VAST. Rehab
REHABILITATION IN VIRTUAL REALITY

VR 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:
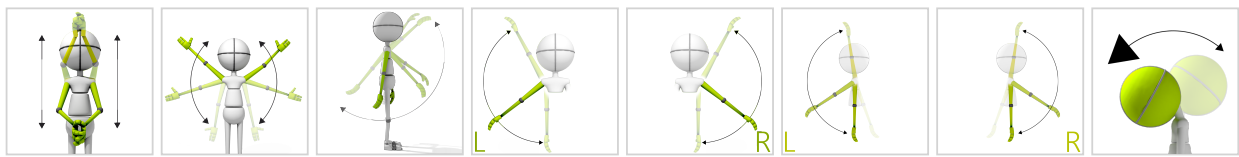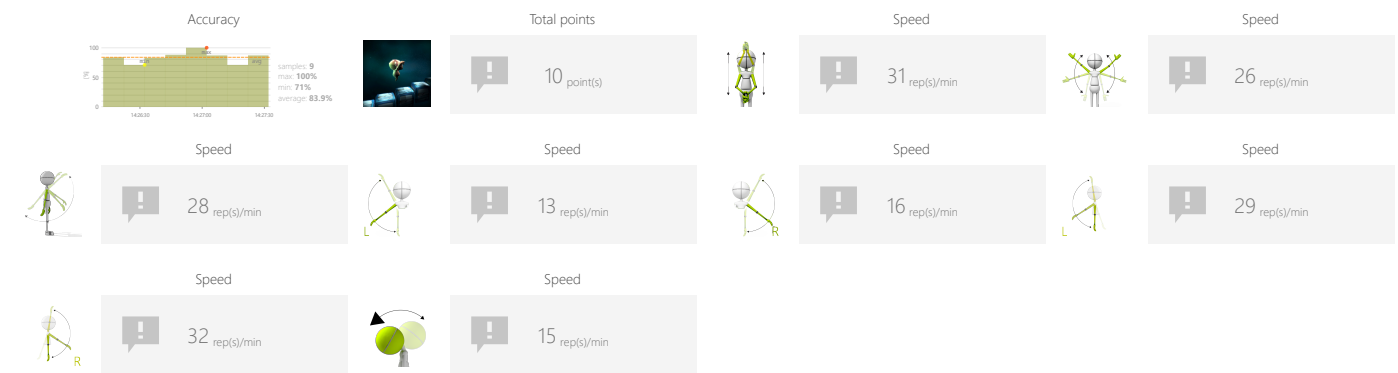
- Oculus Quest 2
- Oculus Quest 3

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
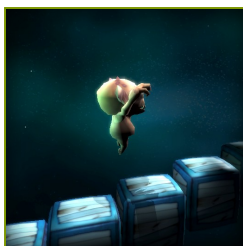
SPEED
STAIRS

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

CONTROL MODES

RESULTS

Accuracy	**Total points**	**Speed**	**Speed**
samples: **9** max: **100%** min: **71%** average: **83.9%**	10 point(s)	31 rep(s)/min	26 rep(s)/min
Speed	**Speed**	**Speed**	**Speed**
28 rep(s)/min	13 rep(s)/min	16 rep(s)/min	29 rep(s)/min
Speed	**Speed**		
32 rep(s)/min	15 rep(s)/min		

ADJUSTMENTS

• Task duration

• Range

• Max time per floor

• Number of stairs

• Pause length

OBJECTIVES

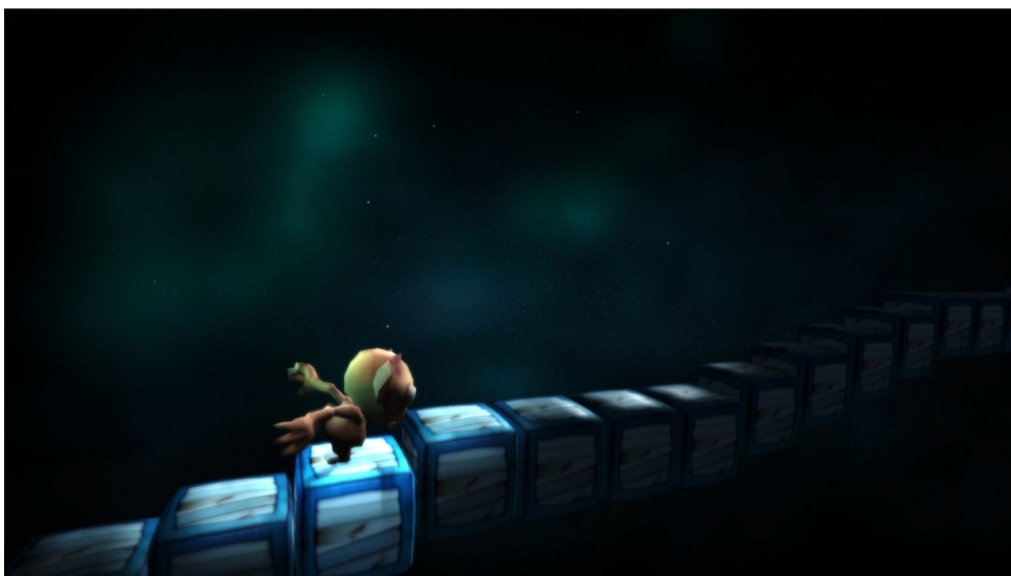• Jumping

• Knees lifting

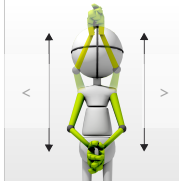• Dynamics of planned movements
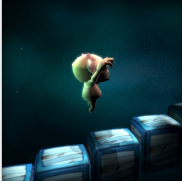
INSTRUCTION FOR PATIENT

Climb the stairs before they disappear.

5

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SPEED
STAIRS

SAMPLE SETTINGS

Difficulty

custom

Duration

90s

Range

80%

20%

Max time per floor

15s

Number of stairs

5

Pause length

3

VAST.Rehab
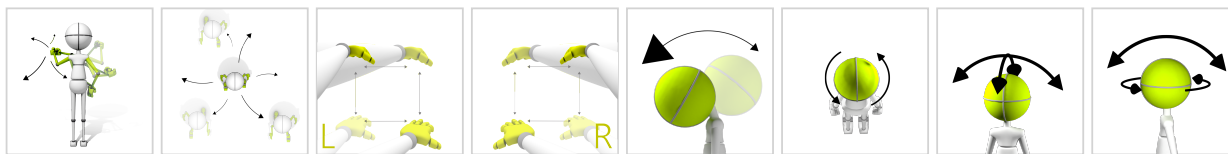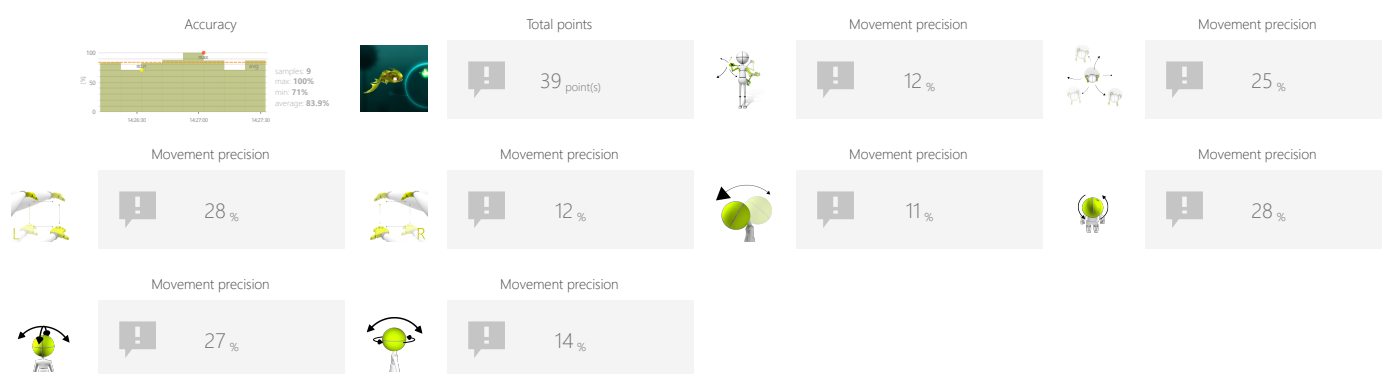REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
FISH

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

CONTROL MODES

RESULTS

Accuracy		Total points		Movement precision		Movement precision	
samples: **9** max: **100%** min: **71%** average: **83.9%**		39 point(s)		12 %		25 %	

Movement precision		Movement precision		Movement precision		Movement precision	
28 %		12 %		11 %		28 %	

Movement precision		Movement precision	
27 %		14 %	

ADJUSTMENTS

• Task duration

• Movement mode

• Range

• Route shape
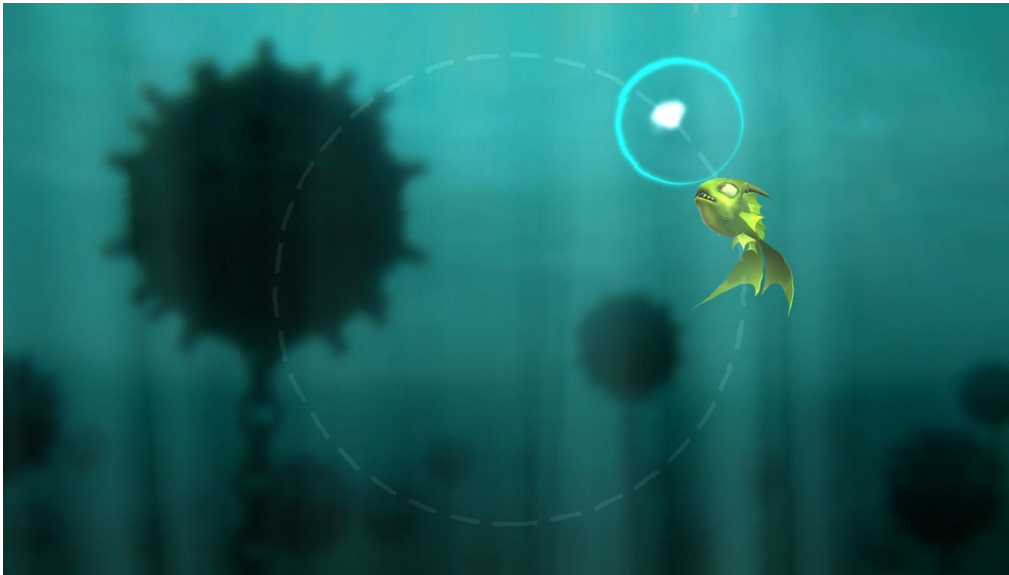
• Speed of objects

OBJECTIVES

• 3D space movements reproduction

• Planned movements

• Muscle strengthening

• Movement precision

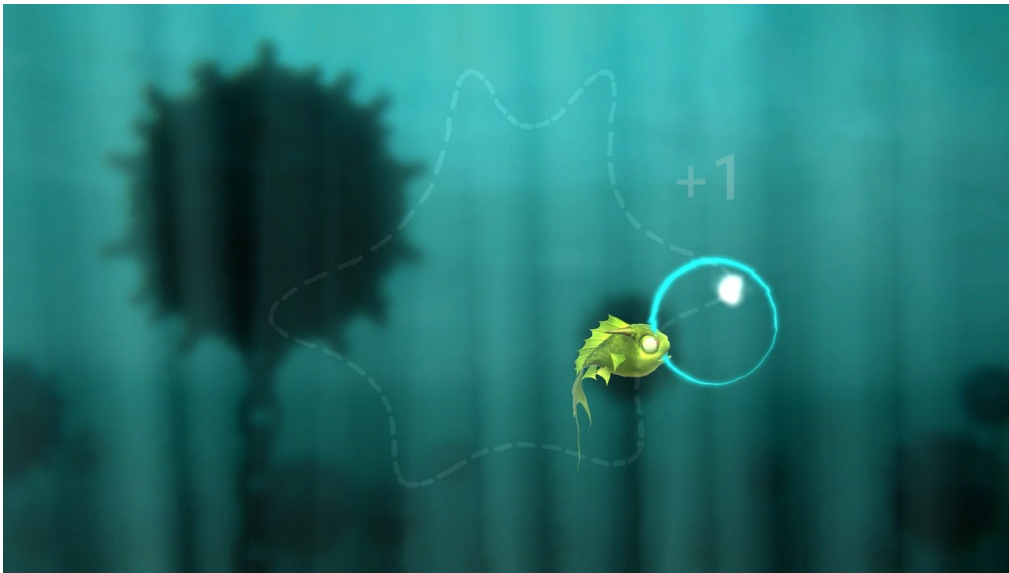• Visual motor coordination

INSTRUCTION FOR PATIENT

Move the blue circle to protect the sparks source from the fish. When the sparks source is inside the circle it is safe.
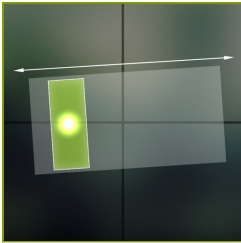
VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
FISH

