



7<sup>th</sup> International Conference and Exhibition on

# Pain Research and Management

October 11-12, 2018 | Zurich, Switzerland

## Scientific Tracks & Abstracts Day 1

Pain Management 2018

## SESSIONS

Pharmacological Approaches for Pain | Anesthesiology and Pain Medicine | Interventional Pain Management Pain Management and Rehabilitation | Pain Management Market | Non-Pharmacological Approaches for Pain

**Chair:** Nelson Hendler, Johns Hopkins University School of Medicine, USA

**Chair:** William P Gallagher Jr, American Academy of Motor Vehicle Injuries, USA

## SESSION INTRODUCTION

- Title:** Peripheral nerve trauma in the pig, a model for neuropathic pain: Evaluation of the evoked and spontaneous pain  
Sigal Meilin, MD Biosciences, Israel
- Title:** Neurogenic information in autoimmune diseases and chronic pain syndromes  
Matthias Seidel, Pain Clinic Basel, Switzerland
- Title:** Complex Regional Pain Syndrome (CRPS): Rehabilitation and interdisciplinary treatment– seen from a rehabilitation based therapy approach  
Lene Moeller Schear Mikkelsen, National University Hospital, Denmark
- Title:** Which is challenging? chronic pain or chronic pain education/training; Bringing the innovative solution into medical education, research and practice  
Ali Alqahtani, Orthopain Center, Kingdom of Saudi Arabia
- Title:** Awareness and use of ergonomically designed equipment and furniture by public and private sector bankers  
Sajid Rashid, Multan College of Physiotherapy, Pakistan
- Title:** Perspective in pain management using traditional Chinese medicine: East meets west  
Chan Tak Yin, Hong Kong Public Hospital, Hong Kong
- Title:** Assessment of analgesic activity of *Nelumbo nucifera* fruit  
Muhammad Ali Rajput, Multan Medical & Dental College, Pakistan
- Title:** Abdominal acupuncture - instant painless way to kill pain caused by tissue injury  
Miu Ha Chan, The Hong Kong Polytechnic University, Hong Kong
- Title:** Chronic pain and comorbidity: How to increase the sexual excitation in spinal cord stimulation relief patients over 40 years old?  
Damien Haton-Pietrin, Neuromodulation Fundamental Physics Laboratory, France

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## Peripheral nerve trauma in the pig, a model for neuropathic pain: Evaluation of evoked and spontaneous pain

Sigal Meilin<sup>1</sup>, Castel David D V M<sup>2</sup> and Itai Sabbag<sup>3</sup><sup>1</sup>MD Biosciences, Israel<sup>2</sup>Sackler Faculty of Medicine, Tel-Aviv University, Israel<sup>3</sup>Lahav Research Institute, Israel

Rodent models are frequently used in the research of pain and continue to provide valuable data on the mechanisms driving pain although criticized due to limited translation ability to human conditions. Previously we have suggested expressed mechanical and tactile allodynia, indicative of painful neuropathy 28 post-surgery peripheral nerve traumas (PNT). In this study we investigate the spontaneous behavior of the pigs following PNT induced neuropathic pain. Computerized monitoring system was used to evaluate the changes in the open field test in addition to a applying a composite behavior scoring system. The data suggest the PNT operation did not affect the animal's ability to walk as the total distance walked by PNT animals was not different than the total distance walked by Sham operated animal. However, PNT animals expressed a significant change in pattern alteration. This effect was unrelated to the time that the animals spent in the open field. Following treatment with different drugs (Morphine, Buprenorphine or Gabapentin) the walking pattern of the animals in the open field changed in a drug specific manner. Also, the detailed behavior score revealed drug specific changes following treatment. Pharmacokinetic analysis of the 3 tested drugs blood and CSF concentration was correlated with the behavior analysis. Over all the data of this study suggest that the open field test together with the detailed behavior score applied in this model are a very powerful tool to assess the spontaneous behavior of pigs following PNT induced neuropathic pain.

### Recent Publications

1. Castel D, Sabbag I, Brenner O and Meilin S (2016) Peripheral Neuritis Trauma In Pigs: A Neuropathic Pain Model. *Journal of Pain* 17(1):36-49.
2. Meilin S, Machicao F and Elmlinger M (2014) Treatment with actovegin improves spatial learning and memory in rats following transient forebrain ischaemia. *Journal of Cellular and Molecular Medicine* 18(8):1623-30.
3. Castel D, Willentz E, Doron O, Brenner O and Meilin S (2014) Characterization of a porcine model of post-operative pain. *European Journal of Pain* 18(4):496-505.
4. Castel D, Naveh M, Aharon A and Doron O (2015) Prolonged analgesic effect of PRF-108 and PRF-110 on post-operative pain in pigs. *Pain and Therapy* 5(1):29-42.
5. Castel D, Sabbag I and Meilin S (2014) The effect of local/topical analgesics on incisional pain in a pig model. *Journal of Pain Research* 10:2169-2175.

### Biography

Sigal Meilin has passion over 20 years in the understanding of neuro-degeneration and pain processes. Her research focus has been on exploring and creating models of pain including translational models in post incision wounds in pigs which closely mimics humans' condition. She holds a PhD from Bar Ilan University in Tel Aviv, Israel where she continued her research involving multi-parametric monitoring of the living brain and the cross talk between the immune system and the neuronal system in neurodegenerative disease. She was the Leader of the Pharmacology Department of Pharms Ltd, prior to joining MD Biosciences in 2006.

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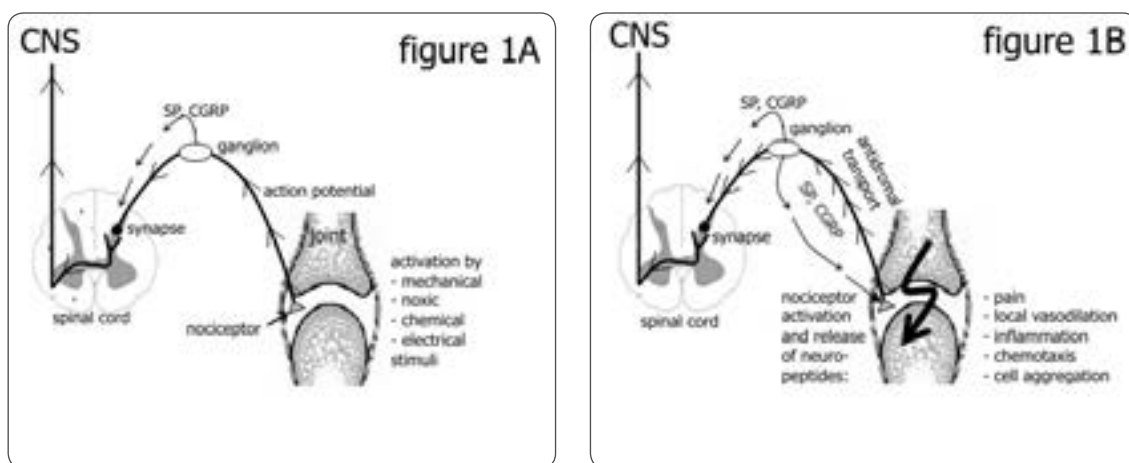
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## Neurogenic information in autoimmune diseases and chronic pain syndromes

**Matthias Seidel**

Pain Clinic Basel, Switzerland

Pain is a key symptom in many musculoskeletal diseases. Persistent nociceptor stimulation activates the peripheral and central nervous system (figure 1A, 1B)), and induces the release of neurotransmitters such as substance P (SP) or calcitonin-gene related peptide (CGRP). Such molecules mediate peripheral tissue inflammation with reddening, swelling, hyperalgesia or allodynia (1). These events are termed neurogenic inflammation (NI). Nerve growth factor (NGF) is a primary stimulator of SP and CGRP. A variety of degenerative and autoimmune inflammatory diseases are characterized by NI and either show a robust upregulation of neuronal mediators or clinical features of disease exasperation after stimulation of the nervous system (2). The latter include internal or external Köbner phenomenon in psoriatic arthritis, pathergy in Behçet's disease, UV light-induced dermatitis in systemic lupus erythematosus or chronic regional pain syndrome (CRPS) that is typically induced by trauma. Further strong evidence for NI in musculoskeletal diseases is provided by clinical trials with molecules that block neuron-derived molecules. Recently, erenumab has been approved for the treatment of chronic migraine (3). This monoclonal antibody binds to the CGRP receptor. Treatment with monoclonal antibodies against NGF such as tanezumab (4) or fasinumab (5) have been effective in chronic pain syndromes including osteoarthritis or low back pain. In conclusion, NI is now more increasingly recognized as an important mechanism in clinical medicine.



