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## Forskningsprofil

My research focus is to understand how sensory feedback is processed in normal or pathological situations, and to identify and treat sensory-motor impairments and disorders. I have been working on several projects investigating, for instance, the role of crossed spinal reflexes in interlimb coordination, the use of nociceptive withdrawal reflex in stroke rehabilitation and the effect of neurofeedback on musculoskeletal pain. Recently, I became passionate about methods to improve diagnosis and interventions for children with sensory motor impairments, including Sensory Processing Disorders, Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD) and Cerebral Palsy. I am currently working on the development of a protocol to identify and assess the mechanism behind sensory processing anomalies in children with ASD and ADHD.

## Kvalifikationer

Biomedical Engineering and Science, PhD, Interlimb communication during human walking: crossed responses in the gastrocnemius muscle, Department of Health Science and Technology, Aalborg University, Denmark.

1 okt. 2010 → 1 jan. 2014

Dimissionsdato: 15 aug. 2014

Project management for scientists

maj 2018 → aug. 2018

University Pedagogy

nov. 2014 → jan. 2016

Electronic Engineering, Master of Science, 110/110 summa cum laude, Modeling synaptic noise of spinal motorneurons, Applied Electronics Dept., University Roma TRE

okt. 2007 → maj 2010

Electronic Engineering, Bachelor of Science, Development of Human-Machine Interface: blink detection in eye gaze analysis systems, Applied Electronics Dept., University Roma TRE

okt. 2003 → jul. 2007

## Publikationer

### Exploring the interplay between poor well-being and physical health in youth

Gervasio, S., Jensen, B., Larsen, R. G. & Olesen, A. E., 5 mar. 2026.

### EEG signatures of low back and knee joint pain during movement execution: a short report

Gervasio, S., Zarei, A. A. & Mrachacz-Kersting, N., 16 aug. 2023, I: *Frontiers in Rehabilitation Sciences*. 4, 9 s., 1216069.

### Exploring the EEG Signatures of Musculoskeletal Pain

Gervasio, S., Hennings, K. & Mrachacz-Kersting, N., 1 jan. 2019, *Converging Clinical and Engineering Research on Neurorehabilitation III: Proceedings of the 4th International Conference on NeuroRehabilitation (ICNR2018), October 16-20, 2018, Pisa, Italy*. Springer Publishing Company, s. 734-738 5 s. (Biosystems and Biorobotics, Bind 21).

### Delayed muscle onset soreness in the gastrocnemius muscle attenuates the spinal contribution to interlimb communication

Gervasio, S., Finocchietti, S., Stevenson, A. J. T. & Mrachacz-Kersting, N., nov. 2018, I: *European Journal of Applied Physiology*. 118, 11, s. 2393-2402 10 s.

**A novel stimulation paradigm to limit the habituation of the nociceptive withdrawal reflex**

Gervasio, S., Laursen, C. B., Andersen, O. K., Hennings, K. & Spaich, E. G., maj 2018, I: *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 26, 5, s. 1100-1107 8 s.

**Sensory feedback in interlimb coordination: Contralateral afferent contribution to the short-latency crossed response during human walking**

Gervasio, S., Voigt, M., Kersting, U. G., Farina, D., Sinkjær, T. & Mrachacz-Kersting, N., 2017, I: *PLOS ONE*. 12, 1, 24 s., e0168557.

**The effect of crossed reflex responses on dynamic stability during locomotion**

Gervasio, S., Kersting, U. G., Farina, D. & Mrachacz-Kersting, N., 2015, I: *Journal of Neurophysiology*. 114, 2, s. 1034-1040

**The effect of fatigue on interlimb communication**

Gervasio, S., Stevenson, A. J. T. & Mrachacz-Kersting, N., 2015, *45th Annual Meeting of the Society for Neuroscience, Neuroscience 2015, 17-21 October 2015, Chicago, IL, USA*. Society for Neuroscience, s. No. 67.16/N38

**Motor control and emerging therapies for improving mobility in patients with spasticity**

Gervasio, S., Macleod, C., Esteban-Herreros, E. B., Meng, L. & Tejada, M. C., 1 jan. 2014, *Emerging Therapies in Neurorehabilitation*. Springer, s. 147-169 23 s. (Biosystems and Biorobotics, Bind 4).

