BOTTLE BASE PACK

2025.1

WHAT IS NEEDED?

Please make sure the PC where you want this module to be active have VAST.Rehab Patient Panel installed and that the following hardware requirements are met:

- Windows 10/11
- Intel Core i5 (8th gen or newer). Important: Avoid ultra-low-power versions (e.g., i5-8250U), as they may not meet performance requirements. Prefer standard or high-performance CPUs.
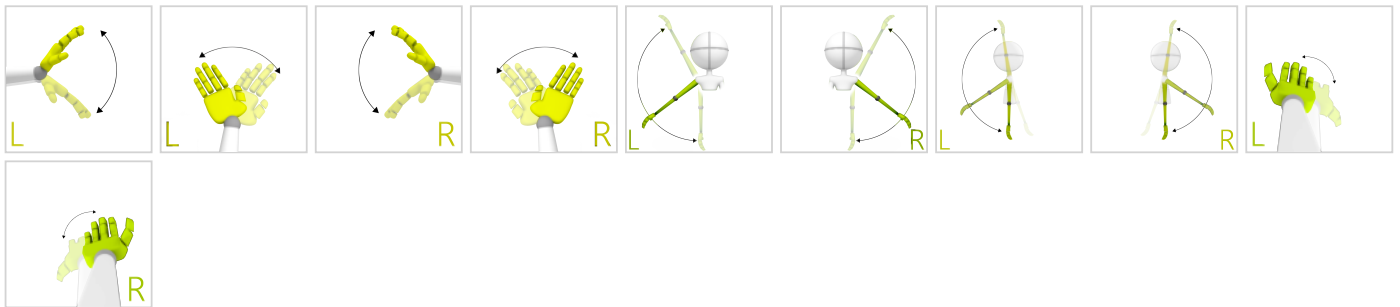- Minimum: 8 GB RAM (16 GB or more recommended for optimal performance).

VAST.Rehab
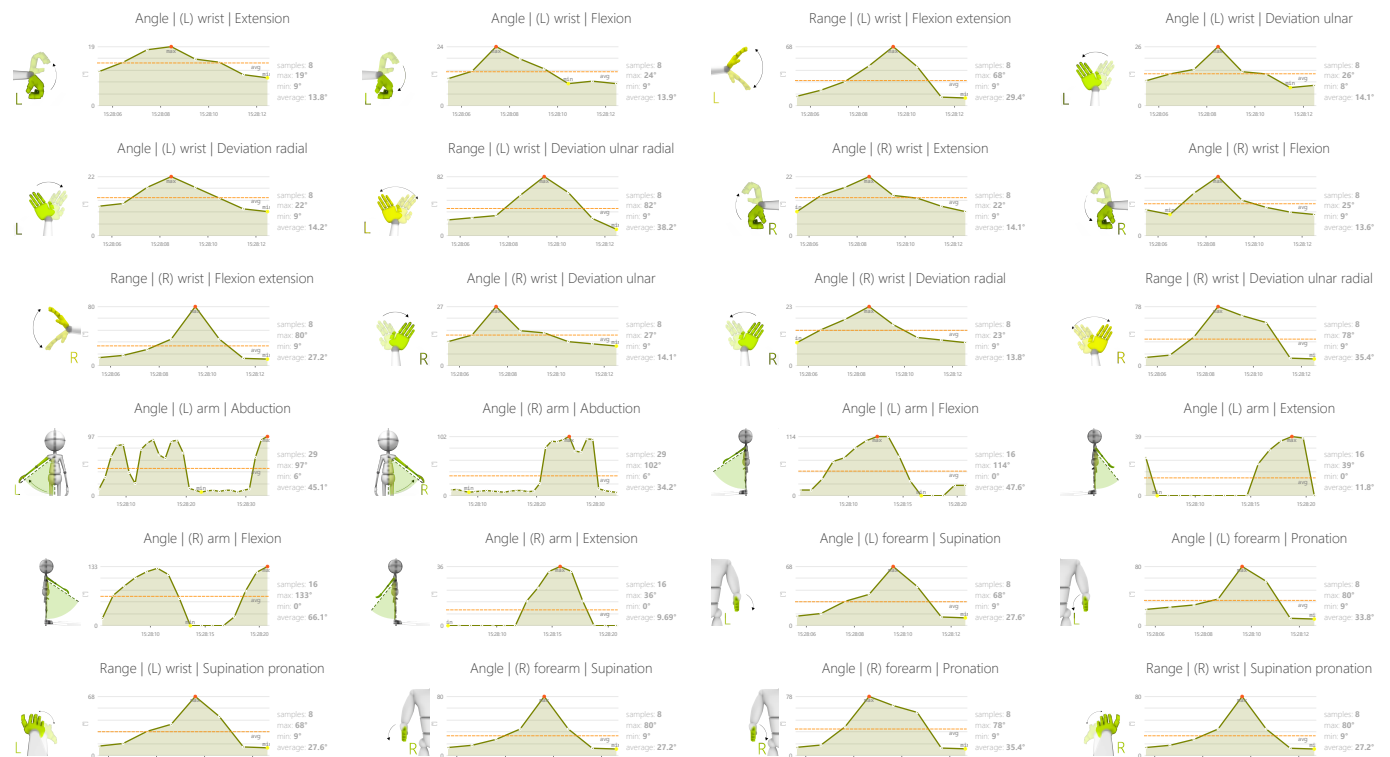REHABILITATION IN VIRTUAL REALITY

RANGE OF MOTION
ANGLES EVALUATION

Measure and gently motivate to increase individual's range of motion in predefined movement patterns.

CONTROL MODES

RESULTS

Angle | (L) wrist | Extension	Angle | (L) wrist | Flexion	Range | (L) wrist | Flexion extension	Angle | (L) wrist | Deviation ulnar
samples: 8, max: 19°, min: 9°, average: 13.8°	samples: 8, max: 24°, min: 9°, average: 13.9°	samples: 8, max: 68°, min: 9°, average: 29.4°	samples: 8, max: 26°, min: 8°, average: 14.1°
Angle | (L) wrist | Deviation radial	Range | (L) wrist | Deviation ulnar radial	Angle | (R) wrist | Extension	Angle | (R) wrist | Flexion
samples: 8, max: 22°, min: 9°, average: 14.2°	samples: 8, max: 82°, min: 9°, average: 38.2°	samples: 8, max: 22°, min: 9°, average: 14.1°	samples: 8, max: 25°, min: 9°, average: 13.6°
Range | (R) wrist | Flexion extension	Angle | (R) wrist | Deviation ulnar	Angle | (R) wrist | Deviation radial	Range | (R) wrist | Deviation ulnar radial
samples: 8, max: 80°, min: 9°, average: 27.2°	samples: 8, max: 27°, min: 9°, average: 14.1°	samples: 8, max: 23°, min: 9°, average: 13.8°	samples: 8, max: 78°, min: 9°, average: 35.4°
Angle | (L) arm | Abduction	Angle | (R) arm | Abduction	Angle | (L) arm | Flexion	Angle | (L) arm | Extension
samples: 29, max: 97°, min: 6°, average: 45.1°	samples: 29, max: 102°, min: 6°, average: 34.2°	samples: 16, max: 114°, min: 0°, average: 47.6°	samples: 16, max: 39°, min: 0°, average: 11.8°
Angle | (R) arm | Flexion	Angle | (R) arm | Extension	Angle | (L) forearm | Supination	Angle | (L) forearm | Pronation
samples: 16, max: 133°, min: 0°, average: 66.1°	samples: 16, max: 36°, min: 0°, average: 9.69°	samples: 8, max: 68°, min: 9°, average: 27.6°	samples: 8, max: 80°, min: 9°, average: 33.8°
Range | (L) wrist | Supination pronation	Angle | (R) forearm | Supination	Angle | (R) forearm | Pronation	Range | (R) wrist | Supination pronation
samples: 8, max: 68°, min: 9°, average: 27.6°	samples: 8, max: 80°, min: 9°, average: 27.2°	samples: 8, max: 78°, min: 9°, average: 35.4°	samples: 8, max: 80°, min: 9°, average: 27.2°

