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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

København N

1 Jan 2013 → nu

Publications

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

Ritterband-Rosenbaum, A., Justiniano, M. D., Nielsen, J. B. & Christensen, M. S., 12 Feb 2019, In : Infant Behavior and Development. 54, p. 133-139 7 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, C., Knudsen, J. R., Li, J., Madsen, A. L. B., Ato, S., Wienecke, J., Ogasawara, R., Nielsen, J. B. & Jensen, T. E., 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, J., Andersen, J. D., Christiansen, S. L., Børsting, C., Morling, N., Lorentzen, J., Kirk, H., Doessing, S., Wong, C. & Nielsen, J. B., Jan 2019, In : American Journal of Medical Genetics. Part B: Neuropsychiatric Genetics. 180, 1, p. 12-24

Characterization of torque generating properties of ankle plantar flexor muscles in ambulant adults with cerebral palsy
Frisk, R. F., Lorentzen, J., Barber, L. & Nielsen, J. B., 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, J. & Nielsen, J. B., 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, M. E., Choi, J. T. L., Nielsen, J. B. & Geertsen, 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, J., Nielsen, J. B. & Cioni, G., 2019, In : Neural Plasticity. 2019, 8 p., 7517351.

Maturation of feedforward toe walking motor program is impaired in children with cerebral palsy
Lorentzen, J., Willerslev-Olsen, M., Larsen, H. H., Farmer, S. F. & Nielsen, J. B., 2019, In : Brain. 142, 3, p. 526-541

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
Pingel, J., Barber, L., Andersen, I. T., Von Walden, F., Tierp-Wong, C. N. E., Døssing, S. & Nielsen, J. B., 2019, In : European Journal of Inflammation. 17, p. 1-6

The development of functional and directed corticomuscular connectivity during tonic ankle muscle contraction across childhood and adolescence
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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, M. E., Geertsen, S. S., Bouyer, L. J., Halliday, D. M. & Nielsen, J. B., 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, J., Pradines, M., Gracies, J.-M. & Nielsen, J. B., Jan 2018, In : Clinical Neurophysiology. 129, 1, p. 89-94

Assessment of intersegmental coordination of rats during walking at different speeds - Application of continuous relative phase
Raffalt, P. C., Nielsen, L. R., Madsen, S., Højberg, L. M., Pingel, J., Nielsen, J. B., Alkjær, T. & Wienecke, J., 2018, In : Journal of Biomechanics. 73, p. 168-176 9 p.

Characterization of corticospinal activation of finger motor neurons during precision and power grip in humans
Svane, C., Forman, C. R., Nielsen, J. B. & Geertsen, S. S., 2018, In : Experimental Brain Research. 236, 3, p. 745-753 9 p.

Day-to-day reliability of gait characteristics in rats

Raffalt, P. C., Nielsen, L. R., Madsen, S., Højberg, L. M., Pingel, J., Nielsen, J. B., Wienecke, J. & Alkjær, T., 2018, In : Journal of Biomechanics. 72, p. 247-251 5 p.

Feedforward neural control of toe walking in humans

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

Geertsen, S. S., Kirk, H. & Nielsen, J. B., 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, J., Barber, L., Kofoed-Hansen, M. & Nielsen, J. B., 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

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Oscillatory corticospinal activity during static contraction of ankle muscles is reduced in healthy old versus young adults

Spedden, M. E., Nielsen, J. B. & Geertsen, S. S., 2018, In : Neural Plasticity. 2018, 13 p., 3432649.

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

Christiansen, L., Madsen, M. A. J., Bojsen-Møller, E., Thomas, R., Nielsen, J. B. & Lundbye-Jensen, J., 2018, In : Brain Stimulation. 11, 2, p. 346-357 12 p.

