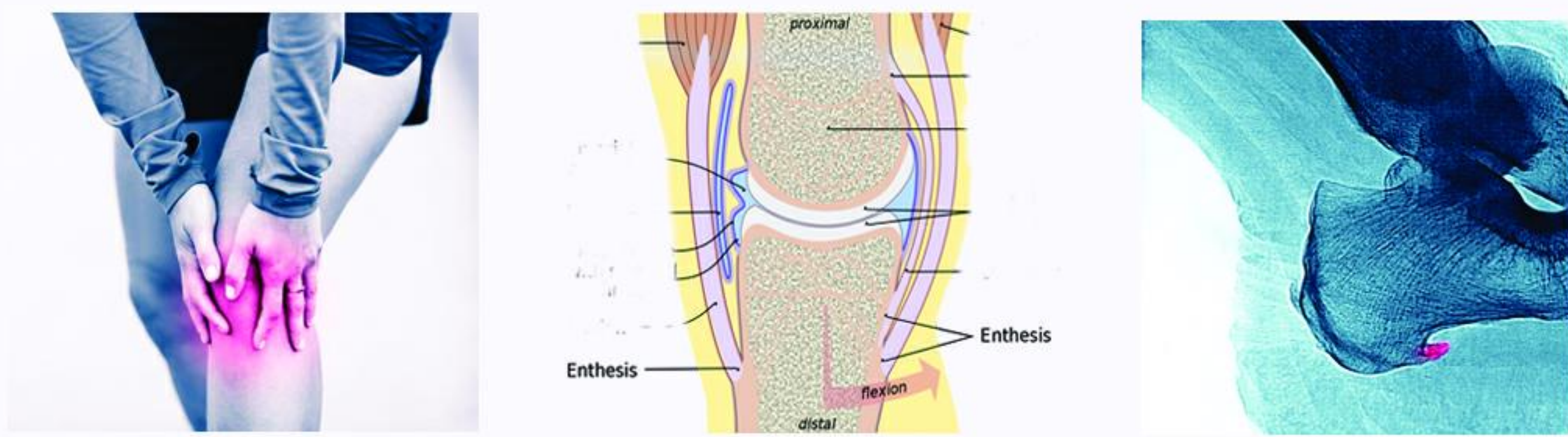
ENTHESOPATHY



S.RAM KUMAR
MPT I Year

Enthesopathy is a disorder in the enthesis. The enthesis is the point where ligaments, tendons and muscle attach themselves to bone and it is the common cause for pain. The most common enthesopathies are tennis elbow and plantar fasciitis. Sometimes enthesopathies can be a part of more widespread inflammatory arthritis such as ankylosing spondylitis, psoriatic arthritis and they can also occur after surgery.

The common causes of enthesopathy includes repetitive movements, overuse, and trauma (Either a fall/blow or micro injury to an affected area). Auto-immune diseases such as rheumatoid arthritis, other inflammatory conditions and genetic predisposition can make the individuals more susceptible to certain injuries. Enthesopathy can develop at any joint or area where tendon or ligaments attach and may cause pain near the joints involved. The common sites involved are heel, knee, hip, finger, toe, elbow and backbone for the enthesopathy to develop.



The major symptoms are pain, swelling, joint stiffness, difficulty in moving the joint & warmth over the affected joint. Often enthesopathy prevents with the clinical manifestations like other disorders such as inflammatory arthritis of the spine or an autoimmune condition. Therefore, it is easy to diagnose enthesopathy in people with such conditions having the

symptom of joint pain.

Enthesopathy can be diagnosed based on symptoms and an examination alone. When symptoms are unclear other investigations such as an ultrasound, x-ray or MRI scan can be helpful. People with enthesopathy may get better with medications of various arthritis and other treatment such as non steroid anti-inflammatory drugs.

PT Treatment:

Physical therapy can reduce pain and stiffness of the joints. Most physical therapy focuses on strengthening and relaxing tense muscles, along with improving flexibility near the enthesis. Performing these exercises on affected side as well as the unaffected side can prevent muscle imbalances, postural variations and worsening of pain. People are adviced to avoid the high intensity exercises which can lead to further damage of the affected joints. Individuals who developed enthesopathy may benefit from nonweight bearing exercises, such as biking, swimming and rowing.

A -Abdominal reflex

B -Babinski's reflex

C -Corneal reflex

D -Deep tendon reflex

E -Extrusion reflex

F -Finger reflex

G -Glabellar reflex

H -Hearing-Breuer reflex

I -Ipsilateral reflex

J -Jaw jerk reflex

K -Knee jerk reflex

L -Lazarus reflex

M -Myotatic reflex

N -Neonatal reflex

O -Oculocardia reflex

P -Psuedo bulbar reflex

Q -Quadriceps reflex

R -Retro bulbaris reflex

S -Symmetric tonic reflex

T -Tonic reflex

U -Uvula reflex

V -Vestibular ocular reflex

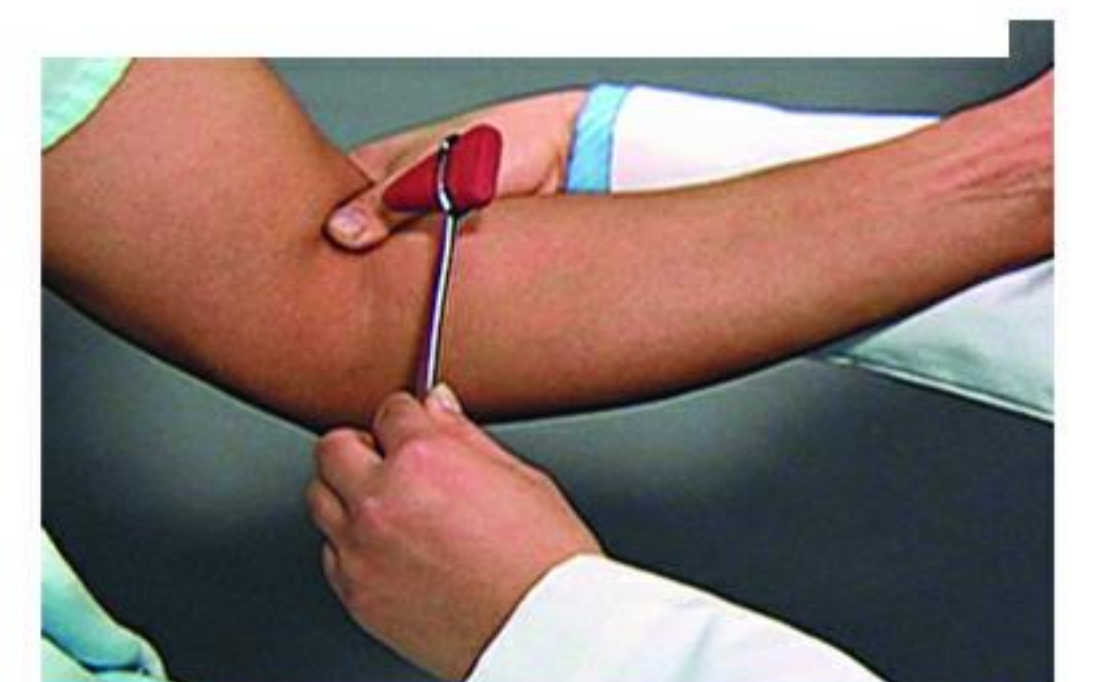
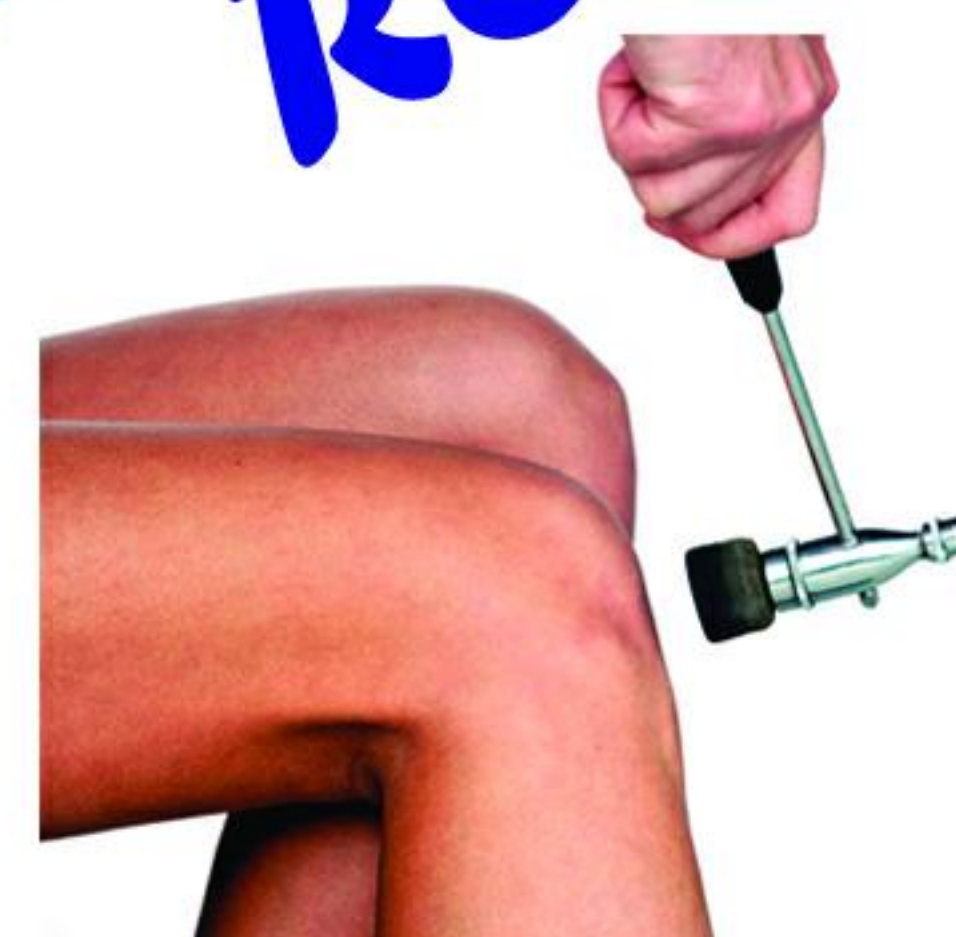
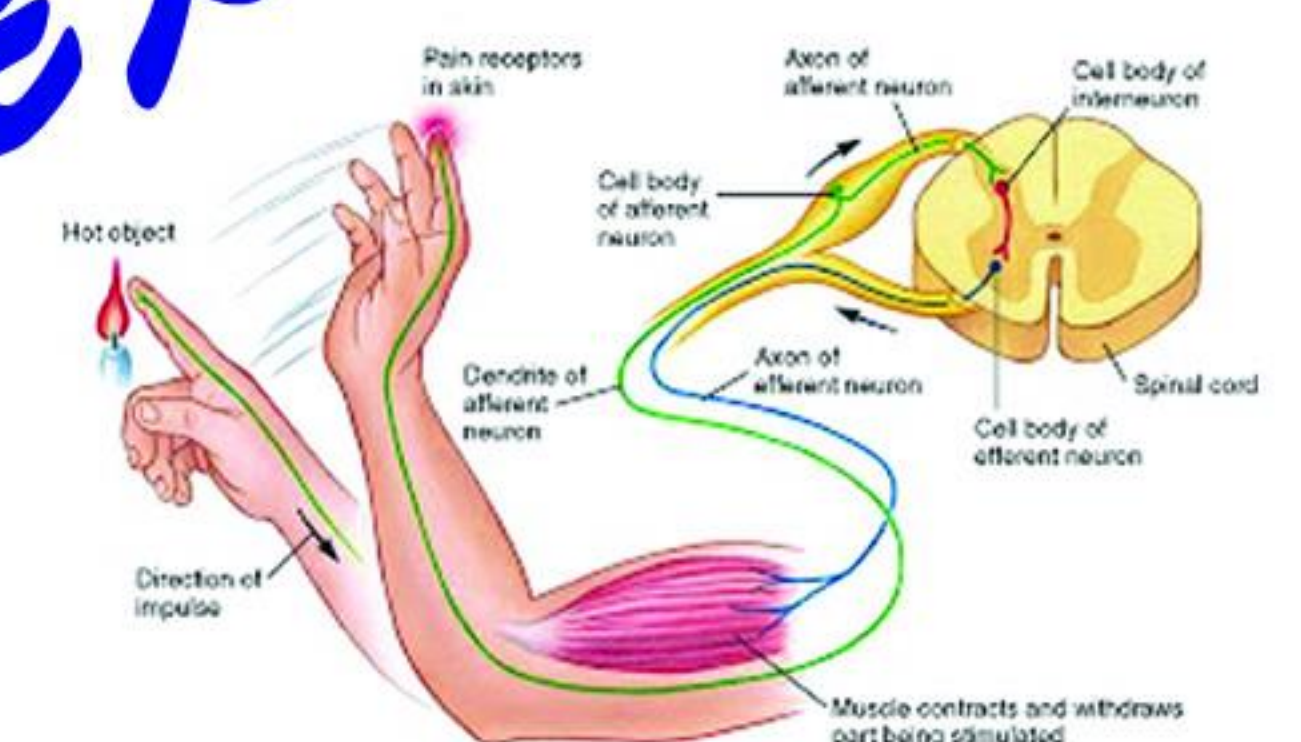
W -Withdrawal reflex

X -Xth cranial nerve (Gag reflex)

Y -Yawn reflex

Z -Zone reflex

A TO Z REFLEXES



BOSS CHANDAR
BPT Final Year

Genomic Science

The Future of Physiotherapy

S.Deepika Shristhudhi P

SVCOPT Alumni



INTRODUCTION:

The genomic medicine in association with physical therapy, is evolving rapidly with increasing amounts of information being gathered and shared between researchers at faster rates than before. The future of medicine, with the sequencing of human genome, appears to provide personalized approaches to care, based upon an understanding of the patient's genetic profile and responses, which are now a target of many clinical and research streams

ROLE OF GENETICS IN PHYSIO:

It has been estimated that there is approximately 99.9% similarity among human DNA sequence, indicating that we are remarkably similar in our genetic makeup. The 0.1% of our DNA that differs among individuals contains genetic variants that influence risk of diseases. Many conditions and impairments encountered by physical therapists have genetic underpinnings including diseases such as stroke, arthritis, diabetes, heart diseases and cancer to name a few.

Studies have indicated that genetic factors influencing many diseases commonly encountered by physical therapists. Genes appear to influence not only risk for diseases, but also progression, outcomes and response to rehabilitation intervention. Eg: the Trp2 allele in the collagen IX alpha chain gene (COL 9A2) has been associated with a 4- fold increase in the risk of developing annular tears at 30 - 39 years old, a 2.4 fold increase in the risk of developing degenerative disc disease and end plate herniation at 40 - 49 years. There is an evidence that response to rehabilitation after brain injury is poorer in individuals with the APOE e4 variant compared to those with out APOE e4.

