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Amadeo

The pioneer in Robotic Finger-Hand Rehabilitation

Upper Extremities

One device. More possibilities for finger-hand therapy.

Every movement of the hand matters in everyday life. **Amadeo is a robotic therapy** device designed for the rehabilitation of patients with impaired finger and hand function. It enables intensive, robot-assisted therapy **of the whole hand and individual fingers.**

With therapy options ranging from passive and assistive training to active exercises, assessments, EMG-supported therapy and the RMT module, Amadeo supports a wide range of therapeutic needs across different rehabilitation phases.



Engineered, designed and manufactured in Austria



Why Amadeo?

- Train the whole hand or individual fingers in one system
- Deliver high-repetition, robot-assisted finger-hand therapy
- Adapt therapy from passive to assistive to active training
- Use objective assessments to track therapy progress
- Expand therapy possibilities with EMG and RMT modules

Key Characteristics

Moderate Severe	Upper Body	Distal	Sensor	Robotic	Gamification	Active, Passive Assistive

Therapy Features

Robotic finger-hand therapy combining repetition, individual finger control, objective assessment and adaptable training across different rehabilitation phases.

700 Repetitions per Session
High-repetition therapy enables intensive finger-hand training within a single session.

Whole Hand or Individual Finger Training
Train individual fingers or the whole hand according to therapeutic needs.

Objective Assessments
Assess range of motion, force, tone and spasticity to support therapy documentation.

Multiple Therapy Modes
Passive, assistive, and active finger-hand training.

Force & Movement Control
Exercises can be controlled by finger extension or flexion force and movement.

Gamification
Therapeutic games add variety and support active participation during training.

EMG-Enhanced Therapy
EMG detects movement intention through muscle activation even when visible movement or finger force is limited.

Robotic Mirror Therapy
RMT combines the principles of mirror therapy with proprioceptive input from the precise robot movement assistance.

For Children & Adults
Suitable for children from 3 years as well as adolescents and adults across different rehabilitation phases.



The Story behind Amadeo

Inspired by Wolfgang Amadeus Mozart, Amadeo stands for the power of precise and repetitive finger movement. Just as Mozart mastered movement through practice, Amadeo supports patients in training the hand and individual fingers and through robot-assisted therapy.

High Repetition. Individual Finger Training. More Therapy Possibilities.


One device
for children,
adolescents
and adults.

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Amadeo in Practice

700 Repetitions per Session*	High-intensity, repetitive finger-hand therapy.
Objective Assessments	Assess range of motion, force, tone, and spasticity.
EMG-enhanced Therapy	Provides information on muscle activation and enables active interaction with Amadeo, even when no visible finger movement is possible.
Robotic Mirror Therapy	RMT combines the principles of mirror therapy with the proprioceptive input from the robotic movement assistance.

* Orihuela-Espina F, Roldán GF, Sánchez-Villavicencio I et al. Robot training for hand motor recovery in subacute stroke patients: A randomized controlled trial. J Hand Ther. 2016 Jan-Mar;29(1):51-7.

Movement Therapy

Amadeo offers versatile movement therapy options, combining passive, assistive, and active training with sensory stimulation and individualized finger movements. Therapy can be adapted to each patient's abilities and needs, including patients with increased muscle tone or spasticity.



CPMplus
Provides continuous passive movement of the hand and fingers with individually adjustable parameters.

Spasticity Treatment
Individual fingers can stop when a defined force limit is reached while the remaining fingers continue the movement.

Sensitivity Training
Provides vibratory proprioceptive stimulation with adjustable frequencies and intensities.

Motility Training
Uses haptic or visual stimuli to support isolated finger movement and finger individuation.

Assistive Therapy
The patient initiates the movement actively, while Amadeo assists completion of flexion or extension when needed.

TyroS

Developed in close collaboration with therapists, TyroS is the heart of the Tyromotion ecosystem. It seamlessly connects devices, therapy programs, patient data, and documentation in one intuitive platform.



