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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

## Scientific Tracks & Abstracts Day 1

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

*Yoga and Physiotherapy 2017*

## Role of yogic science in physiotherapy

**Dattatraya Devarao Kulkarni**

Kaivalyadhama Health and Yoga Research Center, India

The physiotherapy as interdisciplinary subject of health restoration having several merits to restore vegetative component of brain-body functions, however, physiotherapy approach lacks internalized mind-body awareness, a component essential to restore auto regulation of mind-body co-ordination. The study proposes Patanjali School of Yoga, ancient traditional Indian science address psycho-somatic aspects of brain behavior (psyche) function, while hatha yoga school of swatmaram renders experiential aspect of systematic relaxation from somatic (body) to psychic (mind) plane. The cumulative effects both schools of yoga develops psychobiological basis two-way five step human information processing (HIP) pathway to address somatic (body) and cortical awareness, as virtue of “a priori” information nature of yogic instructions processed on control and automatic modes of attention functions. The past scientific yoga research reports on psycho-physiological and neuropsychological front reveals decreased metabolic energy expenditure, psycho-neuro-immunological modulation via neuro-endocrine and hypothalamic –pituitary axis, being monitored and modulated by electro-cortical activity triggered by breath awareness. The yogic HIP effects enhance cell-cell communication through increased signal power, for better affective and cognitive homeostasis. The unique nature of yogic HIP based relaxation response is based on operationally defined two step post-detection closure (PDC) HIP involving “Detection” and “Rejection” stages perceived somatic activity. Further, attains neutral state of attention within perceptual channel assigned to neural space. The study concludes that incorporating yoga training to physiotherapy patients develops whole body monitoring response due breath and body awareness for faster recovery.

### Biography

Dattatraya Devarao Kulkarni has completed his Master of Science in Zoology from Bangalore University, Since 27 years of working as Research Officer at Scientific Research Department, Kivalyadhama, Lonavla-India. His area of research interest encompasses signal detection theory, psychophysics, neurophysiology and neuropsychology in the context of yoga practices. He has authored more than 30 research articles in national and international journals and co-authored a book on Scientific Expositions of Pranayama. His current research includes bio-electrical basis of body awareness in yoga practices, exploring theoretical basis of vedic concepts like Gayatri mantra, OMkar and Pranadharana as explained from astrophysics and astrobiology.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

**Workshop**  
Day 1

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *Cat Levine*

*Be Yoga Andersonville, USA*

### **Healing stories: The transformative power of yoga on the body and mind**

This is a collection of incredible true stories of healing that have happened to the yoga students of Be Yoga Andersonville. Students have experienced recovery and/or pain relief from broken bones, scoliosis, arthritis, high blood pressure, nerve damage, MS, depression and more. The author teaches yoga in the lineage of Bishnu Ghosh and Bikram Choudhury, which treats hatha yoga as therapy for the body, mind and spirit. The class is structured to treat the most commonly found injuries and symptoms of pain by sequencing yoga postures that are commonly used in yoga therapy as preventative care.

### **Biography**

Cat Levine teaches yoga at Be Yoga Andersonville and has been in a daily yoga practice for 13 years. She is the 2017 Illinois and Midwest Yoga Asana Champion in the Women's Division and represented our region at the 2017 USA Yoga National Asana Championships.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *Tanja Pazou*

USA

### **Live well! - Transform your life with creative movement**

In this workshop we use ancient wisdom by practicing yoga and we use a variety of dance forms to create Trans-transformative tools for expansion and transformation having fun while exercising with creative purpose. In this workshop the participants will experience a physical mental-spiritual expansion through the ancient wisdom of yoga; and by practicing a variety of asanas that guide our practice daily, we enter the sacred space of the mind - we balance our thoughts and we become conscious of our breath that bridges both worlds, the seen and the unseen, the material and the non-material. Once we become conscious that we can access both worlds simultaneously, we draw from the creative space of our minds and we bring into the visible forms of movement inspired by a variety of dance forms that we playfully discover without judgment- free flowing-with creative purpose. We express ideas and feelings inspired by a variety of music choices, and we create movements with tools from our yoga practice and a variety of dance forms. This workshop is for beginners and advanced students, for yogis and non-yogis, for professional dancers as well as beginners, without judgement, just creative expansion seeking a path to self-discovery and tapping into the great potential of one-self through the movement arts, like a painter taking a brush colouring the canvas of his Life.