ADJUSTMENTS

• Time to complete action

OBJECTIVES

• Range of motion examination

INSTRUCTION FOR PATIENT

Try to achieve best result

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

RANGE OF MOTION
ANGLES EVALUATION

SAMPLE SETTINGS

Reset
When data is corrupted

Finish
Mark as completed

0:30

Minitask duration

30s

L

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
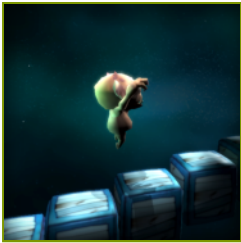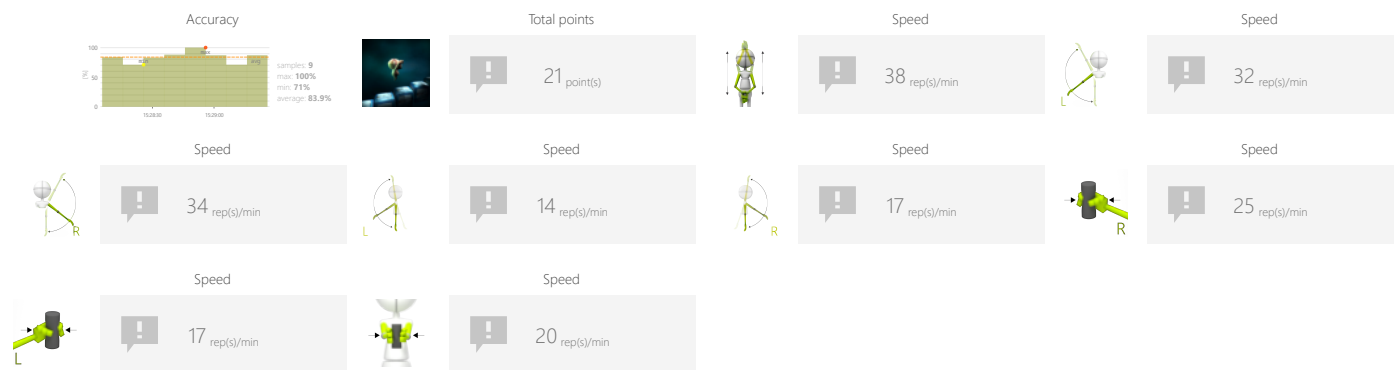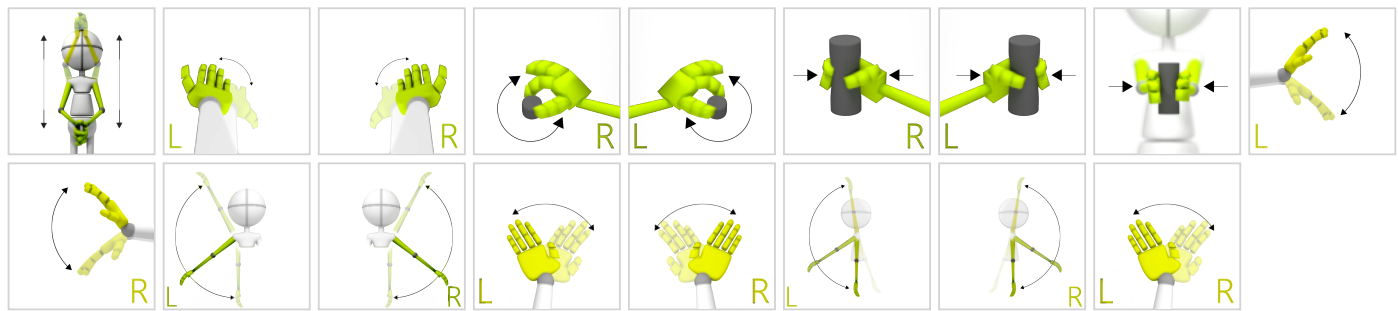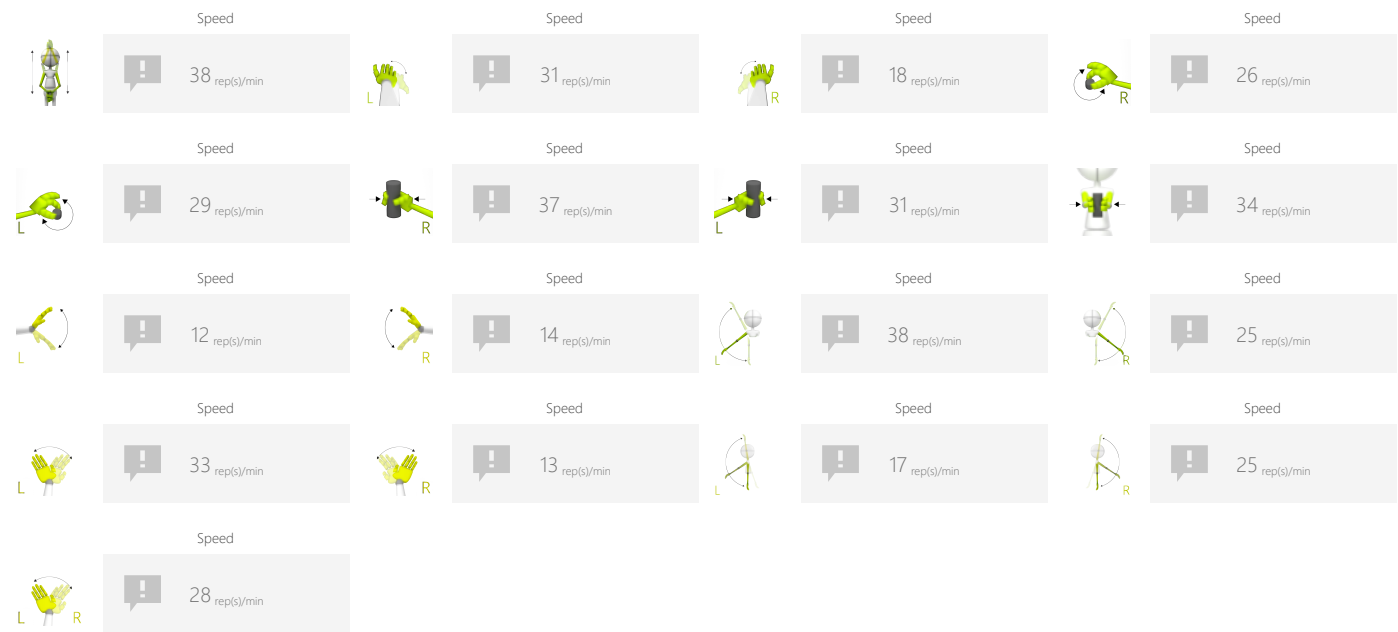
SPEED
STAIRS

Measure number of repetitions of specific movement pattern an individual is able to perform within predefined time interval.
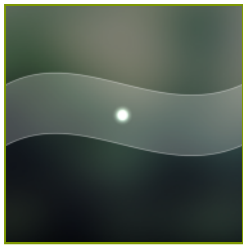
CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points
21 point(s)

Speed
38 rep(s)/min

Speed
32 rep(s)/min

Speed
34 rep(s)/min

Speed
14 rep(s)/min

Speed
17 rep(s)/min

Speed
25 rep(s)/min

Speed
17 rep(s)/min

Speed
20 rep(s)/min

ADJUSTMENTS

• Task duration
• Range
• Max time per floor
• Number of stairs
• Pause length

OBJECTIVES

• Dynamics of planned movements

INSTRUCTION FOR PATIENT

Climb the stairs before they disappear.

VAST. Rehab
REHABILITATION IN VIRTUAL REALITY

SPEED
STAIRS

SAMPLE SETTINGS
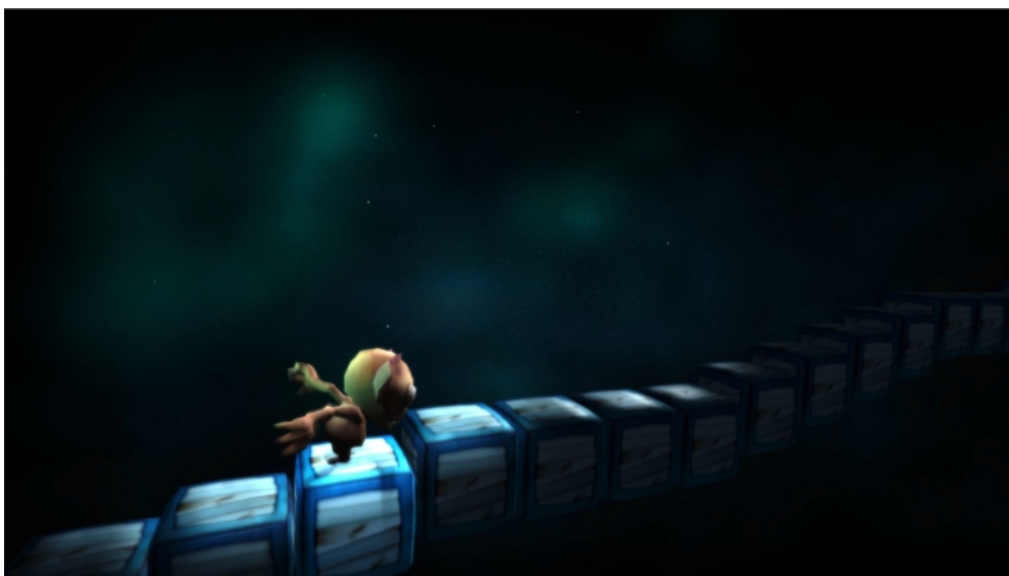
Difficulty
custom

Duration	Range
90s	20% ↕ 80%

Max time per floor	Number of stairs
15s	5

Pause length
3

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SPEED
SPEED TEST

Measure number of repetitions of specific movement pattern an individual is able to perform within predefined time interval.

CONTROL MODES

RESULTS

	Speed		Speed		Speed		Speed
	38 rep(s)/min	L	31 rep(s)/min	R	18 rep(s)/min	R	26 rep(s)/min
	Speed		Speed		Speed		Speed
L	29 rep(s)/min	R	37 rep(s)/min	L	31 rep(s)/min		34 rep(s)/min
	Speed		Speed		Speed		Speed
L	12 rep(s)/min	R	14 rep(s)/min	L	38 rep(s)/min	R	25 rep(s)/min
	Speed		Speed		Speed		Speed
L	33 rep(s)/min	R	13 rep(s)/min	L	17 rep(s)/min	R	25 rep(s)/min
	Speed						
L R	28 rep(s)/min						

ADJUSTMENTS

• Time to complete action

• Range

OBJECTIVES

• Speed of movement

• Repetitive movements

INSTRUCTION FOR PATIENT

Perform the specified movement pattern as many times as possible.
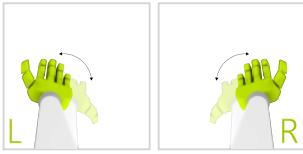
VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
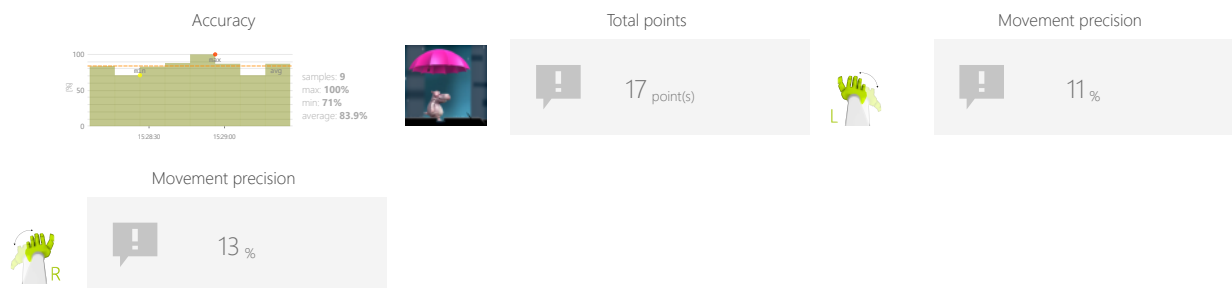## GRAPH

Measure and train individual's skills to perform specific movement patterns with predefined speed and range.

CONTROL MODES

RESULTS

Accuracy samples: **9** max: **100%** min: **71%** average: **83.9%**	**Total points** 26 point(s)	**Movement precision** 34 %	**Movement precision** 10 %
Movement precision 29 %	**Movement precision** 22 %	**Movement precision** 25 %	**Movement precision** 19 %
Movement precision 22 %	**Movement precision** 30 %	**Movement precision** 17 %	**Movement precision** 25 %
Movement precision 19 %	**Movement precision** 21 %	**Movement precision** 29 %	**Movement precision** 32 %
Movement precision 10 %	**Movement precision** 27 %	**Movement precision** 21 %	
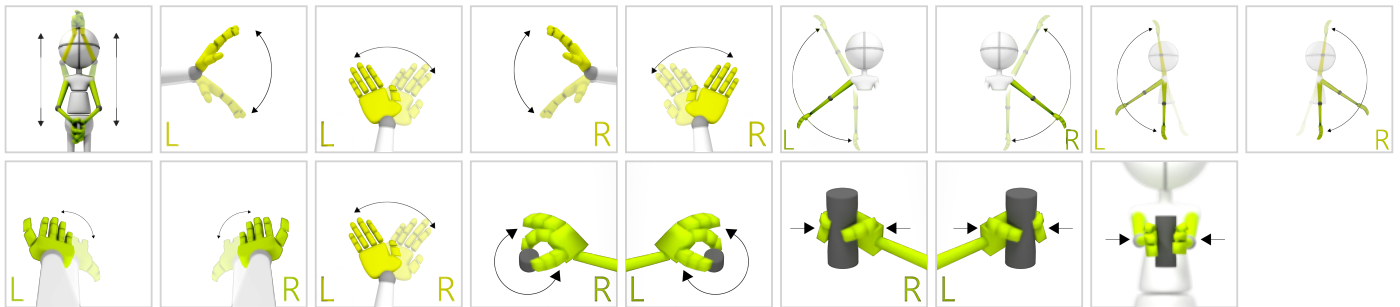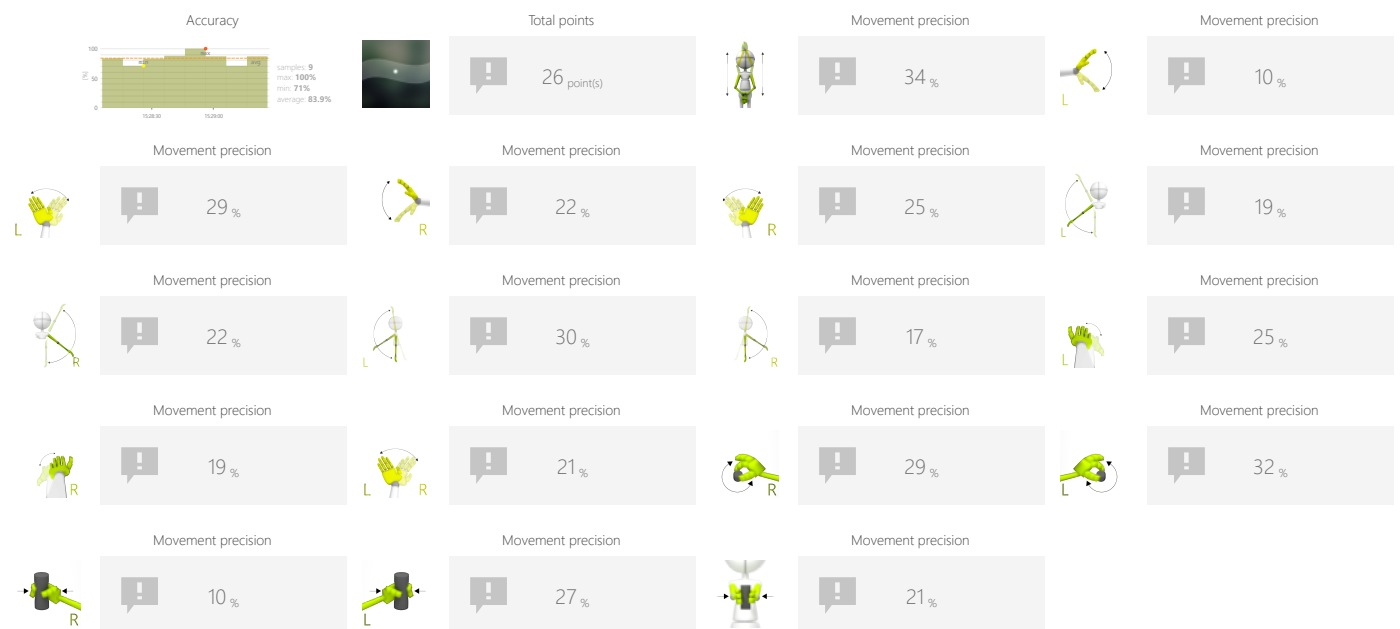
ADJUSTMENTS

