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Information from the WCPT

August 2019

Newsletter IPNFA® research committee

This newsletter is a result of information from various IPNFA members. We received a nice summary of the first international PNF symposium in South America, Brazil. Furthermore a report of the WCPT conference of last May in Geneva, Switzerland.

We checked the internet and standard databases for new publications on PNF and we also received some additional papers from other members. We worked on the content and checked in how far PNF is reasonably described and applied in the research context. Based upon the information from the publications we decide whether to take them to our literature list or to decline then for that. Not just the title referring to PNF, but also is the described performance in agreement with a 3 dimensional component and are the techniques and facilitation principles somehow included. This newsletter provides beside the mentioned reports also some abstracts of our latest update on literature. Naturally some basic info on accessing research and info from the WCPT.

I wish a joyful reading. Fred.

REPORT FROM THE FIRST SOUTH AMERICAN PNF INTERNATIONAL SYMPOSIUM

The first PNF Symposium in South America took place in Rio de Janeiro – Brazil, in 25th and 26th of January 2019, organized by the Educational Center of Cird Clinic. Around 200 professionals and PNF students attended the event.

On the 25th Mônica Cilento started the Symposium with the lecture about “History and Philosophy of PNF in Brazil”, where everyone could get to know about our Master “Julio Sanchez” (the Argentinian PNF teacher who was taught by Maggie Knott, and brought PNF to Brazil). The University Professors Ana Paula Chagas e Fernanda Guimarães followed with the topic “The Inclusion of ICF in the PNF Concept – PNF in University Academic Education. The next topic was “PNF Approach in Elderly Patients with Risk of Falling and Balance Dysfunctions” covered by the University Professors Fernanda Baseggio and Laura Oliveira. After lunch Professors Camila Pupe, Sérgio Nemer and Wendell Bernardes covered the topic “PNF Approach to the Polyneuropathy in the Critical Patient”. They were followed by our IPNFA Instructors Paulo Moté and Leandro Giacometti talking about “the Use of PNF for Patients with Neurological and Orthopedic Gait Disorders. The day was finished with lectures from the MD Daniel Rosa and the PT Fábio Arcanjo presenting “ PNF After ACL Reconstruction”.

On the second day of the Symposium we were happy and pleased to have the presence of some of international IPNFA instructors and friends, and other colleagues.

The first lecture was given by Polish IPNFA Instructor Aleksander Lizak -“How PNF Concept uses ICF in the Evaluation”. The video of a polish patient gave a clear idea of motivation and ICF goals. German IPNFA Instructor Kitty Hartmann presented the topic “PNF and Neurodynamics”, giving the idea of integrating PNF with other approaches. She was followed by German IPNFA Instructor Marcel Grzebellus who talked about “PNF and Irradiation”, a topic that is always so fascinating for all PNF students. The morning was closed by German IPNFA Instructor Benedikt Bömer presenting “PNF and Spasticity”. It’s always great to hear Benedikt’s enthusiasm with all his experience with neuro patients! After lunch colleague Carlos Bustamante, from Chile presented “The PNF History in Chile”. He was followed by IPNFA Instructor José Vicente Martins who covered the topic “PNF for Neurologic and Orthopedic Patients with Upper Extremity Impairments”.



Last lecture was presented by the University Professors Daniella Araújo de Oliveira e João Araújo, about “PNF research – Evidence Based Practice in Physiotherapy”.

It was a pity that we could not have the Argentinian IPNFA Instructor Fernanda Di Natal at this symposium. Besides being the Argentina IPNFA National Contact and the only IPNFA instructor from Argentina, Fernanda has worked with our Master Julio Sanchez for many years. Nowadays she lives in Australia and it was not possible to be present in the event.

After all those interesting lectures the event was closed with the Opening Ceremony of the “Brazilian PNF School”, a project which aims to promote PNF in Brazil, keeping the quality of PNF teaching and stimulating PNF research.



Valdeci Carlos Dionisioa , Cyntia Rogean de Jesus Alves de Baptistab, Adriana de Sales Rodriguesc and Luciane Aparecida Pascucci Sande de Souza

Is it possible to stabilize the trunk using rhythmic stabilization in the upper limb? A cross-sectional study of asymptomatic individuals

ABSTRACT

Objective: The study aim was to evaluate the immediate effect of rhythmic stabilization on local and distant muscles involved in a functional reach.

Method: Prospective, observational cross-sectional study. Eight right-handed and non-impaired individuals (4 females and 4 males) aged 18–24 years (21.5 ± 1.58 years) were evaluated. Bilateral electromyographic recording of the biceps brachii, triceps brachii, multifidus lumbar, and rectus abdominis muscles was performed during three different tasks. Task 1 involved functional reach, while Task 2 involved rhythmic stabilization followed by a functional reach. Task 3 was similar to Task 2, but with 3 repetitions before a functional reach.

Results: The results showed no difference between the tasks or sides. However, an interaction was observed between each side and muscles, with greater activation of the right multifidus lumbar muscle.

Conclusion: Rhythmic stabilization during the task of reaching promotes an increase of multifidus activity ipsilateral to its application. Thus, this particular technique of proprioceptive neuromuscular facilitation can be useful for improving stability of the trunk and can be used in clinical practice for this purpose.

