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Short presentation

I am interested in fundamental research questions to evaluate the effect of exercise and rehabilitation programs. Through animal models, studies on healthy subjects and patients, I together with my group aim to better understand the neural control of movement in health and disease.

Employment

Professor

Department of Neuroscience

København N

5 Jan 2009 → nu

Professor

Department of Nutrition, Exercise and Sports

København N

1 Oct 1999 → 31 Aug 2017

Professor, Head of Section

Neural Control of Movement

København N.

1 Jan 2013 → 5 Jul 2016

Head of section, professor

Motor Control

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1 Jan 2013 → nu

Publications

Directed connectivity between primary and premotor areas underlying ankle force control in young and older adults

Spedden, Meaghan Elizabeth, Beck, Mikkel Malling, Christensen, Mark Schram, Dietz, M. J., Karabanov, Anke Ninija, Geertsen, S. S., Nielsen, Jens Bo & Lundbye-Jensen, Jesper, 2020, In : NeuroImage. 218, 11 p., 116982.

Gait training facilitates push-off and improves gait symmetry in children with cerebral palsy

Lorentzen, Jakob, Frisk, R., Willerslev-Olsen, M., Bouyer, L., Farmer, S. F. & Nielsen, Jens Bo, 2020, In : Human Movement Science. 69, 102565.

Spastic movement disorder: should we forget hyperexcitable stretch reflexes and start talking about inappropriate prediction of sensory consequences of movement?

Nielsen, Jens Bo, Christensen, Mark Schram, Farmer, S. F. & Lorentzen, Jakob, 2020, In : Experimental Brain Research. 238, p. 1627-1636 10 p.

Wearable electromyography recordings during daily life activities in children with cerebral palsy

Michelsen, J. S., Lund, M. C., Alkjær, Tine, Finni, T., Nielsen, Jens Bo & Lorentzen, Jakob, 2020, In : Developmental Medicine and Child Neurology. 62, 6, p. 714-722 9 p.

Chemical denervation using botulinum toxin increases Akt expression and reduces submaximal insulin-stimulated glucose transport in mouse muscle

Li, Z., Näslund-Koch, L., Henriquez Olguín, Carlos, Knudsen, J. R., Li, J., Madsen, A. L. B., Ato, S., Wienecke, Jacob, Ogasawara, R., Nielsen, Jens Bo & Jensen, Thomas Elbenhardt, Jan 2019, In : Cellular Signalling. 53, p. 224-233 10 p.

Sequence variants in muscle tissue-related genes may determine the severity of muscle contractures in cerebral palsy

Pingel, Jessica, Andersen, Jeppe Dyrberg, Christiansen, S. L., Børsting, Claus, Morling, Niels, Lorentzen, J., Kirk, H., Doessing, S., Wong, Christian & Nielsen, Jens Bo, Jan 2019, In : American Journal of Medical Genetics. Part B: Neuropsychiatric Genetics. 180, 1, p. 12-24

Are sensorimotor experiences the key for successful early intervention in infants with congenital brain lesion?

Ritterband-Rosenbaum, A., Justiniano, M. D., Nielsen, Jens Bo & Christensen, Mark Schram, 2019, In : Infant Behavior and Development. 54, p. 133-139 7 p.

Characterization of torque generating properties of ankle plantar flexor muscles in ambulant adults with cerebral palsy

Frisk, R. F., Lorentzen, Jakob, Barber, L. & Nielsen, Jens Bo, 2019, In : European Journal of Applied Physiology. 119, 5, p. 1127-1136 10 p.

Contribution of corticospinal drive to ankle plantar flexor muscle activation during gait in adults with cerebral palsy

Frisk, R. F., Lorentzen, Jakob & Nielsen, Jens Bo, 2019, In : Experimental Brain Research. 237, 6, p. 1457-1467 11 p.

Corticospinal control of normal and visually-guided gait in healthy older and younger adults

Spedden, Meaghan Elizabeth, Choi, J. T. L., Nielsen, Jens Bo & Geertsens, S. S., 2019, In : Neurobiology of Aging. 78, p. 29-41 13 p.

Effects on Parental Stress of Early Home-Based CareToy Intervention in Low-Risk Preterm Infants

Sgandurra, G., Beani, E., Inguaggiato, E., Lorentzen, Jakob, Nielsen, Jens Bo & Cioni, G., 2019, In : Neural Plasticity. 2019, 8 p., 7517351.

Maturation of feedforward toe walking motor program is impaired in children with cerebral palsy

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Recruitment gain of spinal motor neuron pools in cat and human

Nielsen, Jens Bo, Morita, H., Wenzelburger, R., Deuschl, G., Gossard, J. & Hultborn, Hans, 2019, In : Experimental Brain Research. 237, 11, p. 2897-2909 13 p.

Suboptimal nutrition and low physical activity are observed together with reduced plasma *brain-derived neurotrophic factor* (BDNF) concentration in children with severe cerebral palsy (CP)

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Systemic inflammatory markers in individuals with cerebral palsy

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Spedden, Meaghan Elizabeth, Jensen, P., Terkildsen, C. U., Jensen, N. J., Halliday, D. M., Lundbye-Jensen, Jesper, Nielsen, Jens Bo & Geertsen, S. S., 2019, In : *NeuroImage*. 191, p. 350-360 11 p.