• Graph shape (sinus or square, amplitude, border, etc.)

• Task duration

• Range

OBJECTIVES

• Movement precision

• Activity in a given rhythm

• Repetitive movements

INSTRUCTION FOR PATIENT

Try to stay within the borders.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
GRAPH

SAMPLE SETTINGS

Difficulty
3/3

Graph configuration

⟲ : 4.0s   ←│→ : 20%

Duration
30s

Range
20% 80%

Difficulty
1/3

Graph configuration

⟲ : 4.0s   ←│→ : 40%

Duration
90s

Range
20% 80%

Difficulty
custom

Graph configuration

←│→ : 20%   ↑ : 2.0s   ↓ : 2.0s   ↗ : 1.0s   ↘ : 1.0s

Duration
30s

Range
20% 80%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
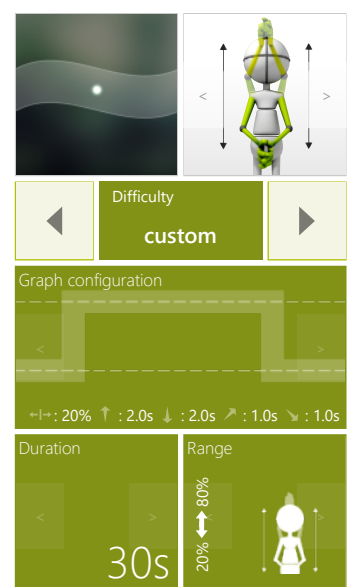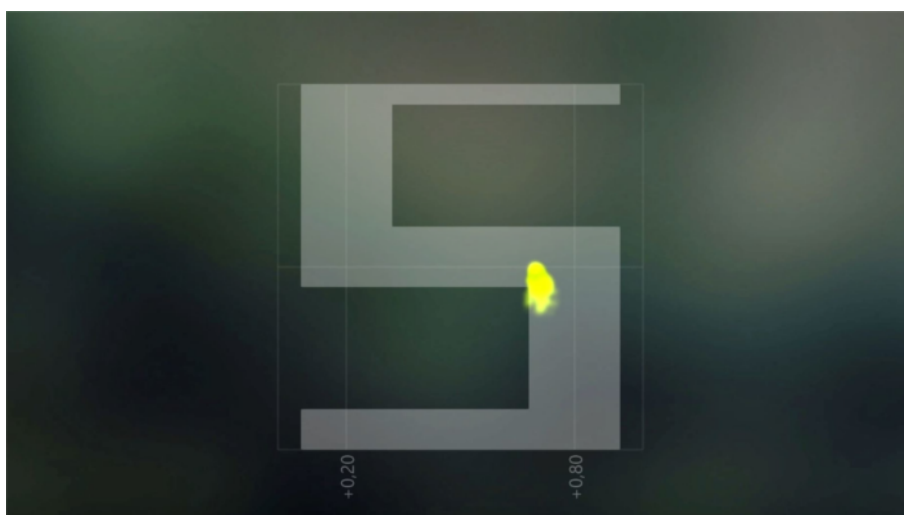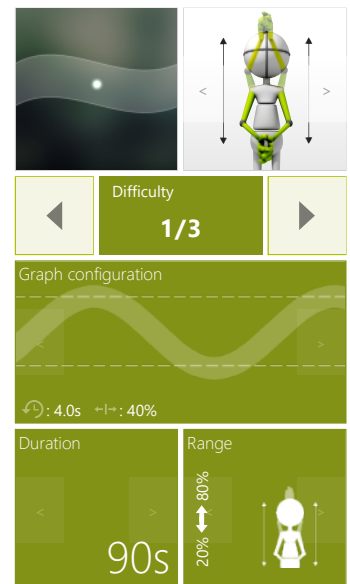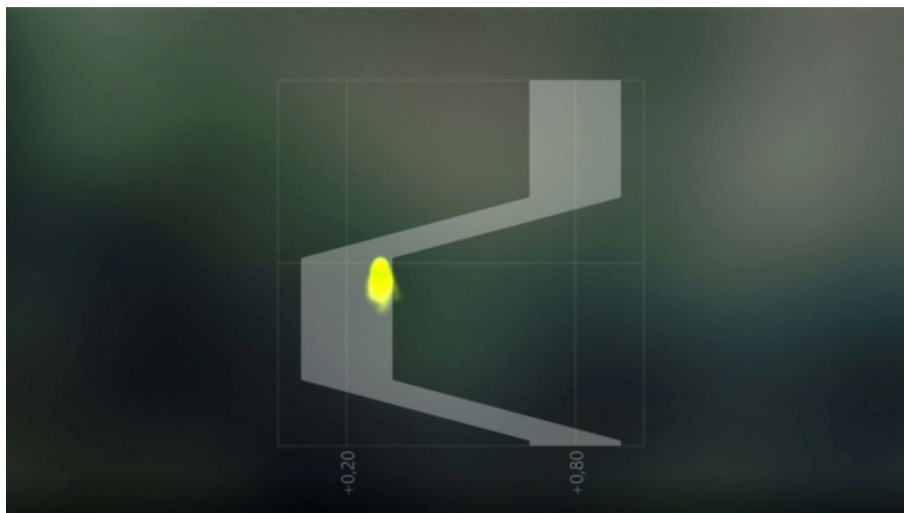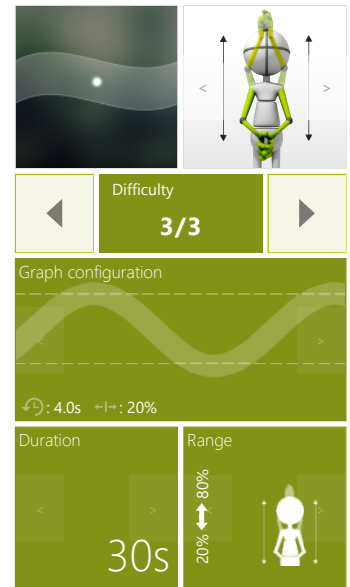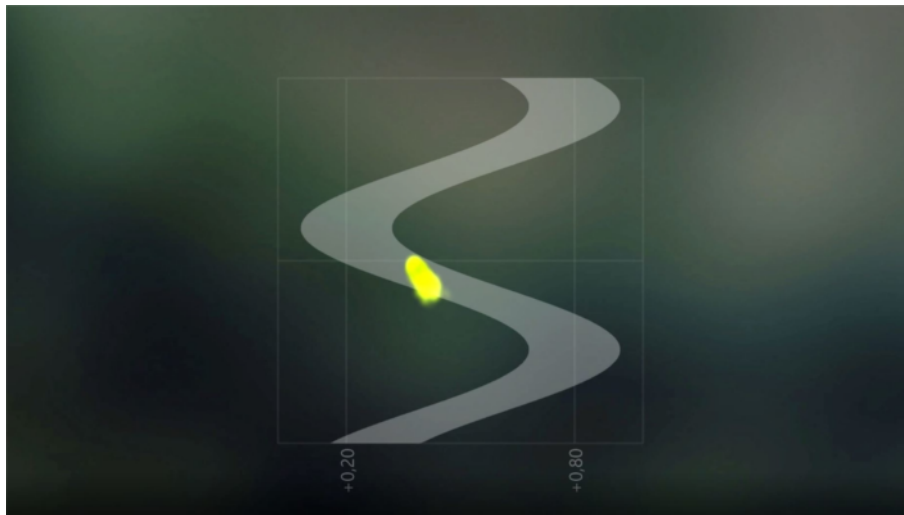
MOVEMENT PRECISION
UMBRELLA

Measure and train individual's skills to perform specific movement patterns with predefined speed and range.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

17 point(s)

Movement precision

11 %

Movement precision

13 %

ADJUSTMENTS

- Task duration
- Path
- Range
- Umbrella size

OBJECTIVES

- Movement precision
- Visual motor coordination

INSTRUCTION FOR PATIENT

Don't let the hippo get wet - keep the umbrella above him!