### **Biography**

Tanja Pazou was born and raised in Germany where she studied professional Dance (Ballet, Modern Dance, Jazz Dance, Improvisation and Kinesiology ), Physiology, Anatomy, Dance Choreography and Applied Behavior Analysis. At an early age she studied Ballet, Modern Dance and Jazz Dance, and she enjoyed the freedom the Movement Arts brought into her Life. Finishing a Bachelor Degree in Business and Finance, she enjoyed the "Escape" the Performing Arts provided for her. Experiencing a painful accident in her dance career, she was bed-bound for many months and she was forced to look into alternative healing methods after traditional medicine didn't work for her. During that time she discovered Yoga. After recovering of her injuries, she traveled to India and enjoyed the vast knowledge of ancient wisdom of yoga and the path of self reflection. This led her to expand on the idea of bridging the un-seen with the seen and the inner world with the outer world, and that's when she discovered Quantum Physics, Hermetic Teachings, Meditation, Shamanism, and the teachings of leading Psychiatrists and scholars in the field of Mind Expansion. in this workshop she is combining all her teachings as a professional Dancer & Choreographer, her studies in Yoga & Meditation and she calls it simply:

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *Julia Chung*

*Body & Brain Yoga, USA*

### **Tongchun living: One-minute change to vitality and mindfulness**

In this workshop, you will learn about how a simple change in your daily life can significantly improve your physical health and emotional wellbeing. “One-minute Tongchun” is a new brain education training method developed by Ilchi Lee, the founder of Body & Brain Yoga. By moving your body for one minute every hour, you can change your habitual patterns and learn to care about your body and yourself. You will experience the one minute change during the workshop, as well as take away practical tips and tools to build a new life transforming habit.

### **Biography**

Julia Chung, Owner & Head Instructor, Body & Brain Yoga, USA. Julia Chung born and raised in Taiwan, a subtropical island located off the south eastern coast of mainland China. She do yoga & Taichi every day. In 2014, She opened a Body & Brain Yoga studio. It hasn't been an easy journey, while for the first time in my life, I feel alive. Through mindfulness, She found my true essence in my brain. I am passionate in sharing this ancient Eastern mindfulness training methods with children and adults, for better health, happiness and peace.

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October 16-17, 2017 Chicago, USA

## Scientific Tracks & Abstracts Day 2

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

Yoga and Physiotherapy 2017

## Determination of herniated segments by thermography in individuals with geriatric cervical disc herniation: Pilot study

Öznur Büyükturan

Ahi Evran University, Turkey

**Introduction:** Along with aging, the increase in individuals' existing health problems is inevitable. For this reason, radiologic examination is often not performed in elderly individuals. In addition to the importance of physical examination for the diagnosis of cervical disc herniation, radiological imaging techniques are often used to support the diagnosis. However, it has been shown that the thermography device is valid for determining the painful spinal segments in individuals who can not undergo radiological examinations due to current health problems. But, no studies have been done on older subjects. The aim of this study is to determine the validity and reliability of Nervo-Scope thermography device in identifying individuals with painful segments with geriatric cervical disc herniation.

