



Schweizer
Paraplegiker
Zentrum

Centre
suisse des
paraplégiques

Centro
svizzero per
paraplegici

Swiss
Paraplegic
Centre

International FES Centre®

Ines Bersch-Porada, Head of the International FES Centre®

Contact

Rehabilitation Administration

Telephone +41 41 939 55 76

E-mail fes.spz@paraplegie.ch

Nottwil, June 23th of 2020
REB/EMME

Course programme

Electrical stimulation for functional improvement of the upper extremity

- from clinical reasoning to evidence-based practice -

20 and 21 November 2020



Execution

Online course with Zoom App

Course management / Speakers

- Dr. Ines Bersch-Porada, Head of the International FES Centre® in the Swiss Paraplegic Centre Nottwil
- Prof. DDr. Winfried Mayr, Associate Professor, Medical University of Vienna, Center for Medical Physics and Biomedical Engineering
- Thomas Schick, MSc Neurorehabilitation, FES-Lecturer

Information and further details of course:

Swiss Paraplegic Centre, Rehabilitation Administration

[www.paraplegie.ch/International FES Centre@area](http://www.paraplegie.ch/International_FES_Centre@area)

fes.spz@paraplegie.ch

Friday, 20 November 2020

09.00 – 09.30 am Welcome
Introduction of speakers
Explanation of the procedure in a virtual setting
Ines Bersch-Porada

Part 1: Introduction to current, stimulation parameters, and stimulation protocols

09.30 – 10.15 am Forms of current and stimulation parameters
What do the terms pulse width, duration of impulse, frequency, amplitude, intensity, and voltage mean?
Winfried Mayr

10.15 – 11.00 am What is the difference between biphasic and monophasic, continuous current and alternating current, rectangular impulse and triangular impulse?
Winfried Mayr

11.00 – 11.30 am Break

11.30 – 12.15 pm What is the effect of the various combinations of parameters on the stimulated structure?
Winfried Mayr

12.15 – 01.30 pm Break

01.30 – 02.15 pm Stimulation protocols: duration, composition of parameters (strengthening, motor learning, cardiovascular training)
Ines Bersch

Part 2: Different innervation pattern

02.15 – 03.00 pm Stimulation upper motoneuron lesion versus lower motoneuron lesion
Thomas Schick

03.00 – 03.30 pm Virtual coffee break

Part 3: Presentation of muscle physiology in various diseases

03.30 – 04.00 pm Stroke and traumatic brain injury
Thomas Schick

04.00 – 04.30 pm Spinal cord injury
Ines Bersch

04.30 – 05.00 pm Peripheral nerve injuries
Winfried Mayr

05.00 pm End of first day of course / Cyber Apero

Saturday, 21 November 2020

Part 4: Introduction to stimulation in function and activity

- 08.30 – 09.00 am Example of stroke in everyday movements
Thomas Schick
- 09.00 – 09.30 am Example of tetraplegia (complete/incomplete)
Ines Bersch
- 09.30 – 10.00 am Example of FES in combination with therapeutical interventions
Thomas Schick

10.00 – 10.30 am Break

Part 5: Procession of patient cases in small groups on Zoom

- 10.30 – 10.45 am Meetings in the Zoom classes
- 10.45 – 12.00 am One case will be processed in every small group. Each case will be introduced and the jointly devised treatment approach presented in a whole-group session.

12.00 – 01.00 pm Break

Part 6: Presentation of group results

- 01.00 – 02.45 pm Presentation of patient examples from the individual groups, plus discussion

Part 7: Future perspectives

- 02.45 – 03.30 pm Transcutaneous spinal cord stimulation – quo vadis?
Winfried Mayr
- 03.30 – 04.00 pm End of course with feedback and 2021 preview (19 November to 20 November 2021)
Ines Bersch

Last updated 23 June 2020 / Subject to change without prior notice

Yours sincerely

Swiss Paraplegic Centre
International FES Centre®

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Head of the International FES Centre®
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Associate Professor, Medical University of Vienna,
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