

HASOMED RehaMove®

Motion training with Functional Electrical Stimulation (FES)

Functional electrical stimulation (FES) is used for stimulating the muscle directly or indirectly via the motor nerve. The aim is to produce a functional movement. Adhesive electrodes transfer the current to the nerve of the paralysed muscle in order to produce a contraction. It is a precondition that the lower motoneuron is intact and that the patient tolerates the stimulation.



MOTOmed viva2
Motion Trainer



RehaStim2
Electrical stimulator (FES)



RehaMove2
FES motion trainer



Active muscle training

Therapy goals for **central paralysis / incomplete** paraplegia:

- Avoid / Prevent secondary diseases (decubitus, thrombosis, muscular atrophy, cardiovascular problems, diabetes)
- Regain the original performance of movement (Motor Learning)
- Improve neuromuscular activation
- Improve and regain voluntary motor control

Therapy goals for **peripheral paralysis / complete** paraplegia:

- Avoid / Prevent secondary diseases (see above)
- Activate the metabolism
- Stimulate muscular growth
- Avoid muscular atrophy
- Stimulate blood circulation
- Improve mental health

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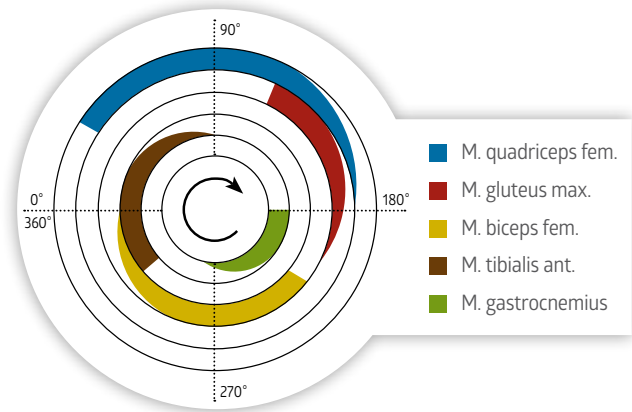
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HASOMED®
HARDWARE AND SOFTWARE FOR MEDICINE

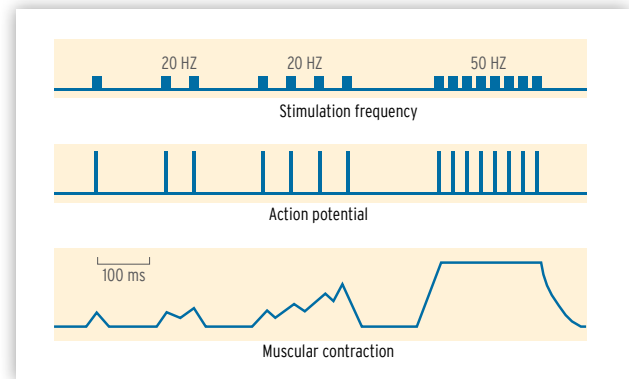
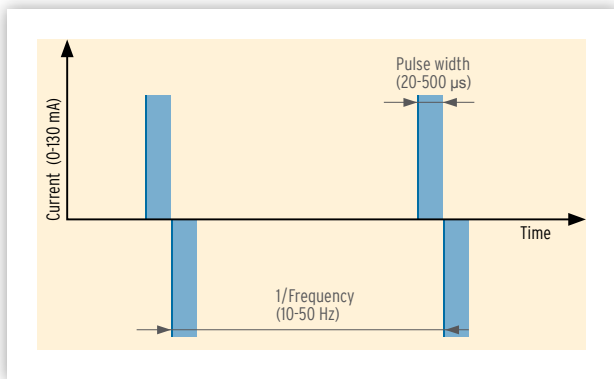
Communication RehaStim-MOTomed

- Devices communicate via data cable
- Data exchange of all relevant parameters (angle or position of the crank arm, rpm and rotational direction, symmetry, gear, time, distance)
- Stimulation sequences are triggered by angle-based MOTomed data



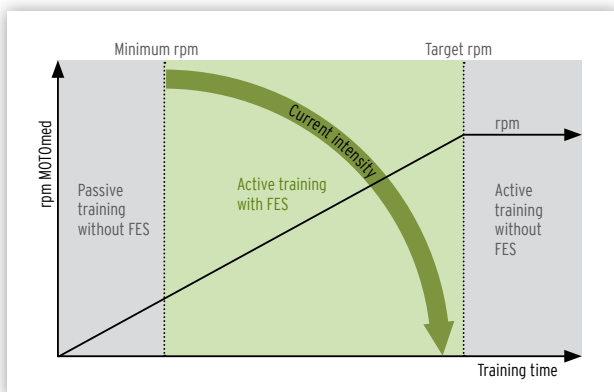
Current settings

- Stimulation with biphasic rectangular pulses over 8 channels
- Pulse width (pulse duration): 20-500 μs
- Current: 0-130 mA
- Frequency (pulses per second): 10-50 Hz
- Stimulation intensity depends on pulse width and current
- Muscular contraction intensity depends on the frequency

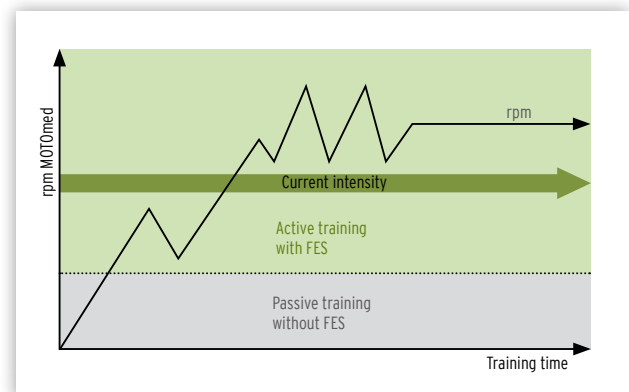


Different forms of training with the RehaMove in adaptive and constant mode

- In **adaptive mode**, the current intensity adapts to the active rpm of the patient
- Aim: support the residual muscle function of the patient, adapt the stimulation depending on muscular fatigue
- In **constant mode**, the current remains the same regardless of the active performance of the patient
- Aim: active movement even without residual muscle function



Settings of the RehaMove in adaptive mode



Settings of the RehaMove in constant mode