**Materials and Methods:** Elderly individuals aged between 65 and 80 years who applied to the Ahi Evran University Physical Therapy and Rehabilitation Center were included in the study. Individuals who were diagnosed with cervical disc herniation, were able to stand independently for at least 5 minutes, did not have back and / or spine surgery, had no scoliosis, were volunteers, and did not have a neurocognitive disorder. The individual's C2-C7 vertebrae were palpated and marked. The device was activated by placing the C2 vertebral level of the device on both sides of the device. In the C2-C7 segments, the device was slowly scrolled and the temperature changes of the nervoscope were recorded. The results of individual MR (bulging: 1; protrude: 2; extruded: 3; sequestration: 4) were also noted. The results obtained from MRI and nervoscope instruments were then compared. In some individuals disk herniation was detected in more than one segment, so the number of herniation was considered, not the number of people. This study was supported by the Ahi Evran University Scientific Research Projects Coordination Unit. Project Number FTR.A3.17.001. The differences between MR results and nervoscope results were compared with using "chi square" and "Pearson correlation analysis"

**Results:** Seventy-six volunteer CDH subjects with a mean age of  $72.04 \pm 8.21$  years and a BMI of  $25.14 \pm 2.47$  kg/m<sup>2</sup> were enrolled in the study. The MRI and nervoscope results were shown in Table 1. There was a statistically significant positive correlation between the herniation grades detected by MR and nervoscope in all segments (c2-3 p<0.001, c3-4 p<0.001; c4-5 p<0.001; c5-6 p:0.014; c6-7 p:0.021) (Table 2).

**Conclusion:** Clinical diagnosis of cervical disc herniation is accompanied by physical examination and MR results. However, due to the presence of pathology and comorbidities present in elderly individuals, the MRI has often risks. This study was carried out to determine the herniated segments by thermography in cervical disc herniation in geriatric individuals. According to the results of the study, MRI (except C3-4) is more effective than nervoscope in determining all cervical spinal herniated segments. However, MRI and Nervoscope showed a statistically significant relationship. When MR is considered to be an expensive and side effect method, it is thought that nerves can be used to determine herniation level in geriatric cervical disc herniation.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

Yoga and Physiotherapy 2017

## Investigation of the effectiveness of graston technique in persons with lateral epicondylitis

**Buket Buyukturan**

Ahi Evran University, Turkey

**Introduction:** Lateral epicondylitis is one of the most common causes of elbow pain. Lateral epicondylitis treatment has different treatment modalities. The graston technique is one of these treatment modalities. The graston technique treats and detects to dysfunctions in the treatment of lateral epicondylitis. It is used in the treatment of many problems, but the study on lateral epicondylitis activity is scarce. This study aims to investigate of the effectiveness of graston technique in persons with lateral epicondylitis

**Methods:** A total of 32 individuals participated in this study. Patients were randomly separated into two groups. First group was applied coldpack, electrotherapy, stretching, eccentric training and strengthening exercises including three times a week for a total of 18 sessions. The second group was used graston technique in addition to same program applied first group at twice a week for 6 weeks. Patients with lateral epicondylitis were assessed by Socio-demographic characteristics, Visual Analog Scale (VAS) for pain intensity, grip strength with hand dynamometer, and Patient-Rated Tennis Elbow Evaluation Scale (PRTEE) for functionality at baseline and after 6 weeks.

**Results:** Socio-demographic characteristics of both groups was shown in table 1. Grip strength, pain intensity, and Patient-Rated Tennis Elbow Evaluation improved in both groups following the treatments ( $p < 0.05$ ) (Table 2). Comparing the effectiveness of these two treatments, in second group the increase in pain intensity, and PRTEE was greater ( $p < 0.05$ ) (Table 2).

**Conclusions:** Application of the graston technique was found to be effective in recovering grip strength and increasing capacity of functional activity in the treatment of patients with lateral epicondylitis. There is a need for more extensive case studies and further studies on evaluating the long-term effect in the graston technique.

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Notes:

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

## Changes in biomechanical and physical variables following six-week agility training among taekwondo players

AmrinderSingh

Guru Nanak Dev University, India

**Purpose:** Taekwondo requires high level of agility, lower limb strength as it helps to improve performance in activities that require you to change direction quickly while keeping balance, strength, speed and body control. The purpose of the study was to determine the effect of a 6 week agility training program on biomechanical variables i.e. the gait and kinetic and kinematic variables as well as the physical variables which included the lower limb strength, fatigue index, anaerobic power, balance, reaction time, agility and flexibility.