Level of Evidence: 5

Journal of Manual & Manipulative therapy 2018, Vol. 26, No. 4, 212–217

<https://doi.org/10.1080/10669817.2018.1467994>

Trevor S. Barss, Gregory E.P. Pearcey and E. Paul Zehr

Cross-education of strength and skill: an old idea with applications in the aging nervous system

Barss et al.: Neuroplasticity of training across the lifespan

Edward Wheeler Scripture's 1894 work out of the Yale Psychological Laboratory has been influential in identifying the nervous system's contribution to the bilateral improvements that are seen with unilateral strength and skill training. Scripture coined the term "cross-education" to describe this improvement in the untrained contralateral limb. While physiological changes accompany aging that may negatively affect the performance of physical tasks, far too much credit has been given to the natural aging process rather than the effects of inactivity. Emerging evidence indicates strength or skill training interventions induce significant neuroplasticity in an aging population. The model of unilateral training provides a unique approach in which to elicit such plasticity. This brief review highlights the innate ability of the nervous system to adapt to unilateral strength and skill training interventions, regardless of age, and provides a novel perspective on the robust plastic ability of the aging nervous system

"Thus, training of one portion of the body trains at the same time the symmetrical part and also neighboring parts. ... The training seems to be of a psychical rather than of a physical order and to lie principally in steadiness of attention."

— Edward Wheeler Scripture, 1894

YALE JOURNAL OF BIOLOGY AND MEDICINE 89 (2016), pp.81-86.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4797840/pdf/vjbm_89_1_81.pdf

The WCPT Congress, 10-13.05.2019 Geneva

The WCPT General Meeting and Congress was hosted on 10-13.05.2019 by the Swiss Physiotherapy Association in Geneva. Over 4,000 participants took part in the congress.



305 speakers had the opportunity to present lectures. 500 posters were presented every day. The key message of the congress was, that evidence based treatment is still not used enough and that networking is an important point to get the physical therapy more representative.



A few hundred organizations and companies presented themselves in the huge market hall. At individual stands, participants could establish professional contacts, obtain information about universities, postgraduate education, medical journals and get practical knowledge. The exhibition was visited by physiotherapists from various countries around the world.

The conference was attended by IPNFA instructors and representatives of national PNF organizations from Switzerland and Poland: Ulla Bertinchamp, Conny Tanner, Karin Jeanbart, Kristin Stjerna, Irmi Feldmann, Fabienne Reynard, Aleksander Lizak, Joanna Tokarska and Agnieszka Stępień.



The congress was great, but we regret that PNF was not represented there. It was a good opportunity to present our concept and scientific research ! Representatives of manual therapy, osteopathy and organizations offering various postgraduate training presented their offer. We hope that the program of the next WCPT congress will include lectures showing the effectiveness of PNF, and participants can get information at the IPNFA stand.



The **People** **Need** **Fun** corner 😊 /

My physical therapist told me that jogging could add years to my life. He was right—I feel ten years older already.

Patient: "Doctor, I get heartburn every time I eat birthday cake."

Doctor: "Next time, take off the candles."

Did you hear about the guy who lost his whole left side? Well, he's all right now.

The physical therapist said, he would have me on my feet again in two weeks

And did he??

Yes, I had to sell the car to pay the bill

Youdas JW et al.

Magnitudes of gluteus medius muscle activation during standing hip joint movements in spiral-diagonal patterns using elastic tubing resistance

Abstract

The aim of this study was to simultaneously quantify electromyographic (EMG) activation levels (% maximum voluntary isometric contraction [MVIC]) within the gluteus medius muscles on both moving and stance limbs across the performance of four proprioceptive neuromuscular facilitation (PNF) spiral-diagonal patterns in standing using resistance provided by elastic tubing. Differential EMG activity was recorded from the gluteus medius muscle of 26 healthy participants. EMG signals were collected with surface electrodes at a sampling frequency of 1000 Hz during three consecutive repetitions of each spiral-diagonal movement pattern. Significant differences existed among the four-spiral-diagonal movement patterns ($F_{3,75}=19.8$; $p=0.001$). The diagonal two flexion [D2F] pattern produced significantly more gluteus medius muscle recruitment (50 SD 29.3% MVIC) than any of the other three patterns and the diagonal one extension [D1E] (39 SD 37% MVIC) and diagonal two extension [D2E] (35 SD 29% MVIC) patterns generated more gluteus medius muscle recruitment than diagonal one flexion [D1F] (22 SD 21% MVIC). From a clinical efficiency standpoint, a fitness professional using the spiral diagonal movement pattern of D2F and elastic tubing with an average peak tension of about 9% body mass may be able to concurrently strengthen the gluteus medius muscle on both stance and moving lower limbs.

Physiother Theory Pract, 2015; 31(6): 410–417

<https://doi.org/10.3109/09593985.2015.1004769>

In May 2019 a two day seminar with interactive workshops on clinical reasoning using the PNF-concept was attended by over 30 master students, aiming for a degree in Physical Therapy in various specified fields of PT.