**Figure:** Principles of pain transmission under physiological and chronic conditions. Neurotransmitters (e. g. SP or CGRP) are released at the synapse to conduct the action potential to the CNS (1A). In case of chronic pain, neuropeptides are transported to and released from the nociceptor (1B). The molecules are powerful inducers of local inflammation.

### Recent Publications

1. Seidel M, Tsalik J, Vetter H, Müller W. (2007) Substance P in Rheumatic Diseases. *Current Rheumatology Reviews*. 3: 17.
2. Seidel MF, Herguijuela M, Forkert R, Otten U. (2009) Nerve growth factor in rheumatic diseases. Doi: 10.1016/j.semarthrit.2009.03.002.

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3. Goadsby PJ, Reuter U, Hallström Y, Broessner G, Bonner JH, Zhang F, Sapra S, Picard H, Mikol DD, Lenz RA. (2017 ) A Controlled Trial of Erenumab for Episodic Migraine. *The New England Journal of Medicine*. 377(22): 2123.
4. Seidel MF, Wise BL, Lane NE. (2013) Nerve growth factor: an update on the science and therapy. *Osteoarthritis Cartilage* 21(9): 1223.
5. Tiseo PJ, Kivitz AJ, Ervin JE, Ren H, Mellis SJ. (2014) Fasinumab (REGN475), an antibody against nerve growth factor for the treatment of pain: results from a double-blind, placebo-controlled exploratory study in osteoarthritis of the knee. *Pain* 155(7): 1245.

## **Biography**

Matthias Seidel has obtained his graduate medical and neuroscience training in Italy, Germany and the United States. He received his medical degree in Essen (Germany) and then served as a Marie-Curie-Fellow in Créteil (Paris/France). He is licensed in Internal Medicine and Rheumatology and has worked in several rheumatology departments in Bonn (Germany), Basel and Biel/Bienne (both Switzerland) where he was recently appointed a chief position. His major scientific interests are neurogenic inflammation in clinical medicine, biomarker molecules and rare diseases in rheumatology.

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## Complex Regional Pain Syndrome (CRPS): Rehabilitation and interdisciplinary treatment – seen from rehabilitation based therapy approach

Lene Møller Schear Mikkelsen  
National University Hospital, Denmark

**Statement of the Problem:** The treatment and rehabilitation of patients with CRPS is challenging. The limited knowledge on the pathophysiology and its complex mechanisms contribute to the fact that CRPS is difficult to treat. Often this means that the disease is treated by an individual knowledge, clinical experience and preference of the individual professionals. In many cases, it is without an interdisciplinary and cross-sectoral approach. Often patients with CRPS are faced with multiple consultations and it is perceived that many patients with CRPS in Denmark are diagnosed late in their illness. However there is international consensus on diagnostic criteria and early identification. Evidence for treatment is weak, but there are good experiences with highly specialized interdisciplinary treatment. Rehabilitation based therapy is recommended as the core treatment for CRPS. In view of this, a Danish National Treatment Guideline for CRPS was developed. The rehabilitation based therapy approach described in this guideline was based on a study to identify current practice among clinicians who deliver rehabilitation based therapy to patients with CRPS.

**Methodology:** An online survey was disseminated to physio- and occupational therapists who works with CRPS in Denmark. Responders were asked about which kind of treatment they found useful, outcome measures, and challenges related to the course of treatment.

**Findings:** Within this survey, the physio- and occupational therapists emphasized the importance of an interdisciplinary approach and called for a function-based treatment algorithm so patients are offered a more uniform treatment due to clinical and evidence-based practice.

**Conclusion & Significance:** CRPS is a multifactorial condition and should be treated as such by a specialized interdisciplinary team. Applicable to the therapeutic part of the National Treatment Guideline for CRPS a function-based treatment algorithm was developed. This survey was the first step trying to develop a best practice model of a therapeutic based approach.

### Recent Publications

1. L Moeller Schear Mikkelsen, P Rotboll Nielsen and H Tønnesen (2016) Multidisciplinary and cross-sectorial treatment of patients with complex regional pain syndrome. *Ugeskr læger* 178(13):V09150702.
2. M Galve Villa, B Rittig Rasmussen, L Moeller Schear Mikkelsen and A Groendahl Poulsen (2016) Complex regional pain syndrome. *Manual Therapy* 26:223-230.

### Biography

Lene Møller Schear Mikkelsen, PT, completed her Masters in Rehabilitation. She has her expertise in Physical Therapy and Rehabilitation. She is highly skilled in pain management and improving interdisciplinary approach to patients with chronic pain conditions.

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## Which is challenging? Chronic pain or chronic pain education/training: Bringing the innovative solution into medical education, research and practice

**Ali Hasan Alqahtani**

Orthopain Center, Kingdom of Saudi Arabia

Chronic pain is perceived by physicians and healthcare systems worldwide as a major challenge. It costs USA more than the cost of cancer, cardiovascular diseases, and AIDS. Despite the major efforts to solve this problem, these efforts have gone in the wrong direction. Chronic pain associated knowledge and pain practices are dissociated. Researches, medical education, legislation priorities and directions are influenced by economic dominance. All available medical/surgical specialties dealing with chronic pain can't see the full picture of the nature and dimensions of chronic pain. Chronic pain is either neuromusculoskeletal, neurovisceral or neuroendocrine dysfunction. A new training/education fellowship had been created at McMaster University in Canada 2007- 2010. This is a 30 months fellowship that included rotations in pain center under anaesthesia, outpatient musculoskeletal physiatry, podiatry, pain psychiatry, neurology, pain psychology, palliative medicine, spinal surgery, sports medicine, complementary/alternative pain medicine. This advanced training/education involved an extensive literature review of the past 30 years of research. The main outcome of this model is an advanced approach to diagnosis and treatment. The main focus is on diagnosing and treating underlying cellular dysfunction and the physical, mental and social dysfunctions using save and cost-effective options. A comprehensive mechanisms specific treatment protocol is used (the RRMMHS protocol) which means:

R: Regenerative, R: Rehabilitative, M: Medication-conventional, M: Mind-body medicine (including psychotherapy), H: Herbal medicine, S: Supplements.

### Biography

Ali Hasan Alqahtani, from Saudi Arabia. consultant Chronic Pain and Musculoskeletal Medicine. He has obtained the Canadian fellowship in chronic pain/musculoskeletal medicine in 2010 from McMaster University ,and double board Family Medicine from National Guard Medical City in 2000. He have created a new fellowship at McMaster University that combines pain and musculoskeletal Medicine from the perspective of anaesthesia, physiatry, sport medicine, podiatry, pain psychiatry, pain psychology, palliative med., regenerative med, and complementary/alternative pain medicine. The main goal was to fill the gaps in knowledge, skills, researches, education and legislation. He was the first graduate from this 30 months fellowship. It was recognized ,by CAPM and McMaster University ,As the most extensive and most comprehensive training in Canada, which included extensive literature review of the past 30 years literatures from different perspectives. He has implemented the outcomes of this fellowship in KSA since early 2010. He is a primary contributor for a major change in pain services in his country under Ministry of Health. He has established the integrative Chronic Pain Center as a private center in Riyadh after five years of Chronic Pain practice in the largest medical city in KSA, then 4 years in his own center in Riyadh, The first Model/center of its kind in the KSA.