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
UMBRELLA

SAMPLE SETTINGS

Difficulty	
◀	**1/3** ▶

Duration

60s

Path

⏱ : 8.0s

Range

80% ⬌ 20%

Umbrella size

150%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
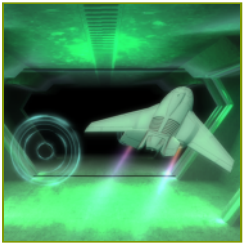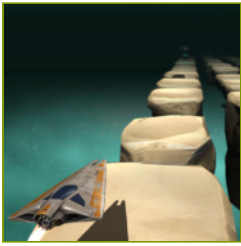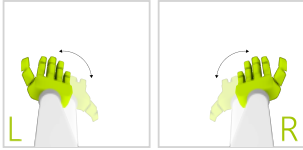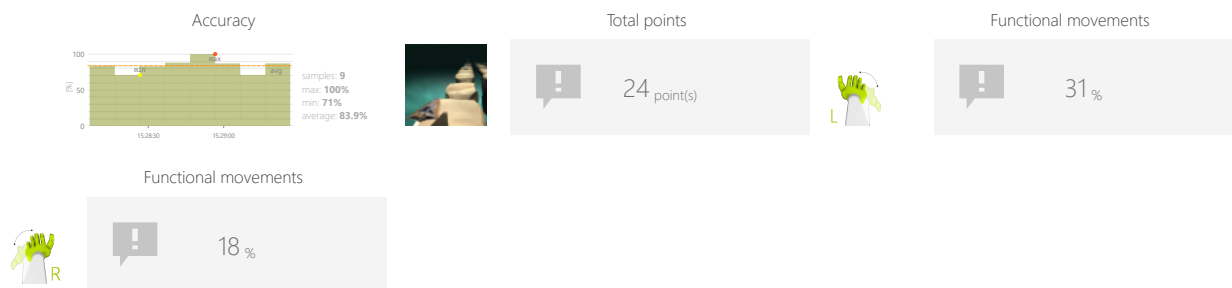
FUNCTIONAL MOVEMENTS
AIRPLANE

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements	Functional movements
samples: 9, max: 100%, min: 71%, average: 83.9%	34 point(s)	28 %	15 %
Functional movements	Functional movements	Functional movements	Functional movements
23 %	10 %	33 %	39 %
Functional movements	Functional movements	Functional movements	Functional movements
12 %	36 %	23 %	31 %
Functional movements	Functional movements	Functional movements	Functional movements
18 %	26 %	13 %	21 %
Functional movements	Functional movements	Functional movements	
15 %	18 %	10 %	
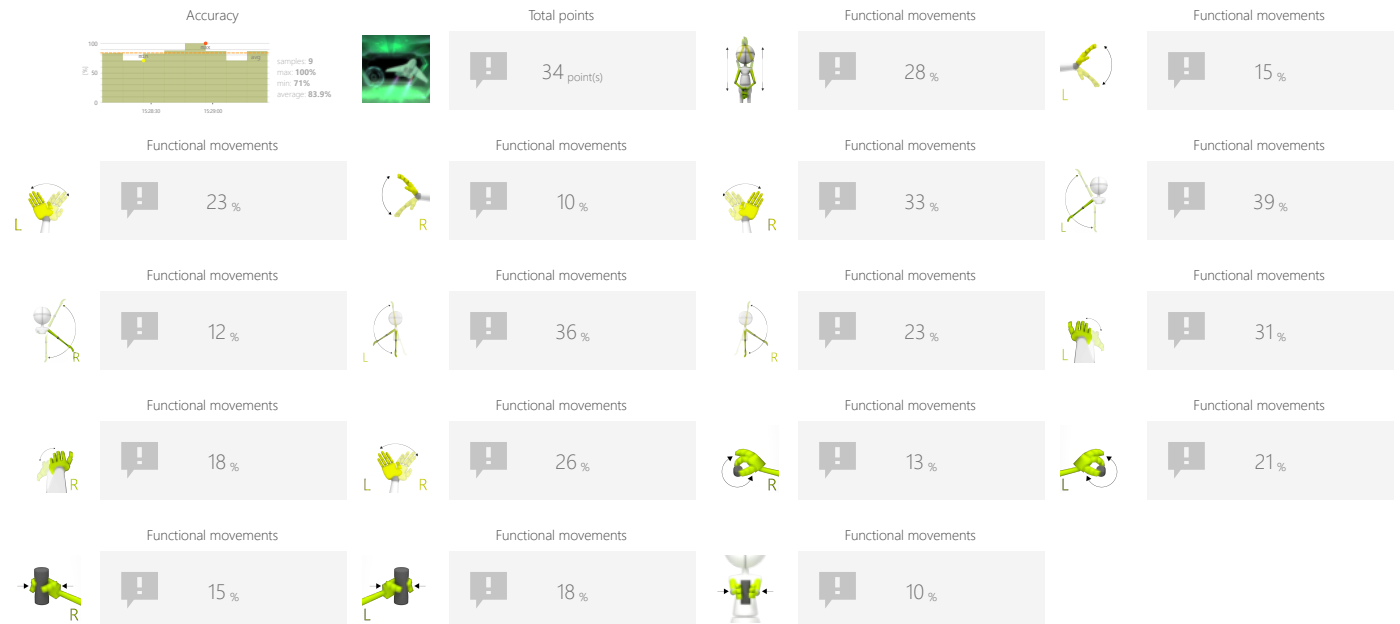
ADJUSTMENTS

• Speed
• Task duration
• Range

OBJECTIVES

• Focusing
• Perceptivity
• Movement precision
• Predicting the trajectory of objects in 3D space

INSTRUCTION FOR PATIENT

Make the airplane fly through the circles. The closer to the center it flies the more points you get.
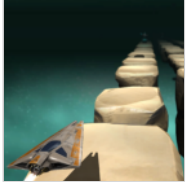
VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
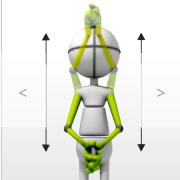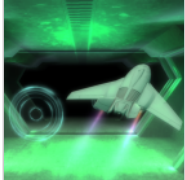
FUNCTIONAL MOVEMENTS
AIRPLANE

SAMPLE SETTINGS
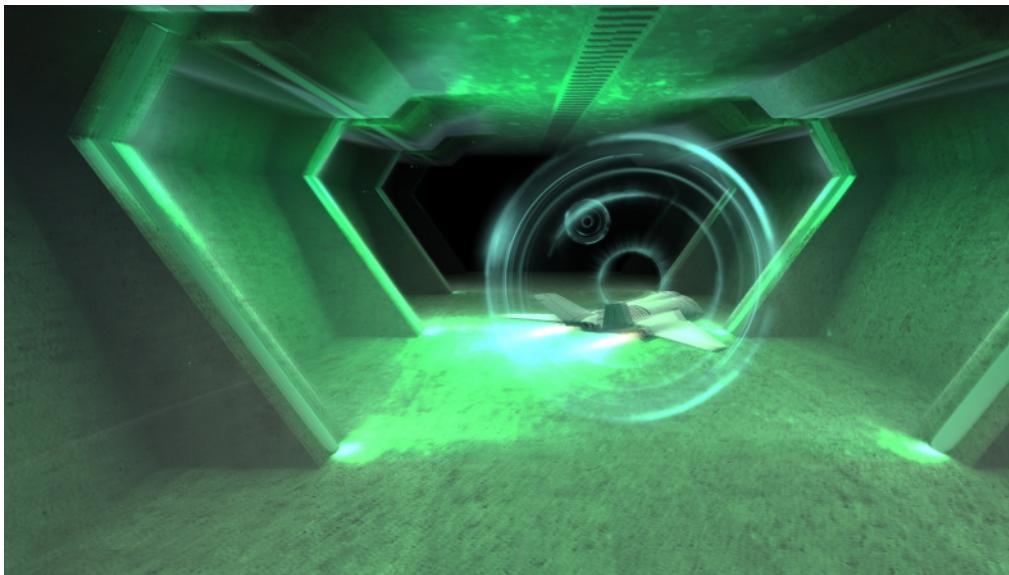
Difficulty
2/4

Speed
100%
speed set automatically

Duration
90s

Range
80%
20%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
STONES

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

24 point(s)

Functional movements

31 %

Functional movements

18 %

ADJUSTMENTS

• Speed
• Task duration
• Range

OBJECTIVES

• Perceptivity
• Dynamics of planned movements
• Reaction to the positive visual stimuli
• Response to negative visual stimuli

INSTRUCTION FOR PATIENT

Make the the spaceship collect the colorful creatures and avoid the rocks.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
STONES

SAMPLE SETTINGS

Difficulty
1/3

Speed
100%
speed set automatically

Duration
90s

Range
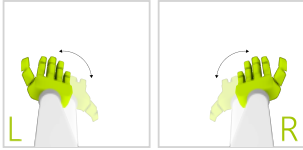80% ⟷ 20%

VAST.Rehab
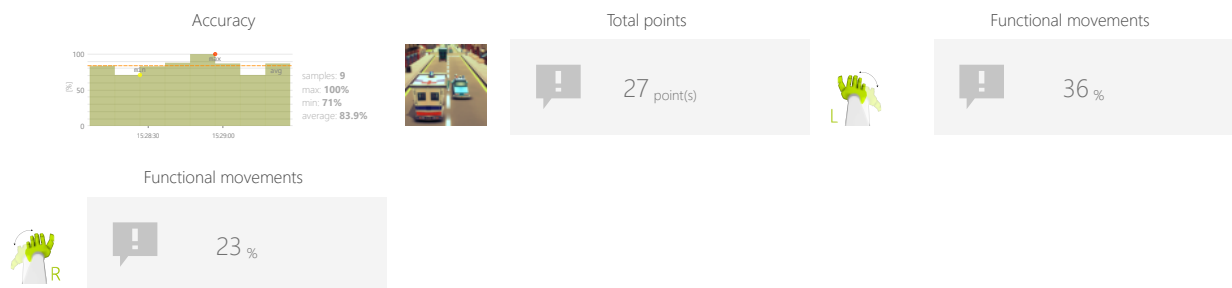REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
AMBULANCE

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

L   R

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

27 point(s)

Functional movements

L   36 %

Functional movements

R   23 %

ADJUSTMENTS

• Speed
• Task duration
• Range
• Distance between cars

OBJECTIVES

• Dynamics of planned movements
• Focusing
• Speed of decision making
• Visual motor coordination

INSTRUCTION FOR PATIENT

Go as fast as you can and avoid hitting other cars.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
AMBULANCE

SAMPLE SETTINGS

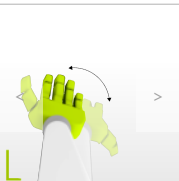Difficulty
2/3

Speed
50%
speed set automatically

Duration
90s

Range
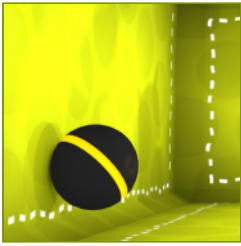80% ⟷ 20%

Distance between cars
50%

Difficulty
custom

Speed
50%
speed set automatically

Duration
90s

Range
80% ⟷ 20%

Distance between cars
200%

VAST.Rehab
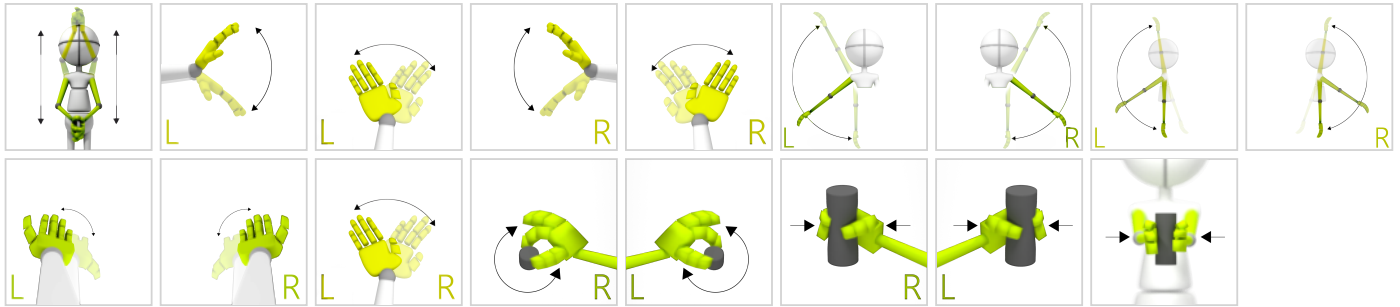REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
ARCANOID

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy		Total points		Functional movements		Functional movements	
samples: 9 max: 100% min: 71% average: 83.9%		39 point(s)		11 %		35 %	

Functional movements		Functional movements		Functional movements		Functional movements	
38 %		30 %		38 %		25 %	

