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# **BCIP TODAY 2019-20**



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**AN OFFICIAL PUBLICATION OF**  
**BANARSIDAS CHANDIWALA INSTITUTE OF PHYSIOTHERAPY (BCIP)**  
**AN INSTITUTE UNDER AEGIS OF SHRI BANARSIDAS CHANDIWALA SEWA SMARAK TRUST SOCIETY**



# Message from the Editor

**Dear readers,**

It gives us immense pleasure in welcoming you, on behalf of the entire community of the BCIP Institute. The Institute has pride standing of about 17 years now. We are proud to follow the path laid down by the Founders of BCSSTS. This Institute has laid the foundation of modern physiotherapy education in Delhi and NCR region. This institution of physiotherapy has immensely contributed to the society by providing intellect talent possessing evidence based practical skills.

The magazine BCIP TODAY is to be viewed as a launch pad for the student creative urges to blossom naturally. As the saying goes, mind like parachute work best when opened. This humble initiative is to set the budding minds free allowing them to roam free in the realm of imagination and experience to create a world of beauty in words.

The enthusiastic write up of your young writers are indubitably sufficient to hold the interest and admiration of the readers. This magazine is indeed a pious attempt to make our budding talents give shape to their creativity and learn the art of bringing awareness because we believe that or success depends upon our power to perceive, the power to observe and power to explore. We are sure that the positive attitude, hard work, sustained efforts and innovative ideas exhibited by our students will surely stir the mind of the readers and take them to the surreal world of unalloyed joy and pleasure. We have put in relentless efforts to bring excellence to this treasure trove.

This magazine is the college official annual publication distributed to members every year. It aims to provide a record of college activities and the achievements of students and alumni as well as offering interesting articles about college. The management and the staff have been supportive of the various activities that were undertaken by the student in view of helping them reach pinnacle of perfection and professionalism in whatever task they took on, thus strengthening the “the journey of achieving excellence”.





# INTRODUCTION



BCIP is a premier Institution of excellence in **Physiotherapy education & training** that develop professionals and leaders of high calibre imbued with values of entrepreneurship, ethics and social responsibility. The Institute is managed under the Aegis of **Shri Banarsidas Chandiwala Sewa Smarak Trust Society**. In order to meet with

the emerging challenges of medical education and clinical facilities in our seamless economical spurt, the society took a strategic decision of establishing BCIP in the year 2003. Since then BCIP is promoting education and clinical practice in Physiotherapy through its educational programs and services. The Institute is affiliated to Guru Gobind Singh Indraprastha University, Delhi and is approved by the Delhi Council of Physiotherapy and Occupational Therapy (DCPTOT). BCIP has been awarded “Grade A” by Delhi State Fee Regulatory Committee, Govt. of NCT of Delhi. BCIP Mission statement is “To be an Institution of excellence in education, research & development, and training in Basic and Applied Physiotherapy”. The Institute will help in the development of society through its education, expertise and clinical services and thereby making it an attractive destination for prospective aspirants in Physiotherapy profession.

Presently Institute is conducting Bachelor of Physiotherapy (BPT) This program comprises of a challenging curriculum, coaxing each student for perfection and highest academic accomplishments. These academic programs develop a winning mindset, positive attitude and a personality exuding confidence. Institute is equipped with infrastructure of national acclaim, core faculty and visiting faculty with rich and vast research and academic experience and shining track record, and thus students are assured of unique and exciting learning experience. Institute has always scaled steeper heights of excellence year by year.



BCIP strives to be the best training and learning centre in the field of physiotherapy education. The Institute mentors every student to be at their best by training them to excel in their performance & to reach perfection. Training activities are organized throughout the year; in addition to in-campus postings, students are trained at



other hospitals of Delhi also. Institute has signed Memoranda of Understanding with hospitals / Institutes of National and International repute to expose students to different aspects of Physiotherapy treatments. BCIP is providing rewarding Physiotherapy programs and is tailoring placements worldwide.



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# LITERATURE





# LOWER CROSSED SYNDROME

Shweta Rohtagi BPT 4<sup>th</sup> year



It is also referred to as distal or pelvic crossed syndrome. In LCS, tightness of the thoracolumbar extensors on the dorsal side crosses with tightness of the iliopsoas and rectus femoris. Weakness of the gluteus maximus and medius. This pattern of imbalance creates joint dysfunction, particularly at the L4-L5 and L5-S1 segments, SI joint, and hip joint. Specific postural changes seen in LCS include anterior pelvic tilt, increased lumbar lordosis, lateral lumbar shift, lateral leg rotation, knee hyperextension. If the lordosis is deep and short, then imbalance is predominantly in the pelvic muscles; if the lordosis is shallow and extends into the thoracic area, then imbalance predominates in the trunk muscles.

This “swayback” posture typically develops from prolonged sitting and sleeping with knees and hips flexed. As lumbar and SI joints become fixated, protective spasm further compresses the spine causes low back, hip and leg pain. Therapists must restore balance and symmetry to all lower crossed muscles and re-check firing order patterns in hip extension, hip flexion and hip abduction.

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## **Lower Body Muscle Imbalance**

- ***Tight Hip Flexors***
- ***Tight low Back***
- ***Weak Abdominals***
- ***Weak Glutes***

## **Related Pain Syndromes**

- ***Low Back Pain***
- ***Mid back pain***
- ***Hip Pain***
- ***Lower extremity pain Syndromes***



## Examination for Lower Crossed Syndrome

Some specific examination points for LCS include the following:-

- **OBSERVAIN IN ERECT STANDING AND GAIT**

- Position of the pelvis. There is usually an increase of anterior tilt of the pelvis. This can be associated with increased lumbar lordosis. Next the shape, size and tone of the tightened/inhibited muscles.

- **ACTIVE EXAMINATION**

- Hip extension - is examined to analyze the hyperextension phase of the hip in gait. Use straight leg lifting.
- Hip abduction – the patient with LCS, will combine the abduction with an lateral rotation and a flexion of the hip.
- Trunk curl up – is tested to estimate the interplay between usually strong iliopsoas and the abdominal muscles.

FIG 1: - HIP ABDUCTION



Source: myhealth.alberta.ca

FIG 2:- TRUNK CURLUP



Source: myhealth.alberta.ca

- **PASSIVE EXAMINATION**

Hip flexors are tested with the patient in a modified **Thomas position**. This test can be influenced by the stretch of the joint capsule and thus more specific test should be performed to confirm the tightness of the adductors. Confirmation of tightness is clear when excessive soft tissue resistance and decreased range of motion are encountered on application of pressure.

- The tightness of Hamstrings is tested with a **straight leg test**.





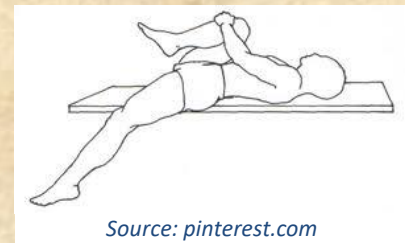
- The **piriformis** muscle is tested with the patient in a supine position. If the muscle is tight, the end feel is hard and may be associated with pain deep in the buttocks.
- Thigh adductors are tested with the patient lying supine at the edge of the plinth. Tight hamstrings may contribute to the range limitation. If this situation occurs, bending the knee should increase the range of movement.
- Triceps surae are tested by performing passive dorsiflexion of the foot. Normally, the therapist should be able to achieve passive dorsiflexion to 90 degrees.

## **PHYSIOTHERAPY MANAGEMENT**

- The treatment of tightness is not in strengthening as it would further increase tightness and possibly result in more pronounced weakness. A tight muscle should be stretched efficiently. Stretching of tight muscles results in improved strength of inhibited antagonistic muscles.
- Stretch the specific muscle for a duration of 15 seconds. A five-week active stretching program significantly increases active and passive ROM in the lower extremity.

### **ILIOPSOAS STRETCH (rectus femoris)**

- The patient is placed in Thomas position. The not –stretched side is maximally flexed to stabilize the pelvis and flatten the lumbar spine. The other leg is normally in flexed position because of the leg into the neutral position. Hold this position 15 seconds.



### **ERECTOR SPINAE STRETCH**

- The patient lies supine in the foetal position, their knees to their chest with their arms wrapped around their knees. Exhale and stretch. Hold this position for 15 seconds.

Reference:

*Key J. The Pelvic Crossed Syndromes: A reflection of imbalanced function in the myofascial envelope; a further exploration of Janda's work. Journal of bodywork and movement therapies. 2010 July;14:299-301*

# ERGONOMIC CARE: WORK MADE EASY

-Stuti Pandey BPT 4<sup>th</sup> year

Ever heard someone telling you that they face lower back pain during sitting continuously during their office hours? Has a guard come to you with a complain of pain in the knee/ ankle? If yes, then they may be facing a repercussion of ergonomic hazard!

Ergonomic practices address the intersection between people and the made environment. Ergonomic hazard is any interaction with the made environment that causes the user discomfort or strain. These are the physical factors within the work environment that arise due to the biomechanical stress on the employee that pose risk to musculoskeletal system. Such problems do not arise immediately. Its important to understand that ergonomic isn't just about the comfort; its directly linked to safety and injury prevention. Poor ergonomic contributes to muscle strain, muscle imbalance and fatigue.

## What are the causes?

1. Awkward postures
2. Static/sustained postures
3. Large forces/ forceful exertions
4. High Repetitive motion

**High task motion:** Many jobs requires repetitive motions and if combined with other risk factors may lead to ergonomic hazards. If the cycle time of these repetitive motions is 30 seconds or less, the work is considered highly repetitive. Examples include typing and using mouse, which can result in carpal tunnel syndrome. Other work-related actions that cause repetitive stress injuries include overhead work, auto mechanical work, driving, messaging clients, etc.

**Forceful Exertions:** Many tasks require excessive exertion/force load on the human body like the warehouse workers move heavy boxes. These exertion increases excessive muscle work leading to fatigue and thus giving rise to musculoskeletal disorders.

**Sustained Postures:** Many jobs like desk jobs, driving, etc requires employees to attain a specific posture for a long duration of time leading to fatigue of various muscles.

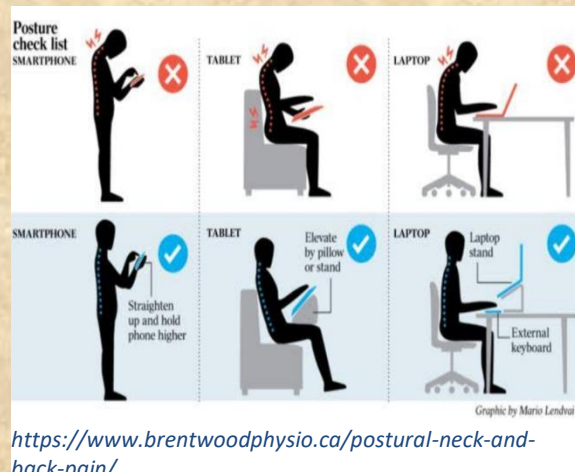


<https://sites.google.com/site/ergonomics2015607/history/caused-of-ergonomics-1>





**Awkward postures:** It produce overloading on certain joints and muscles. Joints of our body are most efficient in mid-range movements, and injuries occur if they work outside this mid-range repetitively or for sustained periods of time without adequate recovery time. According to Andrew Mohler, “the stress from poor posture can lead to back pain by causing problems with your muscles, discs, and joints”. This will eventually lead to injury.