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## Awareness and use of ergonomically designed equipment and furniture by public and private sector bankers

**Sajid Rashid**

Multan College of Physiotherapy, Pakistan

**Background & Objective:** Neck and shoulder are the most susceptible areas for developing musculoskeletal symptoms among computer users. The modifiable risk factors for these work related musculoskeletal disorders include physical office environment and psychosocial work related factors. Computer workstation layout had been shown to be an important physical aspect of work environment that influences the upper quadrant symptoms. Our objective was to find the frequency of neck and shoulder pain and use of adjustable computer workstation among bankers.

**Methods:** A cross sectional study was conducted and 120 participants were questioned. Purposive sampling technique was used in this study. Maastricht Upper Extremity Questionnaire (MUEQ) was remodeled and important questions were extracted from its detailed version. The tool was then validated by taking expert opinion. Frequencies and percentages were calculated for categorical variables.

**Results:** Pain in the neck during working hours was experienced by 71.67% of the respondents and 48.33% of the participants had experienced shoulder pain during working hours. Adjustable keyboards were used by 16.67% of respondents. Back care material was used by 40% bankers. Adjustable chairs were used by 95.83% of the participants. Only 3% of the bankers did not have chairs with adjustable heights. Chairs with adjustable armrests were used by 25% bankers.

**Conclusion:** Neck and shoulder pain are common occurrences among bankers. Most of the components of workstations of bankers were adjustable but some of them still need attention.

### Biography

Sajid Rashid, PhD-PT (HEC Scholar), PP-DPT, MISCP (Ireland) is the Principal/HOD, Multan College of Physiotherapy. He is also a member of Irish Society of Chartered Physiotherapist. He did his graduation in Physical Therapy from King Edward Medical College. He did his MPhil from Riphah University and is currently pursuing his PhD from Isra University. His objective is to make effective use of his experience through serving in a well reputed organization in the field of Physical Therapy and Rehabilitation. He is a reviewer of the journals, Pakistan Journal of Medical Science & Journal of Riphah College of Rehabilitation Sciences. He has several research articles and clinical and teaching experiences. He also attended several workshop and courses. He has vast experience in serving well reputed government and private sector organizations. He worked as a clinician, an academician, a researcher and also an administrator. He has different certificates in medical education and is certified in different techniques. He presented his research work at various national and international forums.

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## Perspective in pain management using traditional Chinese medicine: East meets west

**Chan Tak Yin**

Hong Kong Public Hospital, Hong Kong

An exchange of ideas with University of Minnesota students through email, Skype and Facebook communication was done to compare pain management between United States (US) and Hong Kong (HK). There are quite a lot of differences with US people view pain as a weakness with the saying Pain is weakness leaving the body. HK elderly percept pain as essential of aging process, which is a defining characteristic of human life, and it is related to climatic and seasonal conditions to be treated with over-the-counter pain relief patches. Both countries people prefer non-pharmacological approaches first before taking analgesic by hot and cold packs, aromatherapy, humidifier for sore throat used in US; application of medicinal wine or salve, eating preserved fruits such as citrus peel and kumquat for sore throat used in HK. Alternative treatments such as moxibustion are becoming more recognized but slow to be accepted in US with a lack of evidence-based research to support efficacy. In addition, they are not covered by medical insurance. In HK, several charities subsidized Chinese medicine clinics have acupressure and acupuncture specialties to provide trustworthy and inexpensive treatment to people. But moxibustion remains a less popular and recognized therapy, which can be administered easily with moxa stick ignition.

### Biography

Chan Tak Yin is a Registered Nurse of Hong Kong Public Hospital. She is studying Master of Science in Nursing in the Hong Kong Polytechnic University. She was awarded Sir Edward Youde Memorial Prize in 2002; Outstanding student for CM(N), KCC Award in 2003; Ida Martinson Scholarship for Advanced Nursing Development (Overseas Placement) in 2017 during her school life. She has been to Sun Yat-sen University in Guangzhou for academic exchange and communication in 2016 and awarded Third Prize in the Nursing Researcher Forum. The Ida Martinson Scholarship placement in Florida broadens her horizon and enriched her learning experience in a professional and international context. She had just applied as member of Sigma Theta Tau International.

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## Assessment of analgesic activity of *Nelumbo nucifera* fruit

**Muhammad Ali Rajput**

Multan Medical and Dental College, Pakistan

Recently use of herbal therapies and diet rich in flavonoids and vitamins has increased considerably to treat minor to modest inflammatory disorders, thus existing study was focused to evaluate the analgesic effect of *Nelumbo nucifera* fruit in order to justify its traditional use Pharmacologically in disorders which are associated with pain and inflammation e.g. cancer and arthritis. In current study central analgesic activity in mice was assessed by tail flick test and tail flick latency difference (TFLD) i.e. the time in seconds taken by mouse to remove its tail clearly out of water was noted as the reaction time, Similarly acetic acid induced writhing test was also conducted for the assessment of systemic analgesic effect in mice and number of writhes were counted along with percent inhibition of writhes. Both tests were conducted utilizing separate set of 49 white albino mice of either sex weighing 20-25 g and were equally placed in seven groups. In tail flick test the peak anti-nociceptive effect at all doses of fruit was observed at 90 minutes, however the percentage of tail elongation time was highest at a dose of 200 mg/kg i.e. 82% at 90 minutes. Number of writhes was highly significantly reduced at all doses of *N. nucifera* fruit but maximum effects were observed at dose 200 mg/kg as compared to control (indicating 48.41 % inhibition of writhes). *N. nucifera* fruit have exhibited strong analgesic effect in both animal models which was highly comparable with aspirin and that may be connected with the inhibition of arachidonic acid metabolism hence justified its traditional use in disorders associated with pain and thus encourage more preclinical and clinical trials in this field.



### Recent Publications

1. Assad T, Khan R A and Rajput M A (2018) Anticonvulsant effect of *Trigonella foenum graecum* L on strychnine induced epilepsy model. *Journal of Nutritional Health & Food Science* 6(1):1-6.
2. Assad T, Khan R A and Rajput M A (2017) Anti-epileptic activity of *Nelumbo nucifera* fruit. *Metabolic Brain Disease* 32:1883-1887.
3. Assad T, Khan R A and Rajput M A (2017) Evaluation of the anti-hyperlipidemic activity of *Nelumbo nucifera* fruit in rabbits fed with high cholesterol diet. *Pharmacology & Pharmacy* 8(6):205-13.
4. Khan R A and Rajput M A (2017) Phytochemical screening, acute toxicity, anxiolytic and antidepressant activities of *Nelumbo nucifera* fruit. *Metabolic Brain Disease* 32:743-749.
5. Khan R A, Feroz Z and Rajput M A (2015) Evaluation of anxiolytic activity of extract of *Trachyspermum ammi*. L. *International Journal of Pharmacy and Pharmaceutical Sciences* 7:69-71.

### Biography

Muhammad Ali Rajput is a young researcher and Medical Doctor from Pakistan who has attained PhD and MPhil degrees in Pharmacology from University of Karachi, Karachi and MBBS degree from Liaquat University of Medical & Health Sciences Jamshoro, Pakistan. He attended course of Professional Competency Enhancement Program for Teachers (PCEPT) in May 2009 and became certified academician of Higher Education Commission (HEC), Pakistan. He is well oriented with scientific writing and has so far published 9 articles in journals of international repute and many are under peer review process. He has a teaching experience of more than 10 years and currently serving in Multan Medical & Dental College as Assistant Professor in the Department of Pharmacology. He is well acquainted and expert in conducting teaching sessions based on either conventional or integrated methods of learning and have conducted MBBS, BDS, DPT and BS nursing classes.