SAMPLE SETTINGS

Difficulty	
◀	**custom** ▶

Duration	Movement mode
< >	< >
90s	**Left**

Range	Route shape
80% / 20% ↕ / 20% ↔ 80%	◯

Speed of objects
< >
100%

Difficulty	
◀	**1/3** ▶

Duration	Movement mode
< >	< >
90s	**Left**

Range	Route shape
80% / 20% ↕ / 20% ↔ 80%	⬭

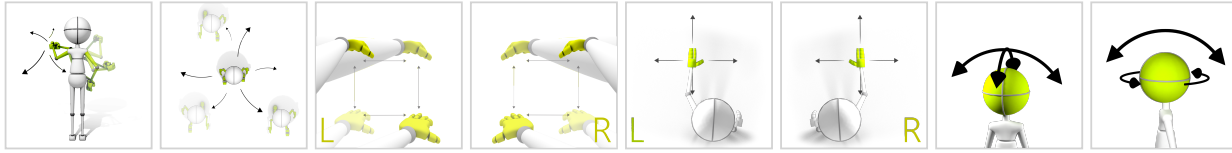| Speed of objects |
|---|
| < > |
| **100%** |

VAST. Rehab
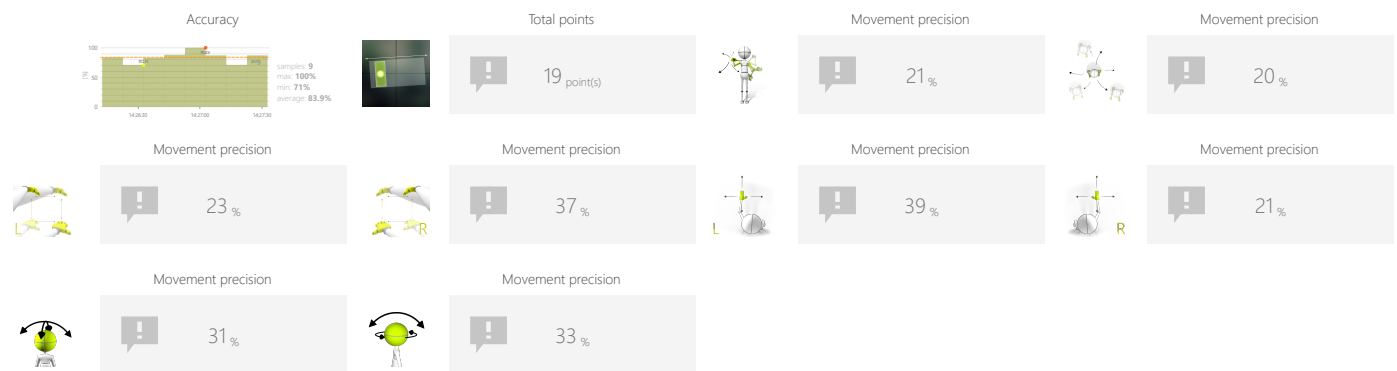REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
PENDULUM

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

CONTROL MODES

RESULTS

Accuracy	Total points	Movement precision	Movement precision
samples: **9** max: **100%** min: **71%** average: **83.9%**	19 point(s)	21 %	20 %

Movement precision	Movement precision	Movement precision	Movement precision
23 %	37 %	39 %	21 %

Movement precision	Movement precision
31 %	33 %

ADJUSTMENTS

• Task duration
• Range
• Show path
• Period
• Rotation
• Pendulum height
• Pendulum width

OBJECTIVES

• 3D space movements reproduction
• Balance and equilibrium training
• Rhythmicity
• Activity in a given rhythm
• Movement precision

INSTRUCTION FOR PATIENT

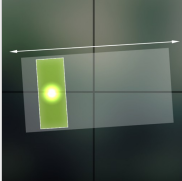Try to synchronize yourself with the rectangle movements. Do your best to stay within the rectangle.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
PENDULUM

SAMPLE SETTINGS

10

Difficulty 1/2

Duration	
	90s

Range
20% ↕ 80%
20% ↔ 80%

Show path	Period
No	5s

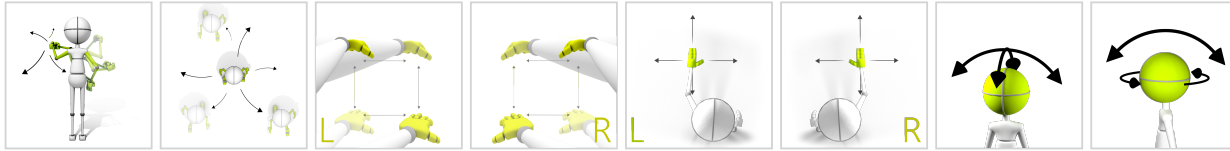| Rotation	Pendulum height
0	50%

Pendulum width
100%

VAST.Rehab
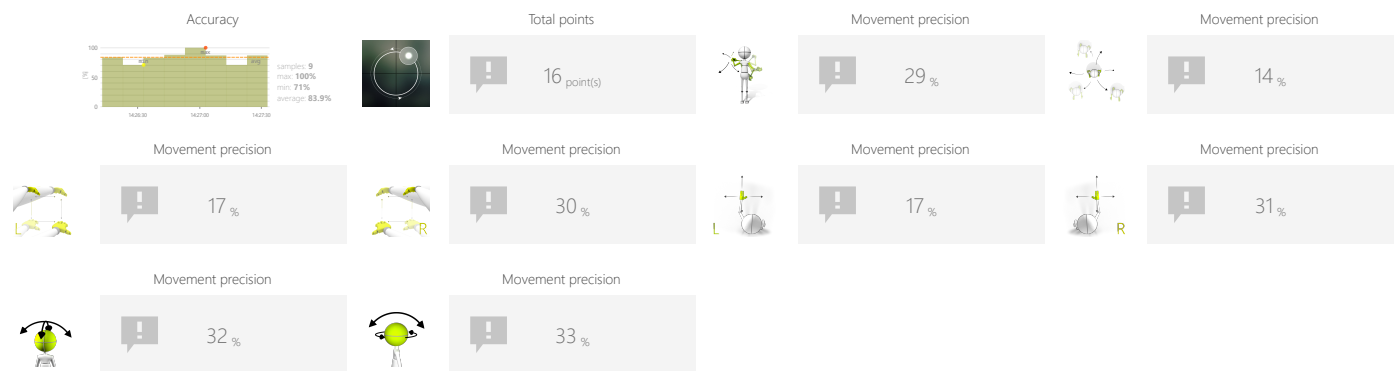REHABILITATION IN VIRTUAL REALITY
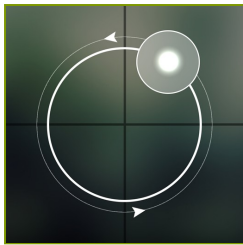
MOVEMENT PRECISION
TRACKING

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

CONTROL MODES

RESULTS

Accuracy	Total points	Movement precision	Movement precision
samples: **9** max: **100%** min: **71%** average: **83.9%**	16 point(s)	29 %	14 %

Movement precision	Movement precision	Movement precision	Movement precision
17 %	30 %	17 %	31 %

Movement precision	Movement precision
32 %	33 %

ADJUSTMENTS

- Task duration
- Range
- Inverse direction
- Show path
- Period
- Radius
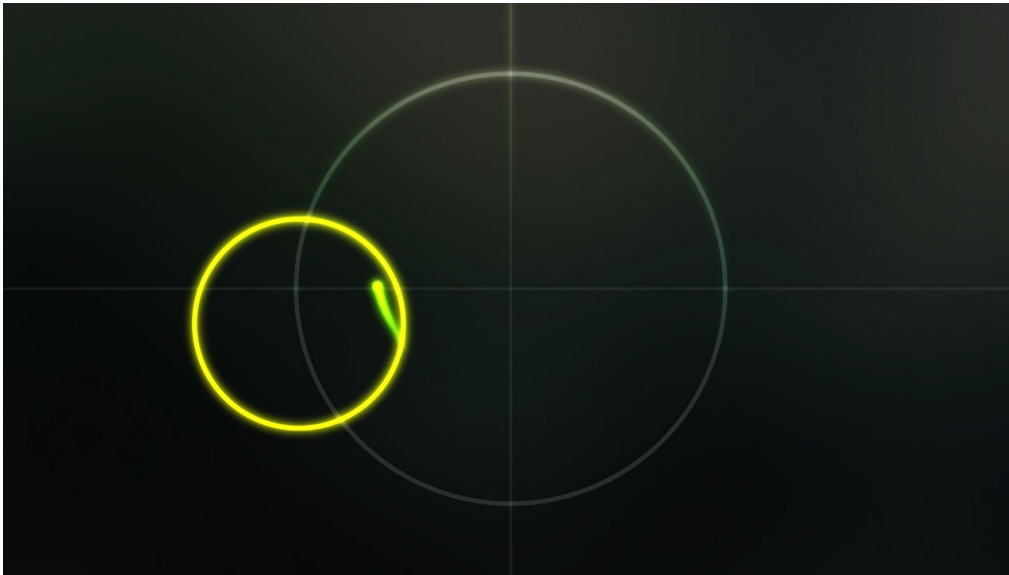- Target radius

OBJECTIVES

- 3D space movements reproduction
- Balance and equilibrium training
- Test the limits of balance and equilibrium

INSTRUCTION FOR PATIENT

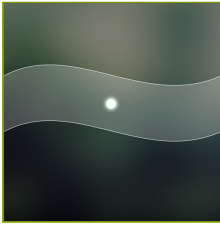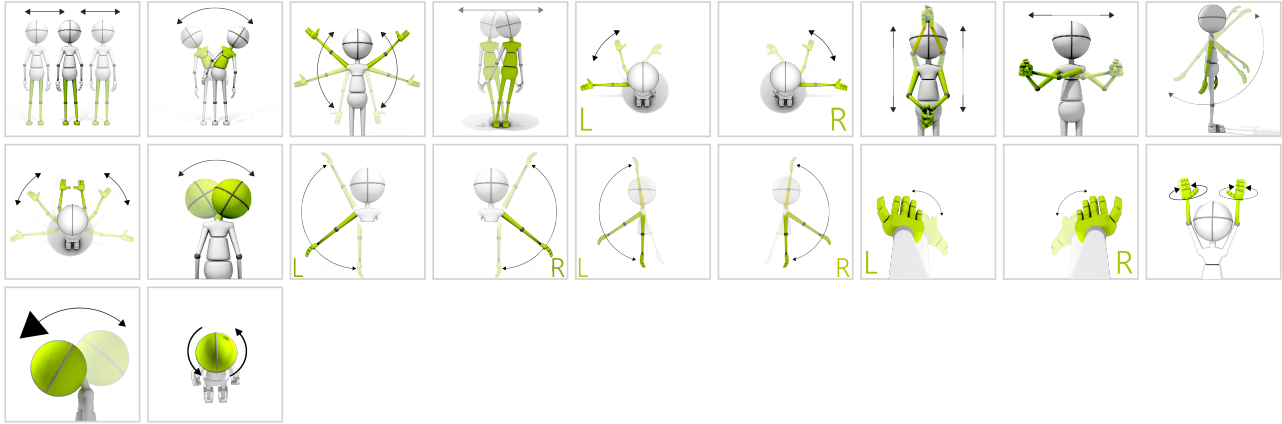Try to synchronize yourself with the circle movements. Do your best to stay within the circle.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
TRACKING