Heritability refers to the proportion of total phenotype variance attributable to genetic factors. Heritability estimates range from 0% (no influence of genes) to 100% (total genetic influence). Family and twin studies shows that many impairments and conditions encountered in clinical practice are influenced by genes. These include postural sway (35%), lumbar range of motion (flexion - 64%), trunk flexibility (sit and reach -64%), and grip strength (48%), fast gait speed over 10 metres (16%) and 6 minute walk test (20%).

These discoveries yield innovative medical interventions and influencing primary prevention, all of which have profound implications for the practice of physical therapy now and in the future. These advances will provide the physical therapists with greater understanding of the risk and the basic physiological process underlying chronic disease and the variability of our clients responses to intervention.

CONCLUSION:

Thus, integration of physical therapy with genomic medicine will help in increasing collaboration and take research from the bench to bedside with increasing effectiveness. If genomic medicine can become integrated successfully in physiotherapy curriculum in the near future, it will contribute to the development of this exciting field of medicine. In partnership with the medical disciplines, physiotherapy can then redefine itself for the new millennia of medicine....

Wii Habilitation

Exergaming Training

Who says rehabilitation has to be easy?

Yes, I believe that therapy should be fun, innovative and personalized to the individual. One of the creative interventions is utilizing the Wii in ways that Nintendo never dreamed. We have over 500 different games, so there is something for everyone to work on balance, coordination, foot, ankle, knee, hip, core, shoulder, elbow, hand and wrist rehabilitation with life size video and surround sound.

As a physical therapist, it's so illogical to me the video games are often regarded as a leading cause of sedentary lifestyles among kids, which can be used as a beneficial tool in physical and occupational rehabilitation.



Many studies have shown evidence that it takes 3,000 to 5,000 repetitions of an exercise to develop "muscle memory". Traditional exercises typically involve performing 3 sets of 10-20 reps, at that rate it would take a person anywhere from 50 to 167 sessions to master an activity. Repeating the same exercise over and over can be tedious, but with the Wii, we can select many different activities to develop muscle memory in a specific way to keep the patient engaged and entertained.

The Wii is directed by physical therapists to work with an individual patient on proper technique and select specific exercises for their condition to improve their functional limitations.

Physical therapists are increasingly bringing the Wii into the rehabilitation setting. The incorporation of gross limb and body movements into a game setting seems to keep patients much more engaged. We modify activities for every level of function from the patient who uses a wheelchair for mobility to the high level athlete incorporating dynamic balance surfaces, therapy balls and assistive devices.

Why Wii?

"Using the game console's unique, motion-sensitive controller, Wii games require body movements similar to traditional therapy exercises. But patients become so engrossed mentally they're almost oblivious to the rigor," explains James Osborn, who oversees rehabilitation services at Herrin Hospital in Southern Illinois.

Popular therapy games include tennis and bowling as well as games like 'Wii Fit' which directly focus on actual balance and strength training. Not only these games can be played individually but also be played by multiple players at the same time, which gains engagement even more.

The Wii is being used in many different rehabilitation settings such as basic health maintenance in the elderly, youth physical therapy, stroke rehabilitation, post-surgical rehabilitation and brain injury rehabilitation. It also aid in stress reduction as well as offering benefits for the treatment of diabetes, asthma and even heart disease. An early case study in PT Journal found that the rehabilitation program of a cerebral palsy when augmented with the Wii resulted in "positive outcomes at the impairment and functional levels"

How Wii Works?

The Wii system is based on motion detection. It engages a spatially sensitive wireless controller, which uses accelerometers and an infrared sensor bar to recognize and interpret gestures. The system differs from other types of games in that it provides auditory, tactile and visual feedback.

The Wii system's game format enhances the therapeutic process. It creates a sense of inner competitiveness, sort of like playing a game of solitaire. You know that you're playing against an imaginary figure on the screen, but you will still try to beat your opponent. Refocusing your attention away from the tediousness of the task helps you to concentrate on and even enjoy the movement patterns.



D. Vigneshwari
SVC OPT Alumni

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Dance may look effortless, but it requires a lot of strength, flexibility, stamina. The range of body movements, repetition & speed of movements can put you at risk of an injury. Whether you are a dancer or a dancer teacher you should be aware of the most common dance injuries and to know how to avoid and prevent them.

WHAT CAUSES INJURY?

- poor core stability
- muscle imbalance
- inflexibility
- lack of muscle strength
- lack of endurance
- misalignment
- training errors

FOUR SIGNS OF INJURY?

- Discomfort disappears during warm-up.
- Discomfort may disappears during warm-up but reappears at the end of an activity.
- Discomfort that gets worse during the activity.
- Pain or discomfort all the time.

HOW DO I KNOW IF PAIN IS FROM AN INJURY?

In most cases, the pain you experience after dancing is muscle soreness that usually subsides within 24 to 48 hours. However, if you experience the following type of pain, you may have suffered an injury.

- Pain that wakes you up at night.
- Pain that is present at the start of an activity
- Pain that increase with an activity.
- Pain that makes you shift your weight or compensate your movements.

WHAT ARE GOOD CROSS TRAINING EXERCISE FOR DANCERS?

- Core & hip strengthening exercise like pilates and core stability exercise are great for dancers and so are aerobic and cardiovascular activities such as running, swimming. They get your heart rate up and help build stamina for long performance.



• PATELLOFEMORAL PAIN SYNDROME:

Patellofemoral pain syndrome, also known as "jumpers knee", results from the kneecap tracing incorrectly due to muscle imbalances like tight hamstrings and calves coupled with weak quads. The placement of repetitive forces on the patella, like through performing jumps or piles without proper form puts a dancer at increased risk.

PAIN- pain in the front of the knee when jumping and stair negotiation.

PREVENTION- foam rolling- hip flexors, quads, IT band, glutes.

TREATMENT- strengthening of core and hip, IT band stretching, re-education of dysfunctional movements patterns.

SOME COMMON DANCE INJURIES AND PREVENTION?

• **ACHILLES TENDONITIS:**

Achilles tendonitis is an inflammation of the tendon in the back of the ankle that connects the prime mover for pointing to your pointe. As the Achilles is active during releve and pointing the foot, this overuse injury is quite common in dancers, especially those utilizing improper technique or participating in excessive training.

PAIN - Gradual onset of a pain and tenderness just above the heel which may feel better when warmed-up, but worse with jumping, releve or pointe work.

PREVENTION - Stretching your Achilles with your foot in parallel, quadriceps, hip, core strengthening to decrease force absorption at the ankle.

TREATMENT - Modalities to decrease inflammation, calf stretching, soft tissue manipulation to calf and surrounding musculature.

• **TRIGGER TOE: (flexor hallucis longus tenosynovitis)**

Trigger toe is another overuse injury that causes inflammation and damage to muscle that is active during pointing the big toe.

PAIN - gradual onset of pain along inside of ankle and under the foot which pointing the big toe which may also feel like big toe is "stuck".

PREVENTION - good form with your releves and not crunching your toes to force a pointe, rolling out the arch of your foot with a ball (but not to the point of pain).

TREATMENT - modalities to decrease inflammation, foot intrinsic muscle stretching, massage.

• **ANKLE SPRAIN:**

Ankle sprains are the most common traumatic injury in dancers. This injury is caused by any movements that forces the ankle outside of the normal range of motion, resulting in an overstretching or in tears to the ligaments of the ankle.

PAIN - acute onset with pain on the medial or lateral side of the ankle, swelling and bruising may be present in chronic condition.

PREVENTION- 4-way ankle exercise, hip strengthening.

TREATMENT - RICE (Rest Icing Compression Elevation), joint protection, early mobility, ankle strengthening and motor control must be improved in order to avoid re-injury.

DANCE IS A GREAT FORM OF EXERCISE, BUT MAKE SURE YOU AVOID INJURIES!!!

- A physical therapy solution and prevention





MUCOPOLYSACCHARIDOSES (Gargoylism)

Mucopolysaccharidoses (Gargoylism) are a group of metabolic disorders caused by absence or malfunctioning of lysosomal enzymes needed to break down molecules called glycosaminoglycans (GAGs). These are found in the fluids that lubricate joints. The collection of GAGs in cells, blood and connective tissues will result in permanent progressive cellular damage which affects appearance, physical abilities, organ and system function and in most cases, mental development. It was estimated that 1 in 2,50,000 live born babies were presenting with this problem.

Types of Mucopolysaccharidoses:

- MPS I
 - (i) Hurler syndrome
 - (ii) Hurler-Scheie syndrome
 - (iii) Scheie syndrome
- MPS II (Hunter syndrome)
- MPS III (Sanfilippo syndrome - A, B & C)
- MPS IVA & MPS IVB (Morquio syndrome)
- MPS V (Scheie syndrome)
- MPS VI (Maroteaux-Lamy syndrome)
- MPS VII (Sly syndrome)
- MPS IX (Natowicz syndrome)

Symptoms:

- Coarse or rough facial features (flat nasal bridge, thick lips, and enlarged mouth and tongue)
- Dwarfism (abnormal bone size or shape) and other skeletal irregularities
- Corneal clouding
- Enlarged organs such as liver or spleen
- Excessive body hair growth
- Short and often claw-like hands, progressive joint stiffness with carpal tunnel syndrome

- Recurring respiratory infections are common with obstructive airway disease & obstructive sleep apnea
- Many individuals affected with enlarged or diseased heart valves

Diagnosis:

Urine glycosaminoglycans tests to find out excess mucopolysaccharides is excreted.

Amniocentesis and chorionic villus sampling can verify if a fetus is carrying a copy of defective gene.

Treatment:

- Currently there is no cure for these disorders. Medical care is directed to treat symptomatic.
- Surgery to remove tonsils and adenoids.
 - Enzyme replacement therapies.
 - Bone marrow transplantation and Umbilical cord blood transplantation
 - Physical therapy measures are needed to delay the joint problems, improve the ability to move and to improve the quality of life.

Life Expectancy

The mildest form have normal life span, those with intermediate usually live to teen age or early adulthood and with severe condition rarely live longer than 10 years.



PHYSIO FOR HURLER SYNDROME

- A Case Report

A 8 years old male brought by his parents with the presenting complaints of difficulty in raising both the arms, bended elbows, knees and ankles. He has the difficulty in walking and getting up from the floor for the past 1.5 years. He has been noted enlargement of the forehead, grey cornea and difficulty in moving the neck at the age of 3 years and he was undergone for various investigations like Urinary Glycosaminoglycan test & Leukocyte enzyme analysis and he was diagnosed as Hurler's Syndrome (MPS- I) at Global hospital, Chennai.

The MRI brain was done on December 2012 showed macrocephaly, enlarged perivascular spaces of white matter & Corpus callosum, cervical spinal canal stenosis. There was a severe median nerve lesion on both sides leading to carpal tunnel syndrome were found by the NCV studies.



Tricuspid valve regurgitation & mild thickening of anterior leaflet of mitral valve was noted in echo-cardiography. The skeletal X-ray shows oval shaped vertebral bodies at L1, L2 and D12 minimal anterior subluxation.

Periodically he was on follow up with the hospital for further treatment and admitted for repeated respiratory tract infections. The MRI taken at January 2018 for brain & cervical spine showed non-obstructive hydrocephallus, Mild atlanto-axial sub-luxation with the kinking of cervico-medullary junction indenting the cervical cord with bullet shaped vertebrae.

On examination, child has coarse facies, muscle wasting noted in deltoid, arm, forearm, thigh, legs and foot muscles. Short & stiff neck, ROM of both the shoulders affected markedly with 40 degrees of abduction and flexion, 30 degrees of terminal extension of both the elbows restricted and available movement in wrist was 30 degrees in flexion & extension limited. Hand grip on both sides was fair and able to do the writing work in the school.



Both the hips and knees were in contracture leading to 35 degrees of flexion deformity . He was able to walk & run with a hip & Knee flexed for a minute upto 30 meters. Bladder & Bowel function, Balance & Co-ordination are normal. He finds difficulty in single leg standing on the right side for few seconds compared with left side.

Presently he needs passive stretching of tightened hamstrings, tendo Achilles. Passive and active exercises have been focused for the neck, trunk & both the upper & lower extremities. Squatting, cycling and stair climbing activities were encouraged to do. Breathing exercises was encouraged by blowing a balloon daily.

After twenty days of physiotherapy the ROM in shoulder, elbow, wrist & knees were increased. His capacity to walk & run was improved upto 50 meters within a minute. His functional limitations had been improved to complete his task with minimal dependence. He was very much interested in doing his exercises as her sister encourages him to complete the task.

Finally, this type of diseases needs a close follow-up with multi-disciplinary team, continuous support of family members and society to improve the quality of life.

T.BHARANEEDHARAN MPT
Asso. Prof
SVCOPT



Muscle Lopsidedness

If one side (or) part of your body is bigger or stronger than the other, then you have a muscle imbalance. and this article will ensure you how to fix it.



P. KALAIIVANAN
BPT Intern



In your body, almost every major muscle has a Twin. Example (pectorals, quadriceps, triceps) and so on. Ergo, a muscle imbalance is a size and /or strength discrepancy between two matching muscle groups. This also termed as asymmetry. Body builders call this disproportion.

Nothing surprises! of course

Assume one muscle (or) muscle group were trained more frequently or intensity than its physiological or visual counterpart, a muscle imbalance will develop sooner or later. Moreover, poor flexibility and mobility often prevents one from doing exercise properly.

To Test Muscle Imbalance

- ✓ Deep squat (an overhead squat)
- ✓ In -line lunge (split squat)
- ✓ Rotational stability
- ✓ Hurdle step over
- ✓ Trunk stability push-up
- ✓ Grab a measuring tape, measure

both sides three times, average the measurements and compare.

How to fix muscle imbalance?

- Train your limbs separately (unilateral training)
- Work lagging muscle early
- Focus on mobility
- Vary your routine
- Lift to your weakness

Exercises:

- ✓ Glute bridge
- ✓ Plank
- ✓ Horse stance
- ✓ Cat and camel
- ✓ Dumbbell row
- ✓ Wide grip inverted row
- ✓ Doorway pectoral stretch
- ✓ Quadruped chin tucks.

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ALIEN HAND SYNDROME

-Too weird that hands seem to take a life of its own

Alien hand syndrome sounds cool. But it's hard to imagine it being anything but frustrating for the patient experiencing it. Basically it occurs when an arm seems to have a mind of its own. Patient with AHS experiences one of their limbs as alien, which act autonomously and perform goal directed movements that are not guided by the intension of the patient. For example; one start buttoning the shirt with one hand and the other hand unbuttons it without them realizing. Patients may even act aggressively against themselves and the funny fact is patient report that there must be an "evil spirit" in their hand. This condition also known as "Dr. Strangelove syndrome".

