RAPAEL NEUROBOT
SMART BOARD

Active Upper Limb Rehab Solution
RAPAEL SMART BOARD

RAPAEL Smart Board is an upper limb rehabilitation training device. Its treatment goal is to improve Functional Arm Reach.

- Smart Board quantitatively assesses patient's condition and recovery through training and provides Kinematic Evaluation of the range, speed, smoothness and harmony of motions.
- Patient is able to improve their active range of motion and coordination with ease and fun due to customizable rehabilitation solutions.

Key Features

- Ergonomic design allowing full range of arm reach
- Real-time biofeedback via infrared position sensor
- Task-oriented movement training through ADL / entertainment / leisure activities contents
- Customizable rehabilitation solutions through learning schedule Algorithm
- Quantitative analysis of the patient's condition and recovery through exercise assessments
- Systematic motor learning based on performance results

Exercise Movements

- Scapular protraction-retraction
- Shoulder flexion-extension
- Shoulder horizontal abduction-adduction
- Shoulder internal rotation-external rotation
- Shoulder circumduction
- Elbow flexion-extension

Smart Board Target Patient Groups

- Cerebrovascular disease
- Spinal cord injury
- Multiple Sclerosis
- Musculoskeletal disorders

The product is accessible to any patient experiencing limitation to functional movements due to damage in their shoulder or elbow joints.

NEOFECT

Training Games and Results

Systematic approach for active range of upper limb motion and coordination training.

Active range of motion training (AROM)
AROM-focused training through point-to-point reaching and free exploration.

Coordination training
Speed-based training through point-to-point reaching, shape drawing, and conditional exploration.

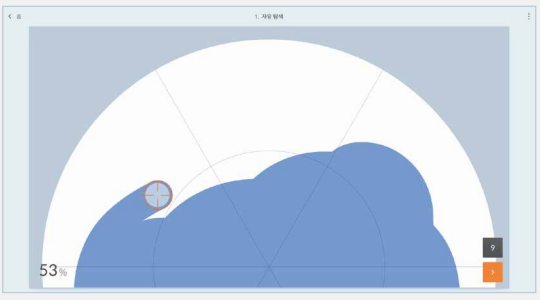
<Example: Coordination training inside the shape>

<Example: Training results image>

Assessment and Results

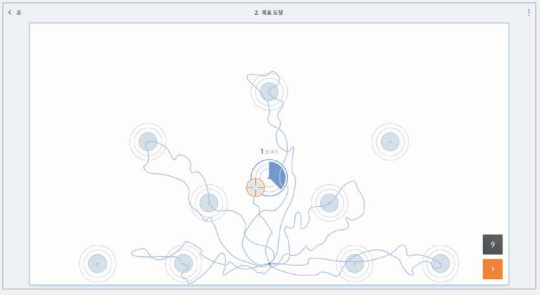
Three types of assessments, to compare and analyze maximum range, accuracy rate for reaching the correct destination, and shape configuration in real-time.

Free Exploration	• Cognitive mapping development of physical movement of the hands and reaction to the curser on the screen • Estimation of the patient's potential reaching range
Point-to-Point Reaching	• Motor planning assessment of reaching movements after recognizing start and finish points
Shape Drawing	• Complex movements achieved by inter-joint coordination • Feedback control function assessment for correcting situations where you draw outside of the shape



<Free Exploration>


<Shape Drawing>


<Point-to-Point Reaching>


<Chart of Individual Assessment Results>