<https://www.brentwoodphysio.ca/postural-neck-and-back-pain/>

## **How to control?**

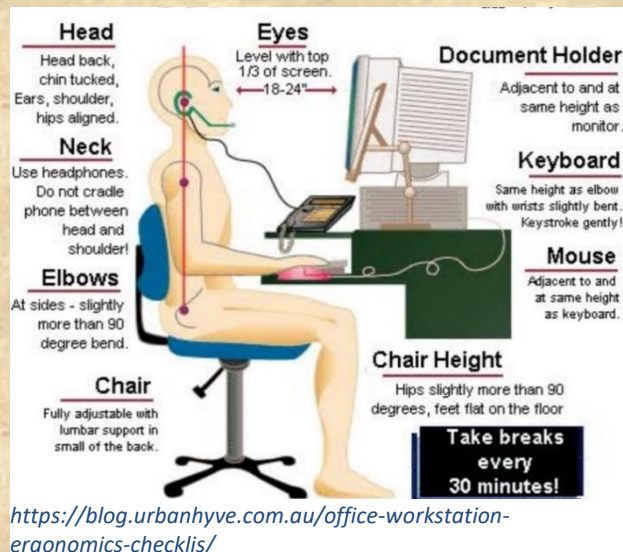
- ✓ Eliminate the requirement of excessive force or repetitive movements to reduce fatigue of worker.
- ✓ Using mechanical assists like carts and trollies, adjustable height lift tables and workstations, will reduce work effort and exertion.
- ✓ Provide safe and effective and proper training of the techniques for doing work.
- ✓ Bringing awareness among employee about various ergonomic hazards
- ✓ Job rotations among employees to reduce the repetitive motions.
- ✓ Breaks should be given in proper time intervals

## **Who is an Occupational health Therapist?**

Biomechanics is the study of body movements and the forces acting upon the musculoskeletal system. Physical therapists have extensive education and experience evaluating the mechanical forces at work in the human body. Injuries typically occur when biomechanical forces exceed the biomechanical limitations of soft tissue or bone. When combined with biomechanical forces, environmental and ergonomic factors have a cumulative effect on our health. Physiotherapist who work to improve the well-being of workers so that they can do their jobs efficiently and effectively are called the Occupational Health (OH) Physiotherapists.



## What do Occupational Health (OH) Physiotherapist do?



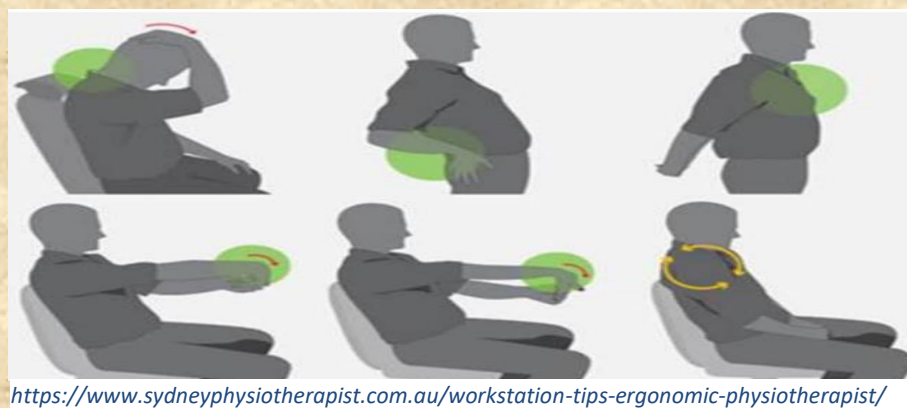
OH Physiotherapists work in diverse settings including manufacturing, the NHS, the service industries, offices, retail, healthcare, ergonomics consultancies, public sector and private practice. They have a role in proactively promoting health and well-being in the work environment and can improve the safety, comfort and performance of the working population. This reduces accidents and sickness absence, and helps to improve productivity and performance.

Physiotherapy treatment and rehabilitation of work-relevant injuries. This treatment is provided on site or in an off-site treatment centre;

- return to work planning;
- improving an employee's tolerance to work gradually;
- educating others on injury prevention in the workplace;
- ergonomics workplace assessments (including DSE);
- health promotion;
- job task analysis and advice on modifications;



<https://www.gilbaneco.com/blog/safety/ergonomic-hazards-in-construction/>



<https://www.sydneyphysiotherapist.com.au/workstation-tips-ergonomic-physiotherapist/>





- Occupational and vocational rehabilitation;
- Functional capacity evaluations;
- helping employers meet their obligations under the Equality Act 2010;
- advice on compliance with Health and Safety obligations; specialist knowledge of manual handling and physical ergonomics in the office and workplace;
- communication and reporting in order to facilitate return to work.
- Many of the OH professionals who provide advice at Fit for Work are OH physiotherapists.

There are significant benefits for both employers and employees in having OH physiotherapists in the workplace. By tackling problems or potential problems early on, the likelihood of them becoming long lasting is reduced. This improves the health and wellbeing of the working population, helps people stay in work and can result in costs savings for companies.



<https://beaconphysicaltherapy.com/conditions/ergonomic-postural-consults/>

## **The benefits of being in employment**

Evidence has shown that being in work can result in significant health improvements and increase the self-esteem of individuals. Work can also help people recover from sickness and reduces the risk of long-term incapacity. The positive health effects of work mean that, if their condition permits, those with disabilities or chronic health issues should be supported to return to, or remain in, work.

Reference:

<https://safetylinelneworker.com/blog/workplace-hazards-series-ergonomics/>  
<https://blog.sliceproducts.com/examples-of-ergonomic-hazards-in-the-workplace>



# CHRONIC PAIN - A BRIEF OVERVIEW

Purshotam BPT 4<sup>th</sup> year

## Introduction

Pain is body's normal reaction to an injury or illness, a warning that something is wrong. For many people, pain continues long after its cause is gone. When it lasts for 3 to 6 months or more, it's called chronic pain. Day after day, it can take a toll on your emotional and physical health. About 25% of people with chronic pain will go on to have a condition called chronic pain syndrome (CPS). That's when people have symptoms beyond pain alone, like depression and anxiety, which interfere with their daily lives.

## Classification

The International Association for the study of pain defines chronic pain as pain with no biological value, that persists past normal tissue healing. The DSM-5 recognizes one chronic pain disorder, somatic symptom disorders, a reduction from the three previously recognized pain disorders. The criteria include it lasting for greater than six months.

The suggested ICD-11 chronic pain classification suggests 7 categories for chronic pain.



**Chronic primary pain:** defined by 3 months of persistent pain in one or more anatomical regions that is unexplainable by another pain condition.

**Chronic cancer pain:** defined as cancer or treatment related visceral, musculoskeletal, or bony pain.





**Chronic posttraumatic pain:** pain lasting 3 months post trauma or surgery, excluding infectious or pre-existing conditions.

**Chronic neuropathic pain:** pain caused by damage to the somatosensory nervous system.

**Chronic headache and orofacial pain:** pain that originates in the head or face, and occurs for 50% or more days over a 3 months period.

**Chronic visceral pain:** pain originating in an internal organ.

**Chronic musculoskeletal pain:** pain originating in the bones, muscles, joints or connective tissue.

## **Epidemiology**

A systematic literature review of chronic pain found that the prevalence of chronic pain varied in various countries from 10.1% to 55.2% of the population, affected women at a higher rate than men, and that chronic pain consumes a large amount of healthcare resources around the globe.

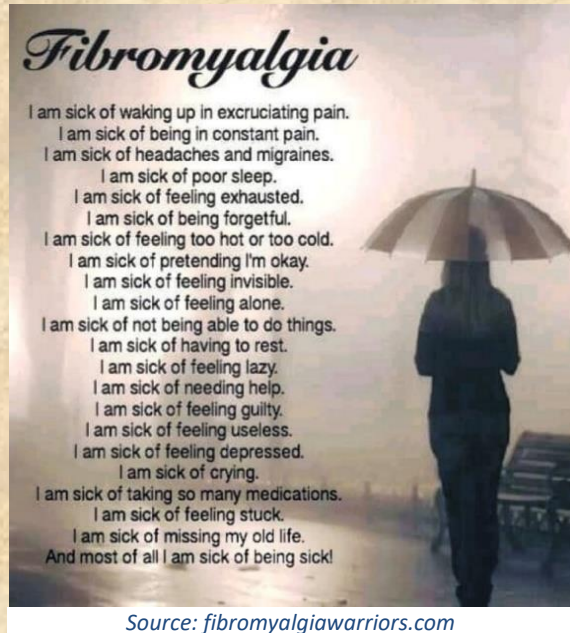
## **Causes**

- Arthritis and other joint problems
- Back pain
- Headaches
- Muscle strains and sprains
- Repetitive stress injuries, when the same movement over and over puts strain on a body part
- Fibromyalgia, a condition that causes muscle pain throughout the body
- Nerve damage
- Lyme disease
- Broken bones
- Cancer
- Acid reflux or ulcers
- Inflammatory bowel disease (IBD)
- Irritable bowel syndrome (IBS)
- Endometriosis, when tissue in the uterus grows outside of it
- Surgery



## Symptoms

- Anxiety
- Depression
- Fatigue
- Poor sleep
- Feeling very tired or wiped out
- Irritability
- Guilt
- Loss of interest in sex
- Drug or alcohol abuse
- Marriage or family problems
- Job loss
- Suicidal thoughts



## Physiotherapy Management

**HOW TO TREAT CHRONIC FATIGUE NATURALLY**  
 Brought to you by Positivemed.com

Chronic fatigue is caused by a block of the **ADRENAL GLANDS**  
 This happens due to:

- ▼ Excessive stress
- ▼ Nutritional deficiencies
- ▼ Stimulants
- ▼ Toxic metals & chemicals.

**SYMPTOMS**

- ▼ Morning fatigue
- ▼ Sleepiness or clouded thinking
- ▼ Burst of energy at around 6 p.m
- ▼ Craving for foods high in salt & fat
- ▼ Increased PMS / menopausal symptoms
- ▼ Mild depression
- ▼ Lack of energy
- ▼ Decreased ability to handle stress
- ▼ Muscular weakness
- ▼ Increased allergies
- ▼ Decreased sex drive
- ▼ Frequent sighing among others

Very important for the body since they secrete more than 50 essential hormones. They are responsible for many body functions like:

- > Energy production
- > Carbohydrate, protein and fat conversion to blood glucose for energy
- > Fluid and electrolyte balance
- > Fat storage

**HOW TO TREAT IT**  
 Without the need of more chemical and artificial products. You can fully live life again by making the necessary lifestyle and dietary changes to treat your disorder.

- Adopt a natural whole-foods diet
- Drink high quality water, not from the tap.
- 5-6 servings of vegetables a day through juicing or meals
- Avoid white flour & other processed grains
- Replace table salt with sea salt
- Add licorice root extract and kelp to your diet
- Do a detox and use an infra-red sauna
- Replace toxic chemical products in the house with non-toxic alternatives
- Spend some time in the sun every day
- Do something fun each day
- Get lots of rest
- Exercise
- Minimize stress
- Take negative people out of your life
- Avoid junk food
- Take high quality fish oils
- Laugh

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Source: [Positivemed.com](http://Positivemed.com)

Many patients state that the pain rules their lives and cannot see how this can change without a medical cure. However, with appropriate instruction in a range of pacing techniques, cognitive therapy to help identify negative thinking patterns and the development of effective challenges, stretching and exercising to improve physical function, careful planning of tasks and daily activities, and the judicious use of relaxation training, many people find the treatment enables them to take back control of their lives, to do more and feel better.