The common emerging factor in alien hand syndrome is that the primary motor cortex controlling hand movement is isolated from pre motor cortex influences but remains generally intact in its ability to execute movements of the hand(hemispheres of the brain surgically separated to relive symptoms in extreme cases of epilepsy). It also occurs in cases after brain surgery, stroke, infection, tumour, aneurysm, migraine and specific degenerative brain conditions such as Alzheimer's disease and Creutzfeldt Jacob disease. Although its a result of damage to corpus callosum as the brain's e-mail server.

Symptoms of this rare neurological disorder are the alien hand moves around, grasp things and responds to the touch of other people, but it happens without the control of the person to whom it belong. Extreme cases have involved involuntarily stuffing food in the mouth, preventing the normal hand from completing simple tasks and self-inflicted punching or choking. There is no permanent cure for Dr. Strangelove syndrome. Therapies and pharmacologic options for AHS lack development but working on treatments to reduce symptoms. Recovery is possible in some cases of brain illness and stroke and recovery is less successful in neurodegenerative disease.

Physiotherapy management for Alien hand syndrome are Mirror box therapy, cognitive therapy techniques and learning task behavioural therapies.

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Consultant Neurological Physiotherapist

9786484738

PALANIAMMAL PHYSIOTHERAPY CLINIC

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DIZZINESS OR VERTIGO ? OPTOKINETIC STIMULATION WILL HELP YOU !

DO YOU HEAR ABOUT OPTOKINETIC STIMULATION ?

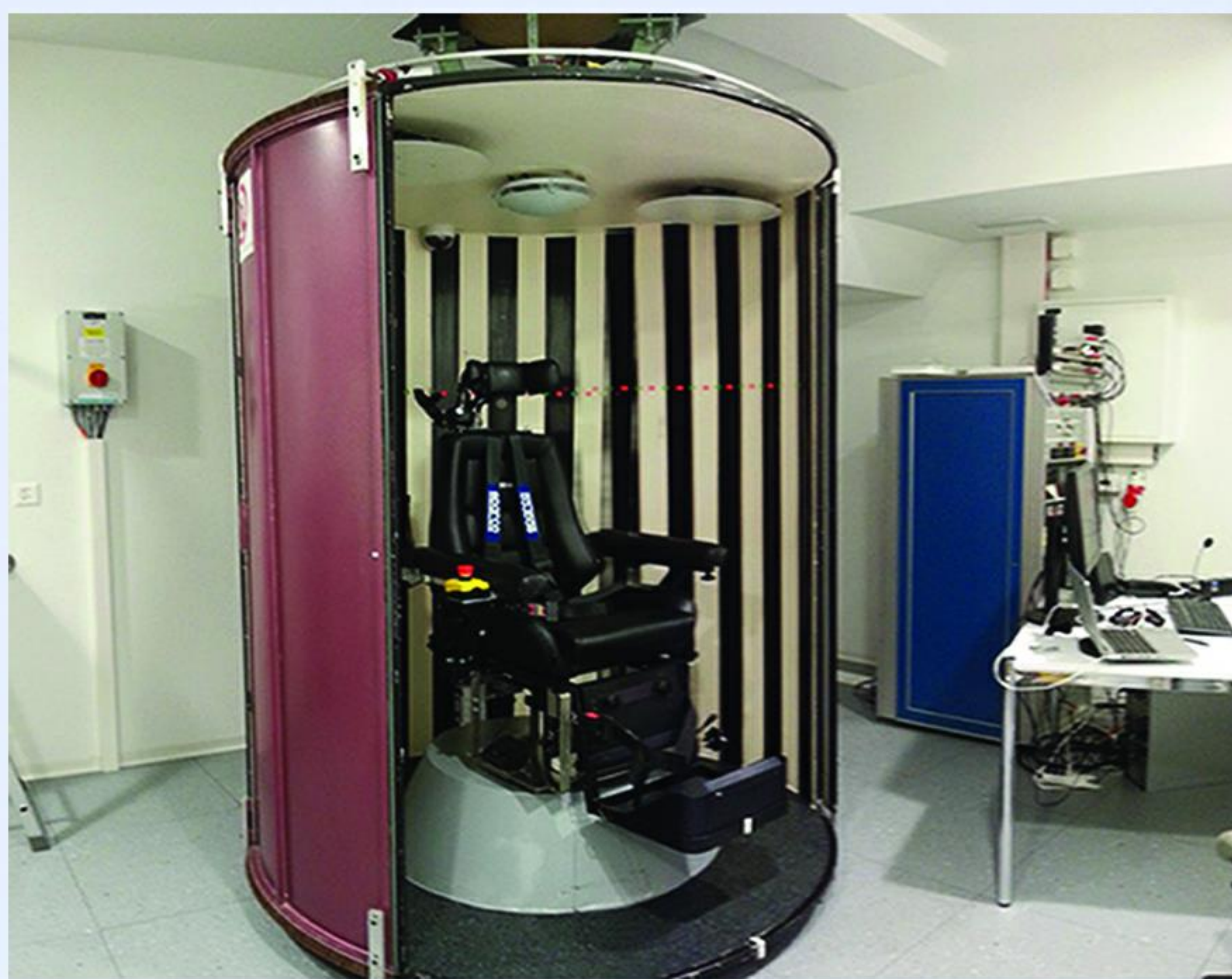
The word *optokinetic* means relating to the occurrence of movement of the eye when moving objects are viewed. The *Optokinetic response* is a combination of a slow-phase and fast-phase eye movements. It is seen when an individual follows a moving object with their eyes, which then moves out of the field of vision at which point their eye moves back to the position to see the object. Often dizzy patients will be referred to a PT directly from their primary care doctor with no laboratory test results. A PT's diagnosis of the cause of the dizziness is made based on a thorough history including the signs and symptoms of the dizziness.



V. Shenbagavalli
BPT - Intern

WHAT TYPE OF PROBLEMS CAN BE TREATED?

Optokinetic stimulation can be helpful for treating Vertigo/Dizziness, Nystagmus, Mal de Debarquement, balance disorders, visual neglect, vestibular dysfunction, seasickness, cervical dystonia.



HOW TO DO ?

Patients are seated in front of the optokinetic array. The stripes are rotated at constant velocity (initially 5 deg/sec), while the head is rolled +/- 20 degree at their rocking frequency.

A metronome is used to set the rocking frequency (typically 1/4 Hz). We usually set the metronome for one click per second. If the head is gradually rolled to the right for 2 clicks, and then gradually to the left for two clicks, this is 1/4 hz. There are 4 sessions/day (or more) for 5 days.

Optokinetic stimulation therapy can be applied via

- Optokinetic drum,
 - Optokinetic tape,
 - Optokinetic ball,
- wrapping and wave checkerboard.

HOW ITS CONNECTED TO BRAIN?

VERTICAL OPK:

- ★ Rightward OPK stimulates L frontal lobe & bilateral mesencephalon.

HORIZONTAL OPK:

- ★ Rightward OPK stimulates R parietal lobe, R frontal lobe, L cerebellum and bilateral pons.

DIAGONAL OPK:

- ★ R upwards: R parietal lobe, R frontal lobe, R cerebellum
- ★ R downwards: R parietal lobe, R frontal lobe, L cerebellum
- ★ L upwards: L parietal lobe, L frontal lobe, L cerebellum
- ★ L downwards: L parietal lobe, L frontal lobe, R cerebellum

CONCLUSION:

The aims of Optokinetic Stimulation therapy is to desensitize the patients through progressive, structured exposure to symptom-provoking movements and situations.

1. The untreated diabetes mellitus leads to?
2. The disease caused by inherited protein found in the surface of RBC?
3. Which is the strongest ligament in the body?
4. Major arterial supply found in mid sagittal view of the Brain?
5. Death of bone tissue due to lack of blood supply?
6. Pregabalin is a neuropathic pain medicine involves in the function of?
7. Folate prevents from?
8. Abnormal swelling in lymphatic system by filarial worms?
9. Pulse palpated at the lateral side of extensor hallucis longus?
10. Glaucoma causes damage to?



S. Koushalyaa
BPT 11 year

M. Sujitha
BPT 11 year



RIDDLES
See Answers Pg.no:36

While I bridged my bachelor of physiotherapy degree in SVMCH&RC, I myself was not inspired by anything or anyone in that respective field. Since I had no idea regarding the profession, I was completely in the state of pandemonium. But the infatuation with the study of human sciences aided me to sustain in these circumstances.

In my first year, I started to discern how the patients were treated? What are the conditions dealt with? Mainly about the patient and therapist relationship!

I used to see the diverse population reporting that the pain has reduced from the level of severity to mild. I was so astonished and understood that "Our human body has the phenomenal capacity to heal". We physiotherapist facilitate this capacity to attain their physical goals. That was my first inspiration and it helped me to start grooming out myself as a physiotherapist. The faculties as well as the clinical instructors not only inspired me but also made me to realize the importance of this profession.

Inspiration is nothing but the process of **being**

mentally stimulated to do or feel something, Especially to do something creative. In order to pursue my resolution to be a physiotherapist, there is a need to get through the most common challenges which favours me to flourish and maintain the professional dignity. Predominantly I was concentrating on the basics i.e., "**ANATOMY OF THE HUMAN BODY**" where I did lag.

The mechanism of each muscle and its structures working together to initiate a movement inspired me a to develop a feat that even Engineers could not replicate. I would spend hours trying to figure out what the purpose of each structure was and how they work synchronously.

As days passes by I myself started to treat the patient in our department: my tutors trained me how to assess, evaluate and treat the patient? Toned me to understand the role of the physiotherapist is to determine the root cause of the disorders and provide solutions to ameliorate the cause. . It was so amazing to see the patients who were severely ill recovers



I AM A PHYSIO

An Autobiography of a Student

step by step.

Then I volunteered with my seniors to treat patients with various disorders & disabilities especially the children with cerebral palsy and witnessed how the physiotherapy can be a tremendous aid in terms of mobility and flexibility. As I possess a empathetic mind, Which has driven my passion in helping others reach their potential abilities evenmore? The magic of manual techniques in conquering patient's pain neither invasive nor pharmacological was the key reason of my further inspiration.

By using the acquired skills gained while treating the disabled, as a therapist I felt so proud that I can help people to improve their strength and I am truly privileged to have the skills to make a significant difference in someone's life. Thus enables them to have another chance of living their life they dreamt about.

Further with my studies during the final semester, I was focused on the research and paperwork's . My Project guide, faculties as well as each and every clinical instructor helped me a lot for my achievement. In specific, I was continually inspired by the women's health: though their struggle to manage simple to complex day to day

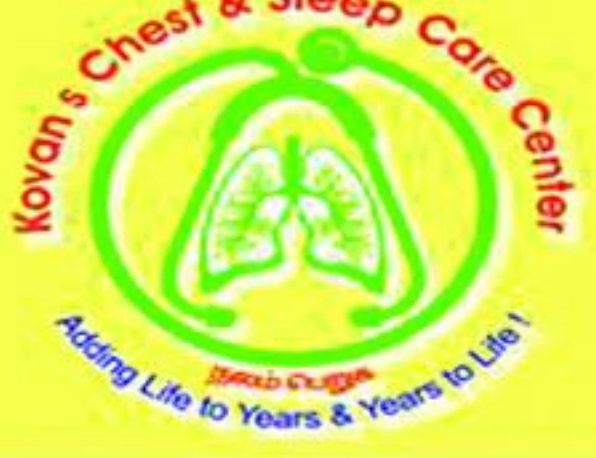
tasks were heartbreaking but their courage and determination in the completion of such tasks were inspiring.. I also feel pathetic as women are being ignored of their health. Therefore a passion generated in me to promote the women's health suffering from various conditions.

I have learnt a lot about my profession over past 4 years. At the time of my internship with no distinct order..... I would like to explore all that I wish to know about .I do commit my life for the professional growth with a stronger determination without abandoning my personal life as well.

I should also stay fit and aspire my juniors in a healthy way. "Opportunities won't Appear but We have to Create".

*I will make use of my opportunity and be a eminent **PHYSIO**.....*

Yours Professionally,
B.SUMITHA
BPT Intern



Kovan's Chest and Sleep Care Center

நுரையீரல் சிறப்பு மருத்துவர்

**Dr. பால. கலைக்கோவனி, M.B.B.S., D.T.C.D., DNB.,
Interventional Pulmonologist & Sleep Medicine Specialist**

➤ ஆஸ்துமா அலர்ஜி

➤ அடுக்குத் தும்மல்

➤ மூச்சுத் திணறல்

➤ நெஞ்சு வலி

➤ நாள்பட்ட சளி பிரச்சனைகள்

➤ இளைப்பு (Wheeze)

➤ சளியில் இரத்தம் வருதல்

➤ அதிகப்படியான குறட்டை (Snoring)

➤ தூக்கத்தில் மூச்சுத் திணறல் (Sleep Apnea)



➤ காசநோய் (TB)

➤ நிமோனியா காய்ச்சல் (Pneumonia)

➤ நுரையீரலில் நீர் கோர்த்தல் (Pleural Effusion)

➤ நாள்பட்ட நுரையீரல் நோய்கள் (ILD, COPD, Sarcoidosis)

➤ நுரையீரல் புற்றுநோய் (Lung Cancer)

➤ புகையிலையினால் ஏற்படும் பிரச்சனைகள் (Cigarette, Beedi)

➤ காற்று மாசுபாட்டால் ஏற்படும் பிரச்சனைகள்

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ADULT SPEECH & LANGUAGE DISORDER [Aphasia, Dysarthria....]

PH NO: 0413-4900642 MOBILE NO: 7094941894/9488431257

TIMING: 9.30AM - 9.30PM

PARAPLEGICS FROM MY COUNTENANCE

-Hidden state behind them...



R.BINDHU OVIYA
BPT Intern

In this hostile and ambitious world, a Paraplegic or Quadriplegic people are being a showcase of sympathy to the society as the extent of their condition could be figured out only by themselves. No one can apprehend the emotions of paraplegics related to the affliction of their mental and physical ability, so that they are trapped in their own body and they are often forced to rely on others for the tiniest of tasks: Some less pleasant to ask as a favor than others. On the other hand, apart from the other execution in this health care society, we physiotherapist disburse our time with them in the rehabilitation of the physical as well as their mental state.

At least a day can we live as a paraplegic?? No.... As per my perspective, paraplegic get to tumble en number of hidden obstacles. It includes their personal, professional and their psychosocial barriers. In a human life span, every one has to undergo the basic exigency which is essential for the survival. As they are bounded to the wheelchair, the hardest deprivation mentioned could be the day- today activity lavishly.

The circadian activities of life such as bathing, toileting, dressing, deporting to other place etc..., are very difficult to carry on by their own. Their necessity to relay on others to accomplish, the above mentioned activities affects them emotionally and forces them to the feel of scandalous. Along with these activities, some of their functional implications are impaired balance, coordination, bladder and bowel dysfunction, impaired bed mobility and transfer, gait abnormalities, decreased energy efficiency, pressure sores, sexual dysfunction.