Key Benefits

- One software for all Tyromotion devices
- Comprehensive patient management and progress tracking
- Automated reports and documentation
- Task-oriented training based on motor-learning principles
- Engaging therapy through motivating therapeutic games

* Optional Module

Robotic Mirror Therapy

A therapy continuum. One device.

Mirror therapy meets robot-assisted therapy. The RMT module* expands Amadeo with Robotic Mirror Therapy and bilateral finger-hand therapy. AI-enabled hand tracking captures movements of the less affected hand and translates them into robot-assisted movements of the affected hand – bringing unilateral and bilateral therapy possibilities together within one device.

Robot-assisted Mirror Therapy (RMT)
The affected hand moves with robotic assistance while the patient can observe the visual feedback of the movement or the real hand moving.

From Unilateral to Bilateral Therapy
Expand established Amadeo therapy options with new bilateral training possibilities.

Therapist-in-the-Loop
Therapists remain actively involved and can provide hands-in guidance whenever needed.

Bilateral Finger-Hand Therapy
Two bilateral therapy modalities enable symmetrical assisted training.


Follow Me
ROM
Force limit
Velocity
Position
terra


Amadeo

EMG-Enhanced Therapy

Surface electromyography (EMG)* detects muscle activation even when little or no visible finger movement is present. Combined with Amadeo, EMG can enable active therapy when patients are unable to generate detectable fingertip force.

Detection of Movement Intention
EMG enlarges the access to active therapy in patients with severe hand impairment**.

EMG Control
Muscle activation can be used to trigger and control active robot-assisted therapy.

Closed-Loop Sensory Feedback
Provides information on muscle activation even when finger movement is not visible.

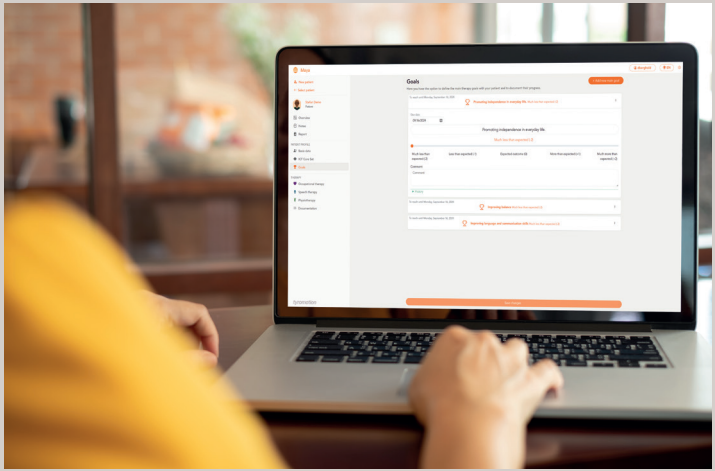
Biofeedback of Co-Contraction Patterns
Visualizing agonist and antagonist activation supports targeted therapeutic feedback.

** Baldan F, Turolla A, Rimini D, Pregnolato G, Maistrello L, Agostini M, Jakob I. Robot-assisted rehabilitation of hand function after stroke: Development of prediction models for reference to therapy. J Electromyogr Kinesiol. 2021 Feb 16; 57:102534.

* Optional Module

Patient Management

Maya* brings clinical and therapeutic information from different devices and therapy disciplines together **in one central platform.** It provides a comprehensive view of patient data, therapy sessions, and progress – supporting structured documentation and interdisciplinary collaboration.



* Optional software solution

Key Benefits

- Centralized patient and therapy data
- Comprehensive view across devices and therapy disciplines
- Clear visualization of progress toward the patient's therapy goals
- Structured reports and documentation
- Supports interdisciplinary collaboration

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Training & Service

Clinical Training

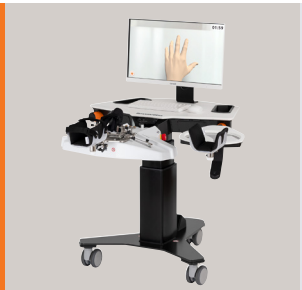
Expert guidance for clinical success. Empowering therapists with expert knowledge. Hands-on training and clinical support from experienced occupational and physiotherapists.