Functional movements		Functional movements		Functional movements		Functional movements	
19 %		36 %		30 %		17 %	

Functional movements		Functional movements		Functional movements		Functional movements	
25 %		31 %		34 %		28 %	

Functional movements		Functional movements		Functional movements	
15 %		23 %		26 %	

ADJUSTMENTS

• Task duration
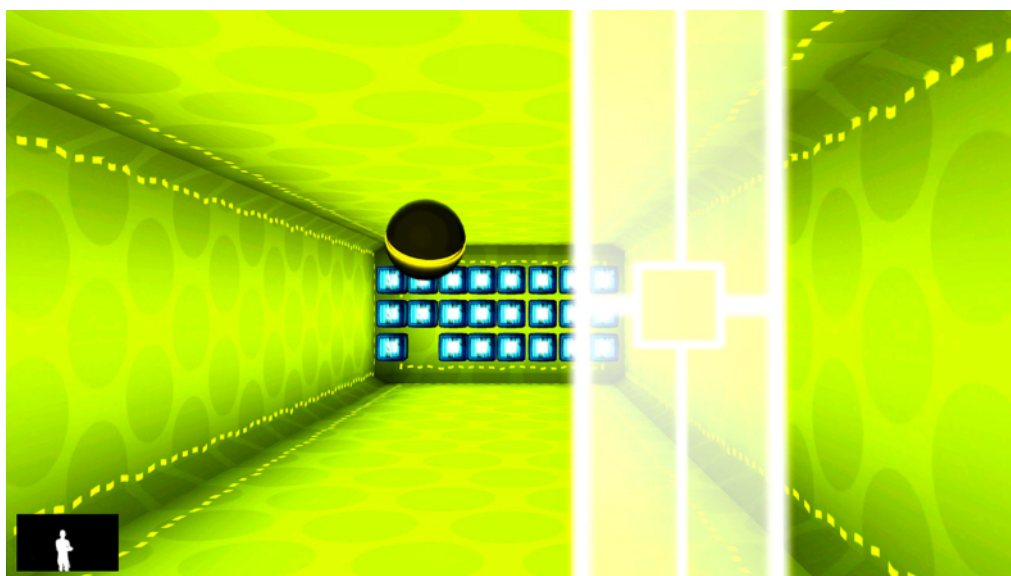• Range
• Reticle size
• Speed of objects

OBJECTIVES

• Dynamics of planned movements
• Predicting the trajectory of objects in 3D space
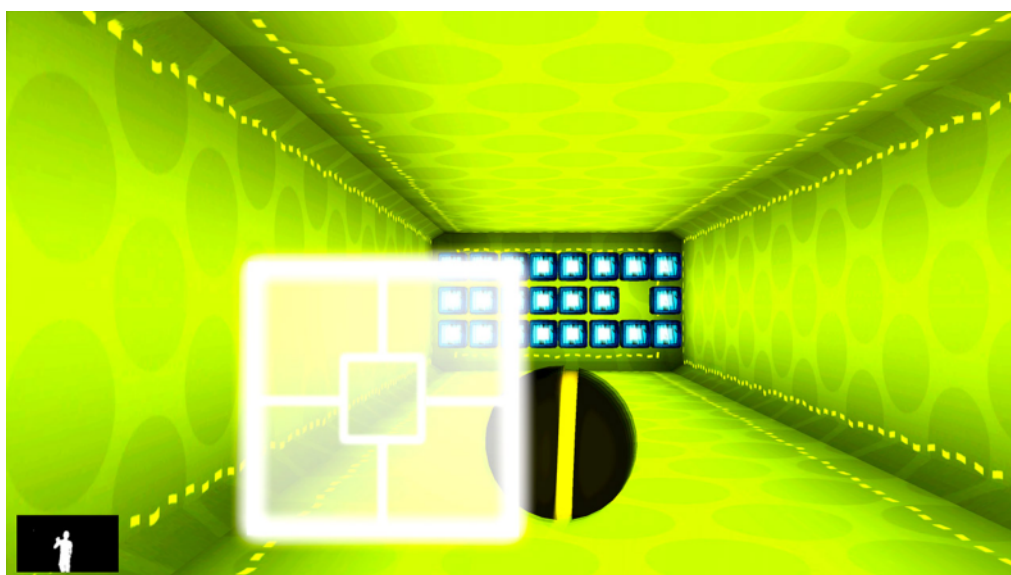• Visual motor coordination

INSTRUCTION FOR PATIENT

Destroy as many boxes as you can.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
ARCANOID

SAMPLE SETTINGS

Difficulty
custom

Duration	Range
90s	20% ↕ 80%

Reticle size	Speed of objects
100%	70%

Difficulty
custom

Duration	Range
90s	20% ↕ 80%

Reticle size	Speed of objects
75%	70%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
ROCKET JUMPING

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements	Functional movements
samples: 9 max: 100% min: 71% average: 83.9%	10 point(s)	13 %	36 %

Functional movements	Functional movements	Functional movements	Functional movements
23 %	31 %	34 %	27 %

Functional movements	Functional movements		
35 %	37 %		
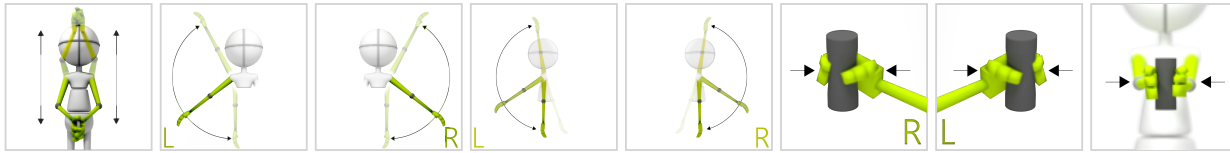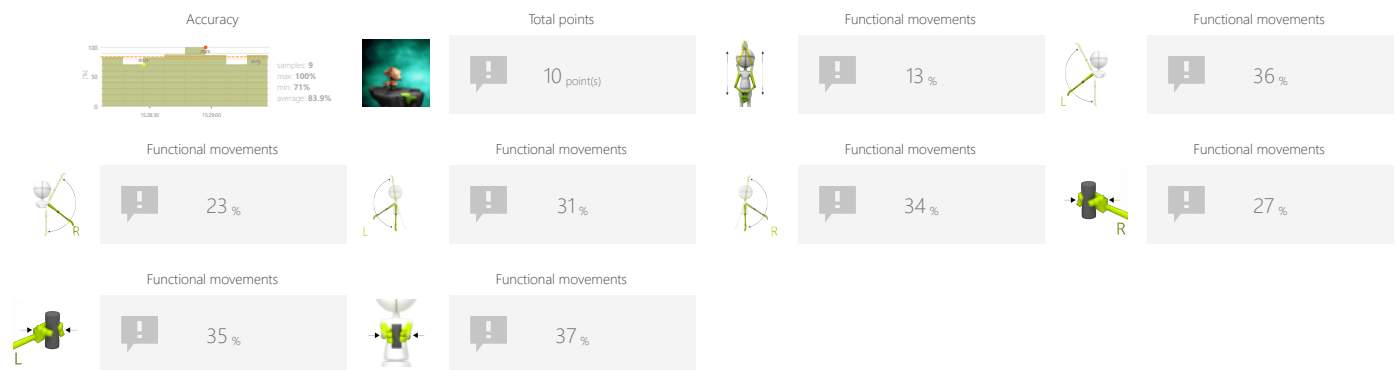
ADJUSTMENTS

• Task duration
• Range
• Time between objects
• Bomb format
• Speed of objects

OBJECTIVES

• Spontaneous movements
• Dynamic responses to emerging moving targets
• Predicting the trajectory of objects

INSTRUCTION FOR PATIENT

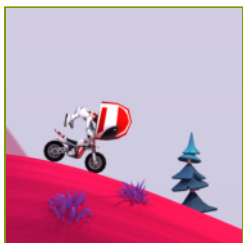Help the creature jump over incoming rockets and avoid being hit.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
ROCKET JUMPING

SAMPLE SETTINGS

Difficulty
1/3

Duration
90s

Range
20% ↕ 80%

Time between objects
5s

Bomb format
1

Speed of objects
100%

VAST.Rehab
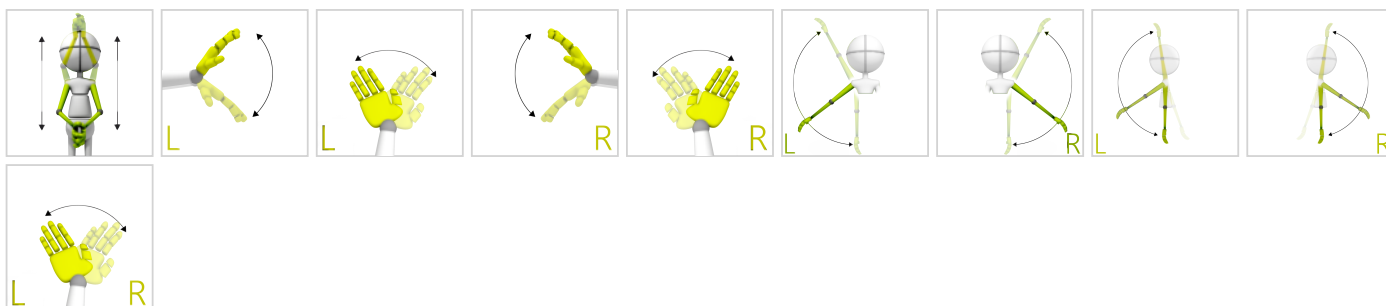REHABILITATION IN VIRTUAL REALITY
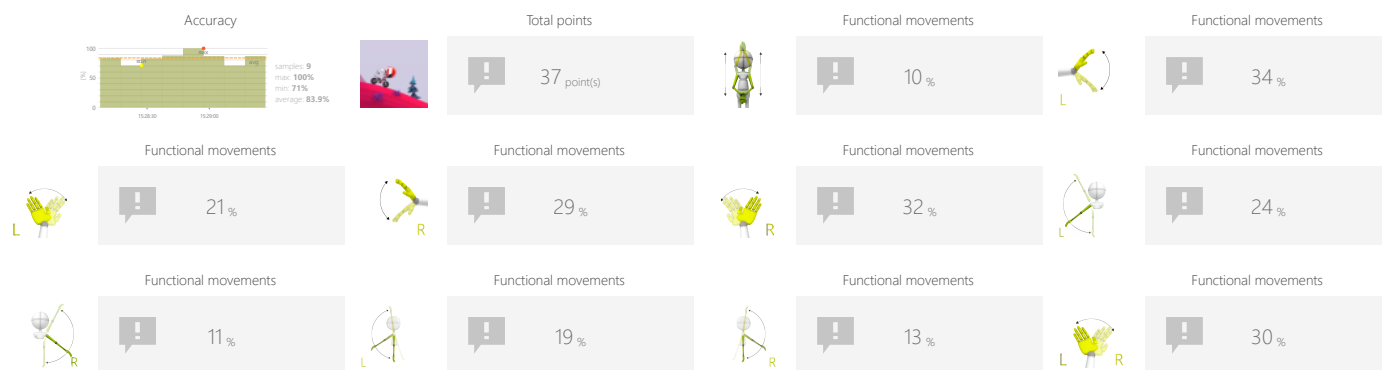
FUNCTIONAL MOVEMENTS
MOTOCROSS