As they are wheelchair bounded, they are also facing a lot of architectural barrier in their surroundings which again made them to depend on others. All these implications leads to alterations in their emotions which is hidden behind them and the emotions they do posses are impassive as they assume that they could not compete with the society which results in self-isolation. Their way of attitude towards the therapist during the treatment shows that they are hopeless and towards the family clearly expose their emotional instability as they are being frustrated by thier family members.

In our therapeutical part, number of recent trends have been arrived which made paraplegics to come out of their despairing status. Some of the trends from ancient to recent are stretching/flexibility exercise, aerobic exercise, physical agents such as thermo therapy and electrical therapy, therapeutical exercise, gait training, transfer techniques and advancement such as "Brain training" technique that restores feelings and movements of patients, Brain Machine Interface(BMI) - a virtual reality device and use of iBOT mobility system, Ekso bionic suit-wearable robot which help them to step up independently. Accessibility and inclusion should be enhanced in the society to break out their impossibleness.

As a physiotherapist, we are facing a lot of professional issues, patient's issues and economical issues which is being faced by patient's as well. So, being a therapist, we should take a owe that a rehabilitation includes not only the functional limitation but also their psychosocial well being. Therefore, the physiotherapist will work on restoring dignity of the paraplegic patient and make my patient's tiniest happiness to be fulfilled then also to be generalized and independent in the societal as well as personal life with the respect and equality. Now our biggest responsibility is to built up the confidence within them for their effectuating life and I am really happy to do that.....

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V. Sasikala,
BPT - Intern

ADENOMYOSIS

– GO AWAY FROM UTERUS

An indelible experience with patient...

“TELL ME A FACT AND I’LL LEARN

TELL ME A TRUTH AND I’LL BELIEVE

BUT TELL ME A STORY IT WILL LIVE IN HEART FOREVER”

-North American Indian proverb.

By letting way to these words, here is a personal experience of one of my patient who was included in the sample for my UG final year project.

As result of my project on “MANUAL PELVIC PHYSICAL THERAPY FOR PATIENTS WITH ENDOMETRIOSIS ADHESIONS – CASE SERIES”, I analysed that manual pelvic physical therapy which is a new intervention will be effective in reducing endometriosis adhesions and endometriosis cysts.

I dealt with many patients during my project but this patient gave me an unforgettable experience. The patient was a 24 years old home maker with a BMI of 23. She first complained of chronic pelvic pain which was persisting for more than two years. Then she slowly explained about her pulling pain that was felt over the abdomen and pelvic region; sudden sharp pain felt with increased bleeding (dysmenorrhoea); back pain; dysurea; bowel dysfunction and no complaints of urinary incontinence which is a common symptom of adenomyosis. In her past medical history, she had a irregular menstruation till last year then after it became regular. She had no complaints of miscarriages or other gynaecological problems. On pain assessment, the NPRS was about 9.

During manual examination, nodules and tightness were felt over the left lumbar and iliac region with reduced mobility of soft tissues. Tenderness was about grade 4. Her radiographs showed the impression of adenomyosis for 5.2cm and that was diagnosed by gynaecologist.



Manual pelvic physical therapy which is a new intervention, was started with mild pressure over the soft tissues; then the pressure was increased slowly by moving the soft tissues in upward, downward and sideway directions without discontinuing the manual contact. Gripping and stretching were given over the hard immobile abdominal and pelvic tissues. Myofascial release over the trigger points and visceral manipulations over the visceral organs were done to reduce pain and the symptoms of bowel problems. I ended the intervention with aerobic and spinal flexors strengthening exercises. The patient attended 10 treatment sessions for two weeks, each session lasted for 2 hours.

After these sessions, the outcome results were satisfiable for the patient as well as for me. The post test radiograph showed reduction of adenomyosis size from 5.2cm to 1.7cm. The patient was also happy with reduced chronic pelvic pain (NPRS from 9 to 5). The other symptoms of dysurea and back pain were also reduced. Thus, from my personal clinical experience, I suggest that manual pelvic physical therapy will be effective in getting relief from adenomyosis.

BIRTH OF MANUAL PELVIC PHYSICAL THERAPY

Larry wurn was a graduate of San Francisco State University (BS, 1972) & the Florida Institute Of Natural Health (LMT, 1990). He became Florida liscensed therapist, then he ran into his childhood love Bleinda Wurn.

After their marriage, unfortunately Belinda developed cervix cancer. The surgery & radiation therapy to treat the cancer likely saved her life, but left her in deliberating pain- due to adhesions. Larry saw the love of his life racked with pain and he wanted to do something. Understanding that adhesions as a result of surgery which made her pain more worser and worser.

Along with Belinda, Larry studied manual therapy with recognized experts in the U.S and Europe. They combined the most effective techniques of the instructors with whom they studied, then refined and developed their own thechniques which gave birth to Manual pelvic physical therapy also known as Wurn technique.



HAND-ARM VIBRATION SYNDROME



DO YOU KNOW ABOUT HAND-ARM VIBRATION SYNDROME ?

Hand-arm vibration syndrome is a well-known disease among workers those who are using hand-held vibrating tools. This leads to changes in sensory perception which results in permanent numbness of fingers, muscle weakness and in some cases, bouts of white finger. Right from the beginning physios were conscious of their electrotherapies. The reason for the physiotherapist, to highly rely upon machines is the patients mind set- as they believe on machines rather than exercises. So people would come and say, "I want to take Interferential therapy or Wax therapy". But now things are changing. People do come asking for exercises. I felt when I am seeing the most of the cases are having pain in hand arm and shoulder which are not only due to radiculopathy. But it is also due to their prolonged machinery works. This prolonged vibration causes nerve pathology gradually leads to Neurological, vascular and musculoskeletal disorders. This ultimately leads to 'occupational' Raynaud disease and digital polyneuropathy.

Nerves are affected initially, leading to changes in sensation. This can then be followed by Raynaud's phenomenon resulting from changes in the blood vessels and resulting in a white finger.



These changes may also lead to muscular aches and pains. Carpal tunnel syndrome is another common neurological vibration injury. If detected in time, most patients are expected to make a full recovery.

S. Subashini
BPT Intern



HOW WE PREVENT THIS ?

Hold the tools as loosely as possible and in varying positions.

Ensure the tools are well maintained

Take regular breaks of atleast 10 minutes away from the tool.

Stop using vibrating tools if possible

You should also avoid anything that makes the symptoms worse, such as smoking and its exposure. Smoking may make the symptoms of HAVS worse because smoking is known to affect the circulatory system in the body, so if you are a HAVS sufferer you should seriously consider stopping smoking.

Doctors can prescribe "CALCIUM CHANNEL BLOCKER DRUGS" which dilate the blood vessels.

PHYSIO PLAY A MAJOR ROLE :

Regular exercise is recommended by many experts.

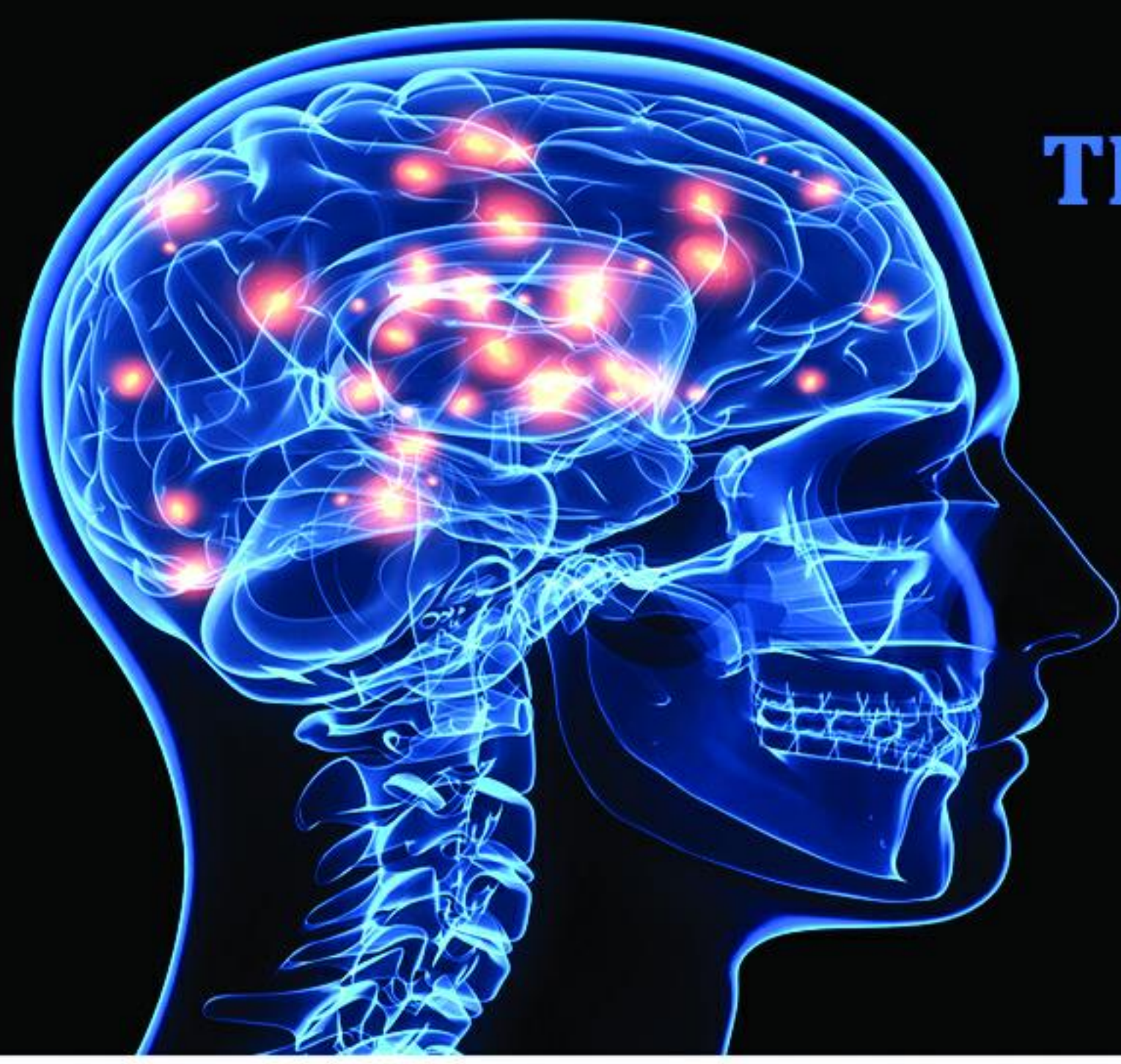
Exercise your hands frequently to improve the circulation.

Try not to touch cold objects- for example, use a towel or gloves when removing food from the freezer or while working with cold food.

Keep your hands warm. Warm gloves are essential when you are out in cool weather.

Keep your whole body warm, not just your hands.

When a bout of symptoms develops, warm the hands as soon as possible. Soaking the hands in warm running water is a good way to get warm.



THERAPEUTIC NEUROSCIENCE EDUCATION

-Education makes sense...

R.KANDHAN
BPT Intern



Therapeutic Neuroscience Education (TNE) is a process of teaching the people with pain about the neuroscience of their pain (TNE), which produces some impressive, immediate and long-term changes, Such as Pain decreases, Function improves, Fear diminishes, Thoughts about pain are more positive, Knowledge of pain increases, Movement improves, Muscles work better, Patients spend less money on medical tests and treatments.

How and why does this work? First, therapeutic neuroscience education changes a patient's perception of pain. Originally, a patient may have believed that a certain tissue was the main cause for their pain. With TNE, the patient understands that pain may not correctly represent the health of the tissue, but may be due to extra-sensitive nerves. Secondly, as fear is eased, the patient is more willing to move and do exercise.

How do we do it? Once we have distilled the information into easy to understand with some interesting visuals, it becomes easy for everyone to understand. This includes patients of all ages, education levels, ethnic groups, etc. Using interpreters, TNE can be used all around the world.

REPRESENTATION OF THERAPEUTIC NEUROSCIENCE EDUCATION:

Therapist: "If you stepped on a thorn right now, would you want to know about it?"

Patient: "Of course."

Therapist: "Why?"

Patient: "Well; to take the thorn out of my foot and get a TT."

Therapist: "Exactly. Now, how do you know there's a thorn in your foot? How does the thorn get your attention?"

Patient: By producing pain

Therapist: "The human body- nervous system carries over 90,000 miles of sensations! All of these nerves have a little bit of electricity in them. This shows you're alive. Does this make sense?"

Patient: "Yes."

Therapist: "The nerves in your foot are always buzzing with a little bit of electricity in them. This is normal and shows....?"

Patient: "I'm alive."

Therapist: "Yes. Now, once you step on the thorn, the alarm system is activated. Once the alarm's threshold is met, the alarm goes off, sending a danger message from your foot to your spinal cord and then on to the brain. Once the brain gets the danger message, the brain may produce pain. The pain stops you in your tracks, and you look at your foot to take care of the issue. Is this right?"

Patient: "Yes."

Therapist: "Once we remove the thorn, the alarm system should...?"

Patient: "Go down."

Therapist: "Exactly. Over the next few days, the alarm system will calm down to its original level, so you will still feel the pain for a day or two. This is normal and expected."

Therapist: "Here's the important part. In one in four people, the alarm system will activate after an injury or stressful time, but never calm down to the original resting level. When this happens, surely you think something MUST be wrong. Based on your examination today, I believe a large part of your pain is due to an extra-sensitive alarm system. So, instead of focusing on fixing tissues, we will work on a variety of strategies to help calm down your alarm system, which will steadily help you move more, experience less pain and return to previous function."

Patient: oh! Thank u sir. Now I'm clear about it. I'll keep moving, whatever happens to me...





Selfie elbow



**SELVAGANABATHY
BPT INTERN**

‘Clicking elbow is commonly called as selfie elbow.” Selfie elbow is a modern technology induced ailment which commonly affects the elbow joint. For the past few years, number of selfie lovers have been increased. The thing to be noted is unless and until a perfect selfie has been clicked, the hand is placed in an abnormal position which results in excessive loading of joints of the upper limb

As now a days technologies are being widely used, the responsibility of the physiotherapist to fix and solve the technology induced musculoskeletal conditions are also appreciated.

Facts behind selfie Elbow:-

Selfie Elbow causes damage over the joints of the upper limb. Most of the time the reason for the damage to occur is the abnormal position in which the elbow joint is holded. Overexertion of the extensor muscles of the wrist as a result of repeated gripping and twisting (ie., supination/pronation) movements may occur prior to the onset of symptoms.

The sustained muscle activity and The repetitive high moments of force are beyond the adaptive capacity of the tissue leads to subsequent deterioration where inflammation, pain and muscle weakness occurs. As days passes by, this lesion ultimately heals with scarring resulting in the recurrence of pain.

wherefore this vicious cycle of pain, muscle weakness and functional limitation goes on and on.

