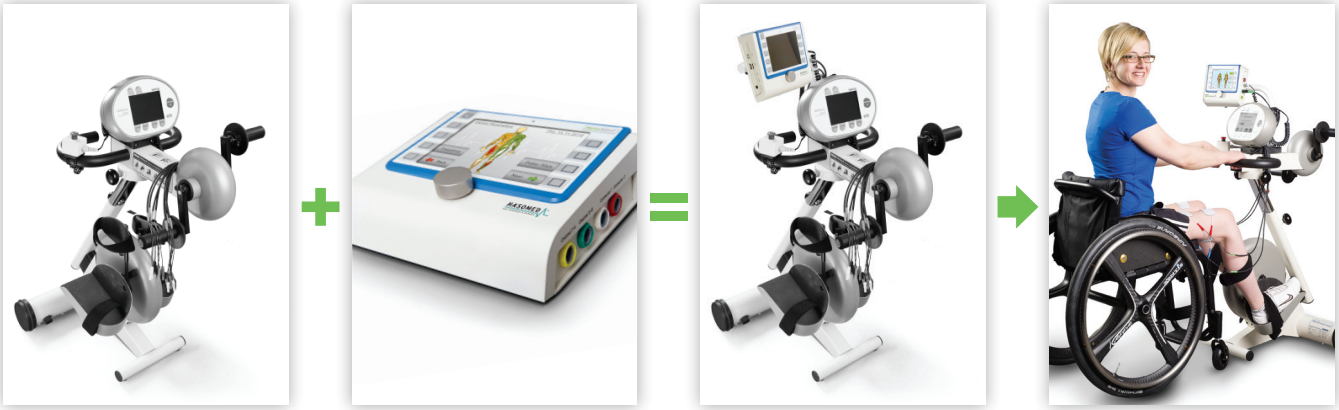
HASOMED

# 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.

### RehaMove combines the proven motion training with Functional Electrical 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 (motorlearning)
- 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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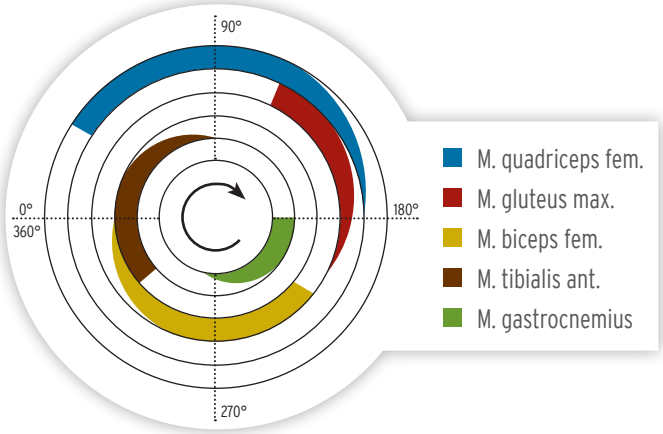
HASOMED®
Hardware and Software for Medicine

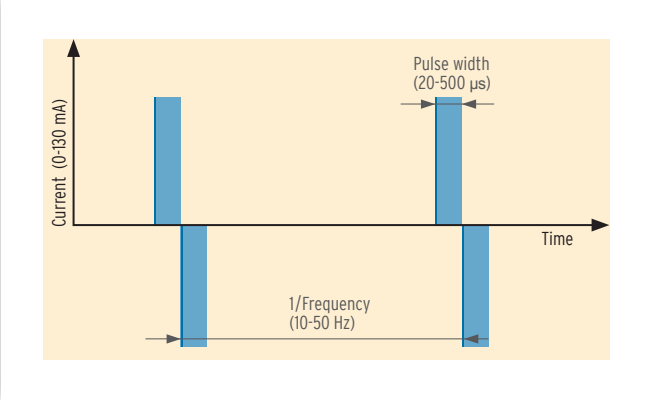
## Communication RehaStim-MOTOmed

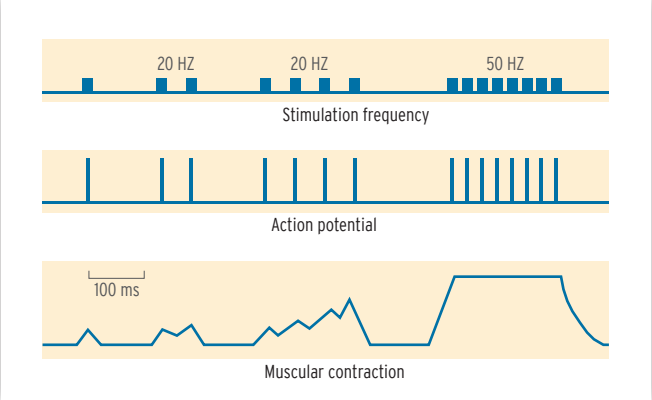
- Devices communicate via data cable
- Data exchange of all relevant parameters (angle or position of the crank arm, rpm and rotational direction, symmetry, gear, time, distance)
- Stimulation sequences are triggered by angle-based MOTOmed data




## 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

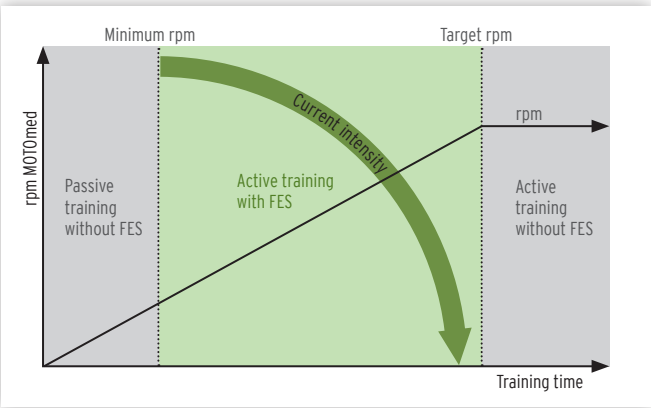


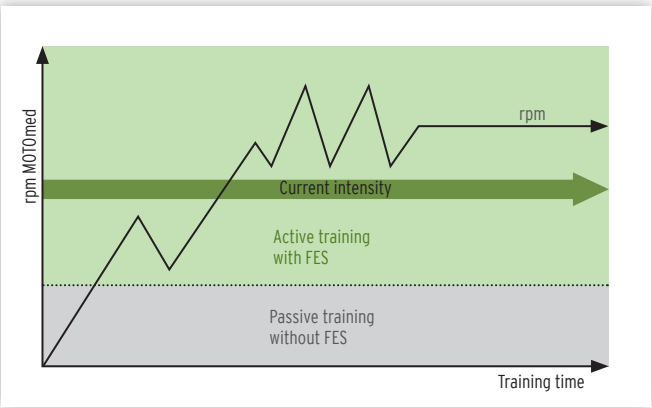

## Different forms of training with the RehaMove in adaptive and constant mode

- 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