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## Abdominal acupuncture - instant painless way to kill pain caused by tissue injury

**Miu Ha Chan**

The Hong Kong Polytechnic University, Hong Kong

**Introduction:** Abdominal acupuncture (AA), Bao's Fu Zhen is a kind of new therapy developed by Prof. Bao Zhi-Yun in China. AA uses the area between CV12 (ZhongWan) and CV3 (ZhongJi) on the vertical line and Sp15 (DaHeng) as the outer most points on the horizontal lines. To cure acute tissue injuries, two typical cases are illustrated.

**Case 1 Fall Injury:** Ms. Zeng. Zeng fell accidentally during work. Hematoma on left chin and felt pain on left neck, shoulder, arm. Pain increased when doing left shoulder movements. Treatment: CV12, KI19 left, CV10, KI17 bilateral, ST24 left, shoulder and neck corresponding point left, upper rheumatism point (AB1) left, upper lateral rheumatism point (AB2) left with 3 needles, all points are punctured in superficial, depth was about 0.1-0.2 cun. After 20 minutes of treatment, pain improved and swelling reduced.

**Case 2 Finger injury:** Ms. Chan. Left fingers were clipped by the closing taxi door. Four fingers on left hand were swollen, painful and not able to flex. Left hand was raised up with fingertips pointing upwards, used right index fingertip to massage the upper lateral rheumatism point (AB2, 1 cun laterally from ST 24) on the left upper abdomen gently for 2-3 minutes, pain and swollen dissipated about 50%. Another 10 minutes massaging the point, kept flexion fingers and then flexor fist. Not much pain retained in the injured fingers in the next day.

**Conclusion:** Abdominal acupuncture, unlike traditional acupuncture, DeQi sensation is not required, once getting the correct points with superficial puncture, the pain on distant injured tissue will cease. Therefore it is a super weapon to kick away pain without pain.



Fig 1 The picture of AA used in treating Zeng's injury.



Fig 2 Comparison of bruise on left hand before and after treatment. Bruise disappeared in following day after treatment.

### Recent Publications

1. Bo ZY (2006) Abdominal Acupuncture Therapy Cure Diseases Without Pain (Chin). Beijing:China Science Popularization Press 25-26,27-29.
2. Wen M S (2009) Depth of needling in abdominal acupuncture. Journal of Practical Traditional Chinese Medicine (Chin) 25(6):418-419.
3. Wang L P and Zhang P (2010) Discussion on the thickness of needle tool in abdominal acupuncture. Acupuncture Research (Chin) 35(3):236-237.

### Biography

Miu Ha Chan is a Registered Chinese Medicine Practitioner working in University Health Service of The Hong Kong Polytechnic University. Her specialty is in acupuncture and TCM gynecology. She is good at using acupuncture to treat acute and chronic pain caused by muscular skeletal injuries and neuralgia, children developmental retardation; using acupuncture combined with TCM medicine to treat menstruation disorder, infertility, menopausal syndrome, emotions disorder and so on. Abdominal acupuncture is one of her frequent use acupuncture technic to treat acute pain caused by tissue injuries.

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## Chronic pain and comorbidity: How to increase the sexual excitation in spinal cord stimulation relief patients over 40 years old?

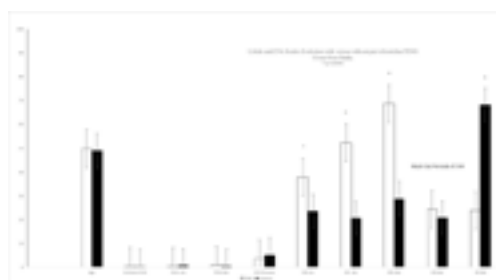
**Damien Haton-Pietrin**

Neuromodulation Fundamental Physics Laboratory, France

**Introduction:** Chronic pain causes a drastic reduction in libido that is also physiologically lowered in 40% of women, over 40 years. TENS has never been so far published have an effect on libido. We used TENS for peri clitoral with electrical stimulation 3 V to 6 V for 30 minutes, 3 times a day for three months. The population of women studied was divided into two groups: TENS group was evaluated versus the control. Pain scores EVA was measured, a rated scale of 0 to 100 were used to measure the libido experienced by patients. Inclusion criteria in tested group were: SCS chronic pain relief longer than 3 months and up to 3 years, and the inclusion criteria recommended by the INS for the SCS. Two groups of patients were formed: TENS-C group: TENS for 3 months and then stop (n = 35) versus C-TENS group (n = 22). Both scales were measured according libido and EVA, at baseline of 1, 3, 6 and 9 months. TENS was stopped at three months after inclusion for the treated group. Treated and control group were monitored at 1-2-3-6 and 9 months. A washout period was defined for cross over with a simple observation period of 3 months. Statistical analysis consisted of t-test.

**Methods & Results:** The population was homogeneous in absence of pain ( $p > 0.5$ ). 33 patients were included in the TENS-C group and 20 patients in the C-TENS group. The results of TENS show that electrical stimulation (ES) of the anterior pelvis promotes a significant increase ( $p < 0.0001$ ) of the libido in the C-TENS group at the first month of treatment. This increase experienced sexual appetite on a numerical scale is constant as long as the treatment is active. Libido in both groups was comparable and not significantly different after the washout period. The C-TENS group also has an increased libido during treatment.

**Conclusion:** Chronic pain is causing much comorbidity including a drop-in libido which worsens the quality of life of patients. The use of an electrical stimulation device for low voltage shows that the patients treated with TENS feel increased libido. The clearance period also helps to show that the non-treated group initially present after three months of treatment increased libido. In the absence of ES, libido was lowered in the TENS-C group after three months of washout. These results are encouraging for the treatment of comorbidities related to chronic pain which cut the quality of life of female patients over 40 who also suffer the aging of sexual excitability with age.



### Recent Publications

1. Block A R et al (2014) Presurgical Psychological Screening in Chronic Pain Syndrome: A Guide for the Behavioral Health Practitioner, Psychology Press 109-114, ISBN 9781317778738.

### Biography

Damien Haton-Pietrin is an Experienced Pain Physician, Mathematician and Physicist. He worked at Interventional Pain Center near Paris before he began a new career as Biophysicist of the central nervous system working especially on the spinal cord diseases.

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# Scientific Tracks & Abstracts Day 2

Pain Management 2018

## SESSIONS

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Pharmacological Approaches for Pain | Interventional Pain Management | Pain Management and Rehabilitation | Clinical Manifestations & Epidemiology of Pain

**Chair:** Fred Nyberg, Uppsala University, Sweden

## SESSION INTRODUCTION

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- Title:** Pharmacologically controlling pain without opioids  
Nelson Hendler, Johns Hopkins University School of Medicine, USA
- Title:** Failure to diagnose concussion/TBI due to a lack of understanding of the mechanism of injury  
William P Gallagher Jr, American Academy of Motor Vehicle Injuries, USA
- Title:** How to deal with patients addicted to pain-relieving opioids  
Fred Nyberg, Uppsala University, Sweden
- Title:** The integrative model of adjustment to chronic conditions: Towards clinical testing and impact in chronic pain  
Lis D Hammond, Teesside University, UK
- Title:** Biomarkers and stem cells  
Sudha Bansode, Shankarrao Mohite Mahavidyalaya, India
- Title:** The complete breast block, an approach to prevent the postmastectomy chronic pain progression  
Juan Bernardo Schuitemaker, General University Hospital of Catalonia, Spain
- Title:** Use of a spinal cord stimulation lead for electromagnetic spectral analysis in 6 radiculopathy suffering patients versus control  
Damien Haton-Pietrin, Neuromodulation Fundamental Physics Laboratory, France