SAMPLE SETTINGS

Duration	Range
90s	20% - 80% / 20% - 80%

Inverse direction	Show path
No	No

Period	Radius
10s	75%

Target radius	
75%	

VAST.Rehab
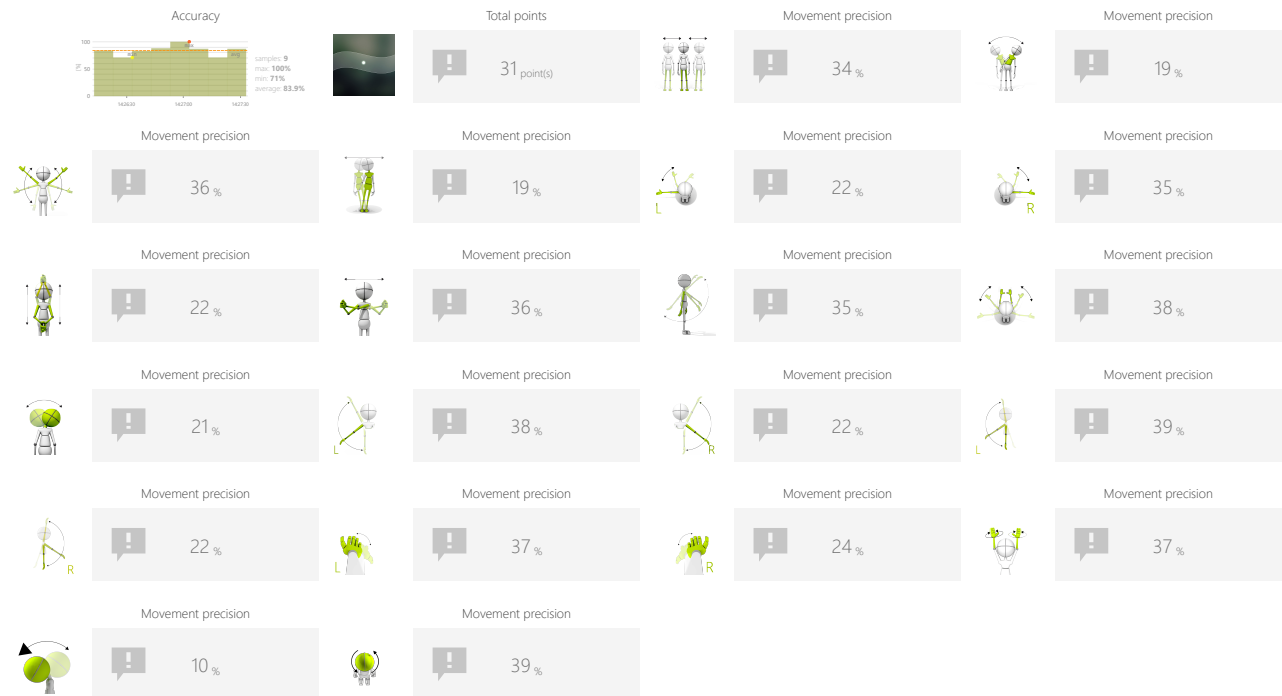REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
GRAPH

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

CONTROL MODES

RESULTS

Accuracy	Total points **31** point(s)	Movement precision **34** %	Movement precision **19** %
Movement precision **36** %	Movement precision **19** %	Movement precision **22** %	Movement precision **35** %
Movement precision **22** %	Movement precision **36** %	Movement precision **35** %	Movement precision **38** %
Movement precision **21** %	Movement precision **38** %	Movement precision **22** %	Movement precision **39** %
Movement precision **22** %	Movement precision **37** %	Movement precision **24** %	Movement precision **37** %
Movement precision **10** %	Movement precision **39** %		

Accuracy details: samples: 9, max: 100%, min: 71%, average: 83.9%

ADJUSTMENTS

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

OBJECTIVES

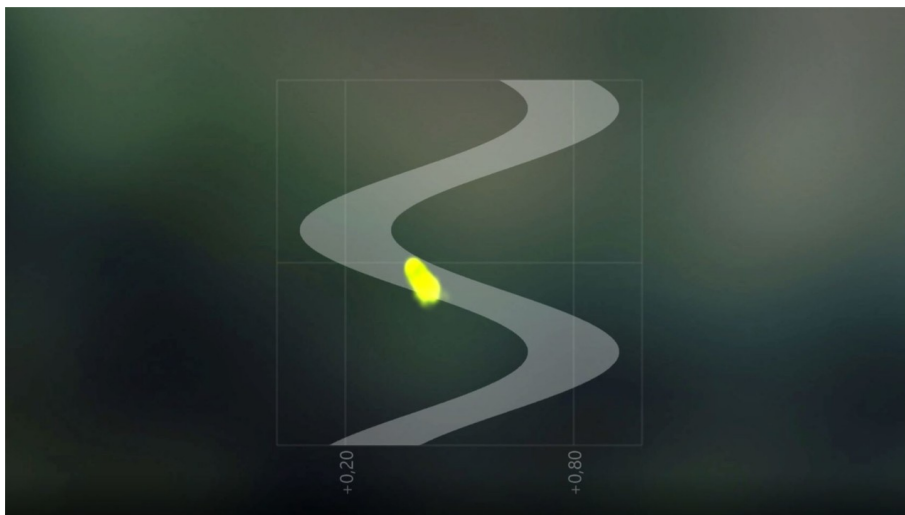• Movement precision
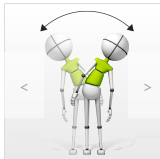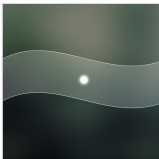• Activity in a given rhythm
• Repetitive movements
• Hands raising

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%
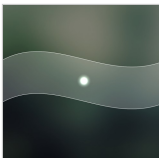
Duration
30s

Range
20% ⟷ 80%
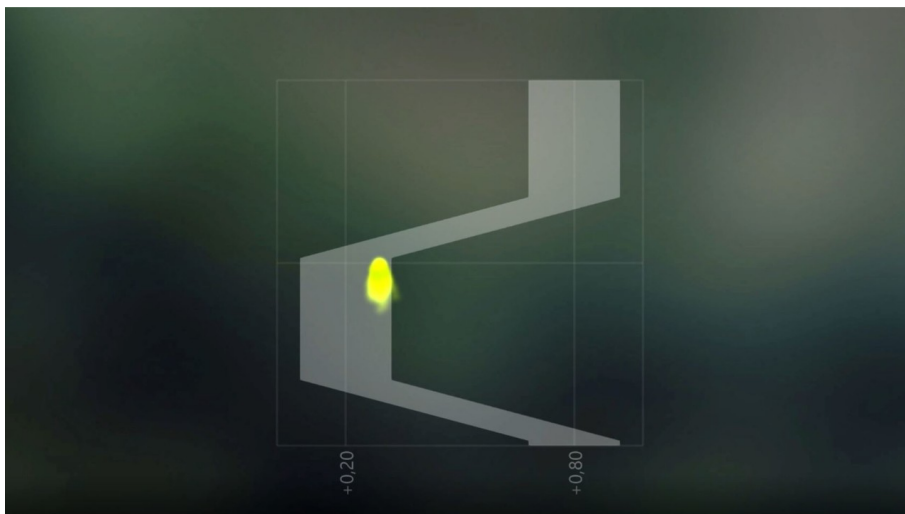
Difficulty
1/3

Graph configuration

⟲ : 4.0s   ↤→ : 40%
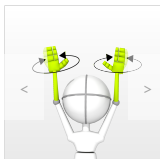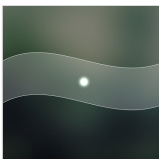
Duration
90s

Range
20% ↕ 80%
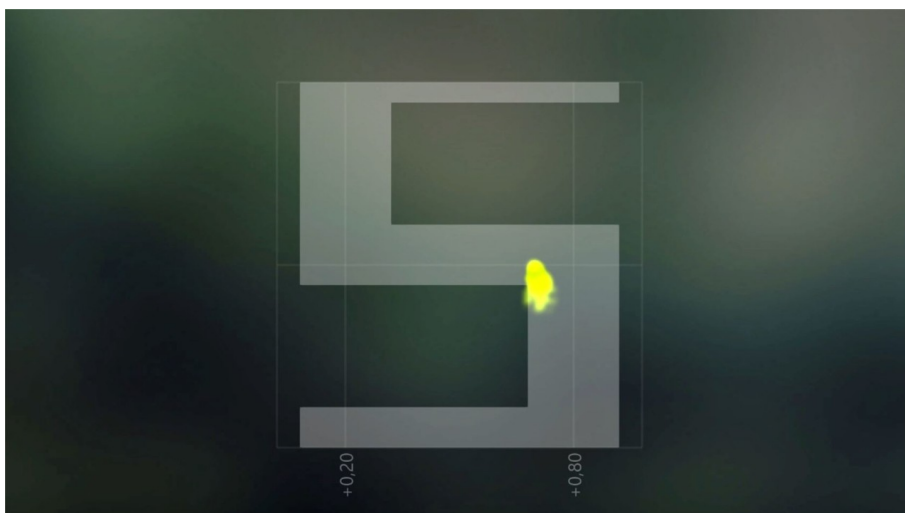
Difficulty
custom

Graph configuration

↤→ : 20%   ↑ : 2.0s   ↓ : 2.0s   ↗ : 1.0s   ↘ : 1.0s

Duration
30s

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MOVEMENT PRECISION
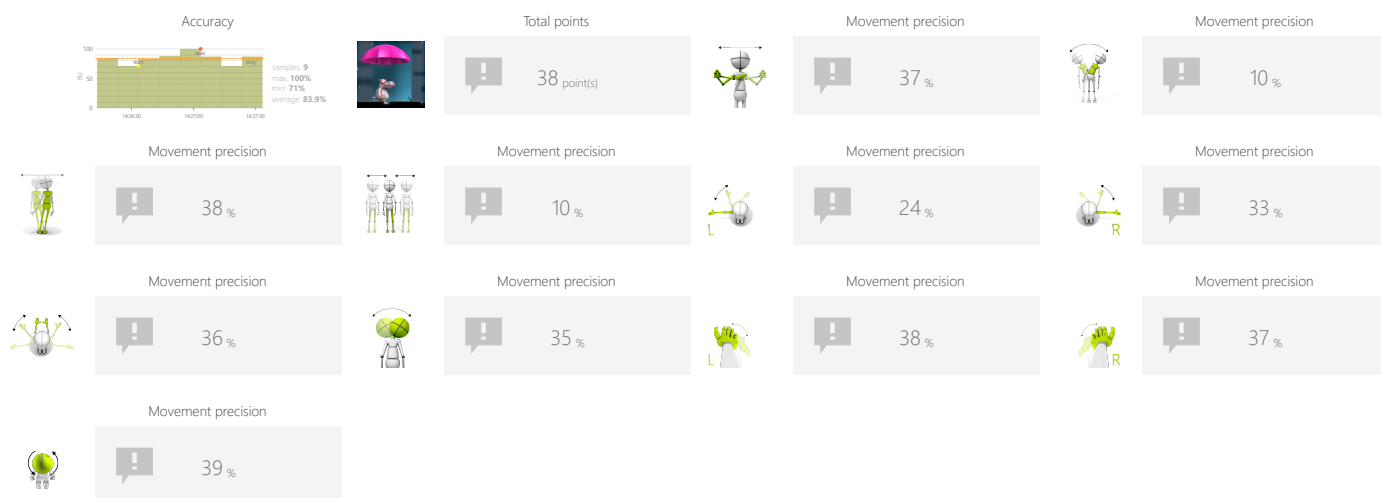## UMBRELLA

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	Movement precision	Movement precision
38 point(s)	37 %	10 %

Movement precision	Movement precision	Movement precision	Movement precision
38 %	10 %	24 %	33 %

Movement precision	Movement precision	Movement precision	Movement precision
36 %	35 %	38 %	37 %
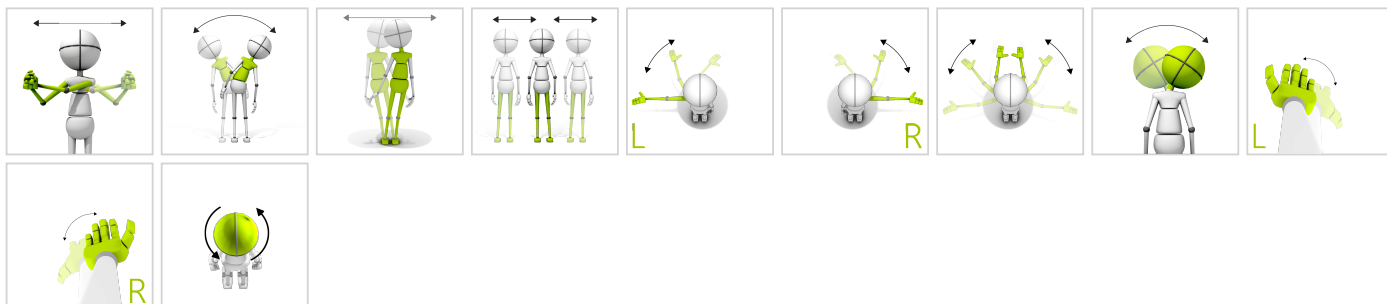
Movement precision
39 %