The **Manipal University Hospital** was hosting this event in the city of Bangalore, India. These two days of exchange of insights and practicing PNF, based upon EBP and clinical reasoning was organized by Mr. Karthikbabu and Mr. Prem. Both PT with a PhD and alumni participants on IPNFA level 1+2 and also 3a +b courses.



The **Physios** **Need** **Fun** corner 😊

What did one eye say to the other eye?

Between you and me, something smells.



A guy in a mental hospital, placed two stones in his ears ..

**The doctor asked him,
"What are you doing?"**

**he replied,
"I'm listening to ROCK music!"**



Van Criekinge T et al.

The effectiveness of trunk training on trunk control, sitting and standing balance and mobility post-stroke: a systematic review and meta-analysis

Clinical Rehabilitation 2019; 33 (6): 992–1002

Abstract

Objective: To investigate the effectiveness of trunk training on trunk control, sitting and standing balance and mobility.

Data sources: PubMed/MEDLINE, Web of Science, Physiotherapy Evidence Database (PEDro), Cochrane Library, Rehab+ and ScienceDirect were searched until January 2019.

Review methods: Randomized controlled trials were included if they investigated the effect of trunk exercises on balance and gait after stroke. Four reviewers independently screened and performed data extraction and risk of bias assessment with the PEDro scale. Disagreements were resolved by a fifth independent reviewer. A meta-analysis was performed to quantitatively describe the results.

Results: After screening of 1881 studies, 22 studies and 394 participants met the inclusion criteria. Trunktraining was executed as core stability, reaching, weight-shift or proprioceptive neuromuscular facilitation exercises. The amount of therapy varied from a total of 3–36 hours between studies. The median PEDro score was 6 out of 10 which corresponds with a low risk of bias. Meta-analysis was performed with a random-effects model due to differences in study population, interventions received and follow-up length. The overall treatment effect was large for trunk control standardized mean differences (SMD) 1.08 (95% confidence interval (CI): 0.96–1.31), standing balance SMD 0.84 (95% CI: 0.04–0.98) and mobility SMD 0.88 (95% CI: 0.67–1.09).

Conclusions: In patients suffering from stroke, there is a strong amount of evidence showing that trunk training is able to improve trunk control, sitting and standing balance and mobility.

<https://doi.org/10.1177/0269215519830159>

From our Swiss/ German colleague, Ursula Bertinchamp

A nice notification about the importance of keeping up reading PT related research outcomes. Just ctrl + click on the blue link and the English info video on YouTube will start. There are other languages available, like French, Dutch, Portuguese etc.

The [#MyPTArticleOfTheMonth](#) challenge is designed to encourage physiotherapists to regularly read high-quality research. The challenge is simple; read at least one article reporting the results of clinical research each month during 2019. We will use a hashtag [#MyPTArticleOfTheMonth](#) on Twitter and Facebook for you to share your reading with the global physiotherapy community. This video is in English.

Slupska L et al.

Proprioceptive Neuromuscular Facilitation for Accessory Respiratory Muscles Training in Patients After Ischemic Stroke

[Advances in Pulmonary Medicine: Research and Innovations](#) pp 81-91 |

This study focused on how pulmonary function is affected by proprioceptive neuromuscular facilitation (PNF) of accessory respiratory muscles in the chronic post-stroke phase. The study involved patients who had had ischemic stroke 6 months or more before the PNF treatment investigated. The objective was to define the effect of PNF on bioelectrical resting and maximum activity of the accessory muscles. Patients were randomly assigned to PNF treatment and just positioning treatment as a reference for comparison; 30 patients each. Electromyography of accessory muscles was investigated before and after physiotherapeutic treatments. We found that there was a greater reduction in EMG activity in all muscles investigated after PNF compared to positioning treatment alone. A reduction of muscle activity due to PNF concerned both affected and unaffected body side, but it was greater on the affected side. We conclude that a reduction of the accessory respiratory muscle activity due to PNF treatment could be of benefit in chronic stroke patients in that it would help normalize breathing pattern and thereby prevent the development of hypoxia.

Keywords

Accessory respiratory muscles · Electromyography · Proprioceptive neuromuscular facilitation · Pulmonary function · Respiration · Stroke

https://doi.org/10.1007/5584_2018_325

WCPT information

Physical therapists' role in chronic pain is the theme for World Physical Therapy Day

Chronic pain is a significant global health burden – with low back pain causing more disability than any other condition. The role of physical therapists in helping people with chronic pain to take control of their condition, increase their activity, and improve their quality of life is the theme of this year's [World Physical Therapy Day](#) on 8 September 2019.



The new WCPT Constitution has been accepted and published on the Charity Commission website.

The Constitution received a unanimous vote of approval at the 19th WCPT General Meeting held in Geneva, 8-9 May 2019.

It sets out the rules that govern WCPT, including its membership organisational structure, and operating procedures. This includes duties and responsibilities of the Executive Board, member organisations, regions, subgroups - as well as the organisation of General Meeting, which is held every four years. The Constitution may only be amended or repealed by a resolution passed by at least 75% of all votes cast at a General Meeting.

[Read the WCPT Constitution](#)