Tips to get rid of it:-

It is suggested that the selfie talking should be kept at a reasonable level to avoid unnecessary soft tissue damage. As a physiotherapist, we play a vital role in treating such technology induced musculoskeletal conditions. Our treatment must focus on pain reduction, increasing the muscle strength and restoring the functional activity of the selfie lovers. Easy tips to be followed :

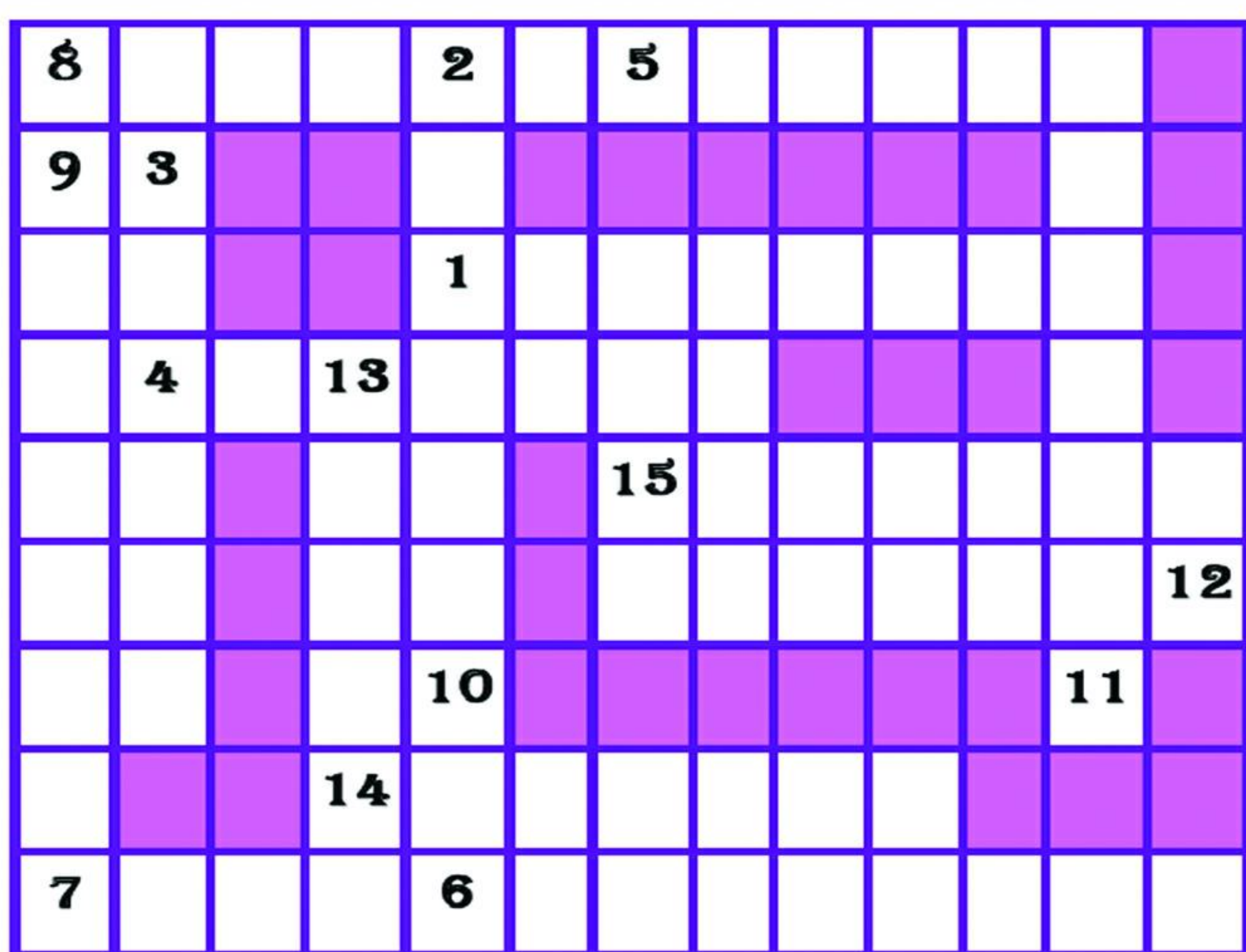
- Restrain the number of selfies taken
- Regular stretches to the upper limb
- Usage of Selfie sticks & elbow caps

Physiotherapy involves : Cryotherapy, Therapeutic ultrasound, Therapeutic eccentric exercise (TEE), Muscle strengthening program and tapings can also be done.

“Have a fun filled as well as a Pain free seflies now on “

Spread awareness among those who are at verge of getting into trouble in future.....

PUZZLE 1: See Answers Pg no:36



1. Name the Muscle that helps in grinning action.....
- 2.Name the hook shaped projection in the lowest tracheal ring
- 3.Flexor digitorum profundus is a.....muscle.
4. Name the condition that causes excessive appetite.....
5. Name the part of eye that responsible for sharp central vision.....
6. Name the condition that causes oscillatory movement of eyeball due to unusual vestibular inputs.....
7. Hypocalcemia leads to.....
8. Increased intraocular pressure leads to.....
9. Testosterone is anhormone.
- 10.How many muscles form the perineal body.....
- 11.Absence of taste sensation is.....
- 12.Lesion in Brodmann area 5and 7 leads to.....
- 13.Colorless fluid containing white blood cell is.....
- 14.Name the anti-coagulant liberated by basophil
- 15.Refractive power of lens is expressed as



**M.PRIYA
G.SHAMSHIYA SHAKIR
BPT II YEAR**

Match the Following & Solve the Puzzle

MATCH THE FOLLOWING

- | | |
|---------------------------------------|---|
| 1. Social interaction difficulties | Radiotherapy and thyroid surgery .1 |
| 2. Extreme fatigue | Drink plenty of fluids .2 |
| 3. Painful sore in mouth, hard to eat | Behavioral and educational therapies .3 |
| 4. Swelling around neck | Recompression chambers .4 |
| 5. Period of illness & arthritis | Treatment consist of self-care .5 |
| 6. Watery eyes | Tonsil biopsy .6 |
| 7. Bends in knee & chokes in lungs | Home remedy - salt water gargling .7 |
| 8. Dementia & Insomnia | Antinuclear antibody test .8 |
| 9. Depression and hopelessness | Topical antibiotic metronidazole .9 |
| 10. Breast tender | Light therapy .10 |

CLUES FOR MATCH THE FOLLOWING:

See Answers Pg no:36

1. It is a neurodevelopmental condition.
2. This condition is also called as "immune dysfunction".
3. Small sore inside the mouth.
4. It is an autoimmune disorder.
5. It is a chronic autoimmune disease.
6. It is a chronic disease.
7. It is a condition occurs in person who move to region of low barometric pressure from a region of high barometric pressure.
8. It is a fatal disease.
9. Whole season spiral into a serious depression.
10. Physical and emotional symptoms that occur in the one to two weeks before a woman's period.



B. BARATHI
BPT IIyear



G.S. SARANYA
BPT IIyear

SOLVE THE PUZZLE (NAME OF THE DISEASE) USING THE ABOVE CLUES,

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

Description

The blood to flow backwards instead of forward, or up, towards the heart. An insufficient or incompetent valve of a vein within the pelvic region is also associated with PCS due to pain occurring from venous distension and congestion. The following terms or phrase have also been associated with this condition: ovarian varicocele and “varicose veins of the ovaries”.

Prevalence

This condition is most often seen in women who are at childbearing age, or older. Majority of women who are affected had a history of multiple pregnancies. It may be asymptomatic and often times may go undiagnosed. This condition can cause continuous or intermittent lower abdominal or pelvic pain, ranging from a dull ache to a sharp severe pain. Duration of pain can last more than 6 months.

PELVIC CONGESTION SYNDROME

-is chronic pain in the pelvis due to abnormal dilated veins

Symptoms

- ☒ Tenderness upon deep palpation of the ovarian point
- ☒ Dyspareunia
- ☒ Presence of varicose veins in the buttock and /or lower extremities
- ☒ Headache
- ☒ Pelvic floor muscle weakness
- ☒ GIT pain and discomfort
- ☒ Changes in bowel and bladder
- ☒ Fatigue
- ☒ Insomnia

Physiotherapy management:

Manual therapies

Joint mobilization
Myofascial release
Retrograde massage
Lymphatic drainage technique
Craniosacral and integrative manual therapy.

Therapeutic exercises

Pelvic floor strengthening exercise such as Kegel's
PF muscle rehabilitation including, sEMG biofeedback.

Pain relieving modalities

Electrical stimulation (ES)
Transcutaneous electrical nerve stimulation (TENS)

Other approaches

Pilates exercise
Cupping therapy

Note

Life style modification
Aerobics, swimming, cycling.



C. Priyadharshini,
BPT - Intern.

Lets we hear
some words from
"kissing spine"

Haiii.... I am,

KISSING SPINE

- you want to know about me.....



keep ur spine out of
kiss..... deal?

WHO AM I !!!

Haiii...!! I 'm "KISSING SPINE" referred as BAASTRUP SYNDROME. I was often missed recognize the cause of low back pain. Do you want to know?... Let us see a description about me.

A BIT OF HISTORY

I am relatively a common disorder of vertebral column, characterized by degeneration of both spinous process arising from the close approximation and contact of adjacent posterior spinous process and I most commonly affect the lumbar spine (L4-L5). I was first described by Christian Ingusler Baastrup in 1933; as a product of radiological findings. I am very much proud to say that I was academically well documented for the cause of low back pain with the incidence of 81% of patients older than 80 years.

I LOVE PEOPLE WITH...

- Above 60 years of age
- Loss of disc space
- Excessive lordosis.
- Repetitive strains of interspinous ligament.
- Incorrect posture.
- Traumatic injuries.
- Spinal stenosis
- Neurogenic claudication.
- Tuberculous spondylitis
- Congenital hip dislocation
- Thoracic spine stiffness.
- Obesity

LOOK BACK MY ATTITUDE...

- Excessive lordosis.
- Low back pain
- Range of motion reduced and painful (Lateral flexion and lumbar rotation)
- Pain increases on lumbar extension and releases on lumbar flexion.
- Cystic lesions and sclerosis
- Flattening and enlargement of articular surfaces
- Bursitis and epidural cyst formation.
- Weakness of abdominals, trunk and back muscles.

BEHIND ME....



Hypertrophic spinous process includes degenerative disc disease

I

Formation of bursa in intermediary interspinous soft tissues.

I

Leads to mechanical back pain.

I

Later chronic stage, it evokes the neuromuscular damage.

WANT TO FIND ME?... FINE! THEN USE THESE CLUES....

X-RAY : Degenerative and sclerotic changes over lumbar spine with close approximation and contact between touching lumbar spinous process.

MRI : Abnormal contact between adjacent spinous process can leads to neoarthrosis and formation of adventitious bursa.

Stork test.

I AM SCARED OF

- Pilates
- Muscle energy technique
- Relaxation therapy
- Stretching exercises for hip flexors
- Core muscle strengthening exercises
- Strengthening of trunk and spinal muscles
- Postural education
- Heat therapy
- Ergotherapy
- Lordotic exercises.



There are so many
twist and turns
within me and I'm
not sure how to
summarize that in
one easy blog post...



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What is Seasonal Affective Disorder (SAD)?

It is a mood disorder in which people who have normal mental health throughout most of the year exhibit depressive symptoms at the same time each year, most commonly in the winter. There is an incidence of about more than 10 million cases per year in India. SAD tends to be predominant in women, particularly during childbearing years, with a reported female-to-male ratio of 4:1.

People may experience:

Mood:

anxiety, apathy, general discomfort, loneliness, loss of interest, mood swings, or sadness.

Sleep:

excess sleepiness, insomnia, or sleep deprivation.

Whole body:

appetite changes or fatigue.

Behavioural:

irritability or social isolation.

General:

depression, lack of concentration, or weight gain

Symptoms

Usually self-diagnosable which include fatigue, depression, hopelessness and social withdrawal.

Bright white "full spectrum" light at 10,000 lux (Luminous flux per unit area), blue light at a wavelength of 480 nm at 2,500 lux or green (actually cyan or blue-green) light at a wavelength of 500 nm at 350 lux are used. Bright light therapy is effective with the patient sitting at a prescribed distance, commonly 30–60 cm, in front of the box with her/his eyes open but not staring at the light source for 30–60 minutes.



Other Treatment Approaches:

Physical exercise has shown to be an effective form of depression therapy, particularly when in addition to another form of treatment for SAD. One particular study noted marked effectiveness for treatment of depressive symptoms when combining regular exercise with bright light therapy. Patients exposed to exercise which had been added to their treatments in 20 minutes intervals on the aerobic bike during the day along with the same amount of time underneath the UV light were seen to make quick recovery.

SSRI (selective serotonin reuptake inhibitor) antidepressants have proven effective in treating SAD. Effective antidepressants are fluoxetine, sertraline, or paroxetine.

CBT (Cognitive behavioral therapy) is a psychotherapy method that teaches people to challenge problematic thought patterns so that they can react in a more effective way. The core idea of CBT is that a person can change the way they feel and act by shifting the way in which they perceive a situation thus replacing it with healthier thoughts.

The connection between light and SAD

Light-therapy boxes aren't merely an expensive prop. The idea is that exposing yourself to bright light when you first wake up will give your internal clock an anchor. As modern humans with adult obligations, we have relatively static sleep cycles, but since the solar cycle changes throughout the year, that often means waking up when it's pitch black outside during the fall and winter. Since our bodies are programmed to sync our 24-hour schedules to the first light of day, which is part of why we want to sleep late in the winter. This mismatch between the solar cycle and our sleep cycle, "two timed events that together guide our behavior, alertness, and mood throughout the day," can lead to depression. But using a light-therapy box when we first wake up tells your brain to start its 24-hour cycle at that moment, effectively putting it back in spring-summer mode thus reducing mismatch.

HOW TO USE?

Photoperiod-related alterations of the duration of melatonin secretion may affect the seasonal mood cycles of SAD. This suggests that light therapy may be an effective treatment for SAD. Light therapy uses a light box which is far more luminous than a customary incandescent lamp.

SAD LAMP

CAN SAD LAMP REALLY MAKE YOU HAPPY?



Annapoorani Parthiban
BPT Intern, SVCOPT

IDD THERAPY

- Spinal Decompression Modus



P.BAVATHARANI
BPT Intern



Intervertebral Differential Dynamics [IDD] therapy is a trusted, non-surgical treatment that decompresses the spine and gently stretches tight muscles and ligaments. It is a potential solution for Back pain, neck pain, and some related conditions. With IDD therapy we use the Accu-Spina medical device to deliver computer controlled pulling forces. It offers a solution that is not possible with manual treatment alone.

HOW DOES IT WORKS.....

IDD therapy distracts (pull apart) targeted areas of the spine. This takes the pressure of an injured or bulging disc, allowing it to heal. When the area of the spine is decompressed it relieves pain caused by muscle spasm and releasing nerves and discs that have become trapped and irritated.

IDD therapy promotes the movements and absorption of fluids and nutrients are essential for disc health. It also stretches stiff muscles and ligaments so that mobility and flexibility can be restored to the spine.