**Methodology:** Thirty elite national level taekwondo players volunteered and were randomly assigned into two groups, group 1 (G1; n=15) agility training group (mean age  $19\pm 6$   $2\pm 06$  years; mean height  $1\pm 72$   $0.08$  m; mean mass  $57\pm 94$   $10\pm 27$ kg) and group 2 (G2; n=15) control group (mean age  $20\pm 13$   $1\pm 55$ ; mean height  $1\pm 71$   $0\pm 07$  m; mean mass  $65\pm 19$   $16\pm 87$ ). Both agility training group and control group were assessed for gait and kinetic and kinematic variables by Zebris FDM Treadmill and Noraxon TELEMIO USA., Inc.v3±1±10, lower limb isometric strength and fatigue index by HUR 5340 leg extension/curl computer controlled isotonic/isometric dynamometer, agility by illinois agility test; anaerobic power, lower limb reaction time, balance assessed by kinematics measurement system and flexibility assessed by sit and reach test. Control group had followed their routine training schedule, and agility training group had performed agility training for six weeks. After six weeks of training post measures were taken.

**Result:** Significant changes ( $p<0.05$ ) in Group 1 (agility training group) were observed in gait phase parameters and average mean amplitude and maximum of the left biceps femoris muscle and in the lower limb strength and fatigue index parameters. Also significant differences were found in all the physical variables tested. No significant change was found in G2 group (control group).

**Conclusion:** This program significantly improved the performance indices and can be incorporated to improve overall performance in the athletes and can be beneficial for athletes who require quick movements while performing their sport such as taekwondo.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

**Workshop**  
Day 2

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *Nicole Superits*

USA

### **Elemental Yin Yoga**

Yin Yoga works intimately with the Five Element Theory and Modern Meridian Theory as well as Buddhist Mindfulness Meditation. Utilizing Yin Yoga Asana as a powerful self-inquiry tool and healing technique, we explore how the different elements and their corresponding meridians show up physically in the body, as well as mentally and emotionally. Together, we awaken and balance the elements within by releasing energy via the deep fascia and therefore removing blockages to relax and rise to your full potential.

### **Biography**

Nicole Superits and I'm a RYT 200 trained in Yin Yoga. I have deeply studied the principles of Yin Yoga, Indian Hatha Yoga, Traditional Chinese Medicine, Tibetan Buddhism and Anatomy of Yoga with TNYT School of Yoga. My passion to share Yin is rooted in my firsthand experience of the liberation and expansion that Yin offers. As both a Yin Yoga Teacher and Energy Worker, I fully integrate mindful embodied presence, body-mind connection, and vital flow of chi or prana within my classes.

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*Yoga and Physiotherapy 2017*

**Notes:**

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *Dutch Martin*

*Carnegie Mellon University, USA*

### **Living Your Dreams**

The “Living Your Dreams” workshop was developed by world-renowned motivational speaker Les Brown, and is licensed to be used by members of the Les Brown Maximum Achievement Team (LBMAT). As an LBMAT member, the author will teach participants the latest goal-attainment and human development sciences pertaining to achieving one’s goals. The materials included are based on years of research and contain the most current information available to propel participants to new levels of performance, whether on their yoga mat or in other areas of life.

### **Biography**

Dutch Martin knows what it means to pull himself up from his bootstraps and overcome adversity. Dutch found yoga in August 2013 at a time in his when he decided to look at his health and wellness goals through a fresh pair of eyes. Like many, he caught the “yoga bug” early on, and was immediately hooked. It was the first form of exercise he had ever done where he felt exhausted and exhilarated at the same time! He decided to become a yoga instructor, with the desire to give back to others what yoga had given him: a deep physical, mental and emotional healing. He earned his RYT-200 certification from Dancing Mind Yoga in Falls Church, Virginia in 2015, and has been teaching yoga ever since. Dutch currently serves as President of his Toastmasters Club, is a participant in the Washington, DC chapter of the National Speakers Association’s Speaker Academy, and is currently studying to become a certified speaker, trainer and coach with the Les Brown Institute and the John Maxwell Team. When he’s not teaching yoga, perfecting his forearm stand on his yoga mat, or speaking to inspire, Dutch spends time reading motivational and self-help books. He is supported and anchored by his wife, Ibtissam, and young son, Luther.

