

OMEGO®

„PRE-GAIT“ THERAPY WITH EARLY MOBILIZATION AND VERTICALIZATION

FACTS AND EXERCISES FOR PHYSICIANS, THERAPISTS AND PATIENTS.



tyromotion

OMEGO®

PRE-GAIT-THERAPY

OMEGO® is a new assessment and rehabilitation device for patients with impaired functions of the lower extremity and gait disorders.

Both unilaterally and bilaterally, as well as for leg press, stepping and cycling exercises and the foot drop therapy can be performed lying, sitting, or in an upright position.

Normal physiological gait patterns are only possible if all of the following four requirements are met:

Locomotion – with OMEGO® you can Step & Foot-Lift

The ability to initiate and improve rhythmic steps
Improved foot control for a safe stance and a smooth heel strike in gait

Musculoskeletal integrity – with OMEGO® you can PRESS & CYCLE

Normalization of bone, joint and muscle functions
Balance control

Neuro-cognitive control – with OMEGO® you can RHYTHM & GAMES

Training of perception via internal and external stimulants (visual, vestibular, auditive and senso-motoric)

Balance – with OMEGO® you can SYMMETRY DETECTION & FEEDBACK

The ability to assume an upright posture and keep the balance
Verticalization and maintenance of posture against gravity: head, body, upper limb

OMEGO® is available in 2 versions, an "Advanced" and "Basic" version. The advanced version has an integrated multifunctional seat. All exercises can be performed while lying, sitting, or in an upright position. Therefore, OMEGO® "Advanced" is ideal for patients that require preterm mobilization and verticalization. OMEGO® is applicable in phases "B" to "F" of the 6-tier neuro-rehabilitation model.

The basic version without the multifunctional seat offers all basic exercises and therapeutic options. It is ideal for mobile patients or people that are wheelchair-bound.

With their short setup times, both versions maximize the net therapy time.

OMEGO® - FACTS

One system for all relevant "Pre-Gait" components

- Stepper
- Cycling
- Leg press
- Foot drop training

Training in lying, sitting, upright position

Uni- and bilateral therapy with 2 separate drives

- Symmetry detection (Dysbalance)
- Hemiplegia training

Motivational evidence-based therapy

- Gamification
- Virtual Reality
- Rhythmic games
- TyroS Software



TYROTHERAPY LOWER EXTREMITY



THERAPEUTIC APPLICATION

Children	✓	Passive training	✓	Physical training	✓
Adults	✓	Assistive training	✓	Exergames/Games	✓
Neurology	✓	Active Training	✓	Gamification	✓
Orthopedics	✓	Isometrics	✓	Virtual Reality	✓
Geriatrics	✓	Proprioception	✓	Rhythmic games	✓
Coupled uni- and bilateral therapy	✓	Verticalization	✓	Reporting	✓
Uncoupled uni- and bilateral	✓	Cycling	✓	Seat	✓
Symmetry detection and training	✓	Stepper	✓	FES-coupling	✓
Spasticity detection	✓	Isolated foot drop training	✓	HL7 integration	✓
Wheelchair-friendly	✓	Leg Press	✓	Medical device classification IIa	✓

Software TYROS

The TYROS Software has been developed with and for therapists and supports the OMEGO® System Hardware with various interactive therapeutic games geared to therapy speed, needs and goals. Game parameters can be individually tailored to the patient's status. This stimulates the motoric learning process and allows any number of active repetitions required for neuroplasticity.

- 1 Software to control all elements (upper & lower limb)
- Readable operating life per device
- Documented reporting
- Universal patient chart accessibility across all hospital departments
- HL7 standard integration
- Training requirements in case of staff turnover: 2 hours
- Annual software upgrade
- Motivational evidence-based therapy

OMEGO® IN PRACTICE

Assessments/TYROS

The combination of TYROS Software and OMEGO® allows an infinite number of therapeutic exercises in a motivational way, with visual and acoustic feedback. The independent drivers facilitate the identification and training of asymmetries in the sequence of movements. This prevents compensation by the less affected side. Thanks to the spasticity recognition OMEGO® can be utilized for a number of diagnoses, and guarantees the patient's safety at all times. Assessments can be performed in different starting positions, depending on the patient's needs.

Interactive therapeutic games

A large number of games are available. This allows the therapists to choose the right game for each patient, based on task orientation. The external focus, which zones in on the planned effect of the motion (e.g. overtaking a car), is an ideal approach for motion training. Specifically developed rhythmic games allow for the training of timing, which is extremely important for a proper gait pattern. Asymmetries are detected in real-time and are trained with therapeutic games. The prospective optional use of VR glasses will open up a whole new range of therapeutic options. It promotes and facilitates the integration of newly learned behavior into everyday life.



Strengthening of gait relevant muscles with leg press

The leg press mode trains the strength of gait relevant muscles, e.g. femoral muscles, in either coupled or uncoupled mode. The uncoupled mode prevents the stronger side from actively taking over – both legs can be trained individually at the same time, thus leading to a more effective and successful therapy. Concentric, eccentric or isometric strengthening exercises allow for an overall training of all muscles required for the physiological gait cycle.

Motion trainer - Cycling

The adaptability of the OMEGO® seat allows training options in ergometer mode with restricted joint mobility. While cycling in the passive mode, the lower limb joints are symmetrically mobilized. The assistive mode allows training active muscle power within individual limits of performance, thus increasing the therapy's success and effect dramatically. While training actively, specific motoric abilities such as coordination, sequence of movements and exertion can be trained with different modes (endurance, resistance). The symmetry recognition detects and utilizes asymmetries.



Stepper

The stepper mode allows for the training of the scope of movement of knee joints, muscular strengthening and symmetry. Active (with and without resistance), passive (symmetric mobilization) and assistive (as little support as possible) settings allow for the specific and goal-oriented training within the patient's individual limits of performance.

Foot drop

For a physiological gait pattern the lifting of the foot while in the swingphase is vital. The foot-lifting mode is ideal for training the movement of the ankle. The passive mode mobilizes the ankle and visualizes the course of movement.

Resistance and/or assistance are set individually in the active or the assistive mode to allow for an individually tailored training, depending on the degree of difficulty.