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy — samples: 9, max: 100%, min: 71%, average: 83.9%	Total points — 37 point(s)	Functional movements — 10 %	Functional movements — 34 %
Functional movements — 21 %	Functional movements — 29 %	Functional movements — 32 %	Functional movements — 24 %
Functional movements — 11 %	Functional movements — 19 %	Functional movements — 13 %	Functional movements — 30 %

ADJUSTMENTS

• Task duration

• Range

• Route shape

OBJECTIVES

• Dynamics of planned movements

• Planning and Strategy

INSTRUCTION FOR PATIENT

Accelerate and brake to cover the entire route as quickly as possible without tipping.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
MOTOCROSS

SAMPLE SETTINGS

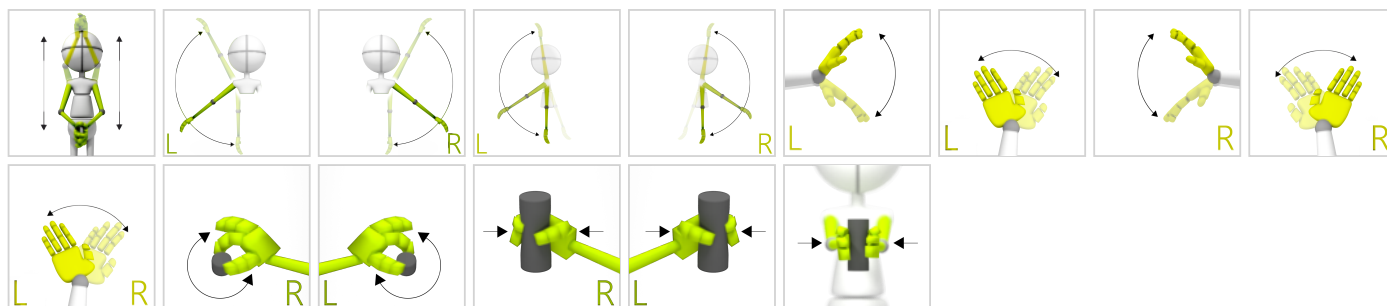
25

VAST. Rehab
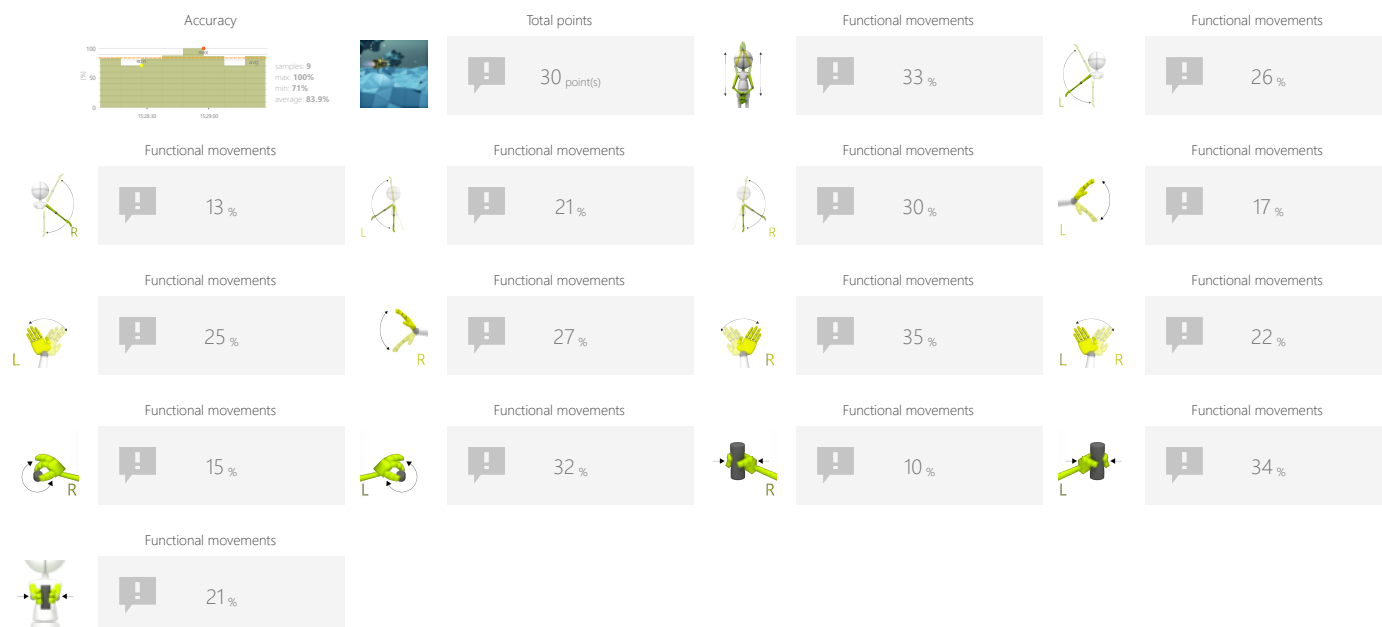REHABILITATION IN VIRTUAL REALITY
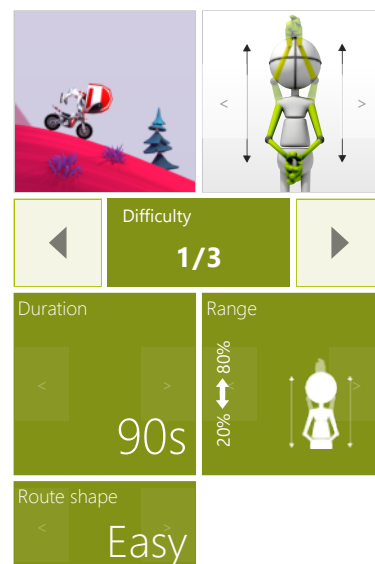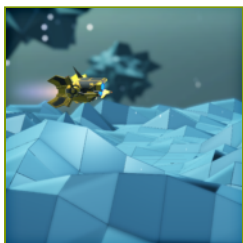
FUNCTIONAL MOVEMENTS
GEOMETRY FLIER

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy	Total points	Functional movements	Functional movements
samples: **9** max: **100%** min: **71%** average: **83.9%**	30 point(s)	33 %	26 %
Functional movements	Functional movements	Functional movements	Functional movements
13 %	21 %	30 %	17 %
Functional movements	Functional movements	Functional movements	Functional movements
25 %	27 %	35 %	22 %
Functional movements	Functional movements	Functional movements	Functional movements
15 %	32 %	10 %	34 %
Functional movements			
21 %			

ADJUSTMENTS

• Speed
• Task duration
• Range

OBJECTIVES

• Dynamics of planned movements
• Activity in a given rhythm
• Visual motor coordination

INSTRUCTION FOR PATIENT

Control the vehicle to avoid the obstacles.

VAST. Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
GEOMETRY FLIER

SAMPLE SETTINGS
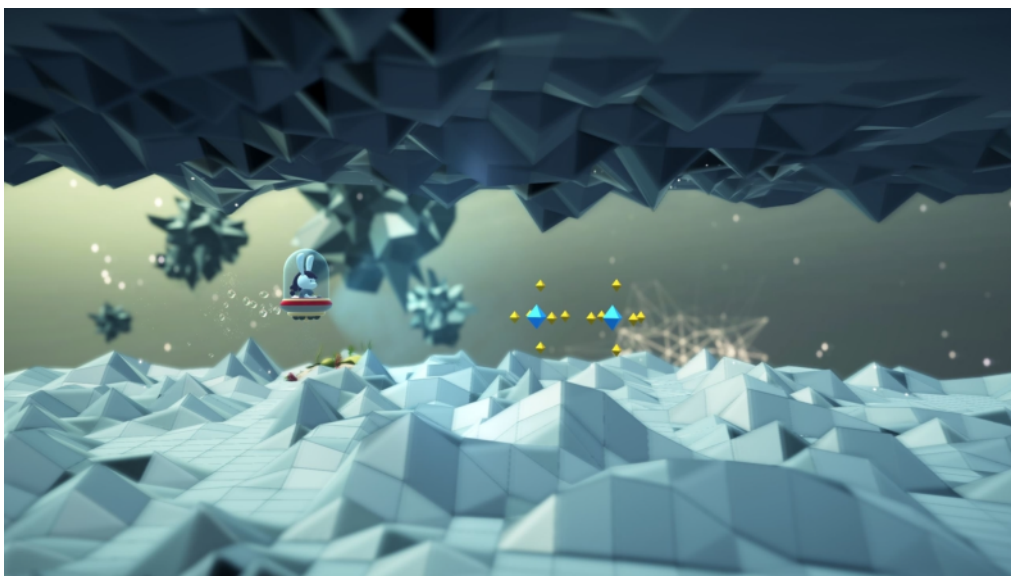
Difficulty
1/3

Speed
100%
speed set automatically

Duration
90s

Range
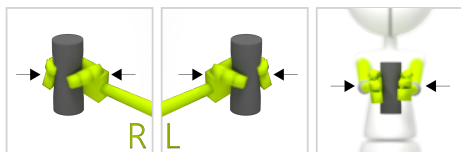20% | 80%

VAST.Rehab
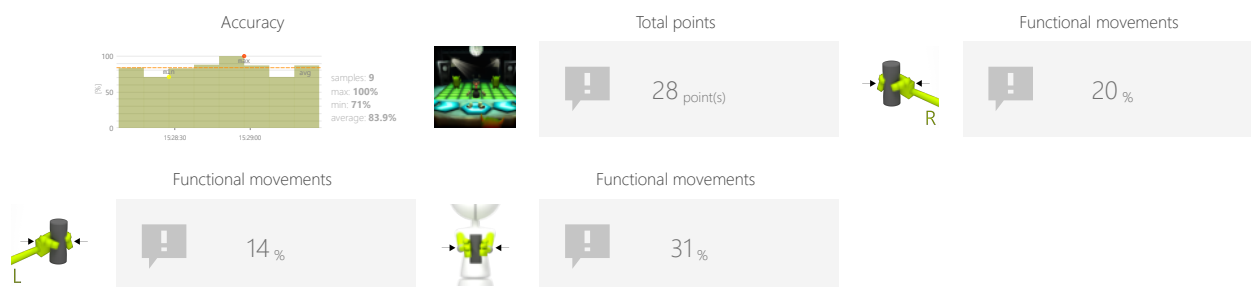REHABILITATION IN VIRTUAL REALITY
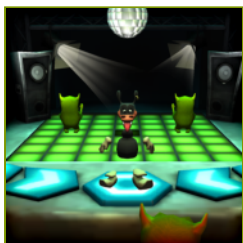
FUNCTIONAL MOVEMENTS
DANCEMAN

Measure and train individual's skills to perform movements based on real-world situational biomechanics. They usually involve multi-planar, multi-joint movements which place demand on the body's core musculature and innervation.