Technical Service

Reliable service throughout the device lifecycle. Comprehensive technical service to keep your therapy systems running at their best.



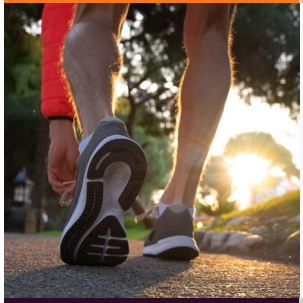
Upper Extremity

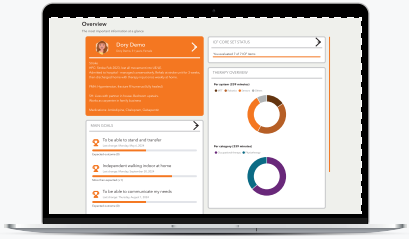


Amadeo
finger & hand





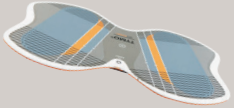




Maya, focus on what really matters: The Patient.

Full Body

Re-Health Technology



Tymo
balance & posture



Elvis
standing & dynamic balance trainer

tyromotion

Diego
shoulder & arm



Myro
interactive & task specific therapy



Get better every day



Pablo
functional rehabilitation



Tyrostation
the perfect therapy setting



Lower Extremity



Lexo
gait & locomotion



Omego Plus
gait training

Research

Evidence that moves neurorehabilitation forward.

Together with clinicians, therapists, and researchers worldwide, we continuously validate and advance our evidence-based rehabilitation technologies. Explore clinical research findings from studies using Amadeo below.

Amadeo robotic hand training may enhance hand motor recovery by restoring hand motor control and sensorimotor plasticity, with neurophysiological changes associated with greater clinical improvements than dose-matched conventional training in an RCT in chronic stroke. [1]

In an RCT in people with Parkinson's disease, Amadeo robot-assisted hand therapy demonstrated greater motor and cognitive improvements than conventional therapy and reduced patient-reported stigma. [2]

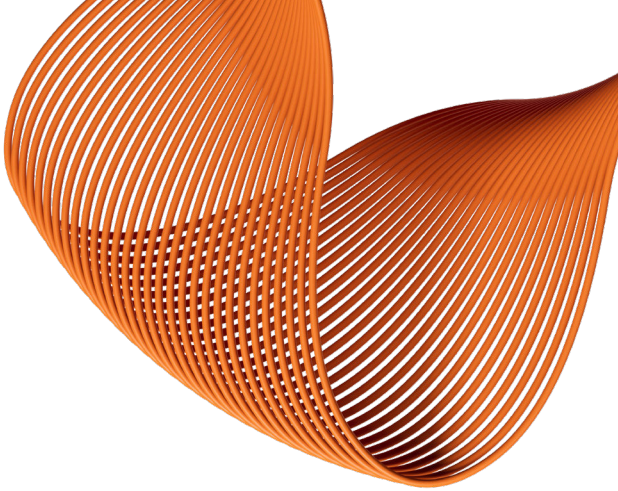
In children with hemiparesis, Amadeo robotic hand therapy was associated with improved bimanual hand use and reduced upper-limb impairment, with gains carrying over to play-based bimanual skills. [3]

1. Calabrò RS, Accorinti M, Porcari B et al. Does hand robotic rehabilitation improve motor function by rebalancing interhemispheric connectivity after chronic stroke? Encouraging data from a randomised-clinical-trial. Clin Neurophysiol. 2019 May; 130(5):767-780.

2. Raciti L, Latella D, Raciti G et al. Exploring the Impact of Robotic Hand Rehabilitation on Functional Recovery in Parkinson's Disease: A Randomized Controlled Trial. Brain Sciences. 2025; 15(6):644.

3. Bishop L, Gordon AM, Kim H. Hand robotic therapy in children with hemiparesis: A pilot study. Am J Phys Med Rehabil. 2017 Jan; 96(1):1-7.

Explore all Amadeo studies



Amadeo: More Possibilities for Finger-Hand Rehabilitation

Get better every day



Do you have questions?
Our Sales Team is happy to help.

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More information
about the product "Amadeo"

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