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Research profile

Research field and research philosophy

The major goal is to identify and modulate key features of human pain neuroplasticity leading to prevention of maladaptive neuroplasticity and promote advantageous neuroplasticity, offering ways to manage chronic pain. A core research philosophy in TGN's work is that pain research by nature is multidisciplinary, hence interdisciplinary and intersectorial collaboration is a key concept, as is collaboration with excellent researchers and students.

Employment

Professor

Professor, Leader
Department of Health Science and Technology
The Faculty of Medicine
Gistrup, Denmark
1 Jul 1997 → 31 Dec 4712

Professor

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The Faculty of Medicine
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1 Jul 1997 → 31 Dec 4712

Pain and Motor System Plasticity

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28 Sept 2015 → present

Professor

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Pain and Motor System Plasticity
The Faculty of Medicine
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1 Jul 1997 → 31 Dec 4712

Center for Neuroplasticity and Pain

The Faculty of Medicine
Aalborg East, Denmark
1 Feb 2015 → present

Adjunct Professor

Western Sydney University
Australia
1 Jan 2015 → 1 Jan 2017

Adjunct Professor

Curtin University
Australia
1 Jan 2004 → 1 Jan 2019

Adjunct Associate Professor

Curtin University
Australia
1 Jan 2001 → 1 Jan 2004

Research outputs

Age and Sex Effects on Cuff Pressure Pain Sensitivity in a Large Cohort: The Tromsø Study (Tromsø7)

Graven-Nielsen, T., Christensen, M. E. M., Nielsen, C., Petersen, K.K.-S., Larsen, D. B., Arendt-Nielsen, L., Stubhaug, A. & Steingrimsdóttir, Ó., 2024.

Mechanisms and manifestations in musculoskeletal pain: from experimental to clinical pain settings

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The nociceptive capacity of muscle, skeletal, and connective tissue

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Musculoskeletal referred pain to the craniofacial region

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Smerte

Graven-Nielsen, T., Høgh, M. & Vægter, H. B., 2017, *Basisbog i fysioterapi*. Bjørnlund, I. B., Sjöberg, N. E. & Lund, H. (eds.). 2 ed. Munksgaard Forlag, p. 71-85 (Fysio/Munksgaard).

User-independent assessment of conditioning pain modulation by cuff pressure algometry

Graven-Nielsen, T., Izumi, M., Petersen, K. K. & Arendt-Nielsen, L., 2017, In: *European Journal of Pain*. 21, 3, p. 552-561

Assessment of musculoskeletal pain mechanisms in clinical and experimental settings: refresher course

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Assessment of musculoskeletal pain mechanisms in clinical and experimental settings

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Graven-Nielsen, T. (Inventor), Arendt-Nielsen, L. (Inventor) & Petersen, K. K. (Inventor), 2016, IPC No. A61B 5/00 (2006.01) , Patent No. WO/2016/189093, 1 Dec 2016, Priority date 26 May 2016, Priority No. PCT/EP2016/061924

Novel models for studying the effect of exercise and fatigue on the pain sensitivity in humans: part of topical workshop

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Approach to activity engagement in musculoskeletal pain: translation from research to clinical application

Graven-Nielsen, T., Kosek, E., Hasenbring, M. & Fehrmann, E., 2015, *Abstract book of the 9th Congress of the European Pain Federation, EFIC, 2-5 September 2015, Vienna, Austria*. European Pain Federation EFIC, p. T5.5 No 5.5a; EFIC5-1109

Assessment of musculoskeletal pain mechanisms and the importance for management

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Assessment of musculoskeletal pain sensitivity and temporal summation by cuff pressure algometry: a reliability study

Graven-Nielsen, T., Vaegter, H. B., Finocchietti, S., Handberg, G. & Arendt-Nielsen, L., 2015, In: *Pain*. 156, 11, p. 2193-2202

Human surrogate models for musculoskeletal pain

Graven-Nielsen, T. & Arendt-Nielsen, L., 2015, *Pain Models: Translational Relevance and Applications*. Handwerker, H. O. & Arendt-Nielsen, L. (eds.). Wolters Kluwer, p. 317-333

Muscular pain comorbidities in joint diseases

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System for evaluating pain modulation, spatial and/or temporal summation of pain or descending inhibition of pain in a human

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The interaction of musculoskeletal pain and physical activity: human studies

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Assessment of musculoskeletal pain mechanisms and relevant human experimental models

Graven-Nielsen, T. & Arendt-Nielsen, L., 2014, *Musculoskeletal Pain: Basic Mechanisms and Implications*. Graven-Nielsen, T. & Arendt-Nielsen, L. (eds.). IASP Press, p. 369-391

Basic mechanisms and assessment of musculoskeletal pain

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Musculoskeletal pain: basic mechanisms and implications

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Preface

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Exogenous muscle pain

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Neurophysiological basis of muscle-referred pain to the head

Graven-Nielsen, T., Ge, H.-Y. & Arendt-Nielsen, L., 2013, *Multidisciplinary Management of Migraine: Pharmacological, Manual, and Other Therapies*. Fernández-de-las-Peñas, C., Chaitow, L. & Schoenen, J. (eds.). Jones and Bartlett Publishers, p. 57-66 (Contemporary Issues in Physical Therapy and Rehabilitation Medicine).

Quantitative sensory testing in musculoskeletal pain

Graven-Nielsen, T. & Arendt-Nielsen, L., 2013, *Refresher Courses, Pain in Europe VIII : 8th Congress of the European Pain Federation EFIC, 9 October 2013, Florence, Italy*. European Pain Federation EFIC, p. 35-42

Referred muscle pain, assessment

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Sensitization is more prominent in patients with pain after revision total knee arthroplasty than in painful knee osteoarthritis

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Effects of musculoskeletal pain on postural control and force variability

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Reply: to comment on "Normalization of widespread hyperesthesia and facilitated spatial summation of deep-tissue pain in knee osteoarthritis patients after knee replacement"

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Translational studies on myofascial trigger points: models and clinical implication

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Assessment of mechanisms in localized and widespread musculoskeletal pain

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Human experimental models of tonic deep tissue pain and manifestations of widespread hyperalgesia

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Injection of nerve growth factor causes prolonged hyperalgesia to phasic pressure stimulation but not allodynia to vibration stimulation

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Referral of musculoskeletal pain

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Reorganized motor control due to muscle pain

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Repeated injections of a high dose nerve growth factor (NGF) do not induce immediate muscle pain but prolonged hyperalgesia

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Impact of clinical and experimental pain on muscle strength and activity

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Sensory and motor manifestations of muscle pain

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The sensory-motor integration in experimental musculoskeletal pain

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Reduced motor unit firing rate in synergist muscles during constant force painful contractions

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Referred muscle pain, assessment

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Muscle pain

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