References:

[https://www.physio-pedia.com/Chronic\\_Pain](https://www.physio-pedia.com/Chronic_Pain), [https://en.m.wikipedia.org/wiki/Chronic\\_pain](https://en.m.wikipedia.org/wiki/Chronic_pain),  
<https://www.webmd.com/pain-management/guide/understanding-pain-management-chronic-pain>,  
<https://www.healthline.com/health/chronic-pain>, <https://www.positivemed.com/tag/chronic-pain-syndrome/>



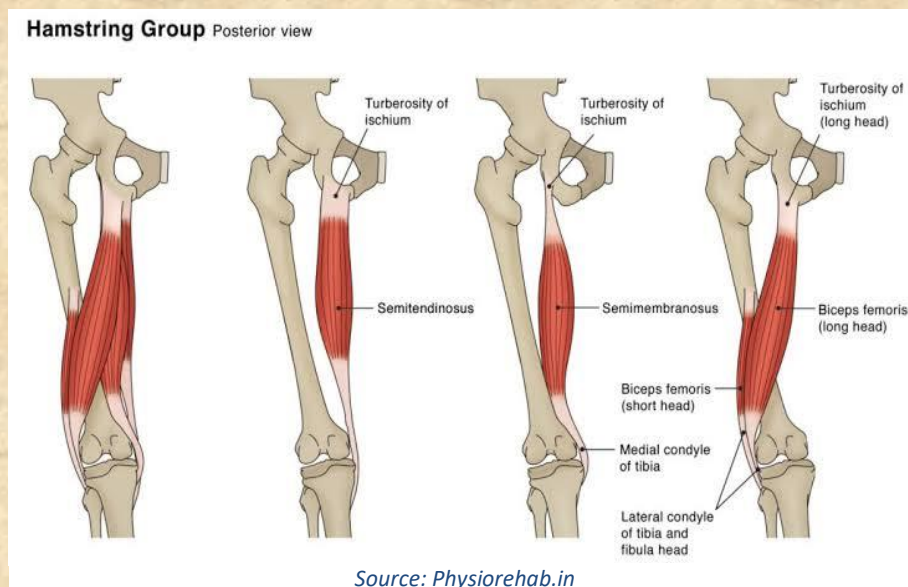


# HAMSTRING TIGHTNESS

Shweta Rohtagi BPT 4<sup>th</sup> year

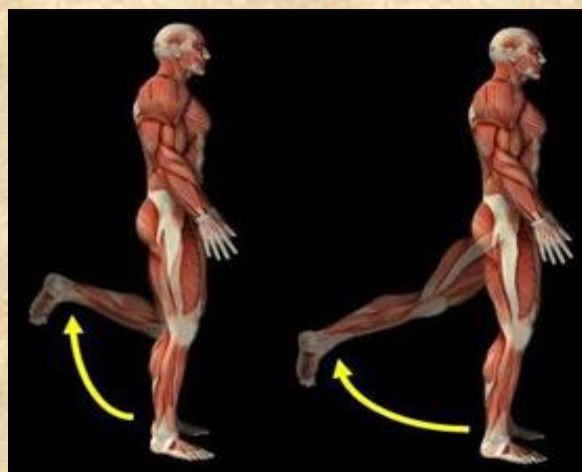
## Hamstring

The Hamstrings are a group of 3 muscles located at the back of the thigh or femur bone. The muscles connect the buttock area of the pelvis to the backside of the lower leg.



## Role of the hamstring

This group of muscles helps in bending the knee and extending the hip (bringing the thigh behind you).



Source: [Physiorehab.in](http://Physiorehab.in)

BCIP TODAY



## **Causes of hamstring tightness**

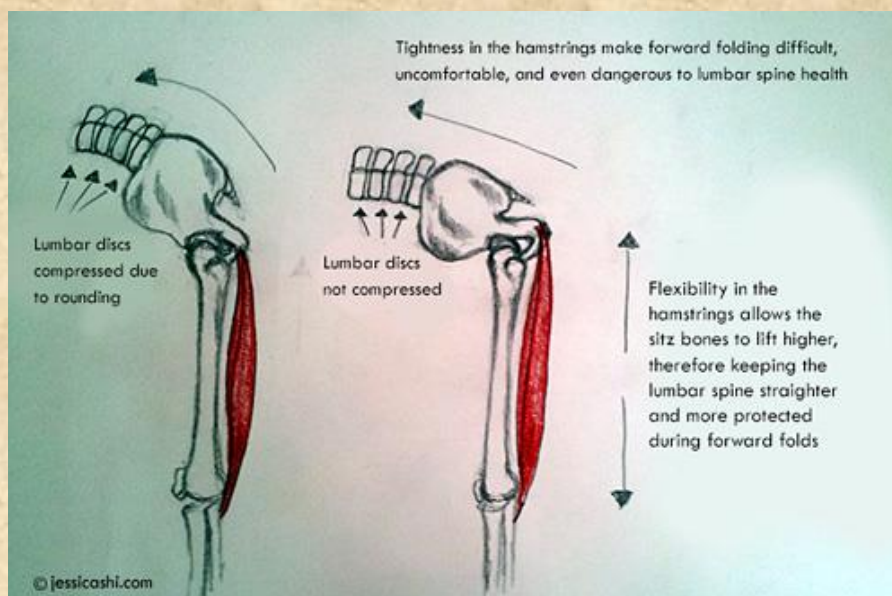
- True hamstring tightness
- Hamstring tendinosis or acute hamstring strain
- Old hamstring injury
- Neural tension (Sciatic nerve supplying the muscle can be tense)
- Protective tightness to guard the pain.

## **Tight Hamstring = Weak lower back**

When this happens over a prolonged period of time the muscles in the lower back become weak and start to fatigue. These muscular imbalances can cause pain in the lower back.

How to prevent hamstring tightness, and in turn lower back pain :

A simple stretching routine can help limit the amount of tightness especially if you are sitting all day. Remember though its not just the hamstring tightness alone that causes pain always, and it is advisable to get evaluated by a physiotherapist and treat it accordingly.



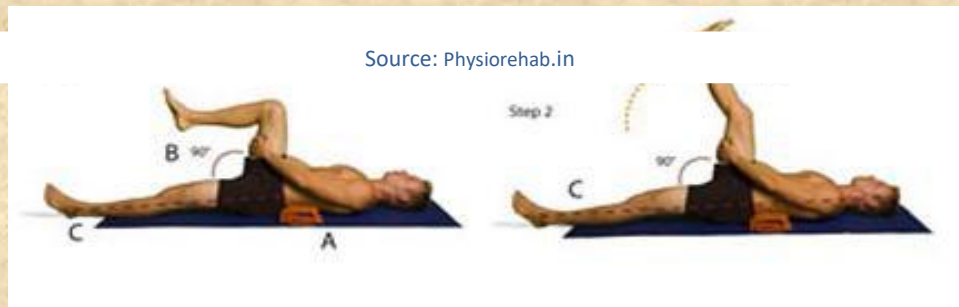
Source: [Physiorehab.in](http://Physiorehab.in)





## **Few of the self-stretches are as follows**

### *90-90 stretch:*



- Lie on your back with both legs straight. Bend one knee to 90 degree.
- Hold your bent leg behind the knee, at the thigh.
- Slowly straighten the bent knee keeping the thigh stable.
- Hold for 20-30 seconds till you feel a mild discomfort/stretch in the hamstring region or when the opposite leg starts lifting from the ground or if the knee starts bending.

## **How does Physiotherapy help?**

Because the pelvis is the part of the body that connects the legs to the torso, any changes in the orientation of the pelvis can create problems at the other joints above and below such as knees, ankles and even neck for that matter as hamstring muscles are attached as slings to the upper back muscles. Correct diagnosis will help the removal of pain and prevent situations.

## **Physiotherapy tools like :**

- Education regarding correct body mechanics and posture.
- Heat/Cold therapy depending on the acute/chronic stage of the condition.





- Ultrasound therapy
- Myofascial release
- Dry needling
- Deep tissue massage
- Trigger point release
- Manual stretching techniques
- Neural tissue mobilization
- Joint mobilization
- Kinesiology taping



Source: [Physiorehab.in](http://Physiorehab.in)



Source: [Physiorehab.in](http://Physiorehab.in)

- Sport specific training
  - Ballistic stretches
- Hands of application of these tools by a licensed physical therapist can help increase the range of motion, improve muscular and joint function and decrease pain in individuals who have backache due to such a cause.

Reference:

[https://www.physio-pedia.com/Hamstring\\_Strain](https://www.physio-pedia.com/Hamstring_Strain)





# DIABETIC PERIPHERAL NEUROPATHY AND ITS EVALUATION

**Shweta Khural BPT 4<sup>th</sup> year**

Diabetes mellitus is not a disease but it is a metabolic clinical syndrome characterized by hyperglycaemia.

Diabetes is a cause of debilitating condition which is known as **Peripheral Neuropathy (PN)**. PN causes pain and discomfort mainly affecting the lower extremities. The loss or reduced protective sensations in the lower extremities leads to balance problems, unnoticed injury, wounds to the foot, poor healing and increased foot ulcerations consequently leading to reduced quality of life in adults with Type 2 DM.

This article aims to provide the importance of Peripheral Neuropathy diagnosis in a clinical setup. To understand evaluation of PN as a routine practice & thereby preventing foot ulcers and complications.

## **Prevalence of Diabetic Peripheral Neuropathy (DPN):**

The most frequently occurring complication in Type 2 DM is **DPN or Distal Symmetrical Polyneuropathy (DSP)**. A study reported that older people with severe bunions, toe deformity, ulcers and deformed nails have two times increased risk of falling when compared with their healthy counterparts.

### **STAGES IN DIABETIC NEUROPATHY:**

**Stage 0:** No neuropathy, no signs / symptoms, abnormal quantitative sensory tests doesn't reveal any abnormalities.

**Stage 1:** Subclinical neuropathy, no signs / symptoms, positive quantitative sensory tests.

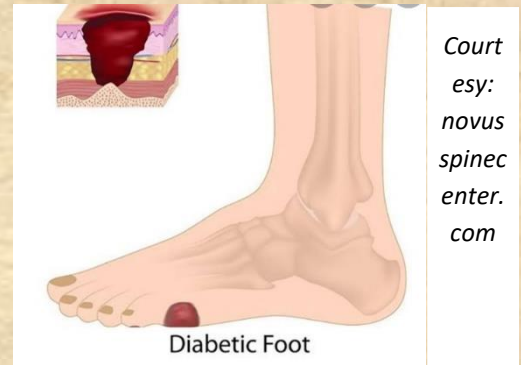
**Stage 2:** Clinically evident neuropathy, with signs/ symptoms, positive quantitative sensory tests.



**Stage 3:** Debilitating neuropathy, with signs/ symptoms, positive quantitative sensory tests.

## **CLASSIFICATION OF DIABETIC NEUROPATHY:**

1. Symmetrical Distal Neuropathy
2. Symmetrical Proximal Neuropathy
3. Asymmetrical Proximal Neuropathy
4. Asymmetrical Neuropathy and Symmetrical Distal Neuropathy



**PAIN:** *Dysesthetic pain is due to increased firing of cutaneous and subcutaneous damaged nociceptive fibres.*

Paraesthetic pain is due to loss of segmental inhibition of large myelinated and small unmyelinated fibres.

Muscular pain includes dull aching pain, night cramps and band like sensations.

## **MOTOR SIGNS AND SYMPTOMS:**

Imbalance while walking is a common complaint. Patient may have Gait Ataxia while walking in the dark yet no Ataxia during the day. Toe extensors and calf muscle weakness may be a key feature.

## **SYMPTOMS OF AUTONOMIC NEUROPATHY:**

Autonomic Neuropathy in diabetes affects many organ systems including gastric bowel motility, urinary bladder, sexual functions, conduction system of heart and skin. Patients complain of symptoms from dry, cracked and mottled skin, dizziness, syncope, abdominal bloating, constipation, urinary incontinence, etc. Not only this silent Myocardial infarction is quite known in Diabetics.

## **NEUROLOGICAL EXAMINATION:**

The examination begins with assessment of vitals such as heart rate, and measurement of blood pressure in several positions, to assess orthostasis and changes in pulse. For patients with orthostatic hypotension, the measurements should be delayed for 1min after position change.





