teora BODY

REHAB RETHOUGHT

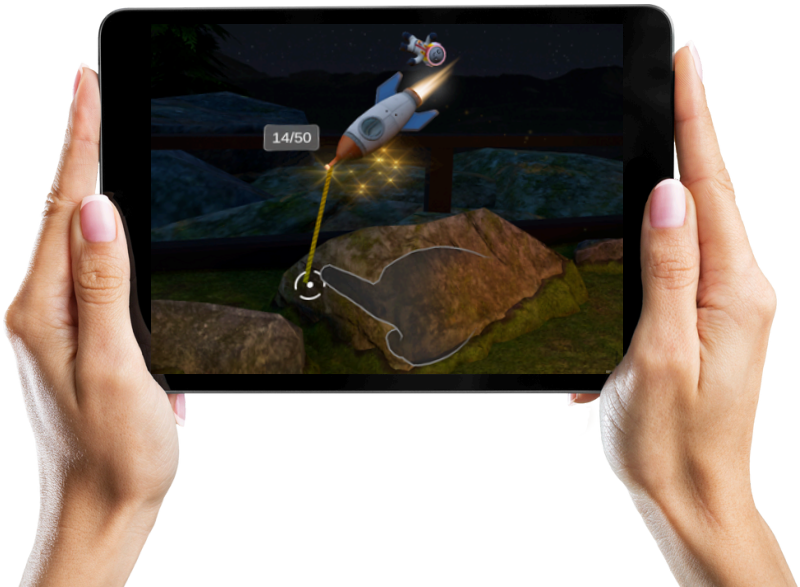
INNOVATIVE - EFFECTIVE - MOTIVATING

What is teora® body?

teora® body is an innovative virtual reality (VR)-supported rehabilitation system that helps patients to improve their motor skills in a fun and motivating way. The combination of interactive movement therapy, real-time feedback and individually customizable levels of difficulty enables sustainable therapeutic success. The focus is on motor skills in the upper extremities and trunk.

Consisting of VR glasses with preinstalled software and a tablet, teora® body is ready for immediate use.

While your patients immerse themselves in virtual reality, you can accompany the therapy using the tablet provided. Have your patients repeat specific exercises and movement sequences while you watch and provide assistance if necessary.



Areas of application

- Neurological rehabilitation (e.g. stroke, Parkinson's disease, multiple sclerosis)
- Orthopaedic rehabilitation (e.g. rotator cuff injuries, elbow injuries)
- Postoperative therapy
- Geriatric rehabilitation

Why teora® body?

More motivation, better results

- So-called. Enriched environments and multisensory stimulation have been shown to have a positive impact on neurological rehabilitation
- Playful learning increases readiness for therapy
- Individual adjustment of difficulty levels enables personalized training
- A sense of achievement increases motivation

Innovative technology, simple application

- Hand tracking and VR lead to the implementation of natural movement sequences
- Therapists have control via tablet monitoring
- With teora® body, several patients can be treated at the same time (group therapy)
- Flexible use in clinics, medical practices and rehabilitation facilities

Targeted training for shoulder, elbow & hand

With teora® body, patients train specific movement sequences and muscle groups:

- Shoulder mobilization & strengthening (e.g. rotator cuff, deltoid)
- Elbow mobility & stabilization (e.g. flexion, extension, supination, pronation)
- Fine motor skills & coordination through precise movement control

teora® body can be used for initial basic training as well as for advanced training. External aids such as therabands can also incorporated into the exercises for targeted strengthening.

Indications

teora® body was developed for use with patients who diagnosed with the following conditions, among others:

- Stroke
- Craniocerebral trauma
- Neurodegenerative diseases (e.g. ALS, Parkinson's, multiple sclerosis)
- (Infantile) cerebral palsy
- Ataxia of the upper extremities and trunk
- Spinal cord injuries
- Musculoskeletal diseases
- Neuropathy

Contraindications

teora® body is not suitable for patients with the following symptoms:

- Acute migraine
- Problems with balance
- Epileptic seizures caused by visual stimuli

Motion sickness (dizziness, headaches, nausea) may occur during the first few applications. In this case, discontinue use and only resume use once the symptoms have subsided. If the symptoms persist, a doctor should consulted.

Virtual reality in rehabilitation

The use of virtual reality (VR) in motor rehabilitation has gained increasing scientific importance in recent years. Numerous studies show that VR-supported training can enable significant improvements in motor functions in neurological and orthopaedic patients.

For example, a meta-analysis published in the Journal of Neural Engineering shows that VR-based therapy after a stroke generally achieves comparable or better results than conventional rehabilitation measures and physiotherapy[1]. In Parkinson's rehabilitation, VR has been shown to promote mobility and increase patient motivation[2].

VR therapy also has a positive effect in orthopaedic rehabilitation. Studies show that VR training helps to improve shoulder mobility after rotator cuff injuries by enabling targeted movement sequences in a pain-free, controlled environment[3]. Furthermore, a study by Levin et al. showed that VR-based therapy approaches promote sensorimotor control of the upper extremities through targeted, repetitive movement patterns and thus support the functional success of the therapy[4].

Studies also show that VR-supported rehabilitation can increase the willingness to undergo therapy and support long-term functional improvements.

[1-4] The resolution of the footnotes can be found on the last pages

Frequently Asked Questions

What is virtual reality?
Virtual reality (VR) is a computer-generated reality that can be experienced with images and often also sound.

What minimum physical requirements should the user fulfill?
At least one arm and one hand must be movable for use. In the current exercises, this also includes the ability to voluntarily bend and stretch the index finger. It is necessary to turn the head about 60° to the right and left. Use with a visual aid is possible without any problems; however, the ability to see and perceive with both eyes is essential. In addition, an intact understanding of speech and the ability to read are required

What spatial requirements must be met?
All exercises can be performed both sitting and standing. For the former, you need a seat and about 1.50 meters of free space in each direction so that your arms can be stretched out. When standing, you need a free area of 2×2 meters.

What technical conditions must be in place?
You do not need any additional technical equipment. All you is a stable and password-protected WLAN network.

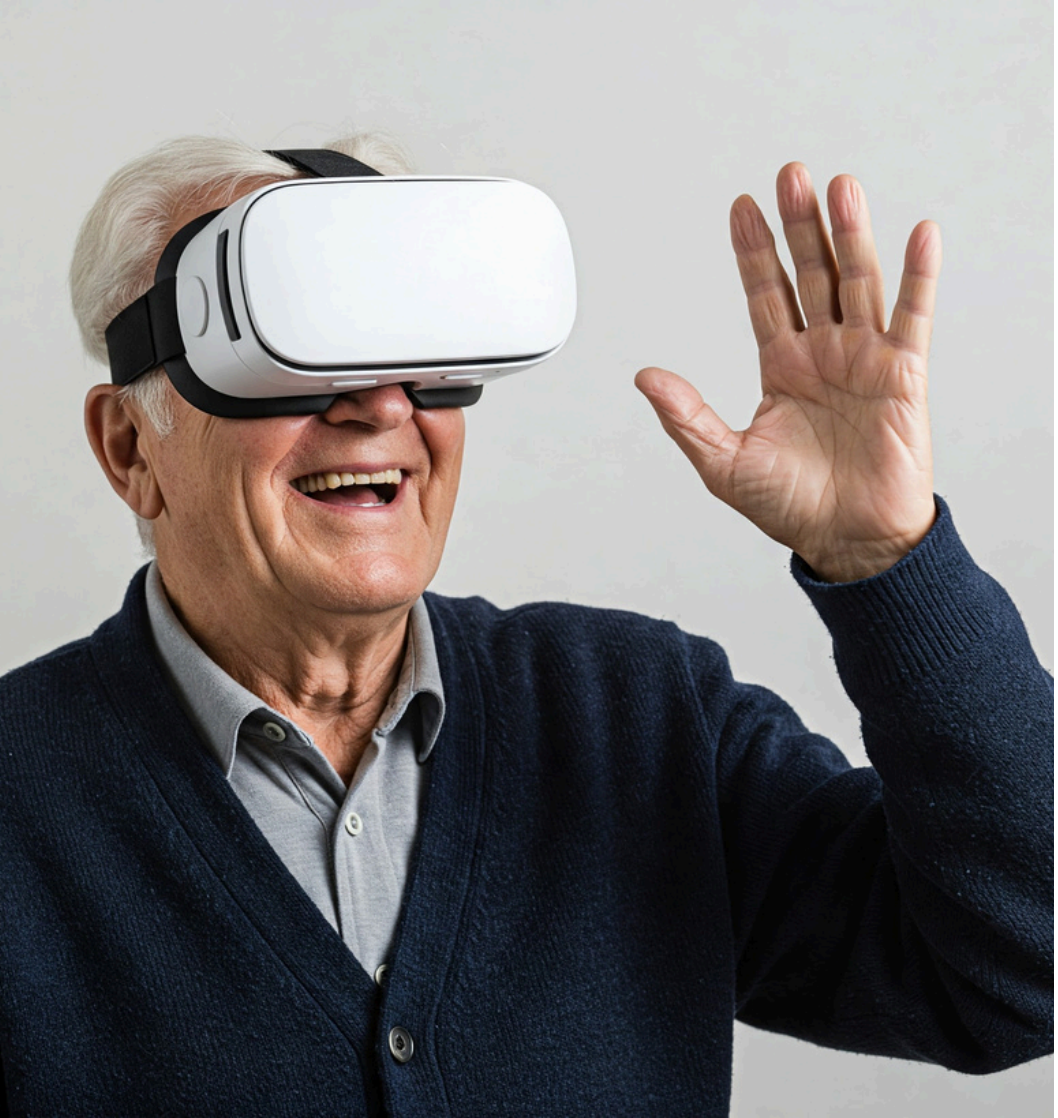
Literature

1 Feitosa JA, et al. 2022. Effects of virtual reality-based motor rehabilitation: a systematic review of fMRI studies. J. Neural. Eng. 19, 1. PMID: 34933281. DOI: 10.1088/1741-2552/ac456e

2 Dockx K, et al. 2016. Virtuelle Realität in der Rehabilitation des Parkinson-Syndroms. Crochane Library. DOI: 10.1002/14651858.CD010760

3 Levin M F, et al. 2014. Emergence of Virtual Reality as a Tool for Upper Limb Rehabilitation: Incorporation of Motor Control and Motor Learning Principles. Physical Therapy. 95(3):415–425. doi: 10.2522/ptj.20130579

4 Knodt M. 2022. Einsatz immersiver virtueller Realitäten präsentiert über ein Head-mounted Display in der neurologischen Rehabilitation. Online einsehbar.



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