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Newsletter IPNFA research committee

In this first edition of the newsletter 2014 we try to deal with the demand for evidence that can be used in Evidence Based Physiotherapy / Practice (EBP). Like we already stated in the last edition, EBP is the way of clinical decision making and clinical reasoning in individual patient management (Sackett et al, 1996). Still in a political way and on governmental level question about the quality of treatment concepts is often leading To help the members of the IPNFA in their individual practice we like to point out that access to (high level) publications becomes more easy in 2014. We as IPNFA experience more and more the demand for proof and the difficulties to be recognized as highly qualified rehabilitation therapists with an exceptional treatment concept. We are not the only ones, just read what the president of the WCPT wrote in their E-update of November 2013. I wish a joyful reading. Fred.

From the President and Secretary General of the WCPT

How do we turn nice words about physical therapy into real, global recognition for the profession and its role in preventing illness and disability and rehabilitating people to maximise participation in society? We all believe that we know **the value of physical therapy**, but when there is discussion of health human resource planning at events such as the [Global Forum on Human Resources for Health](#) in Brazil earlier this month, **there is little reference to physical therapists or, in fact, any other rehabilitation profession.** It becomes clear how many people including other health professionals and health service planners have only limited knowledge of **who we are and the impact that we can make.** If the profession's true value as a part of the health workforce is to be appreciated, **we need to be able to tell policy makers, opinion formers and other professions** how many of us there are, where we work, what we do, and especially what impact we make at a global level. We cannot wait for governments to do this for us. For the past two years, WCPT has been collecting data from its member organisations to profile the profession globally (www.wcpt.org/node/100074). The picture is beginning to form, but it is far from complete. All WCPT member organisations can help by participating in the data collection and sharing information demonstrating the contribution that physical therapists make. If you need any assistance submitting the data contact Catherine at csykes@wcpt.org.

See also this month's Bulletin of the World Health Organization with the theme "Human resources for universal health coverage": www.who.int/bulletin/en/

Kind regards,
Marilyn Moffat and Brenda J Myers

Access to publications.

Therapists who want to backup their treatment approach for specific patients need to find related literature. High level publications are to be found in peer reviewed journals. One of those journals that are ranked in the top of these kinds of journals for physiotherapy is: “Physical Therapy”, the journal that serves as the monthly magazine for the American and Dutch physicals therapy association (APTA and KNGF). Also the journal of the Australian physiotherapy association is regarded as a journal with a very high standard in the field of physical therapy and rehabilitation. Both these journals provide free access to the public. PT journal from the APTA is free accessible for all issues older then 1 year. The archive can be found over this link:

<http://ptjournal.apta.org/content/by/year>

To celebrate 60 years of continuous subscription-based print publication the [Australian Physiotherapy Association](#) is making their [Journal of Physiotherapy](#) available as a digital publication, and is opening access to editorials and the peer reviewed research content to all readers. This will be available from 1st January 2014 (back to Vol 1 No 1 1954). In addition, there will be no submission fees for authors. Read more at <http://bit.ly/19AcrqL>.

This last bit of information provides the opportunity to publish work yourself. So we as committee hope that we can encourage IPNFA members to submit papers like case reports or (pilot) studies with a PNF based topic.

In relation to case reports, we like to present the following abstract:

Green BN, Johnson CD. How to write a case report for publication. *J Chiropr Med* 2006;5:72–82

ABSTRACT

Objective: This paper describes how and why to write a case report for publication in a peer-reviewed journal.

Methods: PubMed, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and the Index to Chiropractic Literature were searched from 2000 through September 2006 using the following search terms: case report, authorship, peer review, and manuscript. Relevant manuscripts were retrieved and the results were used to update a previous narrative overview of the literature.

Discussion: Commensurate with the increased use of evidence-based health care and recent changes in publication requirements, new standards are expected of case reports. Case reports should present new information to the literature and be written succinctly. The types of case reports available are discussed. Steps for preparing a case report are described based upon the current available literature.

Conclusion: Case reports are important contributions to the health sciences literature. Proper preparation of this study design is necessary in order for it to be published. A self-evaluation check sheet for authors is included to assist in the writing process.

New WHO ICF guide

The World Health Organization (WHO) has published the first practical manual on how to use the International Classification of Functioning, Disability and Health (ICF). It will be an important guide for physical therapists around the world, whether applying the ICF in practice, research, teaching or administration.