Patients with dry, cracked and lacerated skin and having changes in nails & skin discoloration may have autonomic Neuropathy. In mild DIABETIC distal Neuropathy, there will be reduced or lost ankle reflexes, gradual loss of large and small sensory fibre modalities or “stocking and gloves” sensory loss. Examination of vibrations senses using 128 Hz tuning fork to check vibratory senses at the feet.

### **MOTOR FUNCTION:**

Typically, weakness will be first administered in the toe extensors followed by the toe flexors. Proximal muscles of the legs are often spared unless DPN is long standing approximately 25-30 years.

Once diabetic Neuropathy advances to the level of the knee, patients complain of weakness in upper extremities.

### **ELECTROPHYSIOLOGICAL TESTING:**

It plays a major role in evaluation of patients with Distal Symmetrical poly neuropathy using sensory and motor nerve conduction studies. Electrophysiological testing defines the fibres that are affected in DPN & also gives insight of the duration and prognosis of the Neuropathy.

Routine Nerve conduction studies are the gold standard for the diagnosis. It includes evaluation of the motor function of the median, ulnar, radial, perineal and aural nerve. In nerve conduction studies (NCS) always correlate with the clinical scores and nerve amplitude reflects the degree of loss of nerve fibres. Severity in abnormality in NCS depicts association with abnormal glycaemic levels.

### **MONOFILAMENT TESTING:**

Monofilament Testing of the plantar surface of the great toe and pulp of the index finger bilaterally can assess sense of touch. The current known device is known as Semmes -Weinstein Monofilaments. They are calibrated, single fibre nylon threads identified by values ranging from 1.65- 6.65 that generates a reproducible buckling stress.



## **QUANTITATIVE SENSORY TESTING:**

It is an essential method for quantifying sensory functions in patients with DPN. Vibration Perception Thresholds (VPT) can be obtained by a simple inexpensive device neurothesiometer.

**CLINICAL ASSESSMENT OF POSTURE:** Postural stability can be evaluated by determining sway, velocity, sway length: in eyes open, eyes closed, eyes open on foam. This includes Posturography with an analyser and display unit.

Reference:

*Dixit S, Maiya A. Diabetic peripheral neuropathy and its evaluation in a clinical scenario: A review. J Postgrad Med 2014 ;60:33-40*

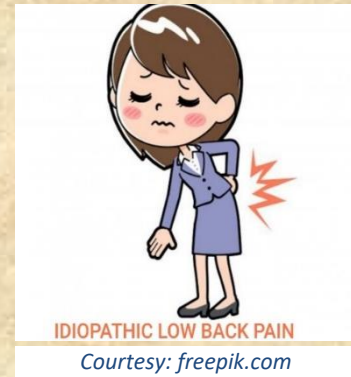




# IDIOPATHIC LOW BACK PAIN

**Shweta Khural BPT 4<sup>th</sup> year**

Low back pain has lately reached epidemic proportions. Acute low back pain is defined as pain, increased muscle spasm and stiffness localised below the costal margin and above the inferior gluteal folds, sometimes followed by radiating pain for up to six weeks. Pain which continues but doesn't exceed twelve weeks is defined as subacute, later becomes chronic.



This article aims at understanding the possible causes of low back pain which is idiopathic in nature.

Low Back Pain may cause a person to stay at home; away from work or it may cause disability that limits a person's ability to perform usual work activities. Some psychosocial factors measured in the acute or subacute stages of low back pain are predictors of progression to chronic low back pain.

In Idiopathic Low Back Pain, it is necessary to recognize the nature of the back pain. The nature of the LBP can be static or dynamic; static when pain is present during stationary positions and dynamic when it appears during movement. The complex nature of the origin, symptoms, individual's perception of pain and its overall influence leads to marked variation in therapeutic approach.

There are several causes of idiopathic LBP:

- Cauda equina compression with clinical signs and symptoms of bilateral sciatica, saddle anaesthesia, bladder and bowel incontinence.
- Abdominal aneurysm- tearing, throbbing pain, syncope, dizziness, hypotension, decreased Peripheral pulses.
- Infectious diseases affecting lumbar spine: bacterial infections- persistent pain even at rest, exacerbated by movement, stiffness and acute symptoms.
- Abdominal / spine tuberculosis and fungal infections- loss of body weight, pain over the affected vertebrae with reflex spasm.
- Discitis with pyogenic sacroiliitis – post disc surgery, SI joint is painful and tender.



## **INFLAMMATORY SPONDYLOARTHROPATHIES:**

- SI Joint Arthritis - Long lasting morning stiffness, persistent pain
  - Ankylosing Spondylitis-Localised SI Joint Pain, iritis gradually increase in stiffness, later affecting the whole spine.
  - Reiter's Disease – conjunctivitis, urethritis, pain localized to lumbar spine
  - Psoriatic Spondylitis- skin patches, localized pain to lumbar spine
  - Tumours- Nocturnal pain at rest
- BENIGN – localized pain, stiffness, involves posterior elements of spine
- MALIGNANT- diffuse pain, systemic symptoms and involves anterior element of spine.
- Osteoporosis- Midline bony tenderness, pain over affected vertebrae, thoracic Kyphosis
  - Osteoarthritis- degenerative disc disease, articular degeneration.

## **REFERRED LOW BACK PAIN:**

### **VISCEROGENIC**

- Vascular Lesions- dull diffused, deep pain abdomen may radiating to hips and thighs
- Genitourinary- constant pain over costovertebral angle
- Kidney- colic pain, not relieved by altering positions.
- Urethral – girdle pain along the belt line

### **Others:**

- Gastrointestinal- pancreatitis (H/O excessive alcohol consumption)
    - Peptic ulcer (pain relief after eating)
  - Polymyalgia Rheumatica – Proximal shoulder/ hip joint stiffness, raised ESR levels.
  - Fibromyalgia- chronic fatigue- diffused muscular pain
- Irritable bowel syndrome - widespread trigger points
- Psychotic – no other clinical findings manifested.

Reference: *Jayant Joshi Essentials of Orthopaedics 3<sup>rd</sup> edition: Spine, 32:458*





# DEPRESSION

**Deepa Mehta BPT 4<sup>th</sup> year**

Depression refers to feelings of despair and hopelessness, negative shifts in perception, and decreased interest in activities that once provided pleasure. A person may have a depressed personality and therefore experience sadness throughout his or her entire life. As in most cases of depression, a person may have one or more episodes of depression, before and after which a normal mood exists. When depression lasts 2 or more weeks and affects occupational and social functioning it is considered to be major depression.

Women with disabilities are more prone to depression (30%) than women without disabilities (10 to 25%) men with disabilities (26%) and general population (10%). In this people stop caring about their hygiene. They may avoid social contact and become increasingly lonely.

## **Signs and symptoms associated with mild, moderate and severe depression:**

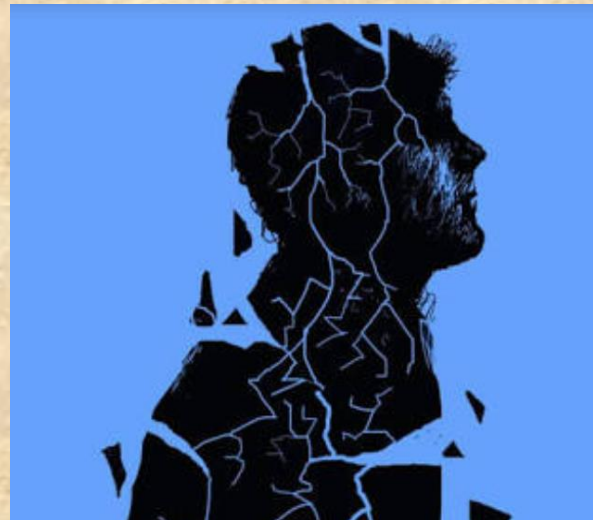
### **Mild depression**

- Anger
- Anxiety
- Decreased concentration
- Depressed mood
- Indecisiveness
- Intrusive thoughts
- Irritability
- Lethargy
- Loneliness
- Neediness
- Sadness



## Moderate depression

- Decreased self-esteem
- Despair
- Despondence
- Excessive guilt
- Fearfulness
- Inadequacy
- Sensitivity



Source: <https://images.app.goo.gl/tXgFQk8HrL7UJrpg6>

## Severe depression

- Anguish
- Change in appetite and weight
- Decreased sex drive
- Desperation
- Feeling overwhelmed
- Helplessness
- Insomnia
- Recurrent thought of suicide
- Worthlessness

## Treating patient with depression

Depressed patients require assistance with motivation. Physical therapist can facilitate motivation by providing encouragement, emphasizing strengths, offering positive feedback, addressing values, and mobilizing guilt into goal acquisition.

It is important to offer reality checks such as pointing out their strengths when they feel worthless. Cognitive therapy can be used to correct ongoing pessimism by challenging negative thoughts.

Recovery from depression doesn't have a specific time line. Each patient's situation is unique, as is the recovery period. Most patients cannot 'snap out of it' as many families members desire.





## **When to make a referral for depression**

If the patient has never been treated for depression and is experiencing suicidal ideation or symptoms of depression that markedly impair life roles, the therapist should refer the patient to a psychiatrist for possible medication and management.

Patients with less severe symptoms who are not suicidal can be referred to a psychologist for verbal therapy. If a patient's depression seems to be caused by family turmoil, a referral to a social worker for family intervention can be made. Patient who have difficulty verbalizing their feelings can be referred through non-verbal means such as music, dance or art. A referral to an occupational therapist can be made to help patients regain function in daily life roles that have been disrupted by depression.

## **Suicide**

Each year more than 10.9/lakh people cases of suicide are reported in the India, and some additional cases may go unreported due to complication regarding the cause of death. People who commit suicide are below the age of 44yrs.

Suicide is often a result of poor social support, low self-esteem, in effective coping skills, and the inability to see a solution to difficult situation. Risk factors includes serious illness, previous suicide attempts, family history of suicide, alcohol and substance abuse/dependence, loss of a loved one through rejection or death, prolonged depression and financial difficulties.

The most frequent signs of suicide risk include the following.

- Direct comments about suicide
- Indirect comment about suicide
- A plan to commit suicide
- Writing a suicide note
- A sudden flight into happiness or relief after a long depression
- Excessive risk taking and a careless attitude
- Self-hatred



The most important thing for a physical therapist to do when suspecting that a patient is suicidal is to prevent him or her from carrying out the act.

During this period, the following should take place.

- Ask patient if they are thinking of hurting or killing themselves.
- Listen to patient without expressing shock, without discrediting what they say and without devaluing their feelings; take all suicide threats seriously even if you do not believe them at the time.
- Respond to patients with empathy and understanding, tell them how much you care about them and that you will be available to help them.
- Alert family members, friends, and significant others to the patient's suicide risk; all of these individuals may help prevent the patient from trying to commit suicide; suicidal ideation does not go away in a day; additional help is required from all possible sources over time.

Reference:

*Susan B O'sullivan Physical rehabilitation: Psychosocial Disorder, 26:1197*





# RESEARCH AND INNOVATION



# SELF-GUIDED PHYSIOTHERAPY COULD BENEFIT CHRONIC FATIGUE PATIENTS

Graded exercise therapy guided by physiotherapists could have significant benefits for patients diagnosed with chronic fatigue, according to a new study.

Research carried out by scientists at Queen Mary University in London saw 200 chronic fatigue patients monitored over a 12-week period as half tried out guided graded exercise self-help (GES) to explore its effects on their symptoms while the other half simply received traditional physiotherapy.