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*Yoga and Physiotherapy 2017*

**Notes:**

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA



## *S S Shiva Singh Khalsa*

*Spirit Rising Yoga, USA*

### **The power of breath and posture: Releasing the blocks**

As we grow older and start losing flexibility of our ribcage and spine, the space available for lungs to work is decreased impeding satisfying complete breath. Natural breathing takes into consideration the three purposes of breathing: replenishing, warming, and cleansing. Simple effective Yoga postures and pranayama brings our awareness back to our breathing patterns with the focus on the structure of the breath and the postures that support it.

### **Biography**

S S Shiva Singh Khalsa is the Program Director of Spirit Rising Yoga and President and CEO of Spirit Rising Foundation. Since 1971, he has taught and practiced with the guidance of his teacher, Yogi Bhajan. He draws on a wealth of experience acquired through decades of spiritual practice, devotion and service. This is the foundation for his teaching and his life. He is known as a Jupiter Teacher, jovial, inspiring and uplifting.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

## Video Presentations Day 2

# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

*Yoga and Physiotherapy 2017*

## **Combination of rice protocol with Mulligan's MWM in grade 1 acute lateral ankle sprains: a pilot study**

**Nivedita Kadambi, Sonali Jangle and Ravi Savadatti**  
SDM College of Physiotherapy, India

To compare the effects of combining RICE (rest, ice, compression, and elevation) protocol along with Mulligan's mobilization with movement (MWM) as opposed to RICE protocol alone in acute cases of grade 1 lateral ankle sprains. Inversion sprain, one of the common injuries observed in the ankle is associated with inflammation and forward pull of the fibula over the tibia at the distal tibio-fibular joint causing a 'positional fault'. There are numerous reports favoring clinically beneficial effects of Mulligan's MWM treatment technique in sub-acute and chronic cases. Since there is dearth of evidence suggesting the effect of Mulligan's MWM in acute cases, this study was initiated. In our study 12 subjects diagnosed with grade 1 inversion sprains were enrolled from the Physiotherapy out-patient department. They were randomly allocated into control and experimental group. The experimental group received RICE protocol along Mulligan's MWM at the distal tibio-fibular joint followed by Mulligan's taping. Control group received RICE protocol alone. The outcome measures, VAS for pain and ankle dorsiflexion range were documented on day 1 and 2 weeks post intervention. The groups were homogeneous for all the parameters at baseline ( $p > 0.05$ ). Compared with the control group, the experimental group significantly improved in both the outcome measures ( $p < 0.05$ ). With this study we can conclude that correction of the distal tibio-fibular positional fault by Mulligan's MWM along with the RICE protocol is worth seeing for further exploration in acute lateral ankle sprain patients.

### **Biography**

Nivedita Kadambi has two years of clinical work experience which includes assessing and planning and treatment of various musculoskeletal disorders. She has presented in various national and international conferences.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

## Significance of q angle as a prognostic outcome measure for subjects with spastic diplegia

Sanam Mainali, Jimshad T U and Anil T John  
Dayananda Sagar College of Physiotherapy, India

**Introduction:** Quadriceps angle (Q angle) is the angle formed by two imaginary lines, one from ASIS to center of patella and other from tibial tuberosity to center of patella. Abnormal Q angle is one of major causes for abnormal gait. In spastic diplegic, lower limb muscles go for tightness leading to Q angle changes.

**Objectives:** To find out significance of q-angle value as a prognostic outcome measure in male subjects with spastic diplegia aged between 7 to 12 years.

**Study design:** Experimental, pre-post-test design was carried out.

**Study Participants and Setting:** Total of 10 male subjects with spastic diplegia aged between 7-12 years. Study was conducted in pediatric rehabilitation centers in Bangalore and Mysore, India.