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
20% ⟷ 80%

Umbrella size
150%
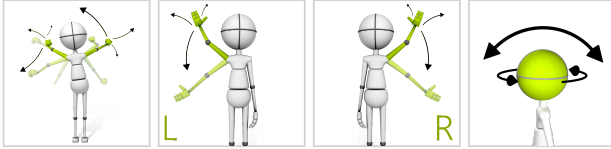
VAST.Rehab
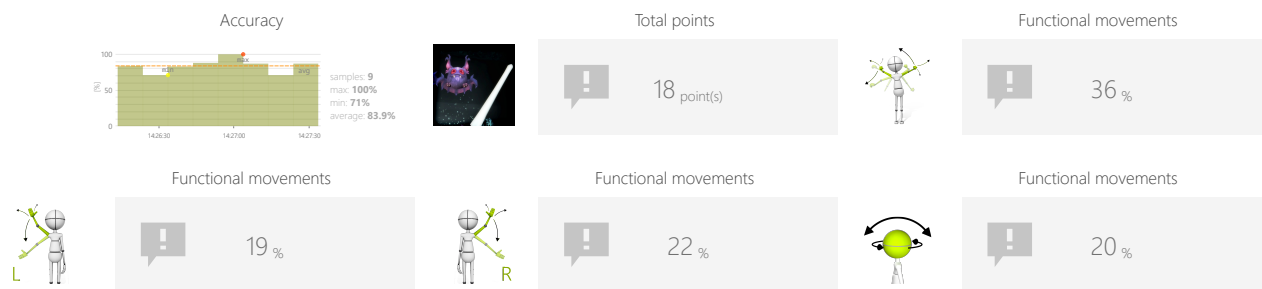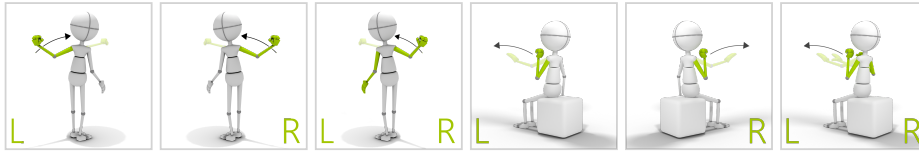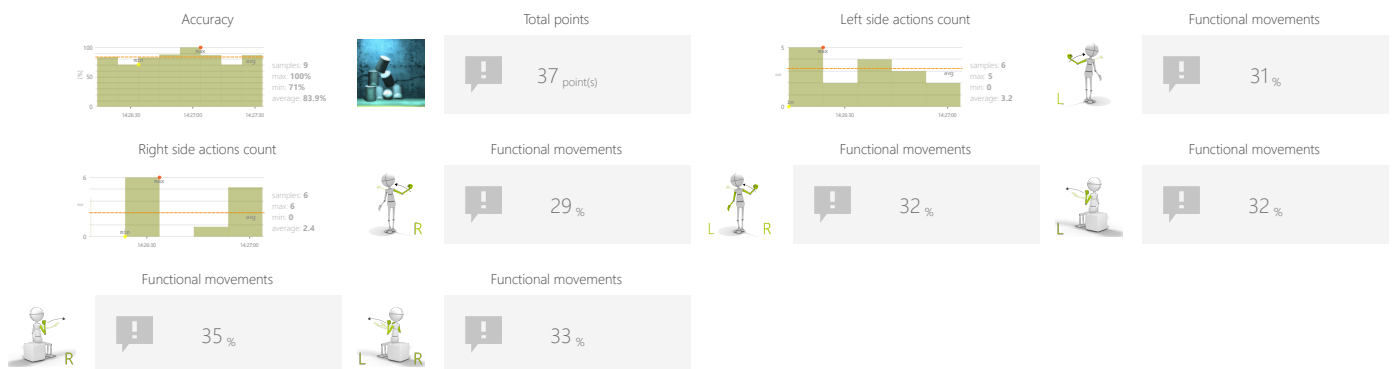REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
VAMPIRES

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
samples: **9** max: **100%** min: **71%** average: **83.9%**	18 point(s)	36 %

Functional movements	Functional movements	Functional movements
19 %	22 %	20 %

ADJUSTMENTS

• Positions to have targets on

• Task duration

• Time between objects

• Time to react

OBJECTIVES

• Visual motor coordination

• Exercise with or without support from healthy limb

• Spontaneous movements in 3D space

• Speed of movement

INSTRUCTION FOR PATIENT

Use your sword to knock down flying vampires who want to bite you!

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty
1/3

Active positions

Duration
90s

Time between objects
2s

Time to react
2s

R

Difficulty
1/3

Active positions

Duration
90s

Time between objects
2s

Time to react
2s

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CANS

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)

Left side actions count
samples: **6**
max: **5**
min: **0**
average: **3.2**

Functional movements
31 %

Right side actions count
samples: **6**
max: **6**
min: **0**
average: **2.4**

Functional movements
29 %

Functional movements
32 %

Functional movements
32 %

Functional movements
35 %

Functional movements
33 %

ADJUSTMENTS

• Task duration
• Speed of objects
• Weight of targets

OBJECTIVES

• Movement precision
• Predicting the trajectory of objects in 3D space
• Dynamics of planned movements
• Dynamic responses to emerging moving targets
• The ability of spatial visualization

INSTRUCTION FOR PATIENT

Throw the balls to strike as many cans as you can.

VAST.Rehab
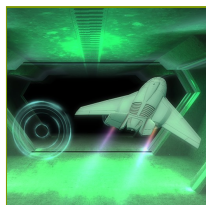REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CANS

SAMPLE SETTINGS

Difficulty
1/4

Duration
90s

Speed of objects
75%

Weight of targets
100%

L R

VAST.Rehab
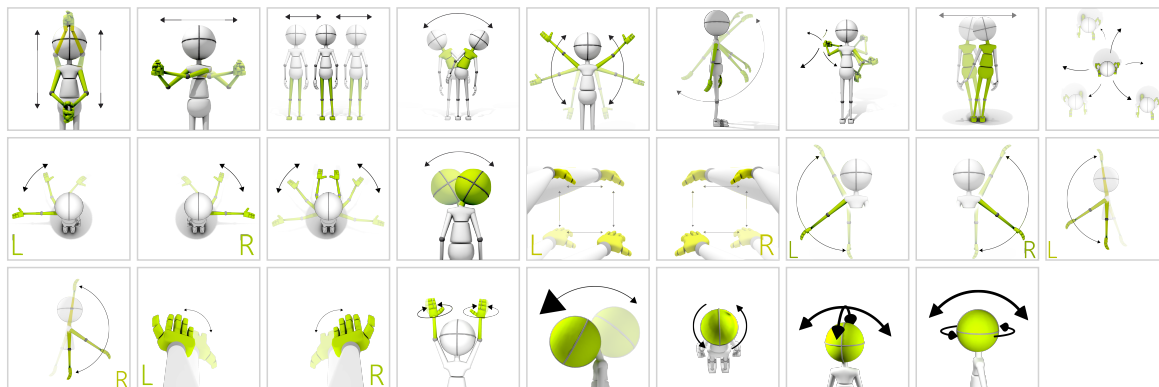REHABILITATION IN VIRTUAL REALITY
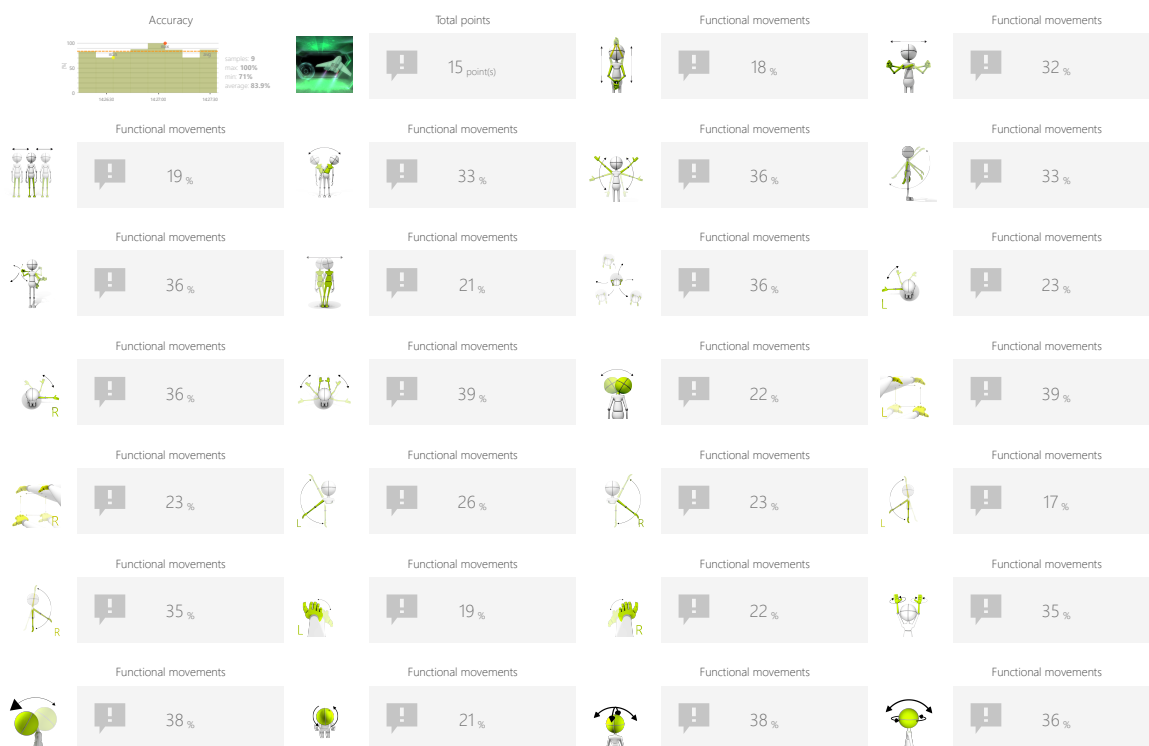
FUNCTIONAL MOVEMENTS
AIRPLANE

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%	15 point(s)	18 %	32 %

Functional movements	Functional movements	Functional movements	Functional movements
19 %	33 %	36 %	33 %
36 %	21 %	36 %	23 %
36 %	39 %	22 %	39 %
23 %	26 %	23 %	17 %
35 %	19 %	22 %	35 %
38 %	21 %	38 %	36 %

ADJUSTMENTS

• Speed
• Task duration
• Range

OBJECTIVES

• Focusing
• Perceptivity
• Movement precision
• Predicting the trajectory of objects in 3D space
• Balance and equilibrium training

INSTRUCTION FOR PATIENT

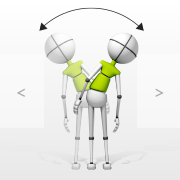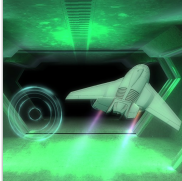Make the airplane fly through the circles. The closer to the center it flies the more points you get.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
AIRPLANE