Download the document at: <http://bit.ly/1c8fEzG>

Specifically the section from page three (3) (*descriptions or definitions*), from chapter three (3) (*ICF may be applied by any health professional, and thus may serve as a foundation for inter-professional education, collaboration and practice*) and from chapter six (6) (*The ICF provides a neutral framework that can serve as a bridge between assessments focusing on health, development, curriculum and social dynamics definitions.*) are useful for our instructors.

We looked and found ---- > some nice abstracts

We as research committee started to check our literature list, so we can use this list for references on specific topics and items in the common script. With this work we run into several interesting newer articles. Below here we like to provide a first impression for all of you with some interesting abstracts. The full text articles are available, just e-mail to Fred

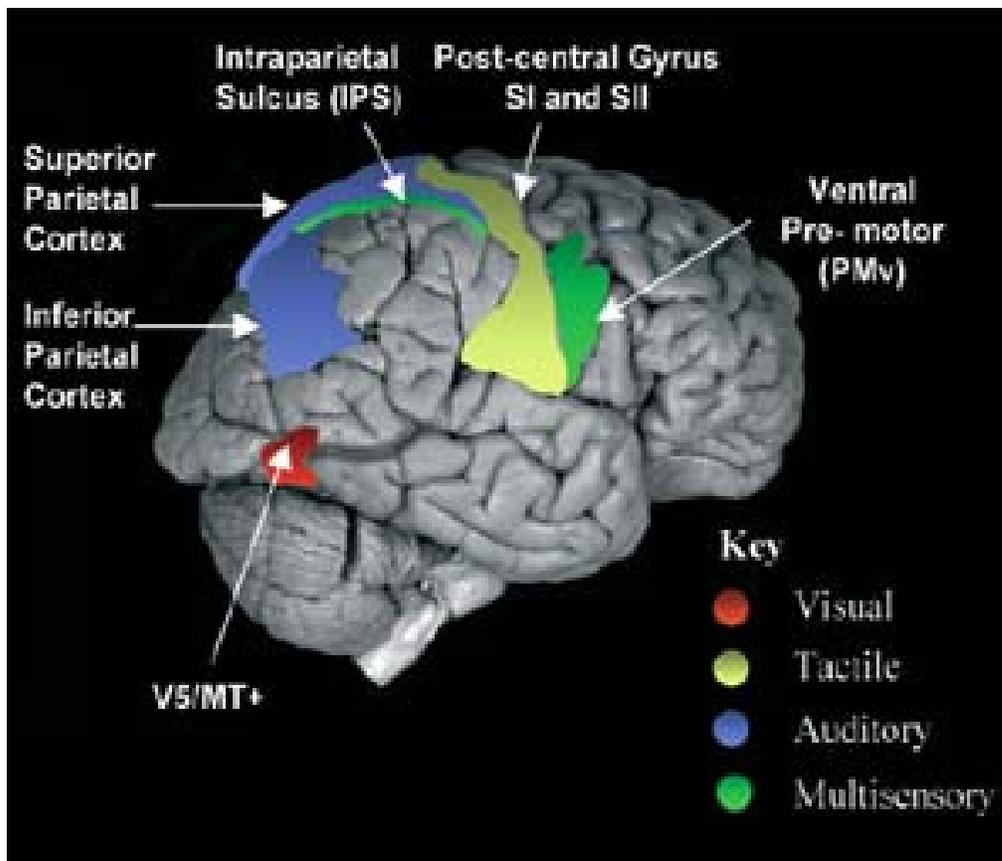
In relation to basic procedures, we like to present the following abstracts:

Mahoney JR et al. Multisensory integration across the senses in young and old adults. *Brain research* 2011, 43-53