IT INVOLVES.....

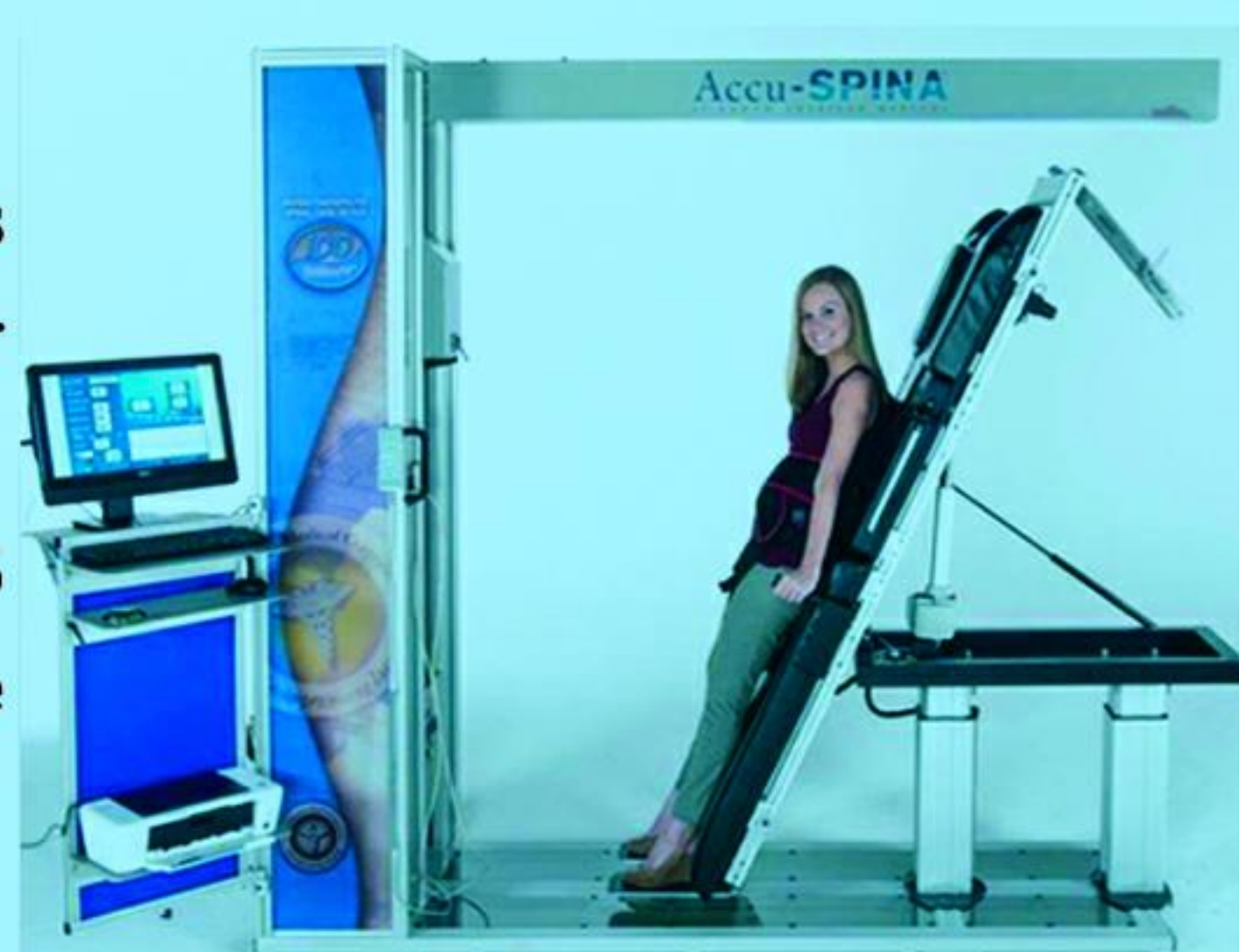
IDD THERAPY is delivered by the SPINA range of FDA cleared class II medical devices. These new machines use sophisticated computer software to apply controlled pulling forces at measured angles in a precise and safe manner to a patient who remains fully clothed, comfortable and relaxed on the treatment bed.

Ergonomic harnesses connect the patient to the SPINA machine and taking into account the patient's weight and condition, a distraction force (stretch) is applied to targeted segments of the spine. Pulling forces are gradually increased over the course of treatments as the body becomes conditioned to the treatment. All aspects of IDD therapy are recorded by the SPINA machine.

In addition to treatment on the SPINA machine, patient begins with 10 minutes of Infrared heat applied to their lower back using new carbon fabric infrared pads worn against the body. These infrared pads helps to relieve pain and increases blood flow in the target area. After treatment on the SPINA machine, patients have 10 minutes of cold therapy to prevent any temporary soreness caused by muscles being worked in a new way.

THERAPY PLAN.....

Each treatment lasts for between 45 minutes and 1 hour. IDD therapy may be classified under "Physiotherapy" for your health insurance. The treatment will typically be spread over 4-6 weeks, the number of sessions you need will be dependent on your condition.



FOR WHOM.....

Unresolved back pain, neck pain, leg pain (sciatica) or arm pain caused by spinal nerve root irritation.

Patients with bulging or herniated discs (slipped discs), degenerative disc diseases and chronic stiffness in the lower back are the inclusion criteria for IDD.

IDD THERAPY has undergone extensive clinical testing and has achieved substantial rates. One study in UK revealed success rates of up to 92%. Thousands of satisfied patients have been successfully treated with IDD THERAPY treatment.

TOURETTE SYNDROME

-THE HIDDEN STRUGGLE



V. Srinithi
-BPT Intern

Tourette syndrome is a developmental neuropsychiatric disorder characterised by multiple, brief, recurrent, non rhythmic movements and one or more vocalizations called "TICS".

Tics vary in frequency. Development of the Tourette syndrome is connected to the irregularity in the basal ganglia of the brain. Commonly affects the children within the age group of 5 to 10 yrs.

Tics tends to be worse during the times that are stressful or exciting. It improves when a person is calm, or focused on an activity. In chronic conditions the Tics appear, disappear and reappear. More common in males than females.

Severity of tics in children with Tourette syndrome usually declines during the adolescence. Anxiety, depression, sleep, mood disorders, learning disabilities and disruptive behaviour disorders are commonly associated with Tourette syndrome persons.

Along with these motor and vocal tics, it also includes the involuntary use or inappropriate of obscene words (coprolalia) and the involuntary repetition of a sound, word or phrase (echolalia).

TICS CLASSIFICATION:

Tics are classified into motor & vocal or phonic.

Motor tics are subdivided into: Simple tics which involves grunting, laughing, and throat clearing. Complex tics which involves making animal like sounds using different tones of voice, swear words.

Vocal or phonic tics are subdivided into: Simple tics which involves eye blinking, shoulder shrugging, eye darting, nose twitching, head jerks and finger flexing. Complex tics which involve facial grimacing, touching objects, hopping, arm flapping, tensing muscle groups and self harm.

Along with these motor and vocal tics, it also includes the involuntary use or inappropriate of obscene words (coprolalia) and the involuntary repetition of a sound, word or phrase (echolalia).

PATHOPHYSIOLOGY OF TICS:

Disturbance in the striatal-thalamic-cortical (mesolimbic) pathway, which leads to a disinhibition of the motor and limbic system.

The involvement of dopamine, norepinephrine and corticotrophin releasing factor leads to the production of tics.

Hormonal factors: Arginine vasopressin and oxytocin altered regulation will lead to the production of tics.

Non genetic factors include the obsessive compulsive disorder.

Genetic factors: The defect on chromosome 13 of gene SLITRK1.

MANAGEMENT:

Therapeutic exercise:

- 1) Neck and ocular muscle stretching
- 2) Neck Muscle strengthening
- 3) Balance training
- 4) Upper body coordination exercises

Other interventions:

- 1) Cognitive behavioural therapy
- 2) Biofeedback
- 3) Deep brain stimulation
- 4) Dietary factors - caffeine may trigger an exacerbation of tics in some children, so they are advised to limit its consumption.



The Perils of Poor Posture

Low back pain is a leading cause of disability on a global level.

Two – third of the population will experience low back pain at some point in their lives and it is a primary cause of missed work. The low back is the foundation of the body and it is the starting point for good upright posture. People who are at work for long hours exhibit poor posture and it leads to increased stress on the surrounding musculature which is the major cause for the low back pain.



A.Kirthiga
BPT Intern
SVC OPT

IMPORTANCE OF POSTURE:

The human body was built for structure and movement. The musculoskeletal system provides the framework and it allows proper support, efficiency and generation of body movement and power. Posture has a major role in overall body health and wellness. Normal body alignment and neuromuscular communication yields provide proper movement strategies, efficiency of energy expenditure, normal organ system function and functional pattern without pain. Good posture allows proper balance, musculoskeletal function, and efficiency in motion.

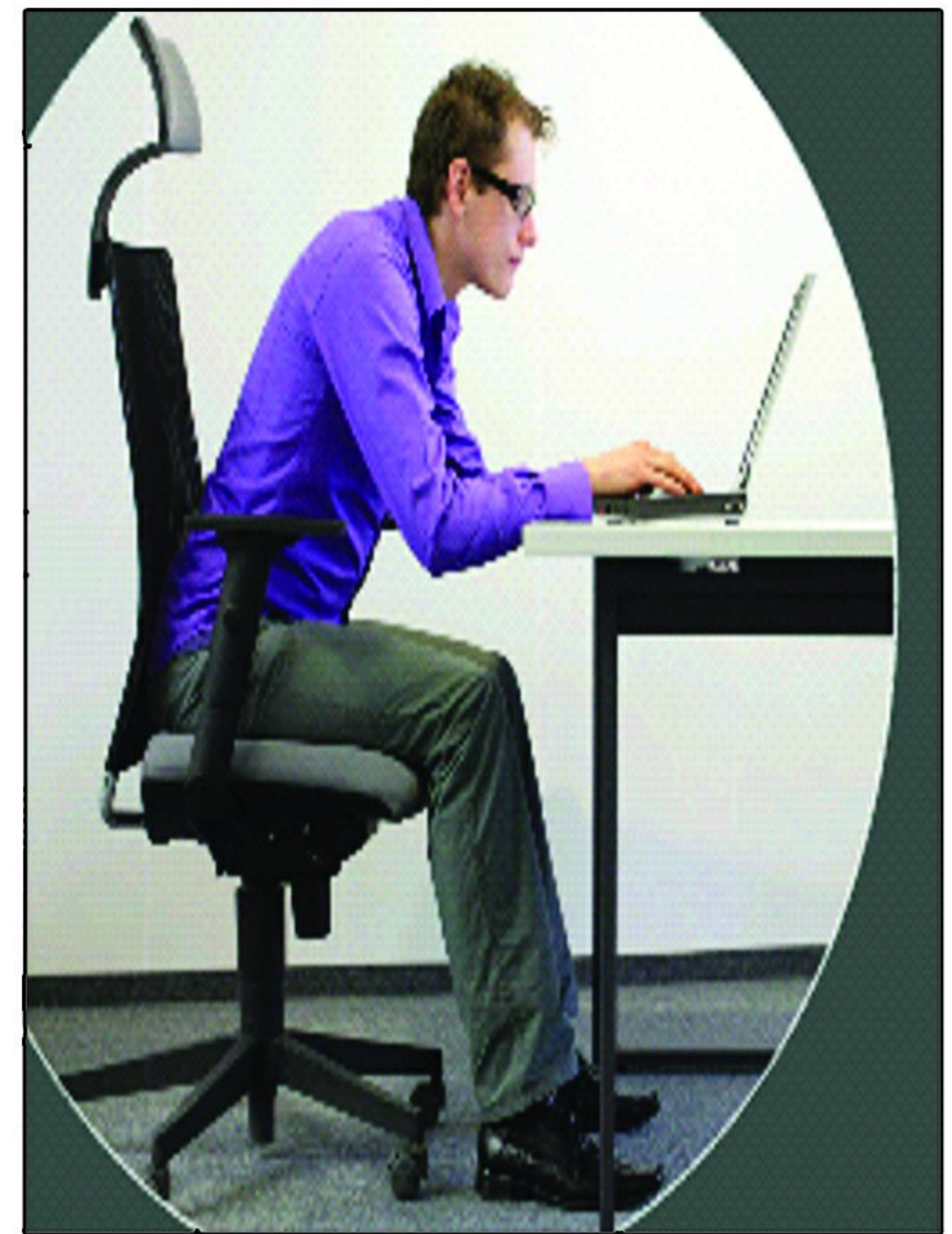
Poor posture can lead to imbalance, dysfunction of musculoskeletal system, inappropriate movement strategy and pain. It also can affect the musculoskeletal system as well as the visceral system. On a deeper level it can affect your breath, energy, sleep, digestion and other body functions. Poor posture puts the musculoskeletal system in an inappropriate position where neuromuscular communication is compromised and as a result the structures being compressed or stretched due to malalignment of joints. The nerves of the extremities exit from the spinal cord through a small opening called foramen. If the spine sits in an abnormal position it reduces the available space for the nerve to exit and leads to nerve root irritation. Nerve irritation can cause pain locally where the nerve roots exist as well as path in which the nerve travels (radiculopathy). Continuous slouching or bending forward with improper mechanics leads to this type of structural irritation and subsequent pain and dysfunction.

MAINTENANCE OF GOOD POSTURE:

Any prolong sitting or standing with poor posture will stress the musculoskeletal system and it increases the potential to cause pain in remote areas based on poor central foundation.

In standing the head should be held over your torso keeping your shoulder back and down by recruiting your transverse abdominal muscle (the deepest abdominal muscle involve in core stability). Inactivity of your deep abdominal muscle allows excessive movement in spine and malalignment in low back which may end in damaging the body foundation where the proper alignment of the entire spinal column begins. Two exercises that can correct posture and reduce decompression on surrounding body structure are

- 1.spinal decompression
- 2.chin retraction



SPINAL DECOMPRESSION:

Spinal decompression can be done in sitting or standing. Sit or stand with good upright posture by reaching up through the crown of the head to unload the spinal column, drop the shoulder down and back pull the abdominal inward the spine. This exercise will activate the small spinal stabilizer muscles (the multifidi) which control the motion between each vertebra.

CHIN RETRACTION:

Keep the head and neck in neutral position, being sure to retract your head (tuck your chin) as you move. With the chest lifted, gently but firmly pull both the shoulder backward while squeezing both the shoulder blades backward and downward.