**Effects of muscle pain on interlimb communication: preliminary results**

Gervasio, S., Finocchietti, S. & Mrachacz-Kersting, N., 2014, *Book of Proceedings, ISEK 2014, XX Congress of the International Society of Electrophysiology and Kinesiology, 15-18 July 2014, Rome, Italy*. ISEK

**Interlimb communication during human walking: crossed responses in the gastrocnemius muscle**

Gervasio, S., 2014, River Publishers. 85 s.

**Interlimb communication during human walking: crossed responses in the gastrocnemius muscle**

Gervasio, S., 2014

**The effect of crossed responses on dynamic stability**

Gervasio, S., Kersting, U. G., Farina, D. & Mrachacz-Kersting, N., 2014.

**Contralateral afferent contribution to crossed responses during human locomotion**

Gervasio, S., Voigt, M., Kersting, U. G. & Mrachacz-Kersting, N., 2013, *Annual Meeting of the Society for Neuroscience, Neuroscience 2013, 9-13 November 2013, San Diego, CA, USA*. Society for Neuroscience, s. No. 832.13/MM9

**Crossed reflex reversal during human locomotion**

Gervasio, S., Farina, D., Sinkjær, T. & Mrachacz-Kersting, N., 2013, I: *Journal of Neurophysiology*. 109, 9, s. 2335-2344

**Contralateral spinal excitability after unilateral locomotor adaptation**

Gervasio, S. & Mrachacz-Kersting, N., 2012, *Proceedings of the XIXth Congress of the International Society of Electrophysiology & Kinesiology, ISEK2012, 19-21 July 2012, Brisbane, Australia*. ISEK, s. 119, No. MOTC\_O3.3

**Extracting motor modules as a measure of interlimb coordination**

Gervasio, S., Gizzi, L., Mrachacz-Kersting, N. & Farina, D., 2012, *Annual Meeting of the Society for Neuroscience, Neuroscience 2012, 13-17 October 2012, New Orleans, LA, USA*. Society for Neuroscience, s. No. 887.20/JJ3

**Lower spinal interlimb communication: evidence for functional significance**

Gervasio, S. & Mrachacz-Kersting, N., 2011, *Annual Meeting of the Society for Neuroscience, Neuroscience 2011, 12-16 November 2011, Washington, DC, USA*. Washington, DC: Society for Neuroscience, s. No. 923.13/VV27

## Priser

### Most Promising Proposal

Frahm, S. G. (Modtager), 14 aug. 0004

## Presse/medie

### Behandling af kroniske smerter

Gervasio, S.

08/11/2018

1 element af Mediedækning

### Donationer

Gervasio, S.

26/10/2018 → 26/10/2018

2 elementer af Mediedækning

### Hjernespil skal hjælpe børn, der sanser verden anderledes

Gervasio, S. & Telléus, P. K.

29/12/2023

1 element af Mediedækning

### I fremtiden kan du måske træne smerte væk med hjernegymnastik

Gervasio, S. & Telléus, P. K.

05/01/2024

1 element af Mediedækning

### Når sanserne spiller hjernen et puds: Forskere har fået et nyt syn på den autistiske hjerne

Gervasio, S.

09/02/2024

1 element af Mediedækning

### På bølgelængde med hjernen

Stevenson, A. J. T., Jochumsen, M. R. & Gervasio, S.

08/02/2024 → 08/02/2024

2 elementer af Mediedækning

## Projekter

### A direct measure of sensory processing anomalies

Gervasio, S. (PI (principal investigator)), Mazhari-Jensen, D. S. (Projektdeltager), Frahm, S. (Projektdeltager) & Lauritsen, M. B. (Projektdeltager)

Simon Fougner Hartmanns Familiefond, Danmarks Frie Forskningsfond

### A neurofeedback treatment for chronic musculoskeletal pain

Gervasio, S. (PI (principal investigator))

Gigtforeningen

01/09/2014 → ...

### A novel stimulation paradigm to reduce the habituation of the nociceptive withdrawal reflex

Gervasio, S. (Projektleder)

01/09/2014 → 30/05/2018

**Interlimb coordination during human walking**

Gervasio, S. (PI (principal investigator)) & Stevenson, A. J. T. (PI (principal investigator))

01/10/2010 → ...