<https://images.app.goo.gl/6u9mm9NSqF7MtnbL6>

Over the course of the study, patients in the GES group were in regular contact with a physiotherapist specially trained in the discipline over the phone or via Skype to establish a gentle exercise routine for each day designed to gradually increase their physical activity levels.

Meanwhile, participants in the other group attended regular physiotherapy sessions with a qualified professional.

At both the beginning and end of the 12-week study period, patients were asked to rate their fatigue and physical function levels in line with the official chronic fatigue system (CFS). On this scale, a lower fatigue score indicates more energy, as does a higher mark for physical function.

By the end of the three months, 42 per cent of those assigned to the GES group had managed to successfully complete the programme and it was found that these individuals' fatigue levels were on average four points lower on the CFS scale than their counterparts who had only received physiotherapy.





In addition, those who had been encouraged to take more control over their physical activity levels with guidance from a specialist saw their overall physical function increase by an average of six CFS points, indicating a marked improvement.

Lead author of the study Dr Lucy Clark commented: "Graded exercise focuses on improving routines and changing physical activity patterns. The aim is to progress carefully to improve, under the supervision of a CFS-experienced therapist, rather than pushing people too hard and towards a setback.

#### REFERENCES

[https://www.justphysio.co.uk/physiotherapy-article-801837416-self\\_guided\\_physiotherapy.html](https://www.justphysio.co.uk/physiotherapy-article-801837416-self_guided_physiotherapy.html)  
<https://www.webmd.com/fitness-exercise/ss/slideshow-different-types-athletic-shoes>



# TECAR Therapy



Source:  
<https://images.app.goo.gl/2oAU7W5wp5iBhtyb9>

The Endogenous Thermotherapy based on the principle of Capacitive and Resistive energy transfer (Capacitive-resistive diathermy).

TECAR is a newly introduced therapy, able to significantly reduce recovery and rehabilitation time by stimulating the activation of biological repair processes. It provides immediate anti-inflammatory and analgesic effects on muscles, tendons, cartilage or ligaments.

The two systems, capacitive and resistive, allow the operator to easily adjust the therapy according to type the pathology. Capacitive transfer for tissue with high water content (muscles), resistive transfer for tissue with the highest resistance and low water content (bones, tendon, adipose tissue).

## MECHANICS

TECAR is characterized by transfer of energy within tissues by using a capacitive electrode covered by an insulator and a resistive electrode conductor, following the mechanism of a condenser of a generator that distributes signals at a frequency of 0.5 MHz at a maximum power of 300 W.



Source: <https://images.app.goo.gl/6u9mm9NSqF7MtnbL6>

## EFFECTS

- Control of pain and inflammatory reactions: it accelerates the rehabilitation program and focuses principally on reduction of pain.
- Recovery of articulation mobility: the research suggests that prompt and safe results can be achieved by using devices with controlled elastic forces along with isokinetic devices that enable the Physiotherapy to customize and control loads.





## DIFFERENCE BETWEEN CAPACITIVE AND RESISTIVE MODES

In resistive mode, low frequency current passes more through resistive parts of body (joints, ligaments, tendon and bones). This mode concentrates the energy mainly upon 'hard tissues'.

In capacitive mode, the higher frequency current flows more through capacitive parts of body (muscles and area with higher water content). Capacitive mode concentrates energy mainly on 'soft tissues'.

## DOSAGE

Sessions may last from 5 minutes to 10 minutes. Normally the patient can be treated 2 to 5 times a week. However, if required more than one treatment can be given daily. The therapist will define the sittings as per individual's condition and severity of pathology.

## ADVANTAGES

- TECAR therapy is safe and side effect free. There is no side effect arising with correct use of the device because TECAR supplies biocompatible energy to biological tissues.
- TECAR can be used in combination with other therapies such as chiropractic, osteopathic treatments, massage, mobilization of soft tissues.
- Can be used following surgical operations.
- TECAR therapy delivers energy to biological tissues and guarantees immediate, long lasting relief.
- Results definitely depend upon the condition of the patient and pathology.
- TECAR can be used in the acute phase to reactivate micro-circulation and stimulate the lymphatic system, to help drain oedema or to rapidly reduce swelling.

In acute phase, it should be used in adjustable pulsed mode to avoid generating excessive heat in the area of injury.

## RESULTS

The majority of patients experienced a reduction in pain and improvised function after TECAR therapy. The results differ statically with acute and chronic cases.

Reference:

<https://okto.bg/en/tecar/>, <https://www.stevenphysio.sg/what-is-tecar-therapy/>, <https://www.tr-therapy.com/subpage>, <https://www.mectronicmedicale.com/america/en/products/doctor-tecar/introduction>



# PEDOMETERS: THE NEW PRESCRIPTION FOR RHEUMATOID ARTHRITIS



Source: [www.prevention.com](http://www.prevention.com)

Using a pedometer to measure the number of steps one takes in a day has been linked to lower fatigue in persons with rheumatoid arthritis, according to research presented this week at the American College of Rheumatology Annual Meeting in San Francisco.

Rheumatoid arthritis is the most common chronic autoimmune disease that affects the joints. RA has the potential for joint damage and deformity, with loss of function. The cause of RA is unknown. It affects people of all ages, and women more commonly than men. RA causes pain, stiffness and swelling, generally in multiple joints. RA may affect any joint, but the small joints in the hands and feet are most frequently involved. Rheumatoid inflammation may also develop in other organs such as the lungs.

Fatigue is problem for many people with RA. And, this can often lead to them shying away from physical activity, which unfortunately contributes to a cycle of more fatigue and less physical activity. Researchers from the University of California in San Francisco recently looked at one way of breaking this cycle -- the use of pedometers.

"With prior funding from the Rheumatology Research Foundation, I completed a study of the predictors of fatigue in RA. We found that, even after accounting for RA disease activity, obesity, depression, and sleep disturbance were important predictors of RA fatigue, and that physical inactivity was associated with each of those predictors. So, physical inactivity seemed to be the most important target to address," explains lead investigator, Patricia Katz, PhD; professor of Medicine and Health Policy; Division of Rheumatology, Department of Medicine, University of California, San Francisco.

Dr. Katz's team recruited 96 people from previous studies and rheumatology clinics to participate in a study -- also funded by the Rheumatology Research Foundation -- that looked at the effects of increased daily activity on RA-related fatigue. To participate in





the study, a person had to be English or Spanish speaking, able to walk (even with a walking aid), able to return for follow up visits, experience at least a moderate level of fatigue, and be sedentary. Of the 96 participants, 88 percent were women with an average age of 54 and who had been diagnosed with RA an average of 14 years. The majority were English speaking; and 59 and 60 percent were on glucocorticoids and biologics, respectively.

At the beginning of the study, each participant filled out a Health Assessment Questionnaire (with the group receiving an average HAQ score of 1.34). They were also asked to report on their level of fatigue, and the group received an average fatigue score of 59 (based on the Patient Reported Outcomes Measurement System, or PROMIS). Finally, they were asked to wear an activity monitoring device for one week to determine their starting level of activity. The median of the average number of steps during that first week was 3,710, which is well below the threshold for a sedentary lifestyle (5,000 steps per day).

After one week, each of the participants was randomly placed into one of three groups. The first group received education on physical activity and no other intervention. Group two received a pedometer and a diary to log their daily steps. Group three received a pedometer, step diary, and a goal of increasing their steps by 10 percent every two weeks.

Groups two and three received calls from study personnel every two weeks to check on progress and collect the number of steps walked. Additionally, during these calls, group three would receive their new step goal for the next two weeks. All of the groups received a follow-up call at 10 weeks and participated in an in-person follow up at 21 weeks.

At 21 weeks, groups two and three had significant increases in their daily steps when compared to group one (which had virtually no change in activity). Group two increased their steps by 87 percent, and group three by 159 percent. "Just having a pedometer and reporting steps seemed to be important," says Dr. Katz. "Combined, both pedometer groups increased average daily steps by 125 percent, and both had significant decreases in fatigue. Of course, having goals seemed to create an even greater increase in steps and decrease in fatigue, but the important shift occurred just from having the pedometer and monitoring steps," explains Dr. Katz, who also notes that groups two and three had an added element of accountability in reporting their steps to study personnel.

While all groups noted their fatigue decreased the more they moved, it was the participants who were the least active at the beginning of the study who noticed the



biggest change in fatigue at the end. This finding, explains Dr. Katz, suggests that people who were the least active gained the most from the intervention.

"From a purely logistical point of view, if someone's baseline activity level is 2,000 steps per day, it may be less difficult in terms of time and effort for them to increase their steps per day by 100 percent to 4,000 steps per day over a five-month period," she explains. "This may also move them from being very sedentary to a healthier level of activity. On the other hand, if someone is already covering 5,000 steps per day, it will take more time during the day for them to increase by 100 percent. And, while this increase is likely to have health benefits, the change in health benefits may not be as great when compared to someone moving from sedentary to low activity.

"Overall, this study further confirms the importance of physical activity for people with RA," concludes Dr. Katz, who suggests people with RA add more steps to their day. "Not only does it help to reduce fatigue -- as shown in this study -- it may improve mood, help a patient maintain a healthy weight, improve cardiovascular risk factors, and improve overall functioning."

REFERENCES:

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<https://www.rheumatology.org/About-Us/Newsroom/Press-Releases/ID/717>





# RECENT ADVANCEMENT IN PHYSIOTHERAPY FOR OA KNEE

OA (osteoarthritis) knee is a leading cause of pain and disability, which reduces the quality of life. The disease is known to progress with advancing age. It has been found to be a major factor in advancing disabilities in the older population.

## PATHOPHYSIOLOGY

Degenerative joint disease, associated with wear and tear occurring with aging.

Pathogenesis involves degradation of cartilage and remodelling of bone due to active response of chondrocytes.

Release of enzymes from these cells break down collagen and proteoglycans destroying cartilages.

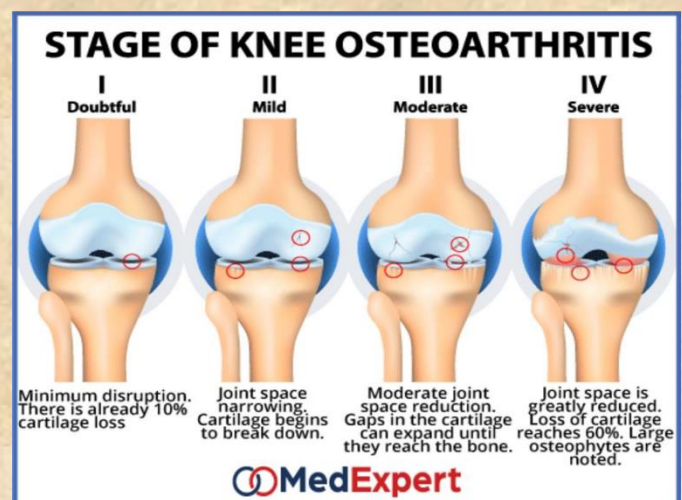
Joint space is progressively lost over time.

## CLINICAL FEATURES

Small joints are commonly affected. Patients typically present with symptoms that are insidious, chronic and gradually worsening.

Typical presentation stands for pain, stiffness in joint, decreased ROM over time, and joint clicking sounds.

X-Ray is revelatory.