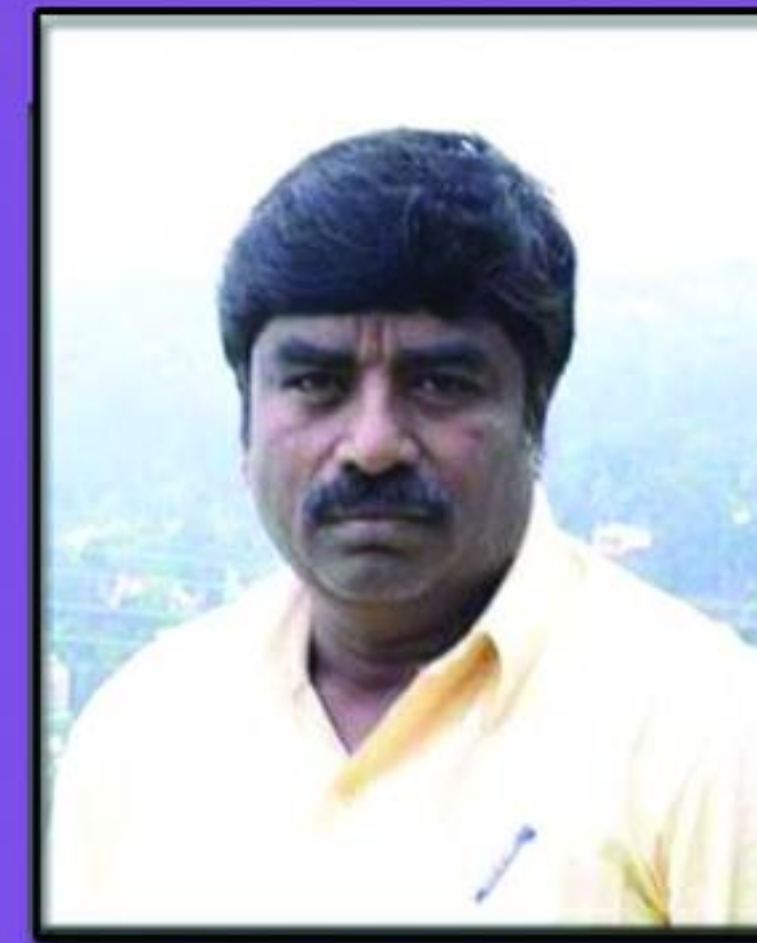
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Solution for the Match & the Puzzle

MATCH THE FOLLOWING - ANSWER

1. Social interaction difficulties Behavioral and educational therapies .3
2. Extreme fatigue Treatment consist of self-care .5
3. Painful sore in mouth, hard to eat Home remedy - salt water gargling .7
4. Swelling around neck Radiotherapy and thyroid surgery .1
5. Period of illness & arthritis Antinuclear antibody test .8
6. Watery eyes Topical antibiotic metronidazole .9
7. Bends in knee & chokes in lungs Recompression chambers .4
8. Dementia & Insomnia Tonsil biopsy .6
9. Depression and hopelessness Light therapy .10
10. Breast tender Drink plenty of fluids .2

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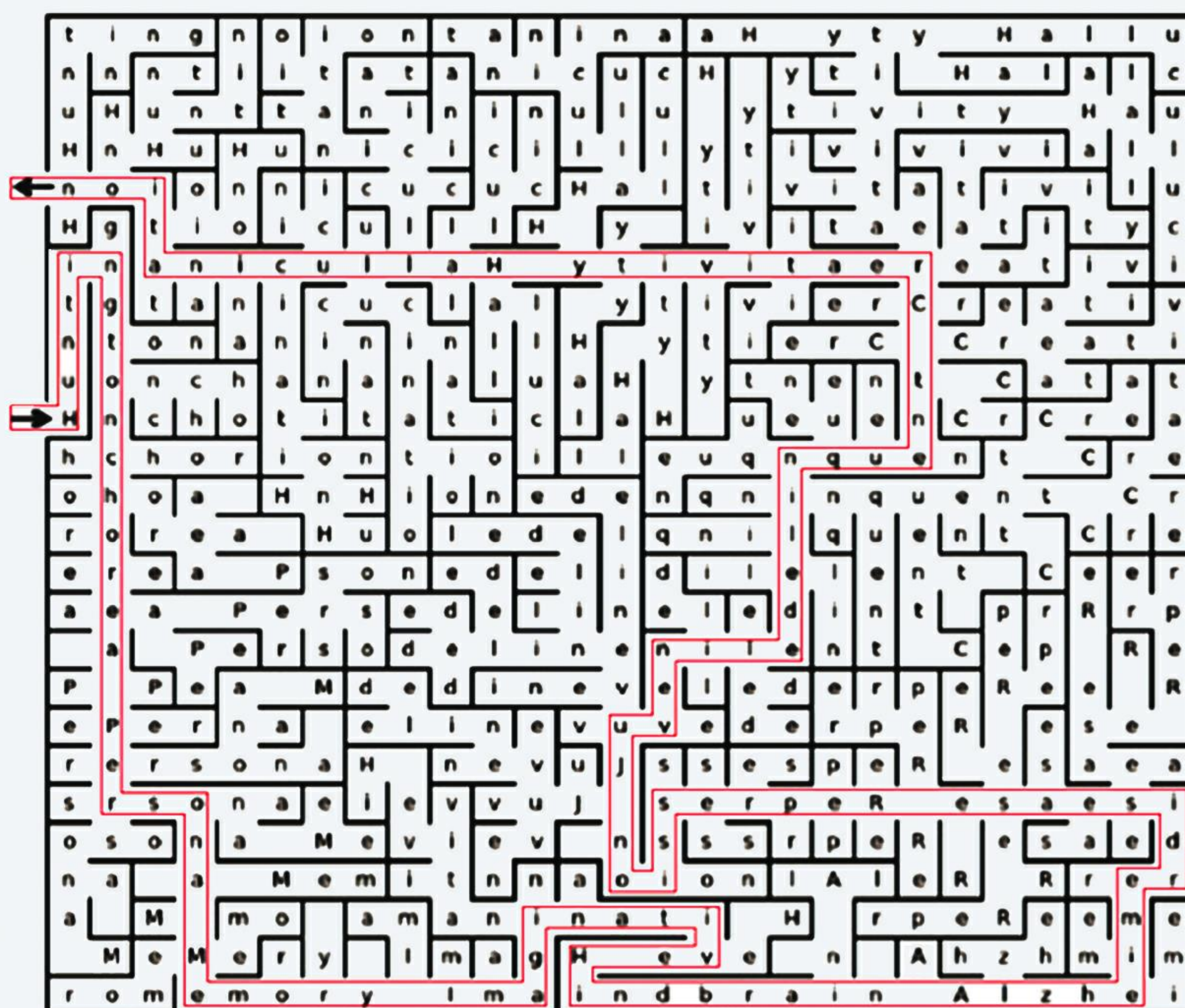
RIDDLES ANSWER

1. Glycosuria
2. Rh disease
3. Bigelow
4. Cerebral artery
5. Avascular necrosis
6. Calms Brain
7. Anemia
8. Elephantiasis
9. Dorsalis pedis
10. Optic Nerve

Answer for the Puzzle

G8	L	A	U	C2	O	M5	A	C	U	L	A	
S9	H3			A							I	
T	Y			R1	I	Z	O	R	I	U	S	
E	B4	U	L13	I	M	I	A				U	
R	R		Y	N		D15	I	O	P	T	E	R
O	I		M	A		A	I	S	O	N	G	A12
I	D		P	T10								A11
D			H14	E	P	A	R	I	N			
T7	E	T	A	N6	Y	S	T	A	G	M	U	S

1. RISORIOUS
2. CARINA
3. HYBRID
4. BULIMIA
5. MACULA
6. NYSTAGMUS
7. TETANY
8. GLAUCOMA
9. STERIOD
10. TEN
11. AGEUSIA
12. AGNOSIA
13. LYMPH
14. HEPARIN
15. DIOPTR



ANSWER FOR THE MAZE PUZZLE

1. Huntington chorea
2. Persona
3. Memory
4. Imaginative
5. Hindbrain
6. Alzheimer disease
7. Repression
8. Juvenile delinquent
9. Creativity
10. Hallucination

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Craniosacral Therapy for better sleep

Dream your future with comfort



A. DEVATHA,
BPT - Intern



Most of the people are suffering from sleep problems. The National Sleep Foundation says that so many people are temporarily affected by sleep disorder, since insufficient sleep can lead to car accidents and chronic diseases including cancer and diabetes. But all of these information were not working for my insomnia. Late at night, I could think about why sleeplessness was not compromising my health. In search of an alternative solution, I came across craniosacral therapy.

Craniosacral therapy (CST) is known to treat a myriad of problems including sleep disturbances. "The light-touch approach of craniosacral therapy helps to calm the body by enabling the client to enter into a state of deep relaxation similar to meditation." It also thought to heal everything from headaches to learning disabilities for all kind of major diseases in different aspects like physical and emotional functions.



Line of Action

The therapist lightly palpates the patients' body, and focuses intensity on the communicated movements. A practitioner's feeling of being in tune with a patient is described as entrainment. Patients often report feelings of deep relaxation during and after the treatment session, and may feel light-headed. While sometimes caused by an increase the level of endorphins, research shows the effects may actually be brought about by the endocannabinoid system. There are few reports of adverse events from CST treatment.

Findings reveals that brain mechanisms are at work during sleep

New findings report the important role of sleep and the brain mechanisms at work as sleep shapes of memory, learning, and behavior. Many adults showed signs of chronic sleep deprivation, making the condition a wide spread public health problem. Sleeplessness is also related to health issues such as obesity, cardiovascular problems, and memory problems.

Caution - Insomnia

Sleeplessness disrupts the coordinated activity of an important net work of brain regions; the impaired function of this net work is also implicated in Alzheimer's disease.

Sleeplessness affects communication between the hippocampus, which is vital for memory, and the brain's "default mode network;" the changes may weaken the event recollection.

In a mise model, fearful memories can be intentionally weakened during sleep, indicating new possibilities for treatment of post-traumatic stress disorder.

Loss of less than half a night's sleep can impair memory and alert the normal behavior of brain cells.



Craniosacral therapy

It is a gentle, non invasive, non intrusive way of restoring the harmony, balance and vitality of mind and body using light touch.

"Brain imaging and behavioral studies are illuminating the brain pathways that are blocked or contorted by sleep deprivation, and the risks that poses to learning, memory, and mental health."

BLOOD FLOW RESTRICTION TRAINING



While I was scrolling Instagram, I just saw this topic which is so interesting....named as BLOOD FLOW RESTRICTION TRAINING. I was amazed that how do we train a muscle through blood flow restriction?? Yah... here I would tell u some information which I had googled about this topic. Here we go!!!!!!!

WHAT IS BLOOD FLOW RESTRICTION TRAINING?

➡ BFRT involves decreasing blood flow to the working muscles in order to promote Hypertrophy and prevent disuse atrophy of muscles.

➡ BFRT involves use of compression devices similar to blood pressure cuff.

➡ The compression devices apply a pressure high enough to occlude 50%-80% of blood flow to the muscles we wish to affect.

I know your next question would be....

"HOW DO I PROMOTE HYPERTROPHY BY TAKING AWAY THE NUTRIENTS THAT THESE MUSCLES NEED TO HEAL AND GROW?"

The most popular theory behind BFRT is that it leads to local hypoxic event, which results in greater accumulation of metabolites that regulate the anabolic response system during exercise. Consequently, we see an increase in anabolic growth factors, fast twitch fiber recruitment, muscle protein synthesis, Heat Shock Proteins, nitric oxide synthase-1 and decreased expression of myostatin. Not only do we get an increase in release of these anabolic response moderators but also we can also limit the amount that can be removed due to the restriction in blood flow.

What next????

HOW DOES IT WORKS?

Exercising with lighter weights while using blood flow restriction causes a local disturbance of homeostasis, as the working muscle does not receive enough blood flow to sustain contractions.

This creates a release of autonomic and anabolic hormones that move throughout the body. This systemic response augments the local response, causing increased protein synthesis. Because little damage is done to soft tissues by avoiding heavy weight lifting, improvements in strength and endurance can come quickly. All tissues both proximal and distal to the blood flow restriction can benefit from these effects.

For whom????

WHO IS BENEFITED FROM BFRT?

● BFRT can safely be used on patients in the acute phase of rehabilitation following most upper or lower extremity surgeries including, ACL reconstruction, meniscectomy, hip, knee replacement, rotator cuff repair or any tendon repair.

● BFRT can minimize loss of muscle mass and decrease bone healing time during early immobilization phases, allowing patients to improve both muscle size and strength without stress of heavy lifting on healing soft tissues.

● Patient with osteoarthritis, rheumatoid arthritis, osteopenia or osteoporosis may also benefit from it. Additionally, it is utilized after strokes or spinal cord injuries and with athletes who want to improve performance.

For whom we can't use this.....

Contra-indications: DVT, pregnancy, varicose veins

Why BFRT????

EFFECTS AND USES:

- ✓ Diminishes atrophy, loss of strength from disuse & non-weight bearing after injuries.
- ✓ Increases strength and hypertrophy with only 30% loads
- ✓ Improves muscle endurance in 1/3rd time
- ✓ Improves protein synthesis in elderly
- ✓ Improves strength & hypertrophy after surgery
- ✓ Improves muscle activation & growth hormone responses.

Be aware!!!!

SIDE EFFECTS:

Subcutaneous hemorrhage (bruising) & numbness, however these symptoms are often discovered in the beginning of BFRT program & dissipate as an individual becomes accustomed to this training modality as reported by 2006 survey of Japanese facilities employing BFRT programs.

I hope, I have given you some useful information regarding this topic, which would be useful for your patients...to treat them with this new technique... see u on next VIVID.....bye!!

R.CHITHIRAI SELVI
BPT 3rd YEAR



LIGHT REACTION TRAINING

A FITNESS TREND....



K.Suriyanarayanan
BPT III Year

INTRODUCTION:

Lights are used as target for the user to deactivate as per the reaction training routine. Various measurements can be captured for immediate feedback in relation to user's performance

During any type of training, specifically speed and agility training, the lights can be deactivated by use of user's hand, feet, head or sports related equipment through full contact

METHODS OF TRAINING

FITNESS TRAINING: Speed, Endurance, Co-ordination, Cognition, Flexibility

SPORTS PERFORMANCE TRAINING: Stamina, concentration and reactivity

VISION TRAINING: Improves communication between brain and the images captured by the eyes

MAP TRAINING: Combination of Physical and Mental training

EXECUTIVE FUNCTION TRAINING : Solving problems, Maintaining attention, Inhibiting emotional impulse.