SAMPLE SETTINGS
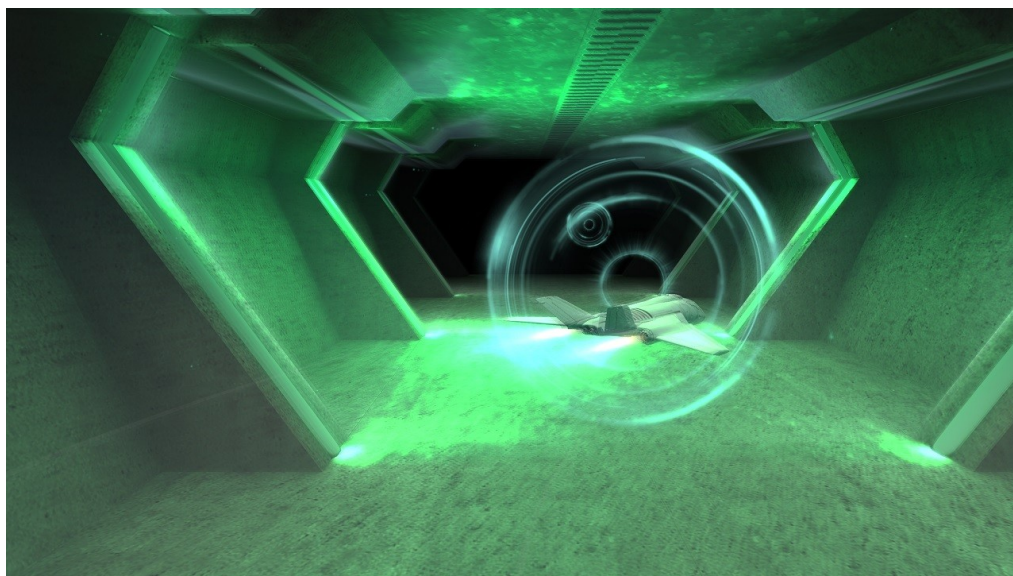
Difficulty
2/4

Speed
100%
speed set automatically

Duration
90s

Range
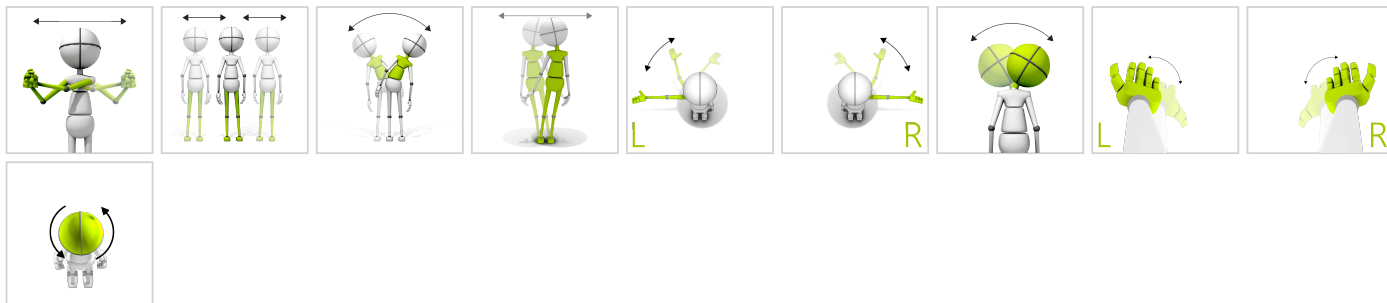20% ⟷ 80%

VAST.Rehab
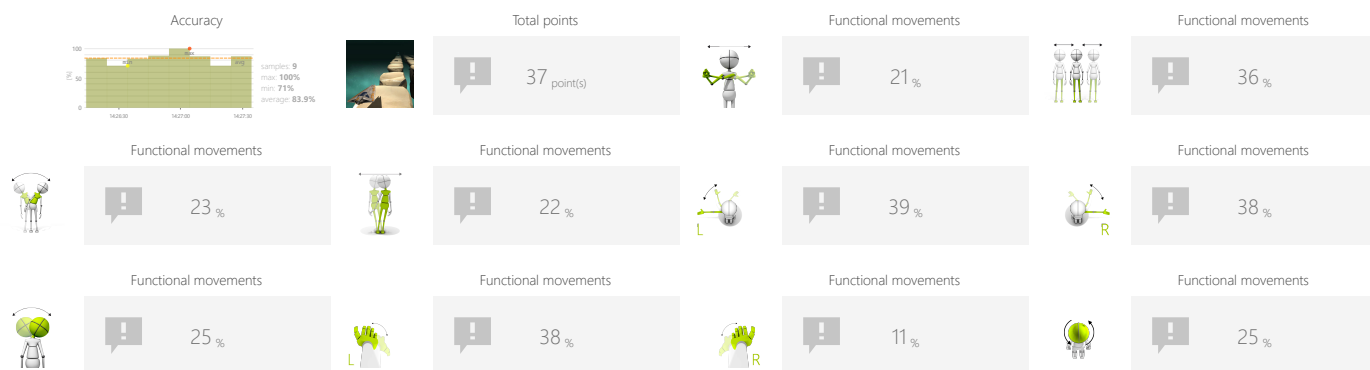REHABILITATION IN VIRTUAL REALITY
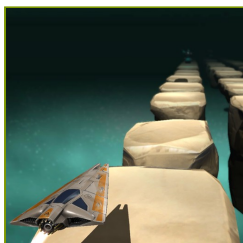
FUNCTIONAL MOVEMENTS
STONES

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	Total points	Functional movements	Functional movements
samples: 9 max: 100% min: 71% average: 83.9%	37 point(s)	21 %	36 %

Functional movements	Functional movements	Functional movements	Functional movements
23 %	22 %	39 %	38 %

Functional movements	Functional movements	Functional movements	Functional movements
25 %	38 %	11 %	25 %

ADJUSTMENTS

• Speed
• Task duration
• Range

OBJECTIVES

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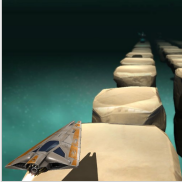• Reaction to the positive visual stimuli
• Response to negative visual stimuli
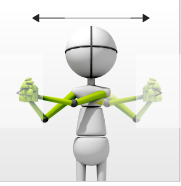
INSTRUCTION FOR PATIENT

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

< >

20% ◀▶ 80%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
HAMMER

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

21 point(s)

Functional movements

35 %

Functional movements

22 %

Functional movements

35 %

Functional movements

20 %

Functional movements

37 %

Functional movements

20 %
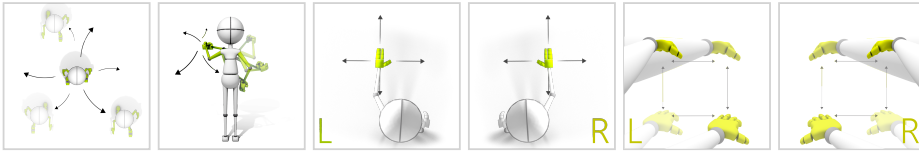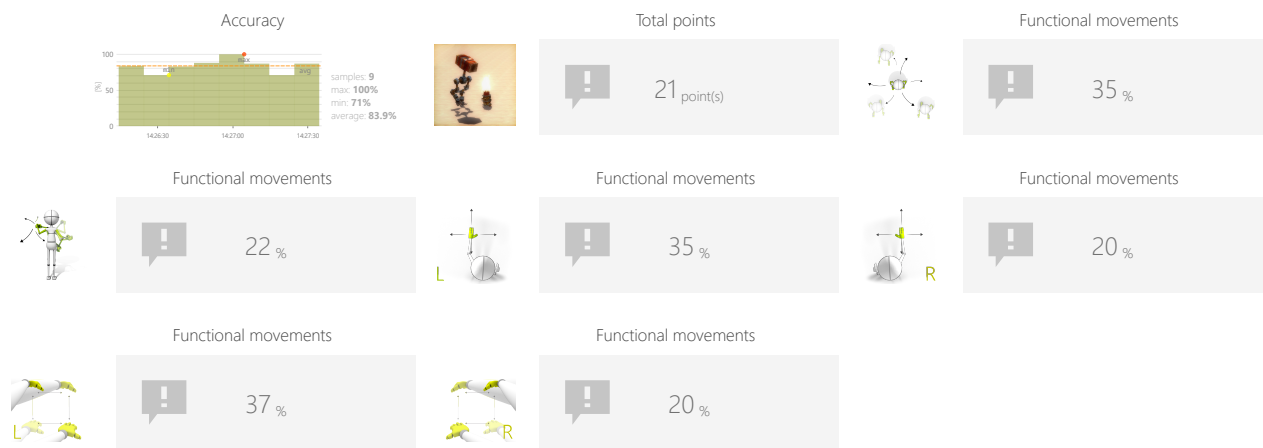
ADJUSTMENTS

• Positions to have targets on
• Task duration
• Range
• Time to react
• Reticle size

OBJECTIVES

• Planning and Strategy
• Sideways walking
• Balance and equilibrium training
• Speed of decision making

INSTRUCTION FOR PATIENT

Hit the burning barrels as quickly as you can. Then return to the center.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
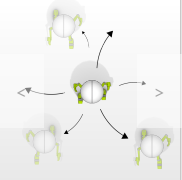
FUNCTIONAL MOVEMENTS
HAMMER

SAMPLE SETTINGS

Difficulty
1/3

Active positions

Duration
90s

Range
70%
30%
30% ↔ 70%

Time to react
10s

Reticle size
125%

**VAST.Rehab**
REHABILITATION IN VIRTUAL REALITY
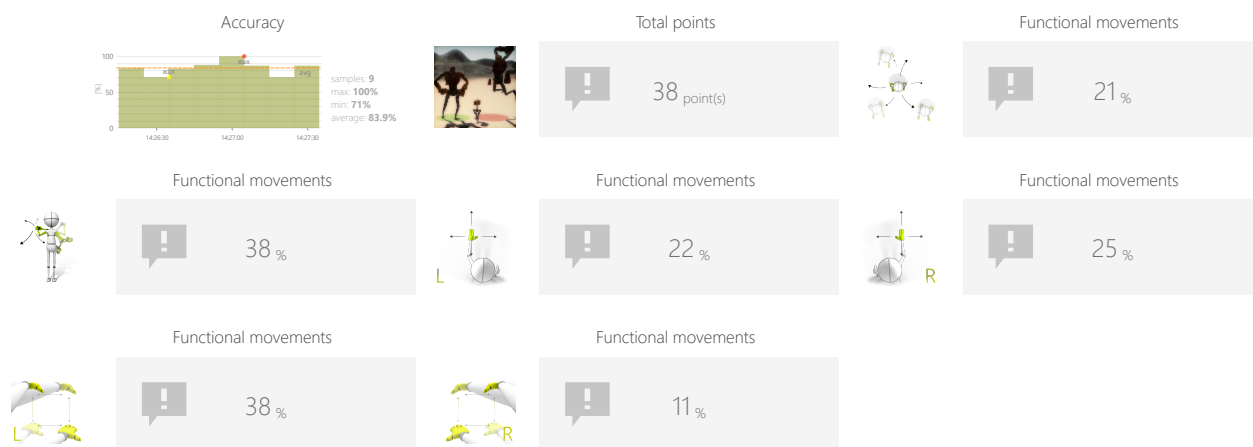
FUNCTIONAL MOVEMENTS
RUNAWAY

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

38 point(s)

Functional movements

21 %

Functional movements

38 %

Functional movements

L **22** %

Functional movements

R **25** %

Functional movements

L **38** %

Functional movements

R **11** %
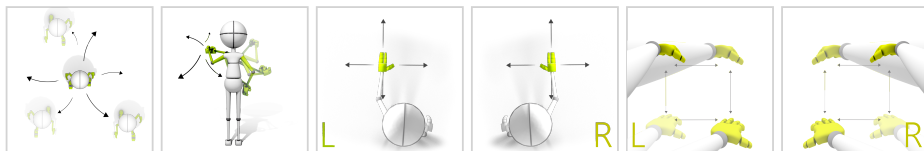
ADJUSTMENTS

• Task duration
• Range
• Number of enemies
• Enemies speed

OBJECTIVES

• Predicting the trajectory of objects in 3D space
• Response to negative visual stimuli
• Focusing
• Perceptivity
• Balance and equilibrium training

INSTRUCTION FOR PATIENT
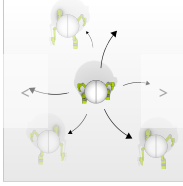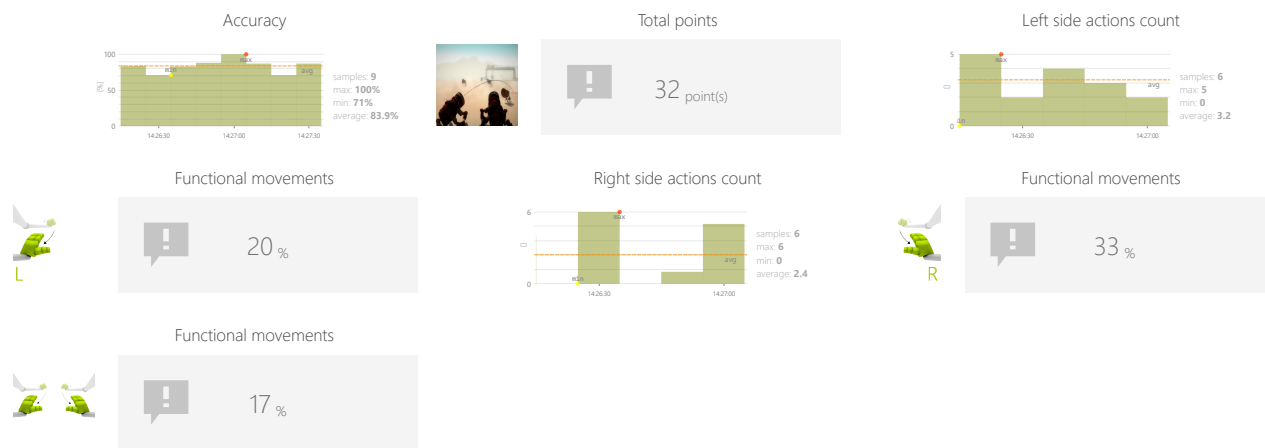
Keep away from the big robots.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty		
◀	**1/3**	▶

Duration	Range
90s	70% 30% 30% ⟷ 70%

Number of enemies	Enemies speed
2	**100%**

Difficulty		
◀	**custom**	▶

Duration	Range
90s	70% 30% 30% ⟷ 70%

Number of enemies	Enemies speed
4	**100%**

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CANNON

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
32 point(s)

Left side actions count
samples: **6**
max: **5**
min: **0**
average: **3.2**

Functional movements
L   20 %

Right side actions count
samples: **6**
max: **6**
min: **0**
average: **2.4**

Functional movements
R   33 %

Functional movements
17 %

ADJUSTMENTS

• Task duration
• Time between cannonballs
• Time between enemies
• Enemies speed

OBJECTIVES

• Planning and Strategy
• Movement precision
• Predicting the trajectory of objects
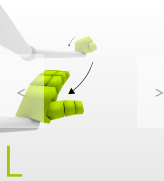
INSTRUCTION FOR PATIENT

Use the cannon(s) to shoot into the robots coming in your direction.