**Method:** This study is performed as a continuation of our previously published research titled Does Q angle change in Spastic Diplegia subjects? In previous study, total of 30 male subjects with spastic diplegia and age 7-12 years were included. The study had proven spastic diplegic children with internal tibial torsion have decreased q-angle and children with external tibial torsion have increased q-angle. In this study, total of 10 subjects were selected out of previously included 30 male subjects based on randomized sampling. Out of 10 subjects, five subjects had internal tibial torsion (group A) and five external tibial torsion (group B). Subjects underwent active rehabilitation of lower limbs for eight weeks. Pre and post intervention value of q angle was collected and compared for analysis.

**Result:** Mean age of group A was 7.8 and group B was 8.4, group A mean BMI was 16.4 and group B was 15.8. Remarkable variation in q-angle was found in pre and post intervention data. In group A, pre-intervention Q angle was 6.6 (left) and 6.8 (right), post intervention was 8.6 (left) and 9.0 (right). In group B, pre-intervention Q angle was 22.8 (left) and 22.6 (right), post intervention 20.6 (left) and 20.2 (right).

**Conclusion:** After analyzing results from the current study and support from past literatures, this study concludes that q-angle is a good prognostic quantitative outcome measure and can be used to check competency of therapeutic exercises in pediatric population.

### Biography

Sanam Mainali is currently working as a Bachelor in Physiotherapy Internee in Dayananda Sagar College of Physiotherapy, Bangalore, India. She completed her high school from Kathmandu, Nepal and moved to Bangalore for higher studies. She will be graduating BPT in this August. She has three international publications. She got her first study published in international journal while she was in third year UG. She has recently bagged First Prize in Paper Presentation in conference conducted by Indian Association of Cerebral Palsy. She is also the First Rank Holder of her batch and Distinction Holder in BPT.

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# Yoga and Physiotherapy Congress

October 16-17, 2017 Chicago, USA

## Impact of vision on neck control in cerebral palsy child

**Sanam Mainali**

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**Introduction:** Deficient neck control is one of the key problems in cerebral palsy (CP). Neck control depends on the interaction of multiple inputs from different sensory systems, one of them being visual functions. Many of the CP cases have visual impairment conditions as well. Assessment and correction of visual impairment can be of significance for making refined head control and improving both orientation and balance. Objective: To analyze the impact of vision on neck control in cerebral palsy children. Study design: Observational cross sectional study. Method: Total of 180 children diagnosed with cerebral palsy and aged between 1-4 years were screened for the study. Among them, 40 subjects (26 males and 14 females) with neck control problem were recruited. Sample was collected on the basis of convenience sampling after giving due consideration to inclusion and exclusion criteria. After an informed consent from parents, all children were made to undergo vision preliminary test and were assessed by pediatric ophthalmologist. Result obtained were analyzed and subjects were divided into two groups, group A 14 subjects with one or more visual impairment, and group B 26 subjects with normal vision. Neck control of all subjects was assessed and graded as 0,1,2, and 3. Neck control was graded based on "Clinical rating scale for head control – a pilot study" by Shashidhar Rao Chavan. In both groups neck control was assessed with subjects lying in supine position to maintain homogeneity of the data. Results: Remarkable variation in neck control was found between group A and B. Subjects in group A showed poor neck control, with mean neck control grade 1.105 whereas subjects in group B comparatively had better neck control with mean grade 2.238.

**Conclusion:** This study concludes that visual dysfunctions seem to play a distinct role in the postural control of children with CP. Thus assessment and improvement of visual functions during CP rehabilitation can significantly help subjects improve their neck control and posture and balance as a whole.

### Biography

Sanam Mainali is currently working as a Bachelor in Physiotherapy Internee in Dayananda Sagar College of Physiotherapy, Bangalore, India. She completed her high school from Kathmandu, Nepal and moved to Bangalore for higher studies. She will be graduating BPT in this August. She has three international publications. She got her first study published in international journal while she was in third year UG. She has recently bagged First Prize in Paper Presentation in conference conducted by Indian Association of Cerebral Palsy. She is also the First Rank Holder of her batch and Distinction Holder in BPT.

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