CONTROL MODES

RESULTS

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

28 point(s)

Functional movements

20 %

Functional movements

14 %

Functional movements

31 %

ADJUSTMENTS

• Task duration
• Range
• Advanced scoring
• Song index
• Spawn rate level

OBJECTIVES

• Activity in a given rhythm
• Spontaneous movements
• Visual motor coordination

INSTRUCTION FOR PATIENT

Hit the green characters when they come close.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
DANCEMAN

SAMPLE SETTINGS

Difficulty
1/6

Duration
90s

Range
50%
0%

Advanced scoring
No

Song index
0

Spawn rate level
Easy

R

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REHABILITATION IN VIRTUAL REALITY

STRENGTH
STRENGTH TEST

Measure and gently motivate to increase individual's force while performing predefined movement patterns.
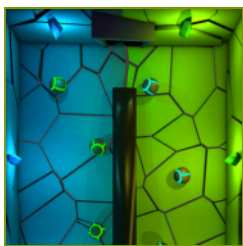
CONTROL MODES

RESULTS

	Squeeze	(R) hand		Squeeze	(L) hand		Squeeze	Hands
R	! 114 Nm	L	! 44 Nm		! 133 Nm
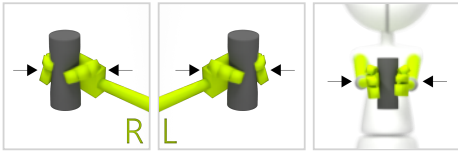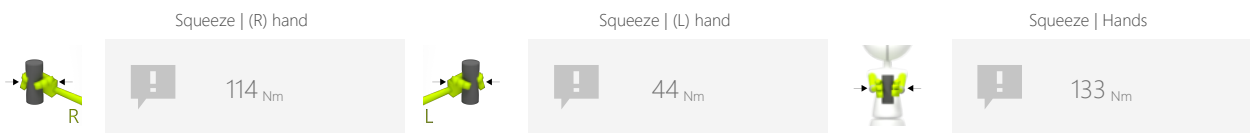
ADJUSTMENTS

• Time to complete action

OBJECTIVES

• Strength examination
• Muscle strengthening

INSTRUCTION FOR PATIENT

Try to achieve best result

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

DIVIDED ATTENTION
SORTER

Measure and train individual's skills to successfully execute more than one action at a time, while paying attention to two or more channels of information.

CONTROL MODES

RESULTS

Accuracy	Total points	Divided attention
samples: **9** max: **100%** min: **71%** average: **83.9%**	22 point(s)	25 %
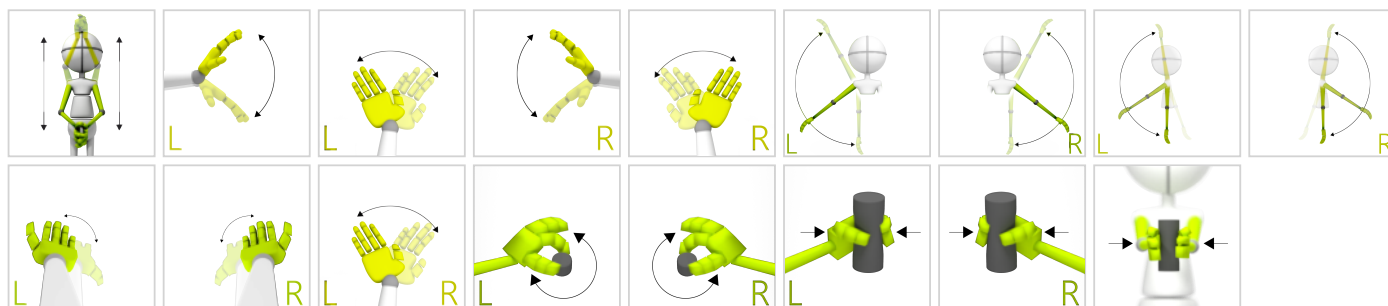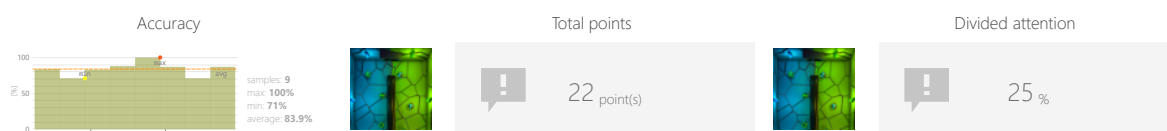
ADJUSTMENTS

• Task duration
• Range
• Number of objects
• Gap size
• Speed of objects

OBJECTIVES

• Predicting the trajectory of objects
• Focusing
• Perceptivity
• Movement precision
• Exercise with or without support from healthy limb

INSTRUCTION FOR PATIENT
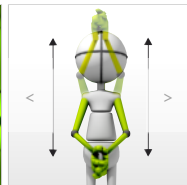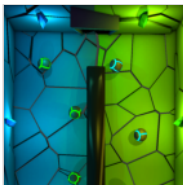
Pass or block the balls so that the blue balls are on the blue side and the green balls are on the green side of the screen.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

DIVIDED ATTENTION
SORTER

SAMPLE SETTINGS
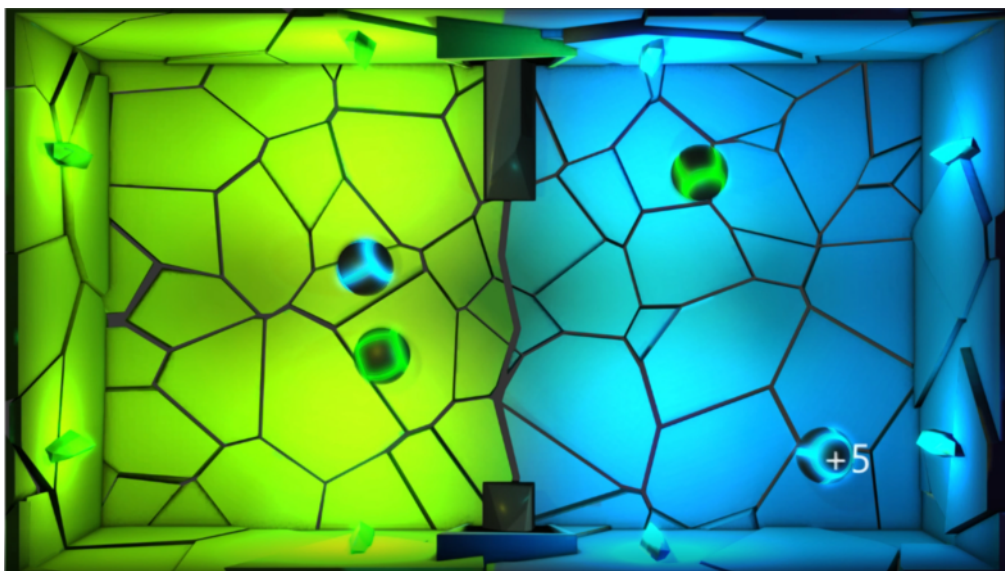
Difficulty 1/3

Duration **90s**

Range 20% ↕ 80%

Number of objects **4**

Gap size **150%**
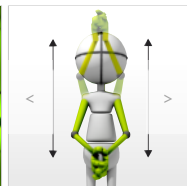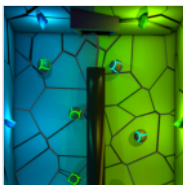
Speed of objects **100%**
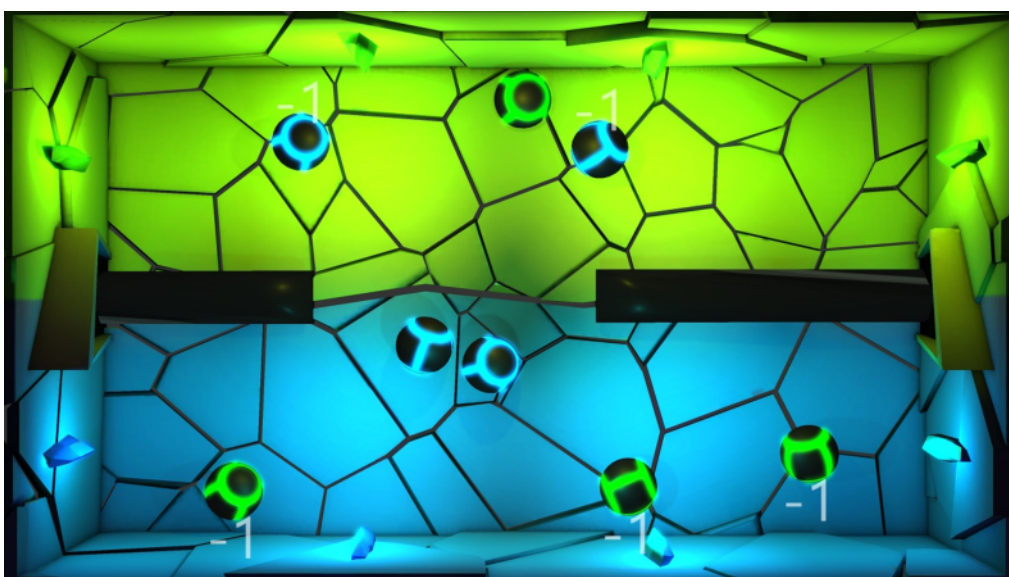
Difficulty custom

Duration **90s**

Range 20% ↕ 80%

Number of objects **8**

Gap size **150%**

Speed of objects **100%**

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
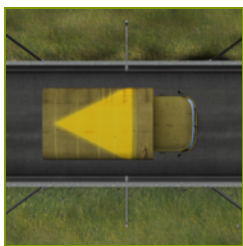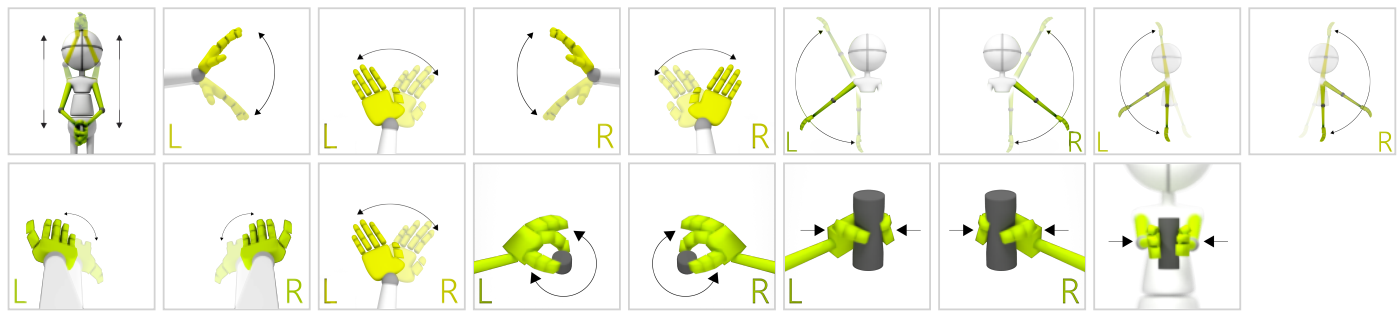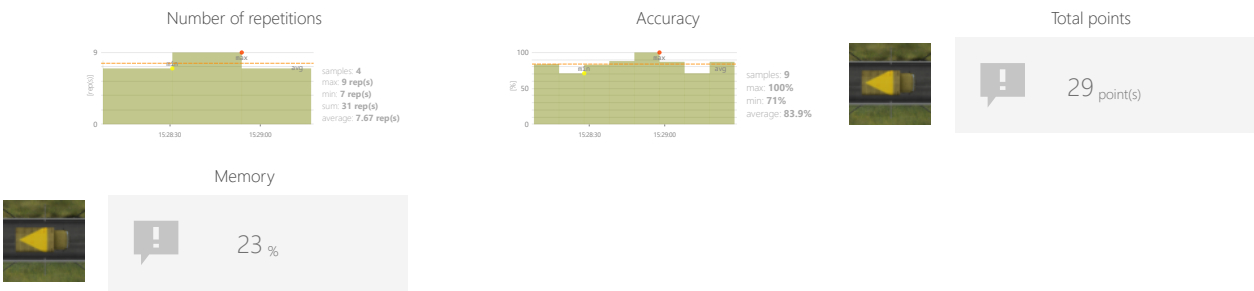
MEMORY
TRUCKS

Measure and train individual's skills to memorize information.