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## Pharmacologically controlling pain without opioids

**Nelson Hendler**

Johns Hopkins University School of Medicine, USA

With the increased use of opioids for control of pain, the drug seeking behavior of some segments of the population, and the small percentage of physicians who prescribe narcotics and opioids for unsubstantiated complaints of pain, the entire method of medication selection for pain has to be re-examined. Pain is a subjective experience, and there is absolutely no way to reliably and consistently measure pain, other than self-reporting from a patient. However, saying a patient has pain, is too broad a statement, akin to saying a patient has a car, which needs repair. A mechanic cannot repair a car without knowing what type of car it is, and what the problems the car has, any more than a physician can help a patient without a proper diagnosis, and understanding what type of tissue is damaged. There are four major components to the rational selection of medication, other than opioids, for pharmacological management of pain: assessing the validity of pain; proper diagnosis is essential for the correct selection of medication; treatment of acute pain is not the same as chronic pain and; damage to different tissue types produce different types of pain, and each tissue type responds to different types of medications. The description of the type of pain may give important insight into the type of tissue which is damaged, and thus allow more rational selection of the type of medication best suited to control the pain. Proper medication selection for the following types of tissue damage will be reviewed: primary muscle spasm, secondary muscle spasm, vascular spasm, vascular compression, vascular inflammation, acute and chronic joint inflammation, infection, acute bone pathology, ligament damage, nerve compression and nerve irritation.

### Recent Publications:

1. Hendler N (1982) The anatomy and psychopharmacology of chronic pain. *Journal of Clinical Psychiatry* 43(8 Pt 2):15-21.
2. Hendler N (1997) Psychological and Psychiatric Aspects of Pain in Neurosurgical Management of Pain, Chap. 2:22-36, ed. North R, Levy R, Springer-Verlag, New York, ISBN 978-1-4612-1938-5
3. Hendler N (2000) Pharmacological Management of Pain, Chapter 12 in Practical Management of Pain, pp. 145-155, Third edition, P. Prithvi Raj Editor, Mosby, St Louis.
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### Biography

Nelson Hendler, MD, MS graduated cum laude from Princeton University. He has an MD and MS in Neurophysiology from University of Maryland School of Medicine. He did his Residency in Psychiatry at Johns Hopkins Hospital, and remained on the Faculty at the Medical School for 31 years. He has published 4 books, 33 medical text book chapter, and 65 articles. He has lectured in over 60 hospitals and medical schools in the US and in 10 other countries. He has served as the President of the American Academy of Pain Management and the Reflex Sympathetic Dystrophy Association of America, and served on the board of the Lightning Strike and Electric Shock Survivors International.

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7<sup>th</sup> International Conference and Exhibition on

# Pain Research and Management

October 11-12, 2018 | Zurich, Switzerland

## Failure to diagnose concussion/TBI due to a lack of understanding of the mechanism of injury

**William P Gallagher Jr**

American Academy of Motor Vehicle Injuries, USA

**Statement of the Problem:** Since the National Football League concussion settlement, diagnosing concussions in sports has become a priority. With rule changes the following season more concussions were diagnosed not because of an increased prevalence but due to a better understanding of the condition. CDC records go a step further to show a greater prevalence of concussions in motor vehicle collisions. As scientists we are limited by what we can measure. Understanding what to measure will open the doors to a better understanding of concussion/TBI.

**Literature Review:** Most current research addresses repetitive injuries commonly seen with athletes. Michael Freeman's 2010 study on traumatic cerebellar tonsillar ectopia in whiplash<sup>1</sup>, points to the need for further research on brain injuries in motor vehicle collisions. Most recently a long term study of veterans has demonstrated that the risk of dementia doubles with a single concussion without loss of consciousness.<sup>2</sup> Others have found that with a lack of understanding of the conditions there is also a lack of follow up care.<sup>3</sup> Researches like Josef Rauschecker have taken up the gauntlet to examine somato-sensory aberrations.<sup>4</sup>

**Conclusion & Significance:** With a focus on cerebral lesions we miss so many structures that are exposed to trauma. With a better understanding of the mechanism of injury comes a better understanding of what can be injured. The current attitude of shaking it off and getting back in the game needs to be replaced with an understanding of the prevalence and extent of these injuries.



### Recent Publications:

1. Freeman, M; Rosa, S; Harshfield, D; et al, (2010). A case-control study of cerebellar tonsillar ectopia (Chiari) and head/neck trauma (whiplash). *Brain injury : [BI]*. 24. 988-94. 10.3109/02699052.2010.490512.
2. Barnes,D;, ,Byers, AL PhD; et al; Association of Mild Traumatic Brain Injury With and Without Loss of Consciousness With Dementia in US Military Veterans, *JAMA Neurol*. 2018;75(9):1055-1061.
3. Seabury, SA; Gaudette,, E; Goldman, D; Assessment of Follow-up Care After Emergency Department Presentation for Mild Traumatic Brain Injury and Concussion Results From the TRACK-TBI Study *JAMA Network Open* 2018; 1(1); e 180210
4. Rauschecker JP, Where, When, and How: Are they all sensorimotor? Towards a unified view of the dorsal pathway in vision and audition. 10.1016/j.cortex.2017. 10.020. Epub 2017 Nov 3.
5. Masel BE, DeWitt DS. Traumatic brain injury: a disease process, not an event. *J Neurotrauma*. 2010 Aug;27(8):1529-40.
6. Cusimano, MD; Casey, J; Jing, R, et al, Assessment of Head Collision Events During the 2014 FIFA World Cup Tournament, *JAMA*. 2017;317(24):2548-2549.

### Biography

William P Gallagher Jr with Lois Laynee has created the Concussion Recovery Center and the Concussion Testing Center. Together they provide testing to validate all injuries with a concussion and provide therapies to retrain the brain and cranial nerves Together with chiropractors who have graduated from the American Academy of Motor Vehicle Injuries who see a minimum of 500 new cases each month they are involved in research on concussions/TBI.

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October 11-12, 2018 | Zurich, Switzerland

## How to deal with patients addicted to pain-relieving opioids

**Fred Nyberg**

Uppsala University, Sweden

Over the past decade, the prescribing of opioids has increased dramatically in Western countries and in particular in North America. In parallel with this increase in opioid addiction, overdose, and associated deaths have been seen. A similar situation occurs in Sweden, where an about 40% increase in drug-related deaths has been documented, over the past decade, mainly due to opioids. These include synthetic drugs as methadone, buprenorphine and fentanyl and an increase has been seen in both males and females. A certain part of the increase is seen in opioid deaths combined with benzodiazepines. Although opioid addiction is effectively treated via a multidisciplinary approach including agonist opioid treatment and psychosocial intervention there are some difficulties. Misuse and diversion of pain medicines, like methadone and buprenorphine comprise a significant problem in Sweden as well as in other Nordic countries as these problems are linked to poor treatment compliance and increases in risk of blood-borne infections, crime, and mortality. To address this problem, changes in medicines used in some Nordic have already been implemented and considerations are under way in others. The new guidelines for treatment of opioid addicts in Sweden recommend combination of buprenorphine-naloxone before mono-buprenorphine. However, even if the occurrence of misuse and diversion of opioid medicine can be reduced there are other issues not always considered. Many opioid addicts in Sweden are infected by Hepatitis C Virus (HCV) and many of these have not been diagnosed and although we have effective medicines against HCV a great part are in lack of treatment. Another issue is that long-term opioid treatment may result in effects on the brain leading to cognitive decline. This presentation will deal with all these problems and in particular it will focus on the possibility to reverse opioid-induced damages on brain areas associated with cognitive function.