Source: <https://images.app.goo.gl/rMLQhEngJpVYgp2AA>



## PHYSIOTHERAPEUTIC TREATMENT

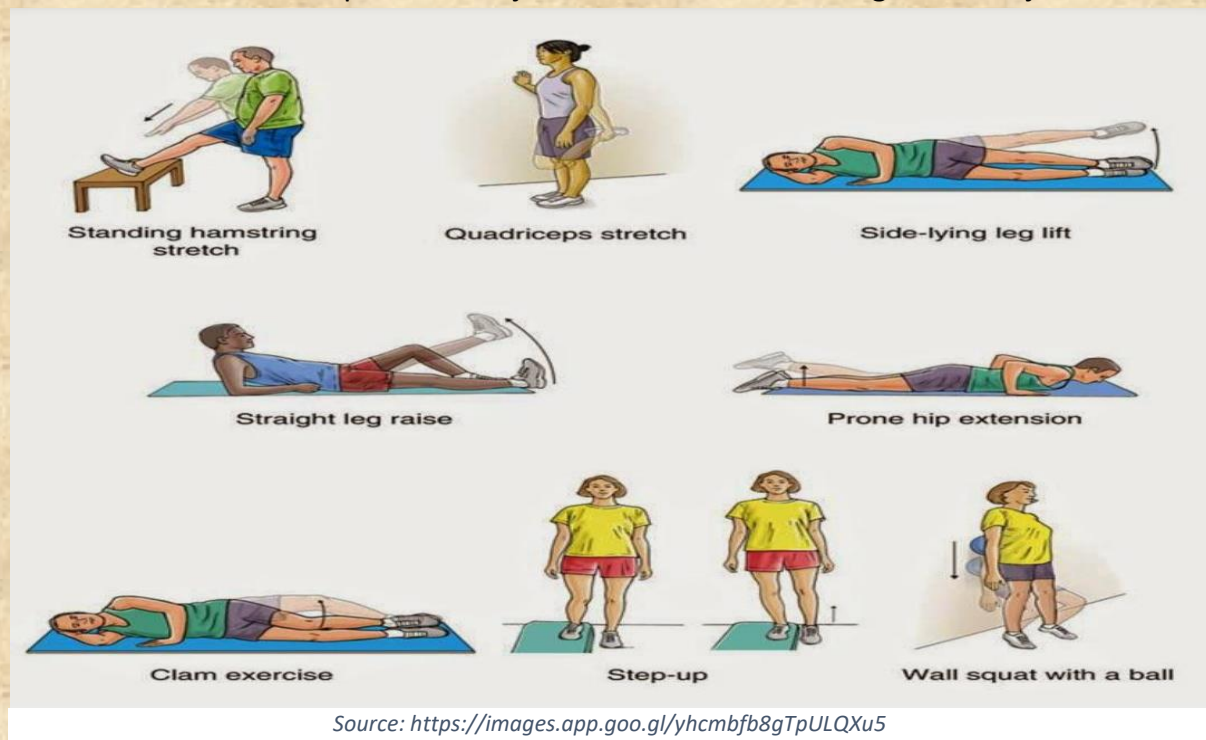
Recent studies have shown that the quality of life can be markedly improved if OA knee patients have been provided early diagnosis and treatment.

Studies show that PT intervention as modalities, exercise therapy along with postural correction, proprioceptive and gait training, reduces progression and severity of disease.

PT modalities such as Ultrasound (UST), Interferential therapy (IFT), Short wave diathermy (SWD) have definite effects on knee pain and discomfort. Exercise and postural correction results in overall fruitful outcomes of treatment.

## EXERCISE THERAPY

This includes stretching, strengthening and improved joint sense to maintain balance with activities. These includes for muscles as Quadriceps, hamstring, adductors, TFL etc. Around the joint. This improves flexibility of knee and activities such as running, bending while stair climbing and squatting and other activities can be done efficiently. This also includes the hip and ankle joint as well when treating the knee joint.

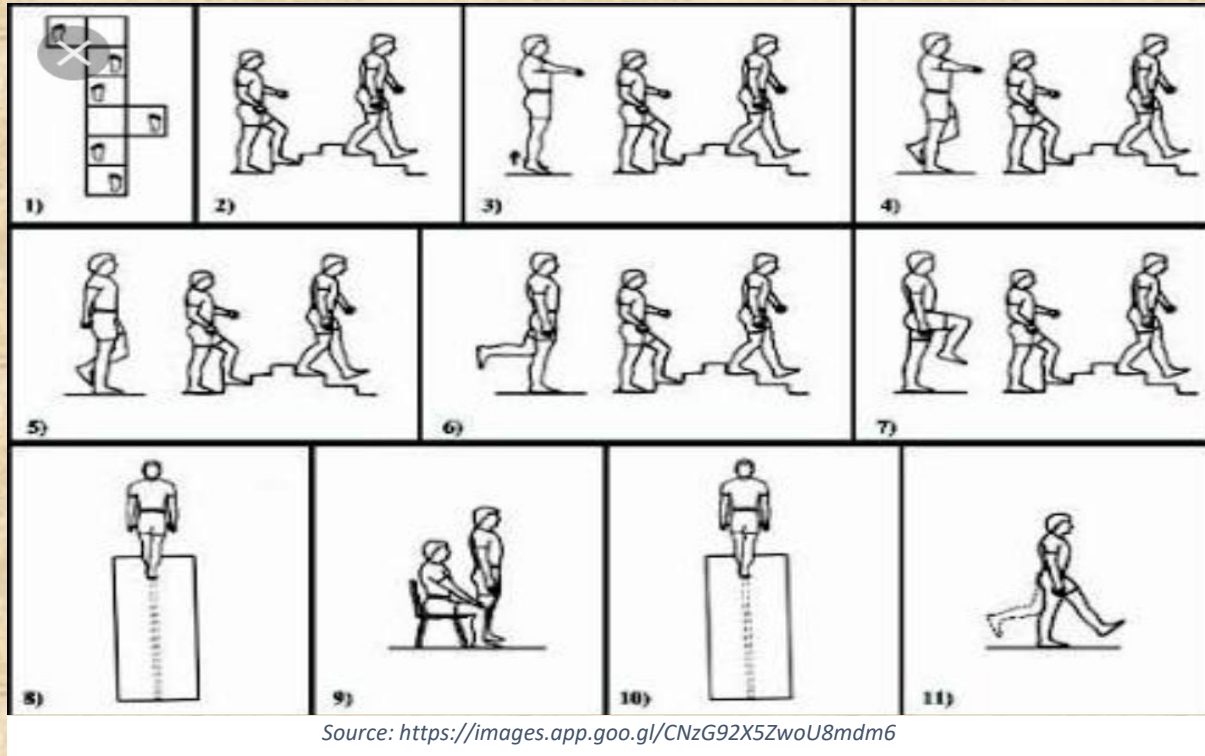






## PROPRIOCEPTIVE AND GAIT TRAINING

This stands as an important parameter for treating OA knee. The proprioception stands for joint sense, while Gait is a walking pattern of individuals. Both of these are disturbed with disturbed alignment or can say misalignment of joint structures.



## LIFESTYLE MODIFICATIONS

These play an important part in supporting other treatments. Includes change in footwear and other activities such as using lift, or escalator instead of stair climbing, and using western toilets to avoid excess squatting.

Thus, PT being a treatment of choice in treating OA knee as a conservative mode, helps to delay severe arthritic changes and helps in betterment of knee joint if diagnosed and treated early.

Reference:

[www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)

<https://cyberleninka.org/article/n/1477199/viewer>

<https://www.mayoclinic.org/diseases-conditions/osteoarthritis/diagnosis-treatment/drc-20351930>



# THE 5 MOST EXCITING NEW TECHNOLOGIES ENHANCING THE TREATMENT OF PHYSICAL THERAPY PATIENTS

1) **Cell phone apps** – Since most everyone has a cell phone these days, apps are readily available, and most of them are free! For those of you who are not techy, there are simple apps which include exercises and pictures. On the other hand, if you're tech savvy, then you may want to download an app that not only has the exercises and images, but that shows the muscle groups and skeletal structure as well. Many apps also include printable instructions with images, videos, capabilities to track your progress, as well as different methods of keeping you connected with your physical therapist in case you have questions while you practice your exercises at home. Apps are an excellent tool that physical therapists use to keep their patients accountable.



Source: [www.medium.com](http://www.medium.com)

2) **Video games** – Nintendo's Wii is a super interactive tool that physical therapists use to keep their patients moving and have continued progress as they recover. The



Source: [www.quotetime.com](http://www.quotetime.com)

Wii controls fit comfortably in your hand and have motion sensors in them that interact with the game on the screen. It also provides real-time feedback letting the player know if they hit the target or not. This allows you to perfect your aim and it naturally improves your eye-hand coordination. Patients who use Wii as part of





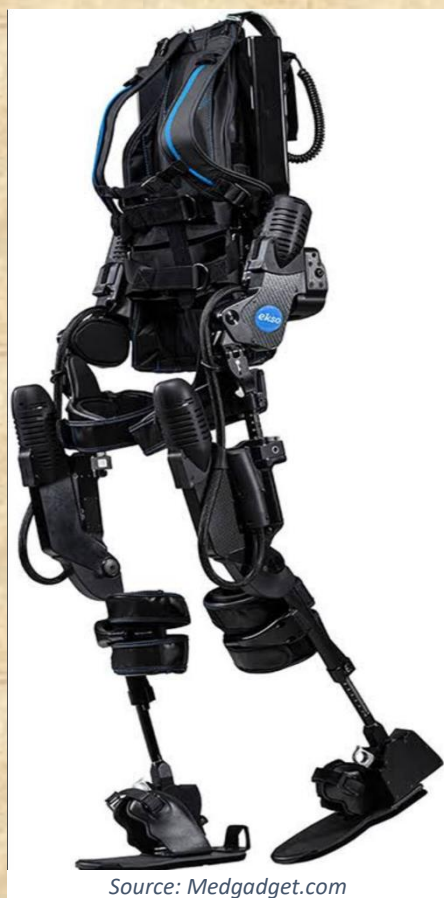
your home exercise program find it not only challenging, but it's also fun. When patients like exercising, they are more likely to stick with it.

### 3) **Computer Assisted Rehabilitation Environment (CAREN)**

– CAREN is an incredible virtual reality program that helps patients with numerous concentrations at the same time. Therefore, maximizing your recovery. Patients are strapped into a harness that supports their body as they stand on top of a treadmill that measures your gait through sensors. This program has



Source: [www.losangeles.af.mil](http://www.losangeles.af.mil)



Source: [Medgadget.com](http://Medgadget.com)

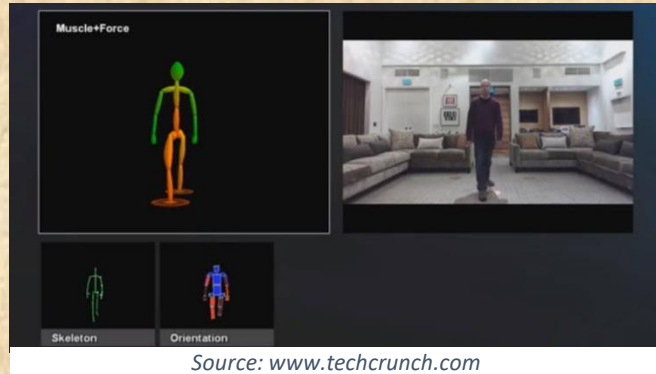
12 cameras to monitor, calculate, and record your motions as you respond to the images on the enormous screen in front of you. The cameras also allow the physical therapist to see which muscles you're using and if you're using them correctly. CAREN is another piece of state of the art technology that provides real-time feedback to both you and your therapist which gives you a more specialized program to help you in your exercises and treatment.

4) **The Ekso Suit** – Another technological advancement that helps physical therapy industry is the Ekso Suit. This device is especially useful for patients who have suffered any kind of paralysis, whether temporary or permanent. The Ekso suit essentially is an exoskeleton "bodysuit" complete with braces that attach to your feet. You wear it using an adjustable waistband. Since the Ekso Suit primarily works the lower body, it has shown great success with patients who have had a stroke or are diagnosed with MS. The suit will help you build muscles to get in and out of your wheelchair, as well as help you walk to prevent atrophy. In the beginning, your physical therapist will set your gait



and speed until you can balance yourself and become acquainted with walking in this unique piece of armour. Once you are comfortable using the Ekso Suit, your physical therapist will program the device to take steps based on your balance and shifting your weight as you take a step. What a great way for you to work your muscles and keep them in motion.