CONTROL MODES

RESULTS

Number of repetitions

samples: **4**
max: **9 rep(s)**
min: **7 rep(s)**
sum: **31 rep(s)**
average: **7.67 rep(s)**

Accuracy

samples: **9**
max: **100%**
min: **71%**
average: **83.9%**

Total points

29 point(s)

Memory

23 %

ADJUSTMENTS

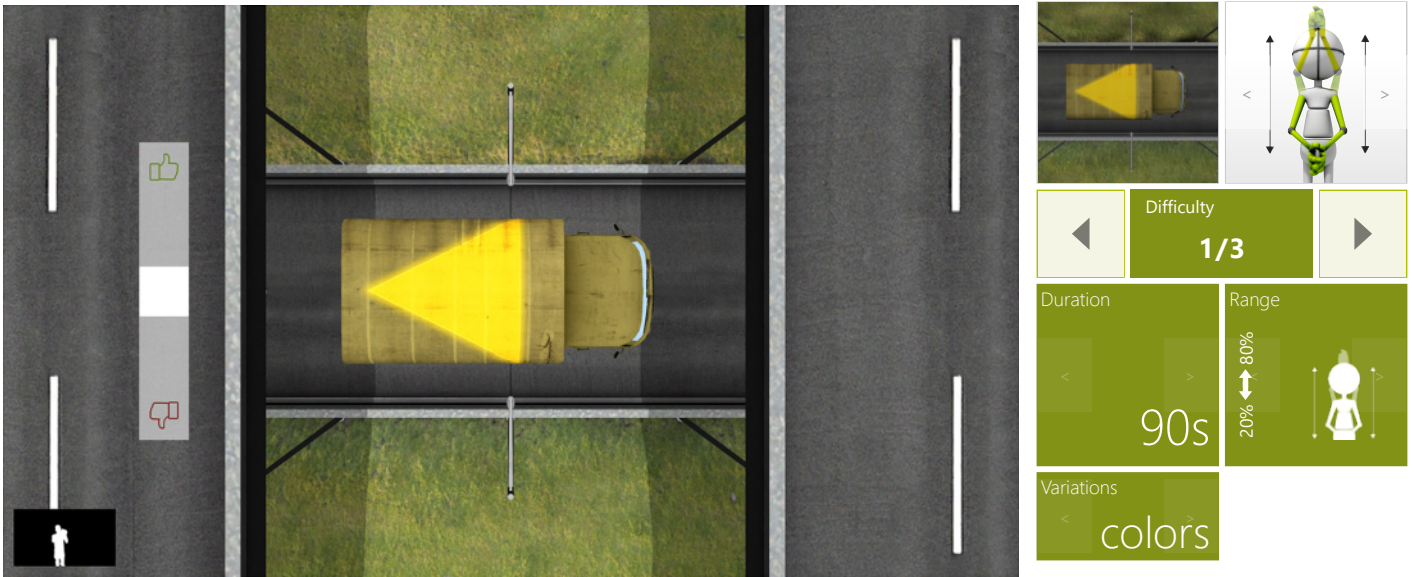• Task duration

• Range

• Variations

OBJECTIVES

• Logical tasks

• Focusing

• Perceptivity

INSTRUCTION FOR PATIENT

Remember the shape and/or its color on the roof of the car you see. Decide with thumbs up or down whether the next car has the same shape and/or color on the roof as the previous one.

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REHABILITATION IN VIRTUAL REALITY

MEMORY
TRUCKS

SAMPLE SETTINGS

Difficulty
1/3

Duration
90s

Range
20% ↕ 80%

Variations
colors

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REHABILITATION IN VIRTUAL REALITY

PROBLEM SOLVING
CLONES

Measure and train individual's skills to reach a solution of specific problems. Problem solving may include mathematical or systematic operations and can be a gauge of an individual's critical thinking skills.

CONTROL MODES

RESULTS

Accuracy	Total points	Problem solving
samples: **9** max: **100%** min: **71%** average: **83.9%**	36 point(s)	31 %
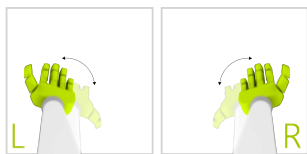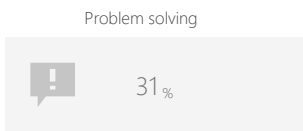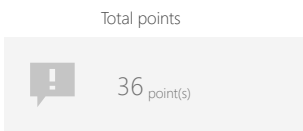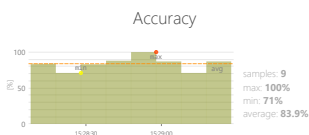
ADJUSTMENTS

• Task duration

• Time to complete action

• Range

• Number of pairs

OBJECTIVES

• Perceptivity

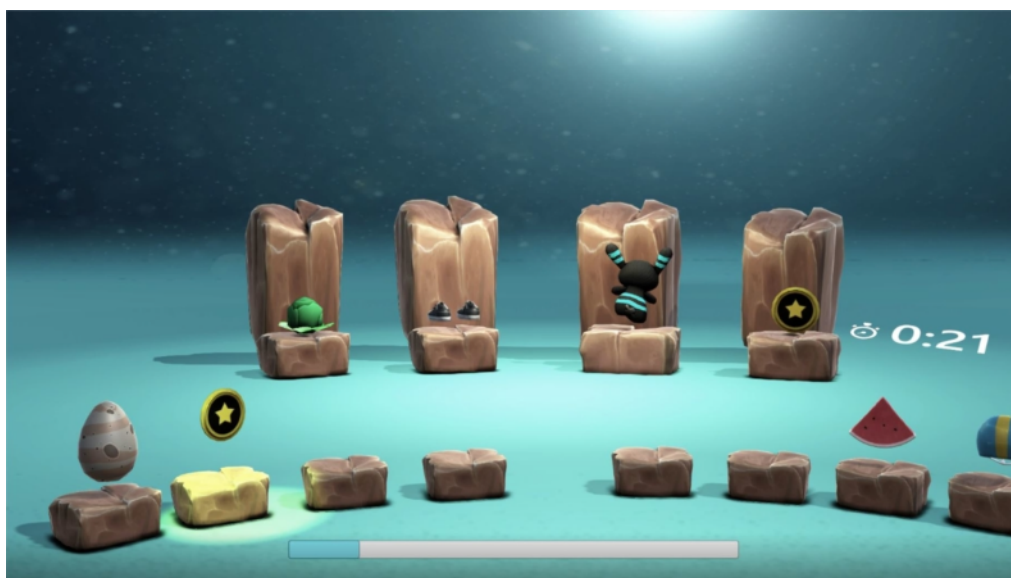• Visual motor coordination

• Logical tasks

INSTRUCTION FOR PATIENT

Select the item which has a pair on the screen.

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REHABILITATION IN VIRTUAL REALITY

PROBLEM SOLVING
CLONES

SAMPLE SETTINGS

| Difficulty |
| 1/3 |

| Duration | Minitask duration |
| 90s | 30s |

| Range | Number of pairs |
| 80% ⟷ 20% | 4 |

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REHABILITATION IN VIRTUAL REALITY

SPECIALIZED
BLOOD PRESSURE

Specialized tasks and evaluations that collect data from multiple categories or do have a unique objectives.

CONTROL MODES

OBJECTIVES

 • Monitor external parameters

INSTRUCTION FOR PATIENT

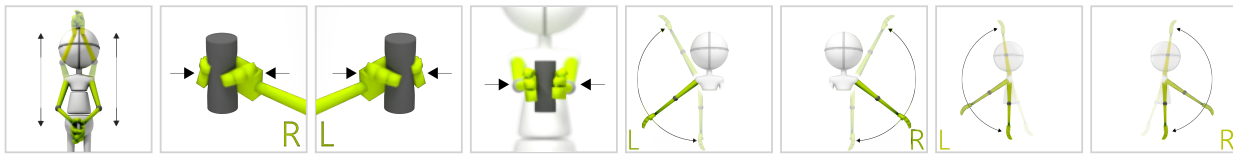Measure yourself your blood pressure and type it in the result.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SPECIALIZED
GONOGO TEST

Specialized tasks and evaluations that collect data from multiple categories or do have a unique objectives.

CONTROL MODES

RESULTS

Always Go mode

samples: **5**
max: **951 ms**
min: **751 ms**
average: **803 ms**

Number of Go impulses missed (always Go mode)

0

Go or NoGo mode

samples: **5**
max: **1847 ms**
min: **814 ms**
average: **1106 ms**

Number of NoGo impulses hit (Go or NoGo mode)

2

Number of NoGo impulses noticed (Go or NoGo mode)

4

Number of Go impulses missed (Go or NoGo mode)

1

Time delay caused by distraction

37 %

Always Go mode

3000 ms

Go or NoGo mode

Go or NoGo mode

Go or NoGo mode

3032 ms

ADJUSTMENTS

- Range
- Required proper repetitions
- Triggering mechanism (rule-based, visual, or auditory)

OBJECTIVES

- Spontaneous movements
- Speed of movement
- Response to negative visual stimuli
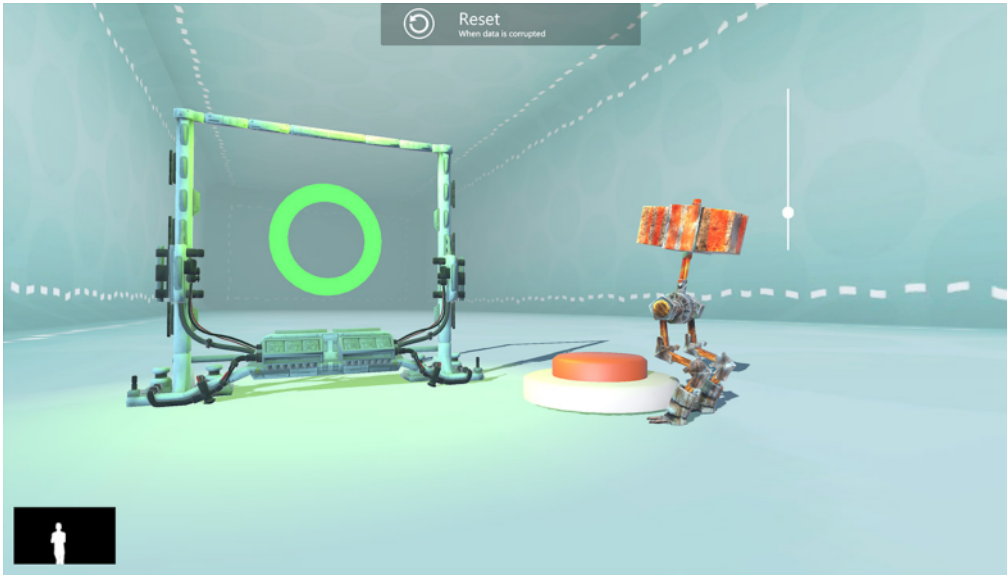- Reaction to the positive visual stimuli

INSTRUCTION FOR PATIENT

Hit the button when positive trigger appears.

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REHABILITATION IN VIRTUAL REALITY

SPECIALIZED
GONOGO TEST

SAMPLE SETTINGS

Range
0% 50%

Required proper repetitions
5

Hit if
color is green

R

Range
0% 50%

Required proper repetitions
5

Hit if
number is > 5

R

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY