REHABILITATION IN VIRTUAL REALITY

http://vast.rehab
Predefined sets of therapeutic tasks and the possibility to create your own sets allow you to start working with a new patient immediately.

Tasks and evaluations in many categories. E.g. range of motion, movement times, speed, balance, endurance, movement precision, divided attention, problem solving, mirror therapy and more.

VAST.Rehab will help you keep your patients more motivated to participate in their rehabilitation process. It will change the way patients feel about their daily exercises.

Gamified therapy sessions let patients experience positive emotions, become more self-confident and in the same time heavily involved.

You can comfortably take care about several patients simultaneously. You'll use a single PC to control all the computers currently used by your patients.

Biofeedback, delivered by the system, enables detailed insight into the course of each training and long-term progress as well. It allows you to collect objective results of treatment progress.

THE "THERAPIST PANEL" CREATES A KIND OF FEEDBACK LOOP BETWEEN A PATIENT PERFORMING REHABILITATION EXERCISES AND A PHYSICAL THERAPIST. IN REAL TIME THE THERAPIST CAN MONITOR THE PATIENT’S PERFORMANCE AND ADJUST PARAMETERS OF THE GAMIFIED EXERCISES TO MATCH THE PATIENT’S INDIVIDUAL RECOVERY NEEDS. BY USING THE "THERAPIST PANEL" THERAPIST IS ABLE TO CONTROL ALL THE COMPUTERS RUNNING VASTREHAB “PATIENT PANEL” AVAILABLE IN THE SAME NETWORK BY CABLE OR WI-FI.

HTTP://VAST.REHAB
3'rd PARTY DEVICES

VAST.Rehab has been designed with integration of 3'rd party medical devices in mind. By learning to use the system once you're able to work with wide variety of patients.

INTEGRITY OF RESULTS

All the results describing the progress patient is making are available in one place regardless of the device used to collect them.

RESEARCH TOOL

VAST.Rehab has dedicated tool designed to help you to do research. The system will guide you through the whole process reminding when the sessions with specific patient should be performed.

THERAPY TEMPLATES

Training plans for your patients may include multiple sessions with or without intensification of the workload. You can easily schedule it for several weeks in patient's calendar.

INTERACTION IN VR

Transferring tasks to virtual reality allows you to separate patient's thoughts from the surrounding area of the hospital. Patient receives both visual and acoustic biofeedback.

ROUTINE ACTIONS

The multitude of routine actions is automated. Despite the full personalization of the therapy for each patient you are able be really effective at work.

FLEXIBLE FINANCING

The system can be employed in big and small institutions as well as in the patient's home. It is highly scalable and can be adjusted to your needs.

HOME REHABILITATION

When you decide it is a good idea for your patient to take the therapy home - it can be easily activated. It will be your additional source of income and VAST.Rehab will help you keep in touch with your patients.

KINECT

Our core "Kinect Base pack" module for VAST.Rehab contains therapeutic tasks in almost all rehabilitation domains. Microsoft Kinect allows accurate full-body motion capture in real time without the need to attach any sensors to the body of the patient. It lets therapists support functional, occupational and cognitive therapy for patients struggling with cerebral, neurogenic, spinal, muscular or bone-related disorders. Taking into account the contraindications and every patient's individual profile, VAST.Rehab "Kinect Base pack" can be used in the case of:

• Cerebro Vascular Accidents • Multiple sclerosis • Cerebral palsy • Parkinson's Disease and Extrapyramidal Syndromes
• Brain-tumor operations • Spinal cord injuries • Traumatic brain injury • Muscular atrophy • Deconditioning - muscle weakness due to lack of mobility • Endoprosthesis for hip, knee, elbow and shoulder joints • Following stable fractures of vertebra and/or extremities • Limb amputations with or without prosthesis • Balance and Equilibrium disturbances
VAST. Rehab is designed for physical, occupational and cognitive therapy

VAST. Rehab is a fully-featured virtual reality exercise and diagnostic system with the flexibility to work for everyone from small physiotherapy practices to the largest hospitals in the world. It is easy to learn and use, making it perfect for therapists looking for convenient way to make their patients more motivated to participate in their rehabilitation process. VAST. Rehab automatically tracks patient's progress, so therapists spend less time doing the paperwork. And we deliver VAST. Rehab in the cloud, on-premises, or with a hybrid combination.

VAST. Rehab integrates wide range of 3rd party hardware products, so by learning to use the system once - therapists are able to work with patients using various medical devices. We have over 10 years of experience implementing software solutions for hospitals and physiotherapy centers of all shapes and sizes. We take the time to understand clinicians’ needs so that we can provide them with the best solution on the market, designed exactly to match their requirements.

Our previous rehabilitation system called SeeMe has been on the market since 2009. It is currently used worldwide in almost 1000 hospitals. We’ve analyzed the opinions and they were used to design the VAST. Rehab system.

VAST. Rehab uses a wide variety of therapeutic tasks to enable training in all rehabilitation domains:

**MUSCULOSKELETAL**
- Range of motion
- Strength
- Endurance
- Fitness
- Cardiovascular training

**BALANCE AND EQUILIBRIUM**
- Trunk and postural control
- Anticipatory postural responses
- Adequate reactions to stimuli and distractors placed in preplanned positions or random, Crossing the midline

**NEUROLOGICAL**
- Movement quality
- Movement awareness
- Proprioception
- Bilateral movements

**COGNITION**
- Memory
- Perception
- Planning
- Executive Functions

All the therapeutic tasks included in VAST. Rehab provide plenty of parameters and difficulty levels. By having those options – therapists are able to prepare trainings that let patients experience positive emotions, keep motivation and become more self-confident. While exercising, patients receive instant instructions and feedback on their performance. By incorporating gaming aspects into therapy, VAST. Rehab is changing the way patients feel about their daily exercises.

VAST. Rehab is already compatible with wide range of medical devices, so by learning to use the system once - therapists are able to work with wide variety of patients. The availability of specialized devices may vary in various world regions, but the VAST. Rehab core devices (Microsoft Kinect, Intel RealSense, Leap Motion) are available worldwide.

Our core “Kinect Base pack” module for VAST. Rehab contains therapeutic tasks in almost all rehabilitation domains. Microsoft Kinect allows accurate full-body motion capture in real time without the need to attach any sensors to the body of the patient. It lets therapists support functional, occupational and cognitive therapy for patients struggling with cerebral, neurogenic, spinal, muscular or bone-related disorders. Taking into account the contraindications and every patient’s individual profile, VAST. Rehab with Kinect can be used in the case of:

- Cerebro Vascular Accidents
- Multiple sclerosis
- Cerebral palsy
- Parkinson’s Disease
- Extrapyramidal Syndromes
- Brain-tumor operations
- Spinal cord injuries
- Traumatic brain injury
- Muscular atrophy
- Deconditioning - muscle weakness due to lack of mobility
- Endoprosthesis for hip, knee, elbow and shoulder joints
- Following stable fractures of vertebra and/or extremities
- Limb amputations with or without prosthesis
- Balance and Equilibrium disturbances

Many clinical studies have shown games to be very effective in increasing patients’ motivation and endurance, leading to marked improvements in outcomes. A case study showed reduction in readmissions from 11% to 5% with 139 patients who used Kinect based rehabilitation.

**CONTACT**

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Once a patient learns how to use the system while working one to one with his therapist, he can take the therapy home. Therapist prepares customized sessions and then day by day analyzes the results to keep the sessions challenging. All data is synchronized with our cloud based server, so the therapist knows whether patients do the exercises as prescribed. Therapist and patient don’t need to be connected to the system in the same time. Patient can perform the session at any time of the day.