The neurophysiology of deforming spastic paresis: a revised taxonomy

Baude, M., Nielsen, J. B. & Gracies, J. M., 2018, (Accepted/In press) In : Annals of Physical and Rehabilitation Medicine. 5 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

Schram Christensen, M., Jensen, T., Voigt, C. B., Nielsen, J. B. & Lorentzen, J., 15 Jun 2017, In : B M C Neurology. 17, 20 p., 112.

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

Ritterband-Rosenbaum, A., Herskind, A., Li, X., Willerslev-Olsen, M., Olsen, M. D., Farmer, S. F. & Nielsen, J. B., 15 Apr 2017, In : The Journal of Physiology. 595, 8, p. 2699-2713

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

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Acute exercise improves motor memory consolidation in preadolescent children

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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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How plastic are human spinal cord motor circuitries?

Christiansen, L., Lundbye-Jensen, J., Perez, M. A. & Nielsen, J. B., 2017, In : Experimental Brain Research. 235, 11, p. 3243-3249 7 p.

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, J. B. & Lundbye-Jensen, J., 2017, In : European Journal of Neuroscience. 45, 12, p. 1490-1500 11 p.

Modulation of fronto-parietal connections during the rubber hand illusion

Karabanov, A. N., Ritterband-Rosenbaum, A., Christensen, M. S., Siebner, H. R. & Nielsen, J. B., 2017, In : European Journal of Neuroscience. 45, 7, p. 964-974 11 p.

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

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New perspectives on the development of muscle contractures following central motor lesions

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Taube, W., Leukel, C., Nielsen, J. B. & Lundbye-Jensen, J., 2017, In : Journal of Visualized Experiments. 123, 8 p., e52663.

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

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October 18-21, 2016, Segovia, Spain. Ibáñez, J., González-Vargas, J., Azorín, J. M., Akay, M. & Pons, J. L. (eds.). Cham, Switzerland: Springer, p. 1031-1036 6 p. (Biosystems and Biorobotics, Vol. 15).

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

Lorentzen, J., Kirk, H., Fernandez-Lago, H., Frisk, R. F., Nielsen, N. S., Jorsal, M. & Nielsen, J. B., 2017, In : Disability and Rehabilitation. 39, 10, p. 987-993 7 p.

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

Sgandurra, G., Bartalena, L., Cecchi, F., Cioni, G., Giampietri, M., Greisen, G., Herskind, A., Inguaggiato, E., Lorentzen, J., Nielsen, J. B., Orlando, M., Dario, P. & CareToy Consortium, 2016, In : Research in Developmental Disabilities. 53-54, p. 32-42 11 p.

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

Pingel, J., Wienecke, J., Lorentzen, J. & Nielsen, J. B., 2016, In : Journal of Neurophysiology. 116, 6, p. 2615-2623 9 p.

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Larsen, L. H., Jensen, T., Christensen, M. S., Lundbye-Jensen, J., Langberg, H. & Nielsen, J. B., 2016, In : Physiological Reports. 4, 2, 11 p., e12684.

Det autonome nervessystem

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Error signals driving locomotor adaptation: Cutaneous feedback from the foot is used to adapt movement during perturbed walking

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Forord

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Fra Tanke til Handling - Bevægelsens Neurobiologi

Christiansen, L. (ed.), Geertsen, S. S. (ed.), Lundbye-Jensen, J. (ed.) & Nielsen, J. B. (ed.), 2016, København: Hjerneforum. 352 p.

Fundamentale kontrolmekanismer

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Muskelfysiologi

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Early identification and intervention in cerebral palsy

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Gait training facilitates central drive to ankle dorsiflexors in children with cerebral palsy

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Twenty weeks of home-based interactive training of children with cerebral palsy improves functional abilities

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10 Hz rTMS over right parietal cortex alters sense of agency during self-controlled movements

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Aging increases the susceptibility to motor memory interference and reduces off-line gains in motor skill learning

Roig, M., Ritterband-Rosenbaum, A., Jensen, J. L. & Nielsen, J. B., 2014, In : *Neurobiology of Aging*. 35, 8, p. 1892-1900 9 p.

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