### Recent Publications:

1. Bazov I, Kononenko O, Watanabe H, Kuntić V, Sarkisyan D, Taqi MM, Hussain MZ, Nyberg F, Yakovleva T and Bakalkin G (2013) The endogenous opioid system in human alcoholics: molecular adaptations in brain areas involved in cognitive control of addiction. *Addiction Biology* 18:161-9.
2. Rhodin A, Grönbladh A, Ginya H, Nilsson K W, Rosenblad A, Zhou Q, Enlund M, Hallberg M, Gordh T and Nyberg F (2013) Combined analysis of circulating  $\beta$ -endorphin with gene polymorphisms in OPRM1, CACNAD2 and ABCB1 reveals correlation with pain, opioid sensitivity and opioid-related side effects. *Molecular Brain* doi: 10.1186/1756-6606-6-8.
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4. Nylander E, Grönbladh A, Zellerroth S, Diwakarla S, Nyberg F and Hallberg M (2016) Growth hormone is protective against acute methadone-induced toxicity by modulating the NMDA receptor complex. *Neuroscience* 339:538-547.
5. Kakko J, Gedeon C, Sandell M, Grelz H, Birkemose I, Clausen T, Rúnarsdóttir V, Simojoki K, Littlewood R, Alho H and Nyberg F (2018) Principles for managing OUD related to chronic pain in the Nordic countries based on a structured assessment of current practice. *Substance Abuse Treatment, Prevention, and Policy* DOI: 10.1186/s13011-018-0160-7.

### Biography

Fred Nyberg is Professor in Biological Research on Drug Addiction at the Department of Pharmaceutical Biosciences, Uppsala University. Since 2011 he has been Head and Coordinator of Uppsala University Center for Interdisciplinary Research on Drug Addiction (U-FOLD). During 2002-2007, he was employed part time by the Swedish Government as Head of Research Issues at The National Drug Policy Coordinator and in 2008 he joined the Advisory Board at The ANDT unit at The Social Ministry dealing with questions relating to drugs and drug addiction. He was Chairman for the Department of Pharmaceutical Biosciences during 1999-2006, and in 2006 he was appointed as Dean at The Faculty of Pharmacy, Uppsala University. He has contributed profoundly to the research community, with over 400 articles in his list of publications reflecting broad aspects of problems related to addiction

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## The integrative model of adjustment to chronic conditions: Towards clinical testing and impact in chronic pain

**Lis D Hammond**

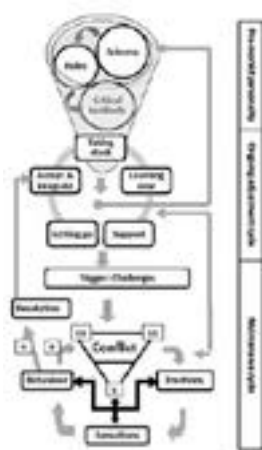
Teesside University, UK

**Statement of the Problem:** A range of psychosocial factors impact on chronic pain, function and poor adjustment has negative consequences for e.g. mental health, activities of daily living and quality of life. Around a third of people attending specialist clinics need clinical intervention for adjustment difficulties. Hammond & Hirst-Winthrop proposed an integrative model of adjustment to chronic conditions (IMACC) based on a grounded theory study into type 2 diabetes. The model is directly clinically applicable as an assessment and intervention tool for people struggling to adjust. This paper reports on preparations for clinical testing in chronic pain.

**Methodology & Theoretical Orientation:** In order to evidence applicability to chronic pain, a theoretical review aimed to link key theories and standard interventions to the IMACC. This was followed by identification of a testing design and development of assessment, treatment and test study protocols.

**Findings:** All components of the IMACC could be linked to one or more key theories in chronic pain. Furthermore, the IMACC showed compatibility with a range of multidisciplinary interventions in standard practice. A multiple baseline single case experimental study design was identified as an appropriate first level testing of the IMACC and behavioural outcome measures were identified.

**Conclusion & Significance:** The theoretical evidence points towards application of the IMACC to chronic pain, which warrants clinical testing of the model. The chosen study design aims to demonstrate clinical effectiveness of the IMACC before progressing to comparative studies.



**Figure:** The integrative model of adjustment to chronic conditions (IMACC)

### Recent Publications:

1. Hammond LD and Hirst-Winthrop S (2016) Proposal of an integrative model of adjustment to chronic conditions: An understanding of the process of psychosocial adjustment to living with type 2 diabetes. *Journal of Health Psychology* doi: 10.1177/ 1359105316664131.
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5. Moss-Morris R (2013) Adjusting to chronic illness: time for a unified theory. *British Journal of Health Psychology* 18:681-6.

## **Biography**

Lis D Hammond is a Counselling Psychologist specializing in psychosocial adjustment to chronic conditions. She gained years of clinical experience in brain injury rehabilitation and pain management before going into academia with the aim of focusing on adjustment research. She is currently appointed as Representative of the British Psychological Society on the NHS England Clinical Reference Board for Specialized Pain.

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## **Notes:**



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## **Biography**

Juan Bernardo Schuitemaker R is a passionate Anesthesiologist with special interest in regional anesthesia. He has experience also in obstetric anesthesia. He mostly works with interfascial blocks, with special interest in chest blocks. Xavier Sala – Blanch is a worldwide known regional anesthesiologist, speaker in the most important conferences always in regional anesthesia, professor of anatomy in the medicine School in the Universitat de Barcelona. Arturo Sánchez – Cohen is a nurse specialist in interventional hemodynamics and pain medicine with great interest in clinical investigations. Ana Teresa Imbiscuso Esqueda, it's an Anesthesiologist pain medicine physician also Intensive care unit trainee.

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## The complete breast block, an approach to prevent the postmastectomy chronic pain progression

**Juan Bernardo Schuitemaker**

General University Hospital of Catalonia, Spain

The breast cancer is the most common cancer suffered by woman in the United States, the lifetime risk of developing breast cancer is about 12% for the average woman, which means 1 in 8 women in the United States will develop it. An estimated 253,000 women in the United States will be diagnosed with invasive breast cancer in 2017, and another 63,000 with *in situ* breast cancer. According to a recent epidemiologic study, higher breast cancer rates were expected between 2009 and 2015. Acute postoperative pain is an integral risk factor in the development of chronic postmastectomy pain; 40% of women will have severe acute postoperative pain after breast cancer surgery, whereas 50% will develop chronic postmastectomy pain with impaired quality of life. For the cohort of women receiving breast cancer surgery (BCS), accumulating evidence suggests a substantial prevalence of chronic postsurgical pain estimated to range between 29 and 57%. Similarly, available studies suggest that from one-fourth to one-half of women who undergo post-mastectomy breast reconstruction surgery report chronic postsurgical pain. Based on this, we proposed in 2015 a new approach of complete breast block for breast surgeries, based in the complex breast innervation, so we perform a modified PECS II, B.R.I.L.M.A., B.R.C.A. plus a subcutaneous infiltration in the inferior edge of the clavicle to block the cutaneous branches of the superficial cervical plexus. With this approach we have performed more than 500 breast surgeries, using it as a part of a multimodal approach, general anesthesia with laryngeal mask airway (LMA), remifentanyl for the air way management, with an excellent hemodynamic stability and pain free postoperative period. We believe that using this approach the patients must have a pain free intraoperative and postoperative period and will fall the progression to chronic pain. Future studies are needed to validate this observation.



### Recent Publications:

- Schuitemaker Requena J B, Mayoral Ripamonti J T, Sala Blanch X, Muñoz S L, Imbiscuso Esqueda A T, Pesa Vendrell N, Arteaga Mejía D, Brasó Vicen C, Tintoré Caicedo X and Sanchez Cohen A P (2015) In plane lateral approach of the pectoral nerves. A PEC II modification. Reg Anesth Pain Med. 40(5):e123.
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- Poleshuck E L, Katz J, Andrus C H, Hogan L A, Jung B F, Kulick D I and Dworkin R H (2006) Risk factors for chronic pain following breast cancer surgery: a prospective study. J Pain. 7:626–34.