5) **The Kinect Camera** – Kinect is a camera that patients use on their PC via the Reflexion Health's Rehabilitation Program. This program is based on previous gaming technology and allows therapists to telecommute and see you perform your exercises at home. (It's along the lines of Skype). This program includes prescribed videos, tutorials, exercises, and coaching. This program also provides real-time feedback for you and the therapist. Therapists also like this technology because it keeps their patients accountable and on task.



As you can see, there are many different technological advances in the field of physical therapy. These devices and programs are very expensive which is why they are not readily available in all states. However, more progress is being made, and they are more in demand than ever before. Patients success rates with these devices are astounding. People are recovering quicker making it easier for them to return to their active lifestyle.

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# JOKES

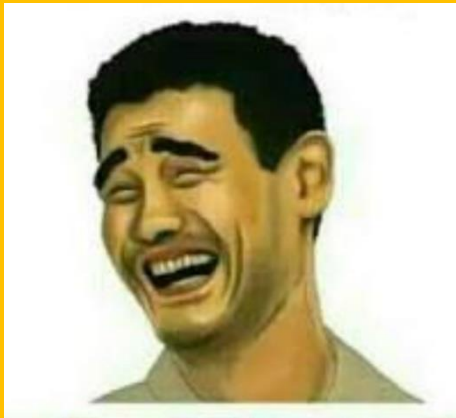


• A young woman is sitting on the examination table. “It hurts here,” she says, pressing her side. “Here,” she says, pressing her leg. “And here,” she says, pressing her arm.

The PT performs a full examination. After a long pause, he turns to the woman and says, “looks like you’ve got a broken finger!”



- I tried looking for PT jokes online.  
But none of them were humerus.
- I had a patient who was a **dairy farmer**.....so I gave him the **calf stretch**; same as the person whom I gave **pendulum** as he was a **clock maker** .....



- What is the physical therapist’s favourite drink?

Ummm.... It’s simple... Tensor fascia latae.... huh it means (**latté**)

Just wink like a “**weak serratus**”.

- What did the Physiotherapist say to the bodybuilder with a herniated disc?  
“You don’t know how to squat “.
- Physiotherapist: I had a patient who said one of the other therapists took her breath away.... So, I gave her diaphragmatic breathing exercises.

Compiled by Juhi Singh, Shweta, Himanshi, Stuti Pandey





1. What is the name of the biggest part of the human brain?
2. The coloured part of the human eye that controls, the light passing through the pupil is called?
3. What is the name of the substance that gives colour to your skin & hair?
4. The muscles which helps in turning your neck are?
5. True or false? The two chambers at the bottom of your heart are called?
6. What substances are nails made up off?
7. Which is the biggest organ of the human body?
8. The innermost part of the bone contains...
9. True or false? An adult human body has over 500 bones.
10. How many lungs does the human body?
11. Another name for your voice box is?
12. The two holes in your nose are called?
13. Your tongue is home to special structures that allows you to experience tastes such as salty, sweet, sour and bitter, what are they called?
14. The bones present in your ears are?
15. The shape of DNA is known as?
16. The flow of blood through your heart & body is called?
17. The bones around your chest that protects the internal organs are called?
18. What is the name of the long pipe that shifts from the back of your throat down to your stomach?
19. When it comes to balance, your ears are important part? True or False?
20. The outside layer of skin of the body is called?

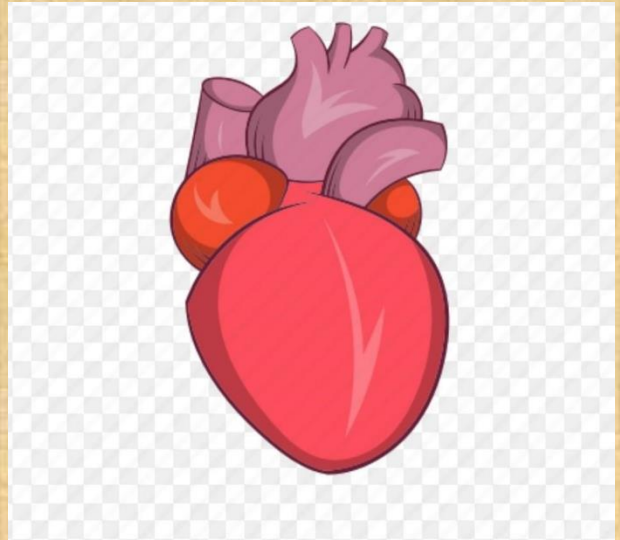


**1. Which is not a type of physiotherapy?**

- a) Neurology
- b) Ophthalmology
- c) Cardiorespiratory
- d) Orthopaedics

**2. Using high frequency sound waves to treat deep tissue injuries is also known as**

- a) TENS
- b) Ultrasound
- c) Laser Therapy
- d) Shortwave diathermy



**3. Which muscle is known as tailor's muscle in human body?**

- a) Hamstrings
- b) Deltoid
- c) Sartorius
- d) Gastrocnemius

**4. Choose the odd one.**

- a) Ober's test
- b) Trendelenburg's test
- c) MacMurray's test
- d) Ely's test

**5. Which passive movement is greatest at the subtalar joint**

- a) Dorsiflexion
- b) Eversion
- c) Inversion
- d) Plantarflexion

**6. The duration of the typical motor unit action potential varies from**

- a) 0.2-1.4 second
- b) 2-14 milliseconds
- c) 20-140 milliseconds
- d) 2-14 microseconds





**7. Which joint is supported primarily by the long plantar ligament?**

- a) Metatarsophalangeal
- b) Subtalar
- c) Talonavicular
- d) Calcaneocuboid

**8. Most commonly NCV is performed on**

- a) Femoral nerve
- b) Sciatic nerve
- c) Median nerve
- d) Radial nerve

**9. Neuropraxia involves**

- a) Atrophy
- b) Axonal injury
- c) Wallerian degeneration
- d) Conduction block
- e) All of the above

**10. Which muscle dorsiflexes the talocrural joint and everts the subtalar joint**

- a) Peroneus longus
- b) Extensor digitorum longus
- c) Anterior tibialis
- d) Posterior tibialis

**11. The dorsiflexors muscles are active during which time of the gait cycle**

- a) Swing phase only
- b) Midstance only
- c) Heel strike to foot-flat
- d) Heel strike to foot-flat and swing phase

**12. Pelvic bone is synonym of**

- a) Ilium
- b) Ischium
- c) Pubis
- d) None of the above





**13. What is the name of the group of muscles at the FRONT of your thigh?**

- a) Quadriceps
- b) Hamstrings
- c) Calves
- d) Pectorals

**14. What is the name of the group of muscles at the BACK of your thigh?**

- a) Quadriceps
- b) Hamstrings
- c) Calves
- d) Pectorals

**15. What is the name of the muscle group located at the front of your chest?**

- a) Biceps
- b) Deltoids
- c) Gluteal
- d) Pectorals

**16. Which group of muscles are found on your back?**

- a) Biceps
- b) Rectus abdominis
- c) Latissimus dorsi
- d) Pectorals

**17. If a physio says you have injured your gluteal muscles, where are these?**

- a) Neck
- b) Stomach
- c) Arm
- d) Leg





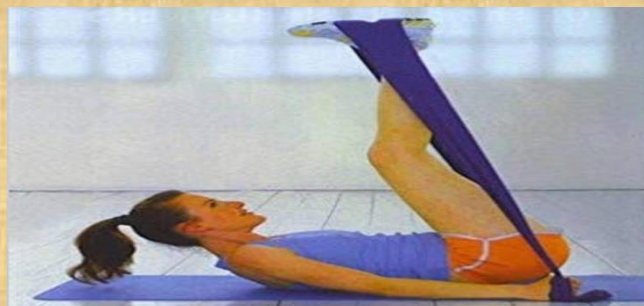
**18. What piece of equipment is a physio likely to use to strengthen your core muscles?**

- a) Gym/swiss ball
- b) Foam roller
- c) Punchbag
- d) Resistance tube



**19. What piece of equipment may be used to strengthen the ankle and knee following injury?**

- a) Dumbbells
- b) Barbell
- c) Stability disc
- d) Punchbag



**20. Which of these is NOT a piece of physio equipment?**

- a) Gym/swiss ball
- b) Medicine ball
- c) Stability disc
- d) Kettle

**21. To help with injuries, which of the following supports can you buy?**

- a) Shoulder
- b) Knee
- c) Ankle
- d) All of the above

**22. To support joints after injury, what may a physio use?**

- a) Tape and strapping
- b) Superglue
- c) Sellotape
- d) All of the above

**23. What is a physio likely to give you during a session?**

- a) Your money back
- b) Exercise and advice sheets
- c) Drugs
- d) Food and drink



**24. Which of these is an exercise for the knee?**

- a) Bicep curl
- b) Crunch
- c) Straight leg raises
- d) Pelvic tilt

**25. Which of these is NOT an exercise of the knee?**

- a) Prone knee bend
- b) Calf raises
- c) Quadriceps tensing
- d) Crunch

**26. Which of the following is an exercise for the back?**

- a) Arching
- b) Bicep curl
- c) Straight leg raises
- d) Calf raises



**27. Which of the following is NOT an exercise for the back?**

- a) One leg to chest
- b) Two legs to chest
- c) Side bend
- d) Chin tucks

**28. Which of these is a shoulder exercise?**

- a) Calf raises
- b) Arm raises to side
- c) Heel slide
- d) None of the above





**29. Which of these can be done to exercise the hip?**

- a) Hip flexor stretches
- b) Quadriceps stretch
- c) Hip flexion
- d) All of the above

**30. Which of the following is NOT an exercise for the neck?**

- a) Neck rotation
- b) Neck side bend
- c) Neck press
- d) Chin tuck

**References:**

*Clinical Orthopedic Rehabilitation by S. Brent Brotzman & Kevin E Milk (2<sup>nd</sup> edition)*  
*BD Chaurasia's Human Anatomy Vol.1,2 & 3,*

Quiz Prepared by Juhi Singh and Stuti Pandey  
Compiled by Shweta Khural and Stuti Pandey



# Answers

1. The cerebrum, 2. Iris, 3. Melanin, 4. Quadriceps, 5. True, 6. Keratin, 7. The skin, 8. Bone marrow, 9. False (there are 206), 10. 2, 11. Larynx, 12. Nostrils, 13. Taste buds, 14. Vertebrae, 15. A double helix, 16. Circulation, 17. Ribs, 18. The oesophagus, 19. True, 20. Epidermis

1)A, 2)B, 3)C, 4) C, 5)B, 6)D, 7)D, 8)C, 9)D, 10)B, 11)D, 12)D, 13)A, 14)B, 15)D, 16)C, 17)D, 18)A, 19)C, 20)D, 21)D, 22)A, 23)B, 24)C, 25)D, 26)A, 27)D, 28)B 29)D, 30)C





# Workshops & Conferences



*Personality Development Program on 1st Feb 2020*



*Vestibular Rehabilitation Workshop on 15th Oct 2019*



*Visit Cum Seminar to IPH on 5th Nov*



*Visit Cum Seminar to IPH on 5th Nov*



*Workshop on management of menstrual disorder on 11 Oct 2019*





*Sports Injury Management on field 3 day workshop*



*Sports Injury Management on field 3 day workshop*



*Seminar on Cardiac Rehabilitation on 27 Jan 2020*



*Orientation Program: Career pathway seminar on 15th Sep 2019*





# BANARSIDAS CHANDIWALA INSTITUTE OF PHYSIOTHERAPY

Organises:

## BCIPCON - 2020

“TEKHNOLOGIA PHYSIOTHERAPY”

Title of the congress is Greek, but not Technology to Physiotherapy!!