FIELD OF APPLICATION :

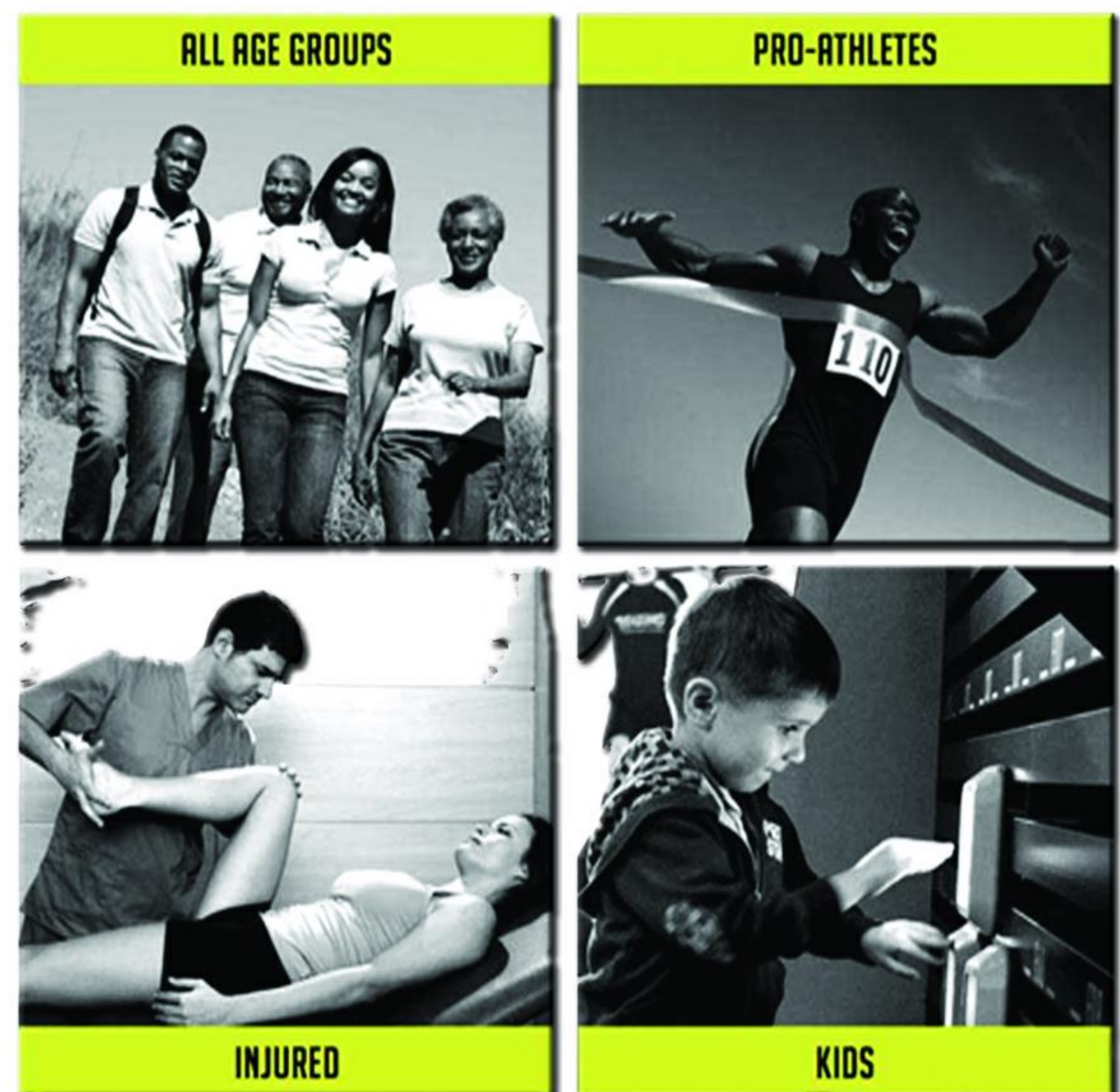
Sports performance

Physical education

Kids fitness program

Small group fitness training

Rehabilitation



THREAPEUTIC EFFECTS:

SPEED AND AGILITY: It reduces the Movement transaction time and repetition

ENDURANCE: Enhances the Ability of the body to process, supply and use oxygen

MUSCE TONE: An accurate and assessable movement performance results in muscle conditioning and improvement

COORDINATION AND CONTROL: Coordination and control allow mastering the ability to combine and control a variety of movements



Sudden Dynamic Impulse Technology

DANCE IS ACTUALLY A WORKOUT

Music: Isolates you from all kind of worries and channelizing your negative energies into a positive medium.

Rhythm: your mind and body synchronize with the music.

Expression: gives glow to your face.

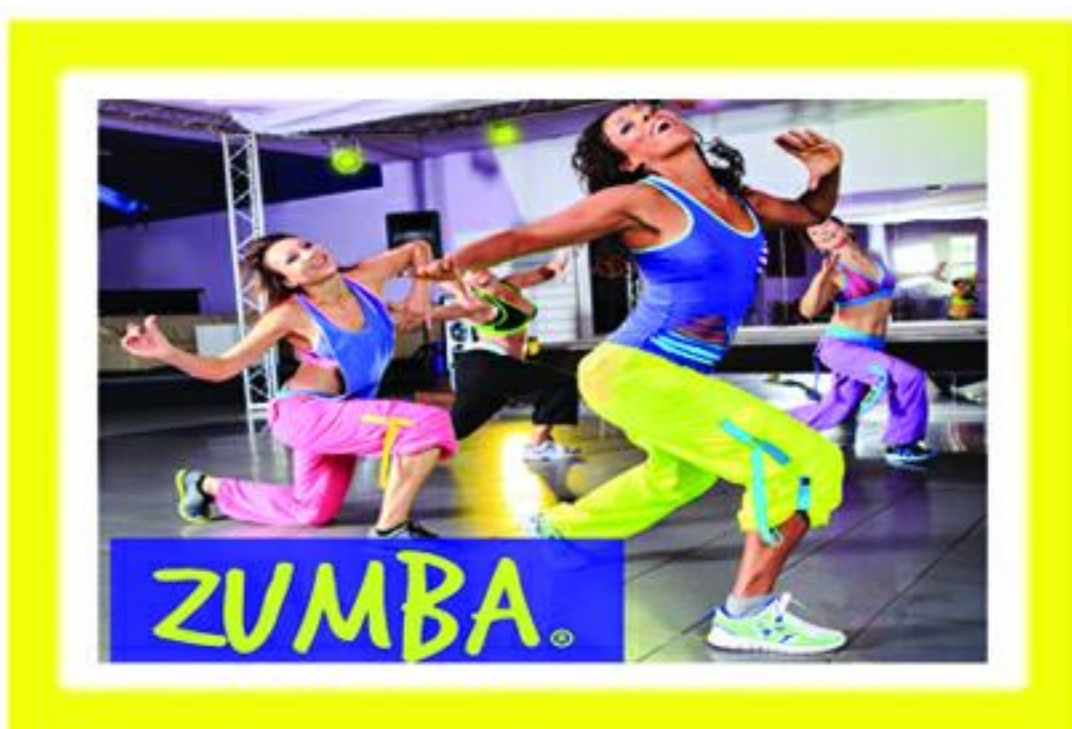
M.VIMAL
BPT Final Year



Dance is a great form of cardiovascular & endurance training. Dance plays a important role in activating the muscles that wouldn't be worked on Gym.



Aerobic dance exercise is currently the most commonly practiced fitness activity. Amount of energy expenditure depend upon the type of dance. Low intensity dance requires a cost of approximately 4-5 Kcal/min. High intensity dance exercise requires a cost of approximately 10-11 Kcal/min. Dance decreases the risk of coronary artery disease, blood pressure, cancer and diabetes. It is the most effective form for slow ageing.



Zumba dance: Zumba is a aerobic workout great for overall fitness. It is easily followed as it has no specific steps to be followed. There is no right or wrong way to perform the zumba dance. Zumba dance helps to burns calories and helps in weight loss. Amount of calorie burn can vary according to the intensity of the dance. Zumba dance for an hour can burns around 300-600 calories.



Hip-Hop dance: Hip-hop dance includes lots of pelvic, hip and waist rolling movements which strengthen the abdominals greatly. It burns around 250 calories per hour.

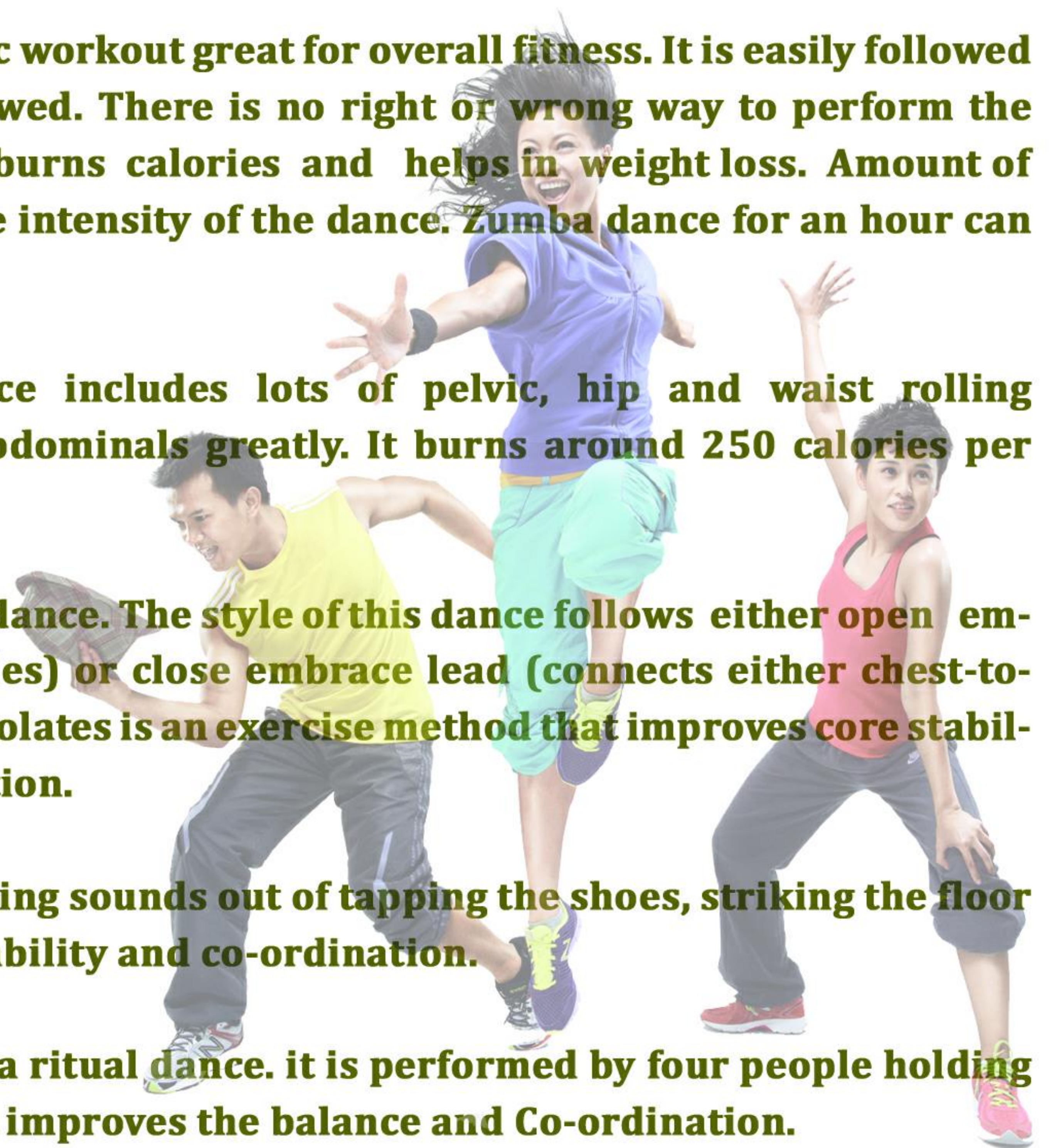


Tango dance: Tango is a partner dance. The style of this dance follows either open embrace lead (space between their bodies) or close embrace lead (connects either chest-to-chest or upper thigh or hip area). Tangolates is an exercise method that improves core stability of Pilates and improves concentration.



Tap dance: It is a form of dance using sounds out of tapping the shoes, striking the floor as a form of percussion to improve stability and co-ordination.

Cheraw dance: Cheraw dance is a ritual dance. it is performed by four people holding two crossed pairs of bamboo sticks. It improves the balance and Co-ordination.



MYTH vs FACT

• *A move will make my back pain worse.*

• *Keep moving can help you recover, as gentle normal movements can be very beneficial to your recovery and these movements are also helps to reduce the fear of moving.*



THE AGING BRAIN

THE BRAIN & EXERCISE



M. Vasanthra
BPT Second Year



S. Swetha
BPT Second Year

Brain aging is predictable to some extent, but not uniform; it affects everyone, or every brain, differently. Slowing down brain aging or stopping it altogether would be the ultimate solution to achieve everlasting youth.

Should we consider aging a natural part of life or an illness?

When it comes to the brain, research has tended to focus on the negative side of aging for example Alzheimer's disease. Yet all of us know that some individuals who continue to be mentally sharp throughout their lives. And the history repeatedly offers proof of genius like A. P. J. Abdul Kalam, Barbara McClintock, Amartya Kumar Sen and so on.

This issue of Science therefore looks at the mechanisms and contexts of successful brain aging. The developmental trajectory of the brain through the entire life span is affected by genetic, physical, and psychological factors. One thing we know already is that our mental lives benefit when we lead lives that are not only physically healthy but also intellectually challenging and socially engaged (Lindenberger, p. 572).

As we age, our brains constantly reorganize in response to new experiences. Even after adverse physical or psychosocial events, such as a stroke or a loved one's sudden death, there is an astonishing level of flexibility in the brain that enables an individual to compensate and adjust (Gutchess, p. 579). Indeed, the language systems of the brain, responsible for some of the richest human interactions, have an inbuilt resilience that ensures that they remain largely robust across the life span (Shafto and Tyler, p. 583). The demographic transformations have to be much more widely discussed if societies are to become well prepared mentally and institutionally look over the challenges.

Therapies to help slow brain aging

Factors have been discovered that speed up brain aging. For example, obesity in midlife may accelerate brain aging by around 10 years, and both sugar and diet varieties of soda are correlated with fast tracking of brain age, having smaller overall brain volume, poorer episodic memory, and a shrunken hippocampus. A growing body of evidence suggests that people who experience the least declines in cognition and memory all share certain characteristics:



- partaking in regular physical activity
- pursuing intellectually stimulating activities
- staying socially active
- managing stress
- eating healthily
- sleeping well

Recent research highlights a plethora of ways that we can actively take charge of our health and perhaps decrease the rate at which our brains age.

Engaging in regular exercise may help prevent cognitive and memory decline:

One intervention that crops up time and time again to stave off age-related mental decline is exercise. A combination of aerobic and resistance exercise of moderate intensity for at least 45 minutes each session and on as many days of the week as possible has been reported to boost brain power in people aged 50 and over significantly.

Likewise, other research by the University of Miami found that individuals over the age of 50 who engaged in little to no exercise experienced a decline in memory and thinking skills comparable to 10 years of aging in 5 years, compared with those who took part in moderate or high intensity exercise. Essentially, physical activity slowed brain aging by 10 years.

A healthy life of both physical and mental may be the best defence against the changes of an aging brain. Additional measures to prevent cardiovascular disease may also be important.

Invitation...



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