Stimuli are processed concurrently and across multiple sensory inputs. Here we directly compared the effect of multisensory integration (MSI) on reaction time across three paired sensory inputs in eighteen young (M=19.17 years) and eighteen old (M=76.44 years) individuals. Participants were determined to be non-demented and without any medical or psychiatric conditions that would affect their performance. Participants responded to randomly presented unisensory (auditory, visual, somatosensory) stimuli and three paired sensory inputs consisting of auditory–somatosensory (AS) auditory–visual (AV) and visual–somatosensory (VS) stimuli. Results revealed that reaction time (RT) to all multisensory pairings was significantly faster than those elicited to the constituent unisensory conditions across age groups; findings that could not be accounted for by simple probability summation. Both young and old participants responded the fastest to multisensory pairings containing somatosensory input. Compared to younger adults, older adults demonstrated a significantly greater RT benefit when processing concurrent VS information. In terms of co-activation, older adults demonstrated a significant increase in the magnitude of visual–somatosensory co-activation (i.e., multisensory integration), while younger adults demonstrated a significant increase in the magnitude of auditory–visual and auditory–somatosensory co-activation. This study provides first evidence in support of the facilitative effect of pairing somatosensory with visual stimuli in older adults.

Cappe C, Rouiller EM, Barone P. Multisensory anatomical pathways. *Hearing Research* 258 (2009) 28–36

In order to interact with the multisensory world that surrounds us, we must integrate various sources of sensory information (vision, hearing, touch. . .). A fundamental question is thus how the brain integrates the separate elements of an object defined by several sensory components to form a unified percept. The superior colliculus was the main model for studying multisensory integration. At the cortical level, until recently, multisensory integration appeared to be a characteristic attributed to high-level association regions. First, we describe recently observed direct cortico-cortical connections between different sensory cortical areas in the non-human primate and discuss the potential role of these connections. Then, we show that the projections between different sensory and motor cortical areas and the thalamus enabled us to highlight the existence of thalamic nuclei that, by their connections, may represent an alternative pathway for information transfer between different sensory and/or motor cortical areas. The thalamus is in position to allow a faster transfer and even an integration of information across modalities. Finally, we discuss the role of these non-specific connections regarding behavioral evidence in the monkey and recent electrophysiological evidence in the primary cortical sensory areas.



Multitasking. Courtesy: <http://www.columbia.edu/itc/sipa/nelson/newmediadev08/multi-tasking.html>

In relation to techniques, we like to present the following abstract:

Gabriel DA, et al., **The Reversal of Antagonists Facilitates the Peak Rate of Tension Development**, Arch Phys Med Rehabil Vol 82, March 2001

Abstract: Objective: The present study was designed to test the effects of the reversal of antagonists on the peak rate of tension development (dF/dtmax) of the elbow extensors.

Design: Experimental, with matched controls.

Setting: A biomechanics research laboratory.

Participants: Twenty-six healthy women without a history of upper extremity injury or neurologic disorder, randomly assigned to experimental ($n = 13$) or control ($n = 13$) groups.

Interventions: Two groups of healthy subjects followed identical exercise protocols, except that the control group performed maximal isometric contractions of the elbow extensors and the experimental group executed a maximal isometric elbow flexion contraction immediately before a maximal elbow extension contraction. Both groups performed 5 cycles of a 2-second contraction with 22-second rest periods between agonist muscle contractions and were evaluated at 4 test sessions spaced 2 weeks apart.

Main Outcome Measures: All measurements were done with the shoulder and elbow at 90° of flexion in the sagittal plane to ensure reproducibility. A load cell was used to measure elbow extension moment and to calculate the peak rate of tension development (dF/dtmax). Biceps and triceps brachii surface electromyographic activity was monitored concurrently. The electromyographic measures were mean spike (peak-to-peak) amplitude and mean spike frequency of the biceps and triceps brachii activity.

Results: Intraclass dF/dtmax and electromyographic reliability was good ($r = .72$) in both groups. Because biceps electromyographic measures were considerably less reliable ($r = .53$), they were not included in our analysis. While dF/dtmax increased quadratically in both groups ($p < .05$), the experimental group was on average 36.1Nm \pm s21 (63%) greater across sessions 2 to 4 ($p < .05$). In contrast, triceps electromyographic activity did not differ significantly between groups ($p > .05$). The means averaged across groups exhibited a quadratic increase from session 1 to session 4: 91mV or 48% for mean spike amplitude ($p < .05$) and 7Hz or 16% for mean spike frequency ($p < .05$).

Conclusions: The greater dF/dtmax for the experimental group was not associated with increased electromyographic activity. The experimental group appeared to use the biomechanic properties of the pretensioned extensor muscle-tendon complex, rather than neurologic biasing, to accomplish its power gains.

Key Words: Elbow; Electromyography; Isometric contraction; Rehabilitation; Shoulder.