VAST. Rehab
REHABILITATION IN VIRTUAL REALITY

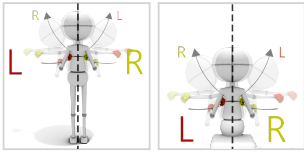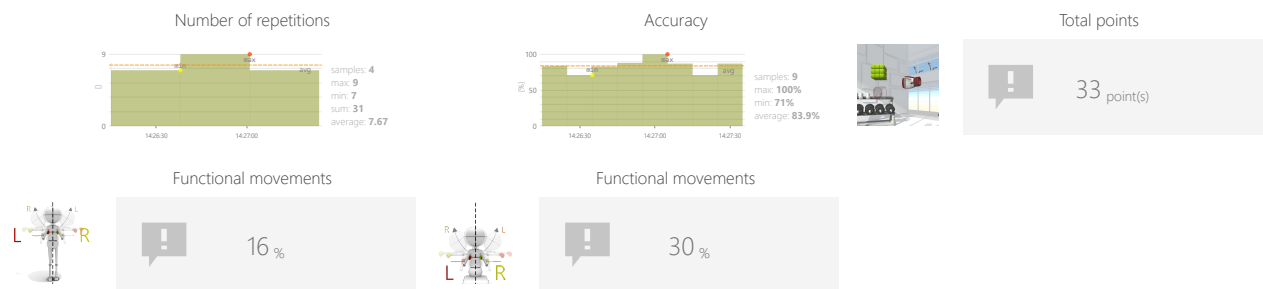# FUNCTIONAL MOVEMENTS
CANNON

SAMPLE SETTINGS

Difficulty **1/3**

Duration **90s**

Time between cannonballs **2s**

Time between enemies **4s**

Enemies speed **50%**

Difficulty **custom**

Duration **90s**

Time between cannonballs **2s**

Time between enemies **4s**

Enemies speed **100%**

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CROSS PUNCHER

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

Number of repetitions

samples: **4**
max: **9**
min: **7**
sum: **31**
average: **7.67**

Accuracy

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

Total points

33 point(s)

Functional movements

16 %

Functional movements

30 %

ADJUSTMENTS

• Task duration

• Time to react

• Distance to targets

OBJECTIVES

• Crossing the midline

• Speed of movement

• Rhythmicity

• Repetitive movements

INSTRUCTION FOR PATIENT

Hit green cubes as fast as you can and remember to always cross your punches and kicks.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
CROSS PUNCHER

SAMPLE SETTINGS

Difficulty
◄ **1/3** ►

Duration

Time to react
3 s

30s

Distance to targets
75%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
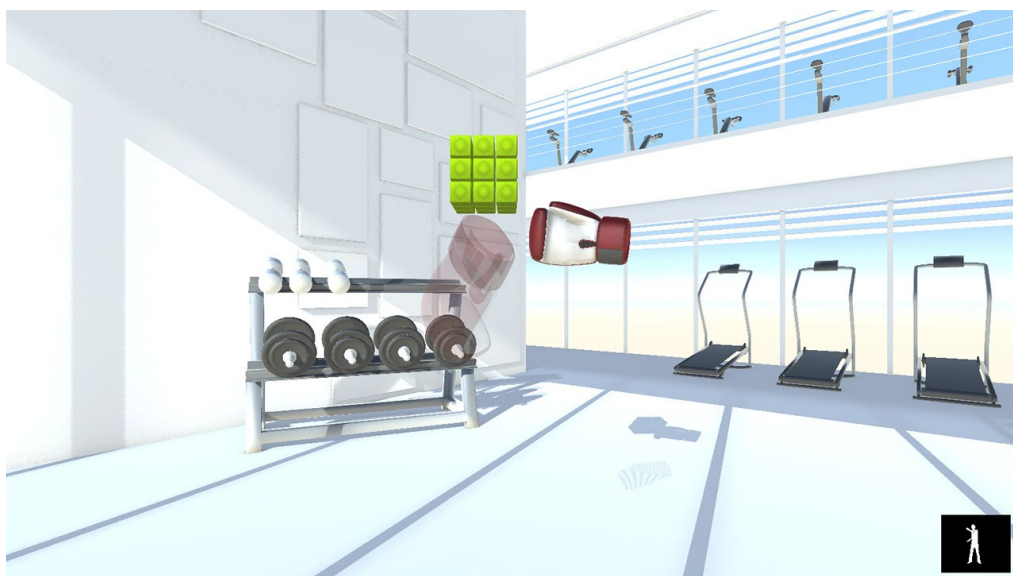
FUNCTIONAL MOVEMENTS
AUTOMATIC CANNON

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** — 15 point(s)	**Functional movements** — 29 %
Functional movements — 32 %	**Functional movements** — 29 %	**Functional movements** — 16 %
Functional movements — 15 %	**Functional movements** — 32 %	**Functional movements** — 30 %
Functional movements — 29 %	**Functional movements** — 16 %	**Functional movements** — 16 %
Functional movements — 33 %	**Functional movements** — 32 %	
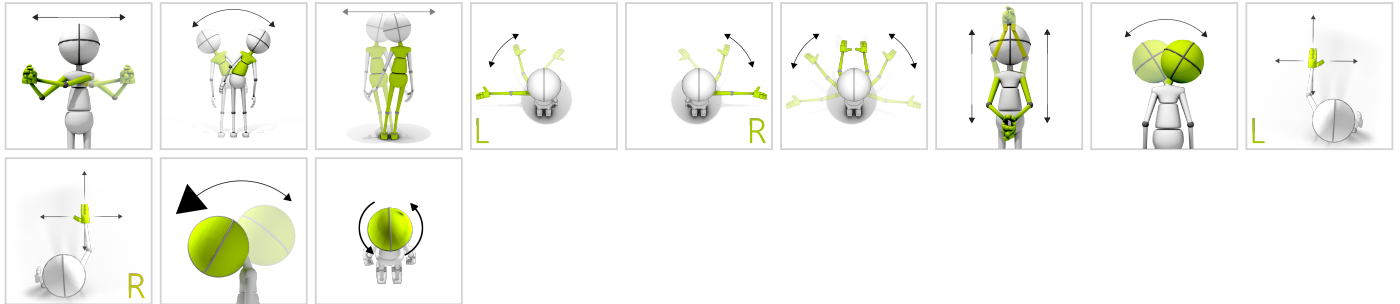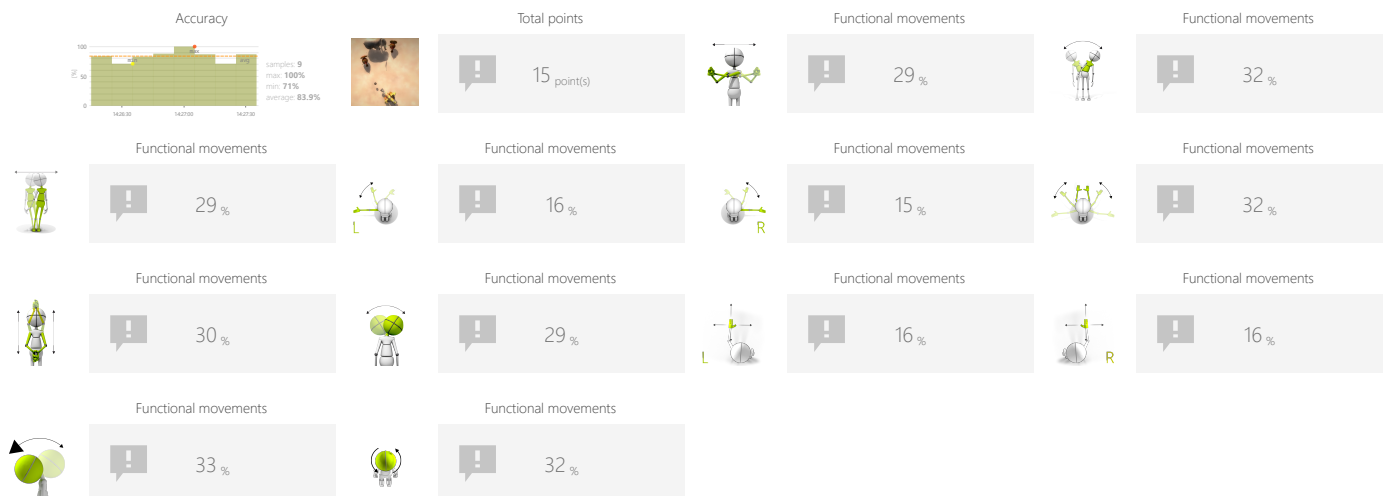
ADJUSTMENTS

- Task duration
- Range
- Enable distractors
- Time between cannonballs
- Time between enemies
- Enemies speed

OBJECTIVES

- Divided attention
- Spontaneous movements
- Arms swings
- Muscle strengthening

INSTRUCTION FOR PATIENT

Control cannon(s) to destroy robots, but avoid hitting the elephant!

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty	
◀	**1/3**	▶

Duration	Range
90s	20% ↔ 80%

Enable distractors	Time between cannonballs
No	1s

Time between enemies	Enemies speed
3s	50%

Difficulty	
◀	**custom**	▶

Duration	Range
90s	20% ↔ 80%

Enable distractors	Time between cannonballs
No	1s

Time between enemies	Enemies speed
3s	100%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
DRAGON

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%**	16 point(s)	29 %	32 %

Functional movements	Functional movements	Functional movements	Functional movements
15 %	32 %	16 %	15 %

Functional movements	Functional movements	Functional movements	Functional movements
32 %	15 %	18 %	31 %
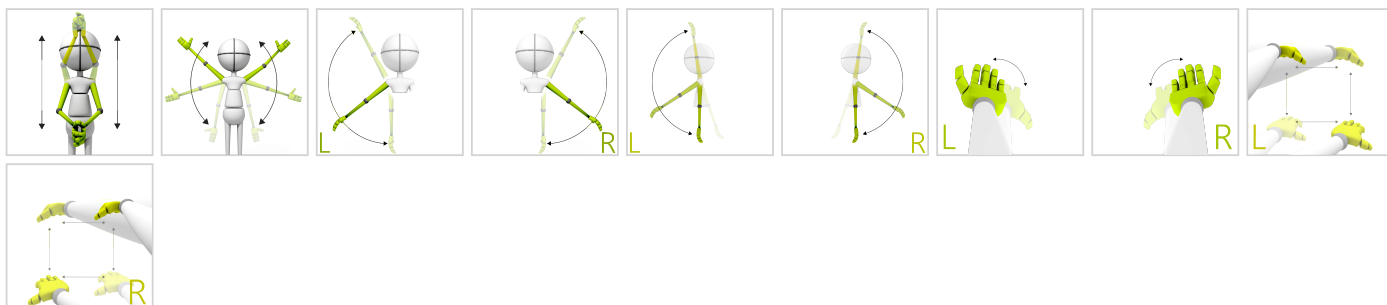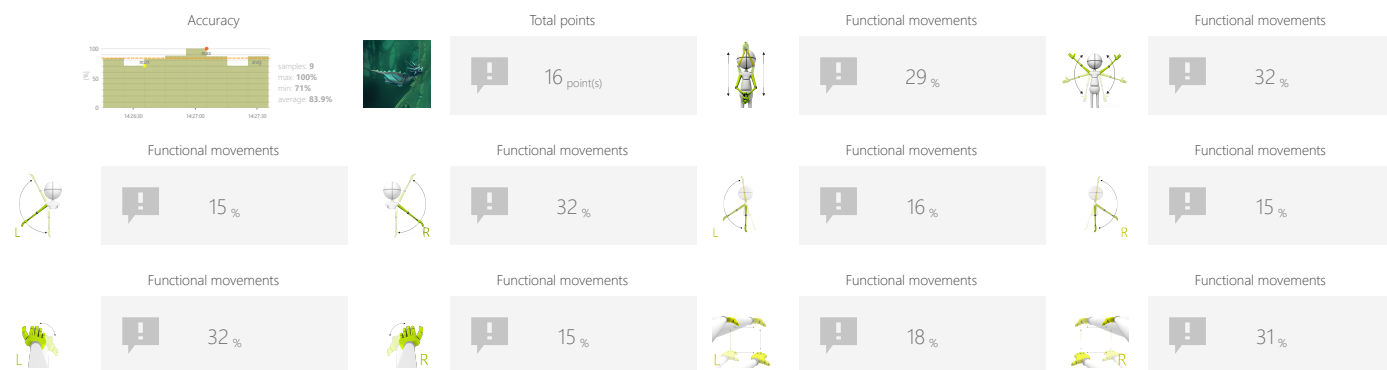
ADJUSTMENTS

• Task duration

• Range

• Coins group size

• Distance between coins

• Gravity force

OBJECTIVES

• Predicting the trajectory of objects

• Improve range of motion

• Visual motor coordination

• Muscle strengthening

• Planning and Strategy

INSTRUCTION FOR PATIENT

Fly and collect the coins.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty — custom

Duration	Range
90s	80% / 20%

Coins group size	Distance between coins
3	250%

Gravity force
100%

Difficulty — 1/3

Duration	Range
90s	80% / 20%

Coins group size	Distance between coins
5	250%

Gravity force
100%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
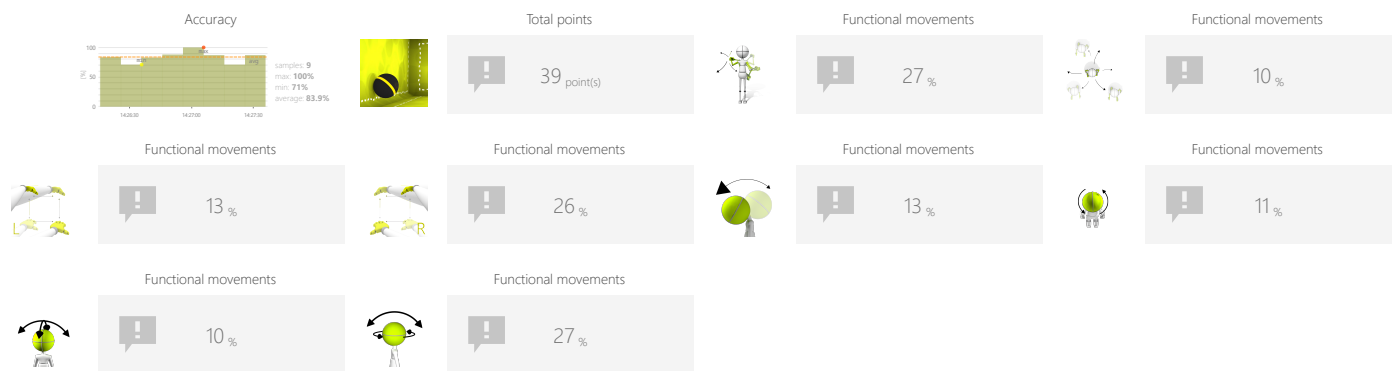
FUNCTIONAL MOVEMENTS
AMBULANCE

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

RESULTS

Accuracy

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

Total points

29 point(s)

Functional movements

13 %

Functional movements

30 %

Functional movements

13 %

Functional movements

28 %

Functional movements

15 %

Functional movements

13 %

Functional movements

16 %
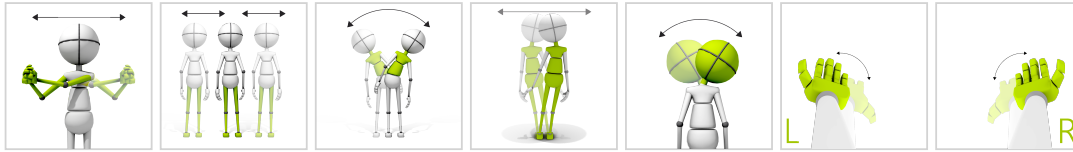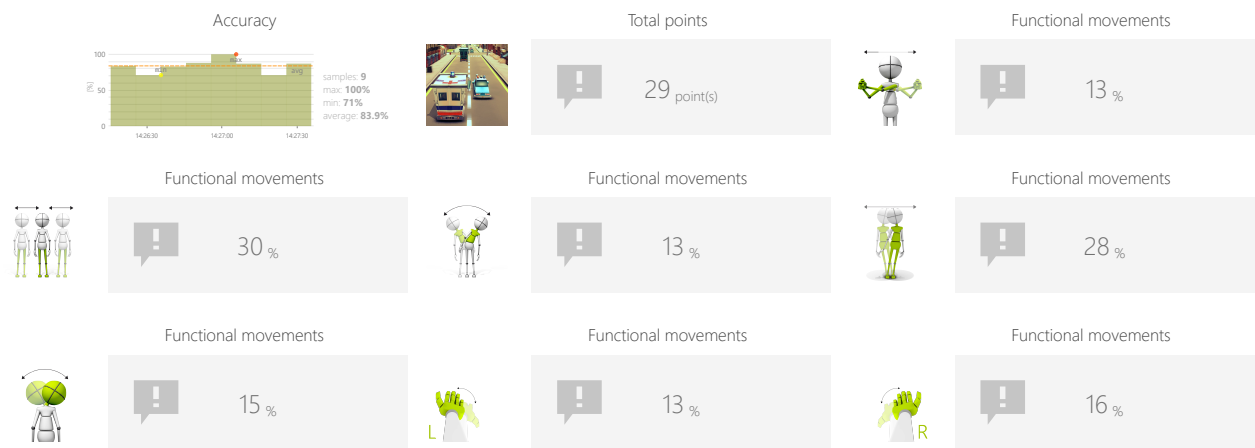
ADJUSTMENTS

• Speed
• Task duration
• Range
• Distance between cars

OBJECTIVES

• Balance and equilibrium training
• 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
30s

Range
20% ⟷ 80%

Distance between cars
50%

Difficulty custom

Speed
50%
speed set automatically

Duration
30s

Range
20% ⟷ 80%

Distance between cars
200%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
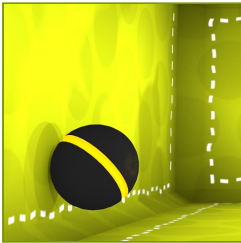
FUNCTIONAL MOVEMENTS
ARCANOID

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)	27 %	10 %

Functional movements	Functional movements	Functional movements	Functional movements
13 %	26 %	13 %	11 %

Functional movements	Functional movements
10 %	27 %
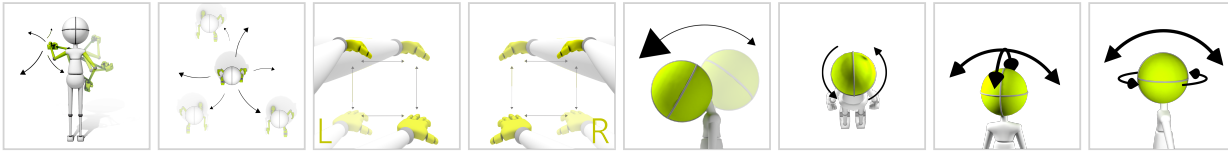
ADJUSTMENTS

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

OBJECTIVES

- Dynamics of planned movements
- Predicting the trajectory of objects in 3D space
- Visual motor coordination
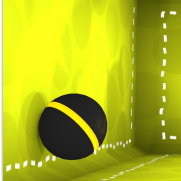
INSTRUCTION FOR PATIENT

Destroy as many boxes as you can.

VAST. Rehab
REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS
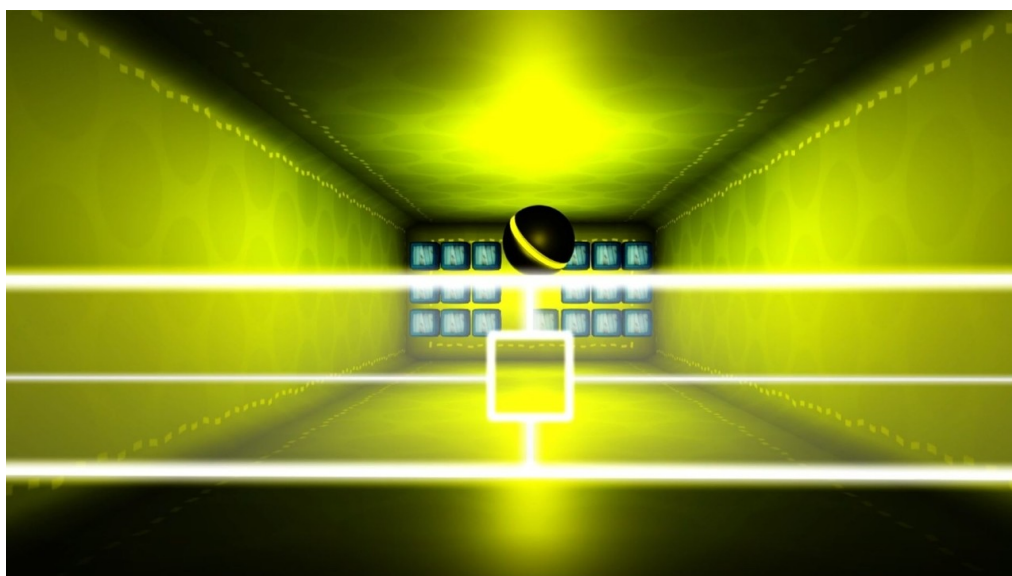
Difficulty **custom**

Duration **90s**

Range 20% 80% / 20% 80%
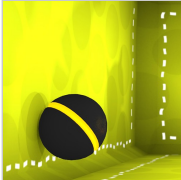
Reticle size **100%**

Speed of objects **70%**
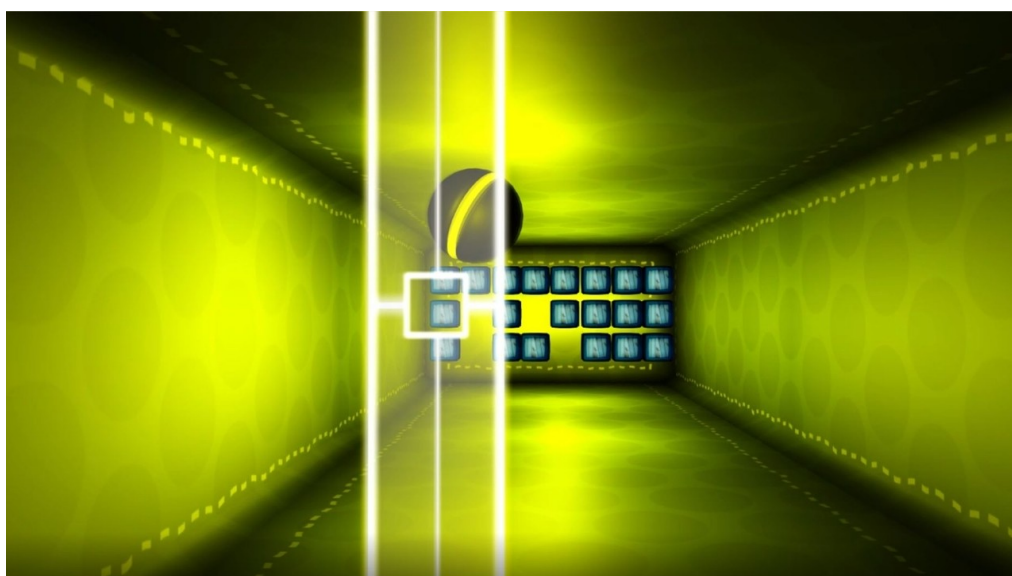
Difficulty **custom**