**Dr. V.P. Gupta (PT)**  
Chief Physiotherapist,  
CTVS, AIRMS,  
Delhi



**Dr. Meenu Dhingra**  
PhD (Anthropology)  
Sr. Scientific Officer  
Head Of Human  
Performance Lab,  
Sports Authority of India  
JN Stadium , Delhi



**Dr. Seema Grover (PT)**  
MPT (Musculoskeletal),  
Certified  
Lymphedema Therapist (LISA)  
HOD, Physiotherapy  
Government  
Apollo Hospital, Delhi



**Mr. Aakash Sinha**  
Founder & CEO at  
Choregraphist Robot Tech  
Gold Medalist  
Lockheed martin India  
Innovation growth Program 2018  
Master in Camp Sc/ Robotics



**Dr. Monica Chabba (PT)**  
MPT, PhD  
Senior Physiotherapist and  
head of gait lab  
PUMEX, Chandigarh



**Dr. Neha Singh**  
Research Scientist in  
Centre for  
Biomedical Engineering  
at IIT, Delhi



**Dr. Megha Saini (PT)**  
Research Scientist in  
Centre for  
Biomedical Engineering  
at IIT, Delhi

ON  
SATURDAY, 29 FEB 2020  
AT

AUDITORIUM, CHANDIWALA ESTATE, MAA ANANDMAI MARG, KALKAJI, NEW DELHI - 110019



BCIPCON 2020



BCIPCON 2020



Students of HCRA NGO at BCIPCON 2020





# Cultural Events



*Freshers' Party for 2019 batch*



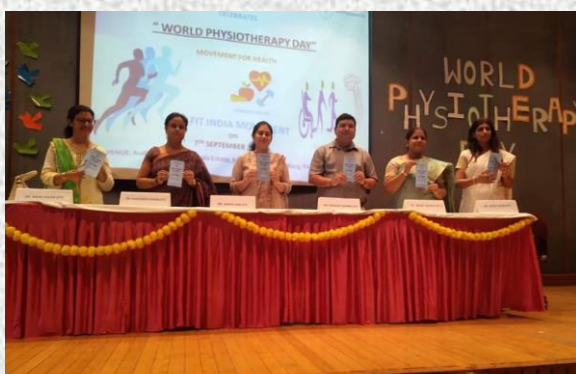
*World Physiotherapy Day*



*Diwali Festival drama competition*



*Diwali Festival quiz competition*



*Panelist on World Physiotherapy Day*



*Small skit presented by students on Independence Day Celebration*





*Nukkad Natak (Antarnaad) competition held at VIPS*



*Article Writing Competition organized by literary club members of BCIP*



*1st prize won by student of BCIP at Inter university Dance Competition*



*Students participated in inter University Competition organized by Manav Rachna University*



*Prize distribution on World Physiotherapy Day*



*1st prize bagged by BCIP student at poster Presentation Competition organized by AIIMS*





# Students as Sports Physio



*Fitness Camp conducted by Indian Railways for National and International Female Basketball Players*



*Students of BCIP at Pinkathon*



*At Dreambig Silver Series Tennis Tournament and Camp, Siri Fort Sports Complex*



*At Fenesta open national tennis tournament under 16*



*At Fenesta Open National Tennis Tournament*





*At 10k Champions Run, 10th edition*



*At Sports meet organized by GGSIPU*



*Fitness Camp conducted by Indian Railways for National and International Female Basketball Players*





# Sports Events



*Tug of war Competition organized by BCIT*



*Students of BCIP bagged 3rd position at GGSIPU sports meet in volleyball (women's)*



*At GGSIPU Volleyball Competition*



*Runner up at Greater Noida Physio Cricket league*



*Women team of tug of war, volleyball and table tennis bagged 1st position in Sports meet organized by BCIT*





# Camps



*Ergonomic Session by BCIP at RST Solutions Company*



*Ergonomic session at Janaki Devi Vocational Centre by BCIP*



*Ergonomic session at Janaki Devi Vocational Centre by BCIP*



*Physiotherapy Awareness Camp by BCIP*



*Special Olympics Bharat at Asha Kiran Mental Hospital*



*Physiotherapy Awareness Camp by BCIP*





## CLINICAL POSTINGS

Institute has an unmatched arrangement for its student's hands-on training in physiotherapy skills and practice. Besides its own two physiotherapy OPDs, Institute has MOU/ permissions with various hospitals for training of its students. Some prestigious hospitals where our students undergo training are:

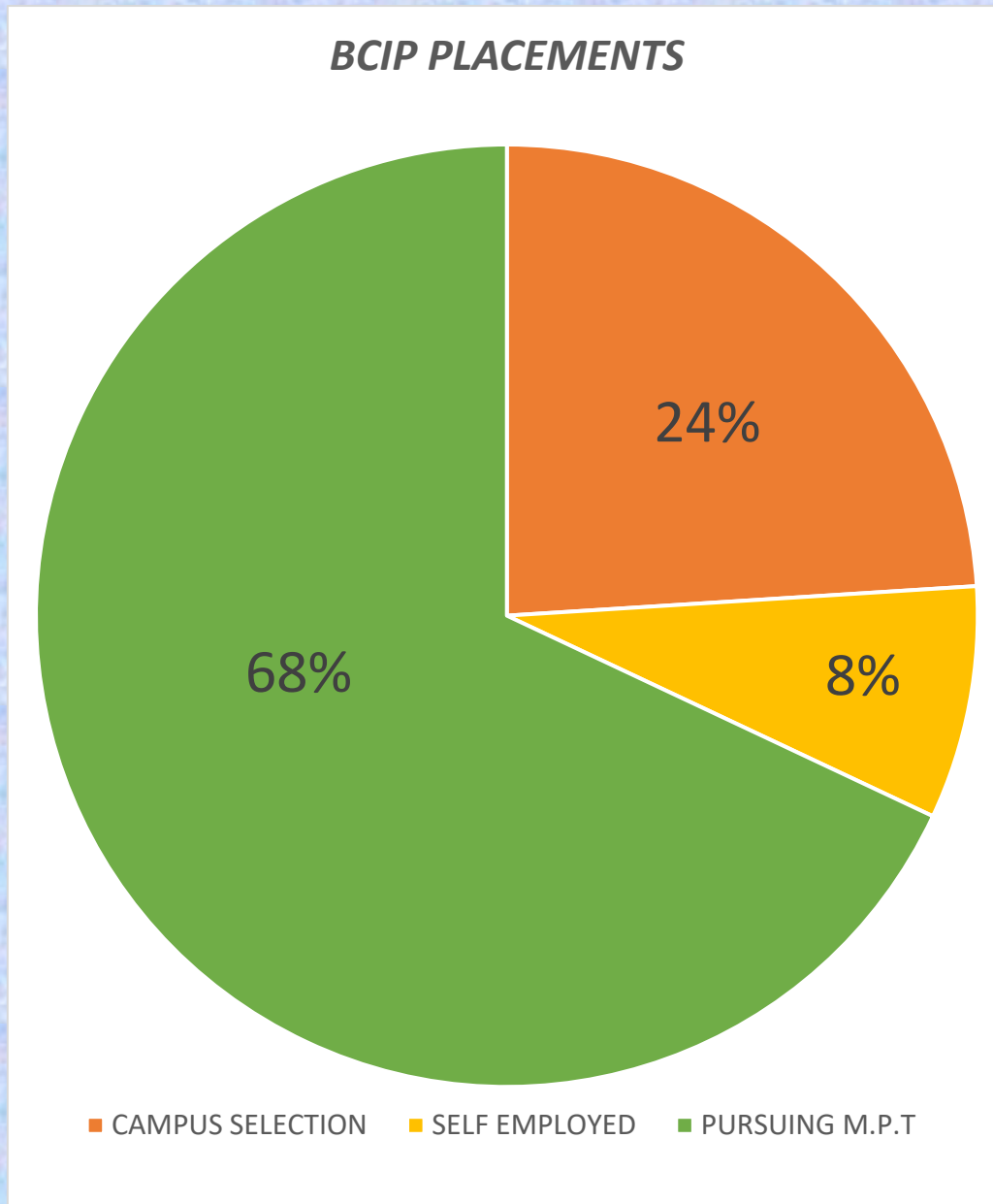
1. BABA SAHEB AMBEDKAR, ROHINI
2. DEEN DAYAL UPADHYAY HOSPITAL, HARI NAGAR
3. PRIMUS SUPERSPECIALITY HOSPITAL, CHANAKYPURI
4. SAFDARJUNG HOSPITAL: BURNS DEPARTMENT, SPORTS INJURY CENTER, CTVS DEPARTMENT
5. GB PANT HOSPITAL, RAJ GHAT
6. HINDU RAO HOSPITAL, MALKA GANJ
7. FORTIS HOSPITAL, VASANT KUNJ
8. VIMHANS HOSPITAL, NEHRU NAGAR
9. ESI HOSPITALS
10. RAM MANOHAR LOHIA (RML) HOSPITAL, CONNAUGHT PLACE
11. MAX SUPERSPECIALITY HOSPITAL, SHALIMAR BAGH
12. BHAGWAN MAHAVIR HOSPITAL, PITAMPURA
13. LNJP HOSPITAL, JAWAHARLAL NEHRU MARG

Students attend to OPD, IPD, ICU and case presentations during these hospital postings. A detailed Log, attendance and performance record is maintained for each student for the period of training.





# BCIP PLACEMENTS












# ACADEMIC ACHIEVERS


## BPT TOPPERS OF ACADEMIC YEAR 2018-19




 **BCIP BPT TOPPERS**  
End Term Results 1st Year (2018)


 Ritika Ria 78.64% Second Position	 Anureet Kaur 79.10 % First Position	 Mini Uniyal 77.40% Third Position
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 **BCIP BPT TOPPERS**  
End Term Results 2nd Year (2017)

 ADITYA VATS 80.00% Second Position	 NITYA CHOPHLA 83.33% First Position	 APOORVA MISHRA 79.67% Third Position
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 **BCIP BPT TOPPERS**  
End Term Results 3rd Year (2016)

 VIDHU TIWARI 86.33% Second Position	 WAGISHA STUTI 87.22 % First Position	 NAVYA 86.00% Third Position
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 **BCIP BPT TOPPERS**  
End Term Results 4th Year (2015)

 NIKITA TRIPATHI 82.13% Second Position	 HARSIRJAN KAUR 85.38 % First Position	 SONAM CHOUDHARY 80.88% Third Position
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# MOMENTS OF PRIDE



*“BCIP Family at Graduation Ceremony 2019”*



*“Shri Bhuvan Mohan Ji, Shri Vijay Narain Ji, Dr Asha Goel and Mr Vipul Gupta at Phooljhari 2019”*



## ***Stuti Pandey***

I am Stuti Pandey Enroll No 03611202616 studying in BPT 4<sup>TH</sup> YEAR. (BATCH 2016). I am the content writer, graphic designer and have tried to edit this magazine along with the cooperation from my mentor Dr Nidhi Kalra and Dr. Savita Tamaria.

I am a kathak dancer and have a great interest in all forms of art.

## ***Purshotam***

I am Purshotam Enroll No 02811202616 studying in BPT 4<sup>TH</sup> YEAR. (BATCH 2016). I have tried to design this magazine along with the cooperation from my mentor Dr Nidhi Kalra and Dr. Savita Tamaria.

I am an avid reader and I also like to write, listening to music and running.







**BANARSIDAS CHANDIWALA INSTITUTE OF PHYSIOTHERAPY (BCIP)**

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