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## **Biography**

Juan Bernardo Schuitemaker R is a passionate Anesthesiologist with special interest in regional anesthesia. He has experience also in obstetric anesthesia. He mostly works with interfascial blocks, with special interest in chest blocks. Xavier Sala – Blanch is a worldwide known regional anesthesiologist, speaker in the most important conferences always in regional anesthesia, professor of anatomy in the medicine School in the Universitat de Barcelona. Arturo Sánchez – Cohen is a nurse specialist in interventional hemodynamics and pain medicine with great interest in clinical investigations. Ana Teresa Imbiscuso Esqueda, it's an Anesthesiologist pain medicine physician also Intensive care unit trainee.

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October 11-12, 2018 | Zurich, Switzerland

## Use of a spinal cord stimulation lead for electromagnetic spectral analysis in 6 radiculopathy suffering patients versus control

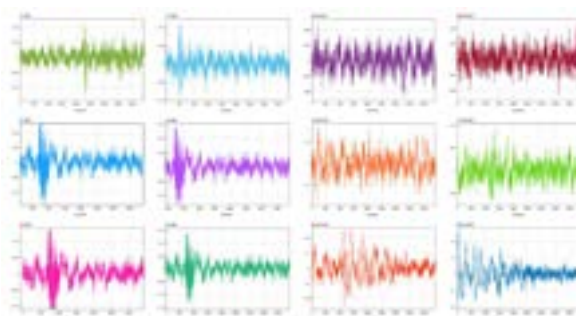
Damien Haton-Pietrin and Alexandra Dubreuil

Neuromodulation Fundamental Physics Laboratory, France

**Statement of the Problem:** The Spinal Cord (SC) electromagnetic physics remains partially unknown despite extensive studies [1]. Especially during chronic pain involving radiculopathy(R). The spectral pattern of the EM activity of the SC could be explored to be more precise for Spinal Cord Stimulation (SCS) processing and to developing close loop device with machine learning. Also, this study is based on the theoretical EM Thomson's theorem [2-3] which said: an electrically charged EM domain creates an EM equilibrium with electroneutral domain. Also, was postulate that a SCS electrode (SCSe, Octrode, ABBOTT SJM) could be used as diagnostic device for SC EM [3] spectral analysis. The electro neutrality (EN) of SCS(e) was preserved by plastic introducer.

**Methodology:** After Ethic Committee and written patient's consents, were included 6 patients who underwent SCS for L4-L5 R relief. Was defined as control the study of the signal issuing of 2 level up of SC (i.e. L2-L3). SCSe was connected to computer (Apple, USA) for oscilloscopic high sensibility recording (MATLAB Signal Processing®) [3]. After obtaining SCSe EN, SCSe was implanted with the classical percutaneously technic (PCT). Patients were under general anesthesia to avoid muscular interferences during PCT. When the plastic introducer was implanted in epidural space, SCSe was also introduced to set the first metallic contact in epidural space to record SC signal. Noise was subsequently substracted. Were first recorded the signals at control level. Secondly the was studied the L5-S1level.

**Results:** The results show the different spectral signals in function of the level of SC studied (figure). Statistical Analysis [5] were performed with JMP®software (SAS, USA). No significant difference between control signal in R suffering patients was observed (Kolmogorov-Smirnov test)  $p>0,5$ . A statistical difference was observed between L4-L5 signals and control level (ANOVA,  $p<0,0001$ ). L4-L5 levels demonstrated a large spike amplitude of SC signal. It could be discussed that SCSe could serve as diagnostic tool in chronic pain. Several clinical trials must be performed to confirm these results.



**Figure:** Left rows: L4-L5 radiculopathy (R) signals, Right rows: L2-L3 Control signal (C): The R signal demonstrated different spike amplitude (R) in contrast with C signal showed no significant spike.

### Recent Publications:

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3. Semmlow J, L: Biosignal and biomedical image processing Matlab Based Application. Dekker, New York (2004)
4. Krauss J, Fleisch D: Electromagnetics with applications. New York. Mc Graw Hill (2010).
5. Grimm L, G, Yarnold P, R: Reading and Understanding Multivariate Statistics. Washington DC. American psychological Association (2002).

## **Biography**

Damien Haton-Pietrin is interventional pain specialist, Postgraduate in Mathematics and Physics. He works partial time at Neuromodulation Fundamental Physics for the passion of research in biophysics and especially Central Nervous System Physics in chronic pain to SCS close loop devices.

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## Video Presentations

Pain Management 2018

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October 11-12, 2018 | Zurich, Switzerland

## Chronic musculoskeletal pain: Connecting the dots

**Suparna Damany**

Damany Center for Chronic Pain, USA

Chronic musculoskeletal pain is the disorder of our decade, and frustrating for both the patient as well as the healthcare practitioner. A cause for this frustration is a failure to understand and relate the inter-relationships between the different bodily systems involved, thereby achieving no success with traditional treatments. An understanding of the pathophysiology of chronic musculoskeletal pain will allow for development of a comprehensive and effective treatment plan. In this presentation, the Damany Integrative Dynamic Method for treatment of musculoskeletal disorders will be introduced. The components of the program will be related to the different puzzle pieces that make up chronic pain. Examples of success stories will be provided.

### Biography

Suparna Damany is an author, international speaker, world-known physical therapist, hand therapist, and ergonomic specialist, with 20 years expertise in treating repetitive stress injuries and chronic musculoskeletal disorders. She is the author of "It's Not Carpal Tunnel Syndrome" which is the best-selling book on the topic. She has presented at several national and international conferences, written for and been featured in professional magazines, and treated patients from all over the world at her clinic in Allentown, PA. She has developed her own brand of treatment for chronic pain, called the Damany Integrative Dynamic Approach. She also consults with companies on injury mitigation, prevention and ergonomics and have initiated several successful programs in large and small companies all over the world. Treating chronic musculoskeletal pain is her talent, and preventing it is her passion. Her approach to injury and pain relief is holistic (combining eastern and western techniques), and long-term, with special consideration to our lifestyle. She also helps people from all over the world through her online program [www.onlineAcheSolutions.com](http://www.onlineAcheSolutions.com). She is currently working on her second book- "Chronic Pain: Connecting the Dots". With her talks, she leaves the listener with practical, poignant information with a scientific base, that he/she can use immediately.

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## Antipyretic activity of ethnomedicinal plant *Hydrocotyle javanica*

Krithika N

Presidency College, India

**Statement of the Problem:** Fever or pyrexia is an elevation of body temperature that exceeds the normal daily variation and occurs in conjunction with an increase in the hypothalamic set point from 37°C to 39°C. The objectives in treating fever are first to reduce the elevated hypothalamic set point and second to facilitate heat loss. A trigger of the fever causes a release of prostaglandin E2 (PGE2). Antipyretic property of medicinal plants can be assumed to be mediated through interference of prostaglandin synthesis and inhibition of cytokines release. The present study was proposed to assess the antipyretic activities of ethnomedicinal plant *Hydrocotyle javanica* Thunb. (Apiaceae) on Wistar albino rats

**Methodology & Theoretical Orientation:** Brewer's yeast (sub-cutaneous injection of 20% aqueous suspension of dried yeast in 2% gum acacia at a dose of 20 ml/kg below the nape of the neck) was used to induce pyrexia in the all experimental rats after measuring their initial rectal temperatures. The test animals were then divided into five groups. Group I was the control and, group II was administered the reference drug paracetamol. Group III, IV and V rats were administered the plant extract of dosage 150, 300 and 450 mg/kg of body weight respectively. Rectal temperatures of the test rats were recorded after 18 hrs. Of inducing pyrexia for every one hour up to 23 hours, against the standard reference drug paracetamol

**Findings:** The whole plant methanol extract of *H. javanica* (300 and 450 mg/kg b. wt.) significantly attenuated hyperthermia in test rats in 1 hr. observation ( $p < 0.01$ ) and was even more significant ( $p < 0.001$ ) from 2-6 hrs. Observation period in comparison to control. The brewer's yeast elevated the body temperature in the rats to  $39.38 \pm 0.16^\circ\text{C}$  after 24 hrs., which was brought down to  $36.12 \pm 0.16^\circ\text{C}$  in 3 hrs. after treatment with 150 mg/kg of *H. javanica* extract. Whereas the other doses 300 and 450 mg/kg of *H. javanica* plant extract reduced the elevated body temperature to  $36.54 \pm 0.24^\circ\text{C}$  and  $36.72 \pm 0.56^\circ\text{C}$  respectively after 2 hr.

