Frontiers in Neurology/Neurorehabilitation e-book on Project: Surface Electromyography: Barriers limiting widespread use of sEMG in clinical assessment and neurorehabilitation. In preparation. All contributions are available on: https://www.frontiersin.org/research-topics/11157

Table of contents:

Editorial

Roberto Merletti, Isabella Campanini, William Zev Rymer, and Catherine Disselhorst-Klug https://www.frontiersin.org/articles/10.3389/fneur.2021.642257/full

General papers

Surface EMG in clinical assessment and neurorehabilitation: barriers limiting its use. Isabella Campanini, Catherine Disselhorst-Klug, William Zev Rymer and Roberto Merletti https://www.frontiersin.org/articles/10.3389/fneur.2020.00934/full

sEMG meets Biomechanics: Correct interpretation of sEMG-signals in neuro-rehabilitation needs biomechanical input.

Catherine Disselhorst-Klug and Sybele Williams https://www.frontiersin.org/articles/10.3389/fneur.2020.603550/full

Surface electromyography in physiotherapist educational program in France: enhancing learning sEMG in stretching practice.

Pierre Portero, Anton A. Dogadov, Christine Servière and Franck Quaine https://www.frontiersin.org/articles/10.3389/fneur.2020.584304/full

Clinical applications and experiences

Added value of dynamic EMG in the assessment of the equinus and the equinovarus foot deviation in stroke patients and barriers limiting its usage.

Isabella Campanini, Michela Cosma, Mario Manca and Andrea Merlo https://www.frontiersin.org/articles/10.3389/fneur.2020.583399/full

Clinical relevance of state-of-the-art analysis of surface electromyography in cerebral palsy.

Germana Cappellini, Francesca Sylos-Labini, Carla Assenza, Laura Libernini, Daniela Morelli, Francesco Lacquaniti and Yury Ivanenko

https://www.frontiersin.org/articles/10.3389/fneur.2020.583296/full

Surface electromyography in clinical practice: a perspective from a developing country.

Hachi Manzur and Joel Esteban Alvarez-Ruf

https://www.frontiersin.org/articles/10.3389/fneur.2020.578829/full

Use of surface EMG in clinical rehabilitation of individuals with SCI: barriers and future considerations.

Rakesh Pilkar, Kamyar Momeni, Arvind Ramanujam, Manikandan Ravi, Erica Garbarini and Gail F Forrest

https://www.frontiersin.org/articles/10.3389/fneur.2020.578559/full

Muscle activity after stroke: perspectives on deploying surface electromyography in acute care. Katherine Muterspaugh Steele, Christina Papazian and Heather Feldner https://www.frontiersin.org/articles/10.3389/fneur.2020.576757/full

Barriers to sEMG assessment during overground robot-assisted gait training in subacute stroke patients.

Michela Goffredo, Francesco Infarinato, Sanaz Pournajaf, Paola Romano, Marco Ottaviani, Leonardo Pellicciari, Daniele Galafate, Debora Gabbani, Annalisa Gison and Marco Franceschini https://www.frontiersin.org/articles/10.3389/fneur.2020.564067/full

Surface electromyography applied to gait analysis: how to improve its impact in clinics? Valentina Agostini, Marco Ghislieri, Samanta Rosati, Gabriella Balestra and Marco Knaflitz https://www.frontiersin.org/articles/10.3389/fneur.2020.00994/full

Surveys of clinical operators

Clinical use of surface electromyography for neuromuscular assessment and decision-making in neurorehabilitation settings: a survey on current applications and potential barriers.

Andrea Manca, Andrea Cereatti, Lynn Bar-On, Alberto Botter, Ugo Della Croce, Marco Knaflitz, Nicola A. Maffiuletti, Davide Mazzoli, Andrea Merlo, Silvestro Roatta, Andrea Turolla, Franca Deriu https://www.frontiersin.org/articles/10.3389/fneur.2020.573616/full

"It's all sort of cool and interesting...but what do I do with it?" A qualitative study of stroke survivors' perceptions of surface electromyography.

Heather A. Feldner, Christina Papazian, Keshia Peters and Katherine M Steele https://www.frontiersin.org/articles/10.3389/fneur.2020.01037/full

Teaching and communications barriers

Analysis and biophysics of surface EMG for physiotherapists and kinesiologists: towards a common language with rehabilitation engineers.

Lara McManus, Giuseppe De Vito and Madeleine M Lowery https://www.frontiersin.org/articles/10.3389/fneur.2020.576729/full

Winter School on sEMG signal processing: an initiative to reduce educational gaps and promote engagement of physiotherapists and movement scientists with science

Carlos Ignacio De La Fuente, Álvaro S Machado, Marcos R Kunzler and Felipe P Carpes https://www.frontiersin.org/articles/10.3389/fneur.2020.00509/full

Occupational medicine

sEMG: A window into muscle work, but not easy to teach and delicate to practice - a perspective of the difficult path to a clinical tool.

Bernard J Martin and Yadrianna Acosta-Sojo

https://www.frontiersin.org/articles/10.3389/fneur.2020.588451/full

Critical issues and imminent challenges in the use of sEMG in return-to-work rehabilitation of patients affected by neurological disorders in the epoch of "Industry 4.0".

Alberto Ranavolo, Mariano Serrao and Francesco Draicchio

https://www.frontiersin.org/articles/10.3389/fneur.2020.572069/full

Exercise, sport physiology and kinesiology

Surface Electromyography: what limits its use in exercise and sport physiology?

Francesco Felici and Alessandro Del Vecchio

https://www.frontiersin.org/articles/10.3389/fneur.2020.578504/full

Critical appraisal of surface electromyography (sEMG) as a taught subject and clinical tool in medicine and kinesiology

Vladimir Medved, Sara Medved and Ida Kovač

https://www.frontiersin.org/articles/10.3389/fneur.2020.560363/full