The neurophysiology of deforming spastic paresis: a revised taxonomy

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Using corticomuscular and intermuscular coherence to assess cortical contribution to ankle plantar flexor activity during gait

Jensen, P., Frisk, R., Spedden, Meaghan Elizabeth, Geertsen, S. S., Bouyer, L. J., Halliday, D. M. & Nielsen, Jens Bo, 2019, In : *Journal of Motor Behavior*. 51, 6, p. 668-680 13 p.

On Denny-Brown's 'spastic dystonia' - What is it and what causes it?

Lorentzen, Jakob, Pradines, M., Gracies, J. & Nielsen, Jens Bo, Jan 2018, In : *Clinical Neurophysiology*. 129, 1, p. 89-94

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Raffalt, P. C., Nielsen, L. R., Madsen, S., Højberg, Laurits Munk, Pingel, Jessica, Nielsen, Jens Bo, Alkjær, Tine & Wienecke, Jacob, 2018, In : *Journal of Biomechanics*. 73, p. 168-176 9 p.

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Raffalt, P. C., Nielsen, L. R., Madsen, S., Højberg, Laurits Munk, Pingel, Jessica, Nielsen, Jens Bo, Wienecke, Jacob & Alkjær, Tine, 2018, In : *Journal of Biomechanics*. 72, p. 247-251 5 p.

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Lorentzen, Jakob, Willerslev-Olsen, M., Hüche Larsen, H., Svane, Christian, Forman, Christian Riis, Frisk, R., Farmer, S. F., Kersting, U. & Nielsen, Jens Bo, 2018, In : *Journal of Physiology*. 596, 11, p. 2159-2172 14 p.

Impaired ability to suppress excitability of antagonist motoneurons at onset of dorsiflexion in adults with cerebral palsy

Geertsen, S. S., Kirk, H. & Nielsen, Jens Bo, 2018, In : *Neural Plasticity*. 2018, 11 p., 1265143.

Impaired muscle growth precedes development of increased stiffness of the triceps surae musculotendinous unit in children with cerebral palsy

Willerslev-Olsen, M., Choe Lund, M., Lorentzen, Jakob, Barber, L., Kofoed-Hansen, M. & Nielsen, Jens Bo, 2018, In : *Developmental Medicine and Child Neurology*. 60, 7, p. 672-679 8 p.

Increased central common drive to ankle plantar flexor and dorsiflexor muscles during visually guided gait

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Modulation of task-related cortical connectivity in the acute and subacute phase after stroke

Larsen, L. H., Zibrandtsen, I. C., Wienecke, Troels, Kjær, Troels Wesenberg, Langberg, Henning, Nielsen, Jens Bo & Christensen, Mark Schram, 2018, In : *European Journal of Neuroscience*. 47, 8, p. 1024-1032 9 p.

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Progressive practice promotes motor learning and repeated transient increases in corticospinal excitability across multiple days

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Kurtzer, I., Bouyer, L. J., Bouffard, J., Jin, A., Christiansen, L., Nielsen, Jens Bo & Scott, S. H., 2018, In : *Experimental Brain Research*. 236, 3, p. 665-677 13 p.

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To be active through indoor-climbing: an exploratory feasibility study in a group of children with cerebral palsy and typically developing children

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A critical period of corticomuscular and EMG-EMG coherence detection in healthy infants aged 9-25weeks

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A randomized clinical trial in preterm infants on the effects of a home-based early intervention with the 'CareToy System'

Sgandurra, G., Lorentzen, Jakob, Inguaggiato, E., Bartalena, L., Beani, E., Cecchi, F., Dario, P., Giampietri, M., Greisen, Gorm, Herskind, A., Nielsen, Jens Bo, Rossi, G. & Cioni, G., 2017, In : *P L o S One*. 12, 3, 13 p., e0173521.

Acute exercise improves motor memory consolidation in preadolescent children

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Contribution of sensory feedback to plantar flexor muscle activation during push-off in adults with cerebral palsy

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Convergence of ipsi- and contralateral muscle afferents on common interneurons mediating reciprocal inhibition of ankle plantarflexors in humans

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Development and aging of human spinal cord circuitries

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How plastic are human spinal cord motor circuitries?

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Long-term progressive motor skill training enhances corticospinal excitability for the ipsilateral hemisphere and motor performance of the untrained hand

Christiansen, L., Larsen, M. N., Grey, M. J., Nielsen, Jens Bo & Lundbye-Jensen, Jesper, 2017, In : European Journal of Neuroscience. 45, 12, p. 1490-1500 11 p.

Modulation of fronto-parietal connections during the rubber hand illusion

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Muscle disuse caused by botulinum toxin injection leads to increased central gain of the stretch reflex in the rat

Pingel, Jessica, Hultborn, Hans, Naslund-Koch, L., Jensen, Dennis Bo, Wienecke, Jacob & Nielsen, Jens Bo, 2017, In : Journal of Neurophysiology. 118, 4, p. 1962-1969 8 p.

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Spatial facilitation of reciprocal inhibition and crossed inhibitory responses to soleus motoneurons during walking

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Supplementation of docosahexaenoic acid (DHA), vitamin D₃ and uridine in combination with six weeks of cognitive and motor training in prepubescent children: A pilot study

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Treadmill training with an incline reduces ankle joint stiffness and improves active range of movement during gait in adults with cerebral palsy

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A pilot study on early home-based intervention through an intelligent baby gym (CareToy) in preterm infants

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Aldring

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Basal neurofysiologi

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Botulinum toxin injection causes hyper-reflexia and increased muscle stiffness of the triceps surae muscle in the rat

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Forord

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Impaired gait function in adults with cerebral palsy is associated with reduced rapid force generation and increased passive stiffness

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