**Conclusion & Significance:** *Hydrocotyle javanica* evinced a significant antipyretic effect in yeast-provoked elevation of body temperature in experimental rats, and its effect is comparable to that of paracetamol. The investigated plant *Hydrocotyle javanica* is a febrifuge and could be recommended as a potent antipyrexia agent/ source of phytotherapeutic ingredient.

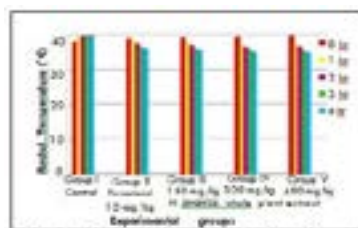


Fig. 1: Antipyretic activity of *Hydrocotyle javanica*

### Recent Publications:

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- Pasin J S M, Ferreira A P O, Saraiva A L L et al. (2010) Diacerein decreases TNF- and IL-1 levels in peritoneal fluid and prevents Baker's yeast-induced fever in young rats. Inflammation Research 59:189-96.
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## **Biography**

Krithika N is a Faculty of Botany and completed her PhD in the field of Medico-Botany in January 2018. Her in-depth knowledge in Botany especially, medicinal plants have helped in assessing the pharmacological aspects of an ethnomedicinal plant used by natives of Nilgiris, Tamilnadu, India. She has based her study with reference to *Hydrocotyle asiatica* (*Centella*) of family Apiaceae on which enormous studies have been reported. This is one of the study on the chosen plant *Hydrocotyle javanica* Thunb. Her few of the studies has won best paper and best oral presentation awards at various conferences. She has nearly ten research publications.

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## Dynamic functional cranial nerve assessment tool

**Lois Laynee**

Concussion Recovery Center &amp; Restorative Breathing, USA

**Statement of the Problem:** Chronic pain has a variety of causes, ranging from an initial injury or an ongoing illness, but there may also be no clear cause. Because of this, chronic pain can be very hard to treat and can have negative impacts on the patient's lifestyle. Presently there are many baselines for creating a diagnosis as the symptoms can be elusive. Following the patient's symptoms can contribute to the perception of always chasing the pain. Since pain fibers create signals, the inclusivity of a traditional neurological assessment could reveal information to improve the accuracy of diagnosis. Returning to a cranial nerve assessment can offer brainstem input as to its role in deciphering sign and symptoms. This elucidates the new concept that each brain has its own unique sensory map which can be identified non-invasively through a Dynamic Functional Cranial Nerve Assessment Tool (DFCNAT). Typically, the DFCNAT reveals mis-mapping in the sensory cortex to some degree. This mis-mapping evokes inaccurate sensory topography, with inaccurate feedback loops. The reentrant signaling does not equate to the motor map, the inhibitory system is abnormal and the cortical dimension will exhibit asymmetrical, inaccurate neuromodulation. Thus the chronic pain cycle is not discovered as to the abundant signal location.

**Literature Review:** Multiple recent studies have demonstrated somatosensory mis-mapping due to chronic pain<sup>1,2</sup>, surgery<sup>2</sup>, trauma<sup>3,5</sup>, amputation<sup>4</sup>, and palsy<sup>6</sup>.

**Conclusion & Significance:** With the DFCNAT locating the dysfunction cranial nerve and its mis mapping, noninvasive resynchronization with non-noxious inputs to the sensory cortex will override the mis mapping and mis signaling. Results to be more fully researched can offer brain/body systems therapeutic interventions at all ages.

### Recent Publications:

1. Woojin Kim, Sn Kwang Kim & Junichi Mabekura, Functional and structural plasticity in the primary somatosensory cortex associated with chronic pain, *Journal of Neurochemistry*, 141, 4,(499-506), (2017)
2. Chapman, CR & Vierck, CJ, The Transition of Acute Postoperative Pain to Chronic Pain: An integrative overview of research on Mechanisms, *The Journal of Pain*, 10.1016/j.pain.2016.11.004, 18, 4, (359.e1-359), (2017)
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4. D'Alonzo, M. et al, Electro-cutaneous stimulation on the palm elicits referred sensations on intact but not on amputated digits, *Journal of Neural Engineering*, 15, 1, (016003), (2018)
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### Biography

Lois Laynee is a dynamic pioneer and passionate lecturer in the fields of Education, Sleep, Scar Release Healing, Cranio Facial Neuro development, and concussion/TBI. Her work with the Laynee Restorative Breathing Method™ and Dynamic Functional Cranial Nerve Assessment Tool™ are leading to better recovery rates from brain injury.

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7<sup>th</sup> International Conference and Exhibition on

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## Combination of lumbar plexus with parasacral sciatic nerve block for hip fracture in elderly patient with heart disease and chronic lung disease

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The incidence of hip fractures has been increasing in the elderly. Lumbar plexus block (LPB) is an advanced nerve block technique with known advantages for the management of these patients. Because the placement of the needle is in the deep muscles, the potential for systemic toxicity is greater. Care should be taken when selecting the type, volume, and concentration of local anesthetic. The LPB provides anesthesia or analgesia to the entire distribution of the LP, including the anterolateral and medial thigh. When combined with a sciatic nerve block, anesthesia of the entire leg can be achieved. Because of the complexity of the technique, the benefits of LPB should be always being weighed against the risks. This is a case of 85 y/o elderly female patient, with a right femur fracture requested for hip arthroplasty. The patient has a diagnosed of chronic ischemic heart disease and chronic obstructive pulmonary disease, ASA III-E. The laboratory values were satisfactory. It was decided to perform the anesthetic technique based on the LPB accompanied by Sciatic Nerve Block at the Para Sacral level. We use ASA-Standard monitoring, sedation was administered with I.V Remifentanyl 0.001 mcg/Kg/min, and oxygen with facemask. The patient was placed in the left lateral decubitus position. Iliac crest, spinous processes (midline), a standard regional anesthesia tray is prepared with sterile towels and gauze. After aseptic and antisepsis procedure the skin and paravertebral muscles are anesthetized by infiltrating local anesthetic subcutaneously at site of needle insertion. The respective nerve blocks were performed using a 10 mm sterile needle connected to a peripheral nerve stimulator. Visible or palpable twitches of the quadriceps muscle at 1 mA were sought. Anesthetic mixture consists of 2% Lidocaine, 5% bupivacaine and 4 mg dexamethasone per 20 ml. The orthopedic procedure was carried out without complications and the patient remained stable and comfortable.



### Recent Publications:

1. Dyer S, Crotty M and Fairhall N A (2016) Critical review of the long-term disability outcomes following hip fracture. *BMC Geriatrics* 16:158.
2. Nirav A, West J, Farmer T and Basmajian H (2017) Nerve blocks in the geriatric patient with hip fracture: a review of the current literature and relevant neuroanatomy. *SAGE* 8(4):268-275.
3. Mitragotri M V, Agrawal P I, Kulkarni V V, Adke N S and Ladhav D A (2017) The comparative study of two techniques of lumbar plexus block by anterior and posterior approach for lower limb surgery. *Indian Journal of Pain* 31:146-51.
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