Duration **90s**

Range 20% 80% / 20% 80%

Reticle size **75%**
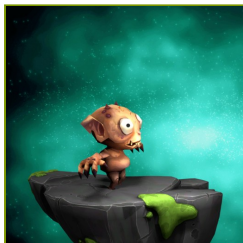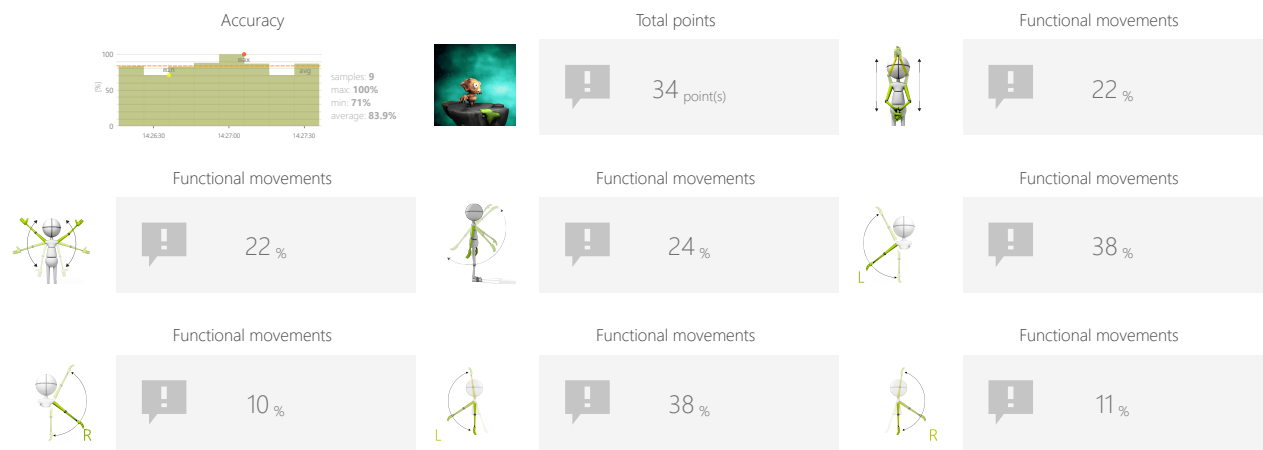
Speed of objects **70%**

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
samples: 9 max: 100% min: 71% average: 83.9%	34 point(s)	22 %

Functional movements	Functional movements	Functional movements
22 %	24 %	38 %

Functional movements	Functional movements	Functional movements
10 %	38 %	11 %

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
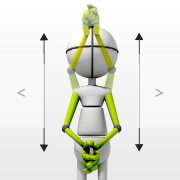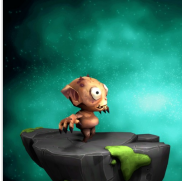
FUNCTIONAL MOVEMENTS
ROCKET JUMPING

SAMPLE SETTINGS

Difficulty 1/3

|	
Duration	Range
90s	20% 80%
Time between objects	Bomb format
5s	1
Speed of objects	
100%	

Difficulty custom

Duration	Range
90s	20% 80%
Time between objects	Bomb format
5s	2
Speed of objects	
100%	

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
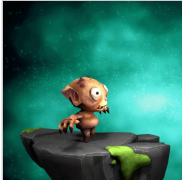
FUNCTIONAL MOVEMENTS
RAILS

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%	20 point(s)	22 %	36 %
Functional movements	Functional movements	Functional movements	Functional movements
35 %	22 %	35 %	38 %
Functional movements	Functional movements	Functional movements	Functional movements
21 %	38 %	38 %	10 %
Functional movements			
22 %			
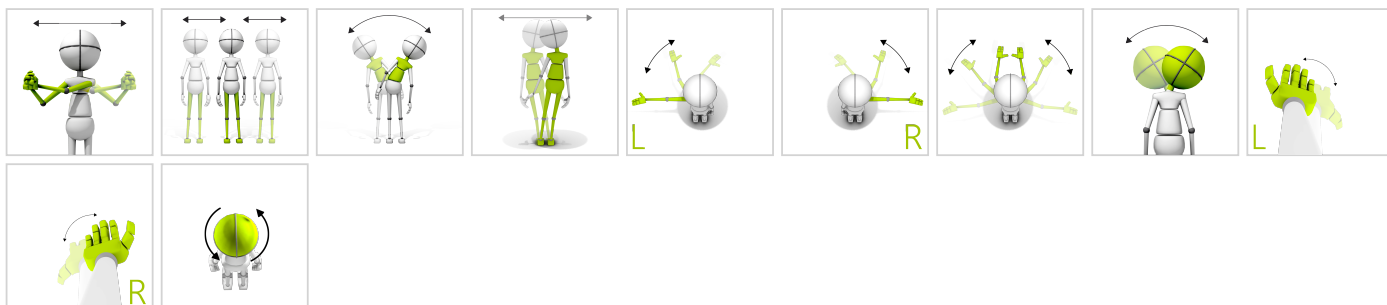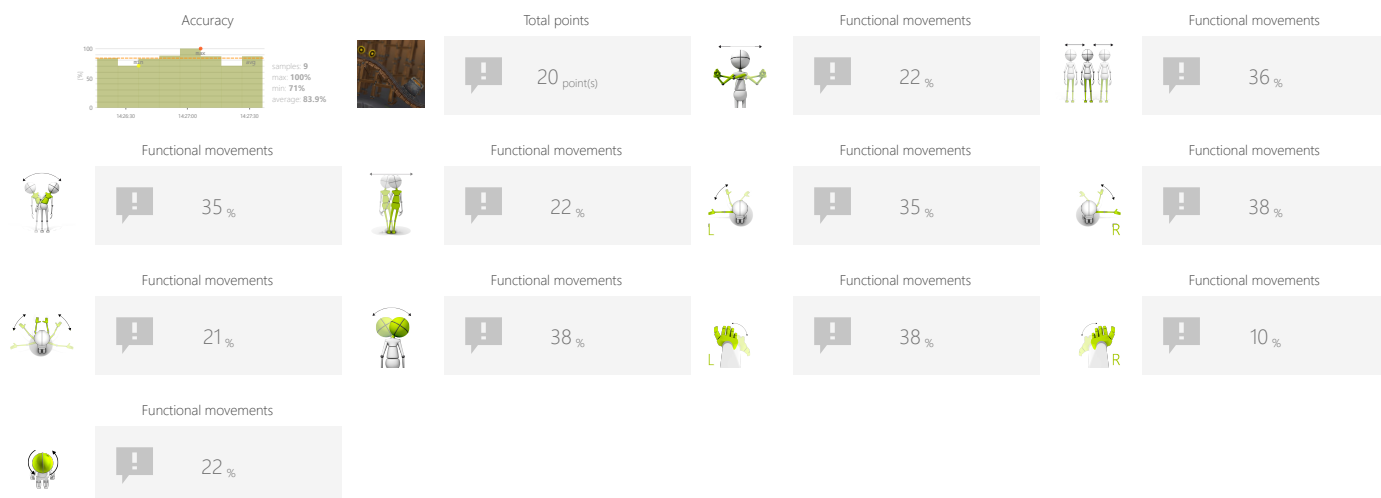
ADJUSTMENTS

• Speed
• Task duration
• Range
• Route shape
• Enable derailing
• Enable obstacles
• Time between objects

OBJECTIVES

• Dynamic responses to emerging moving targets
• Predicting the trajectory of objects
• Visual motor coordination

INSTRUCTION FOR PATIENT

Control the trolley to collect the coins.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

FUNCTIONAL MOVEMENTS
RAILS

SAMPLE SETTINGS

Difficulty
1/3

Speed
100%
speed set automatically
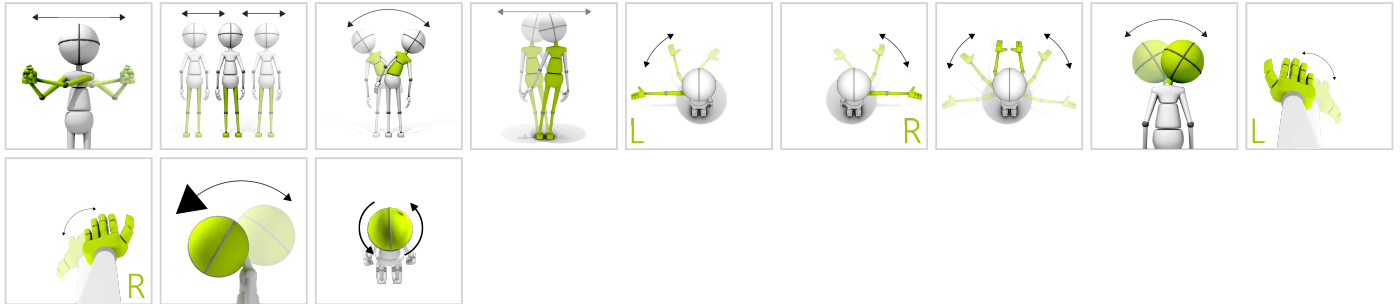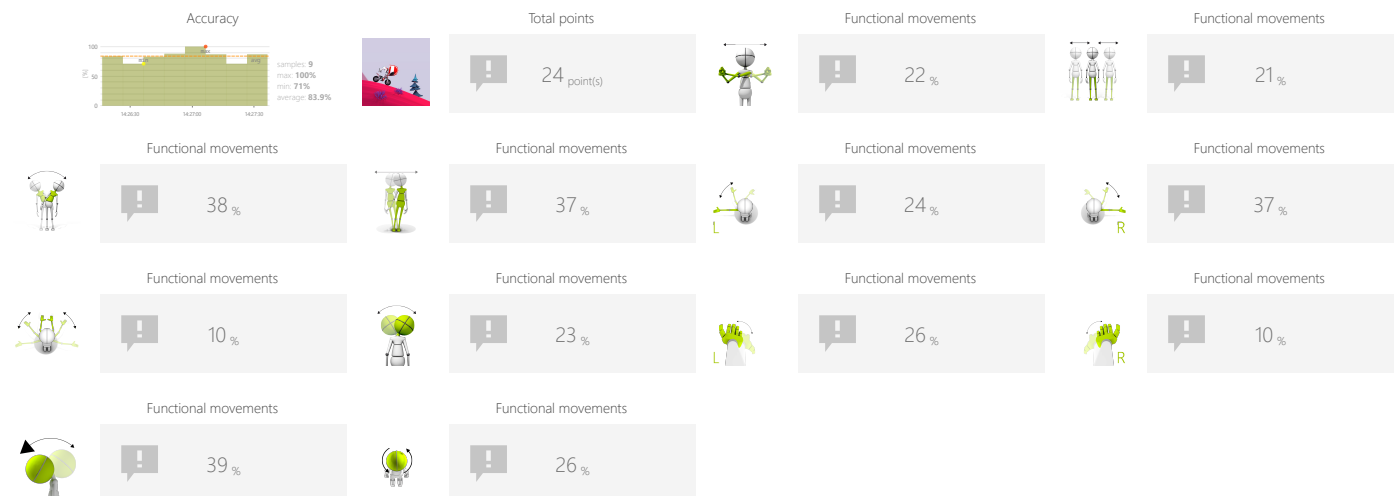
Duration
90s

Range
20% ⟷ 80%

Route shape

Enable derailing
No

Enable obstacles
No

Time between objects
5s

Difficulty
3/3

Speed
200%
speed set automatically

Duration
90s

Range
20% ⟷ 80%

Route shape

Enable derailing
Yes

Enable obstacles
No

Time between objects
5s

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 — 24 point(s)	Functional movements — 22 %	Functional movements — 21 %
Functional movements — 38 %	Functional movements — 37 %	Functional movements — 24 %	Functional movements — 37 %
Functional movements — 10 %	Functional movements — 23 %	Functional movements — 26 %	Functional movements — 10 %
Functional movements — 39 %	Functional movements — 26 %		

ADJUSTMENTS

• Task duration

• Range

• Route shape

OBJECTIVES

• Dynamics of planned movements

• Planning and Strategy
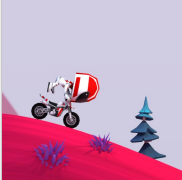
INSTRUCTION FOR PATIENT

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

Difficulty
2/3

Duration
90s

Range
20% ↔ 80%

Route shape
Medium

**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%**	35 point(s)	38 %	37 %

Functional movements	Functional movements	Functional movements	Functional movements
24 %	23 %	10 %	39 %

Functional movements	Functional movements	Functional movements	
39 %	26 %	39 %	
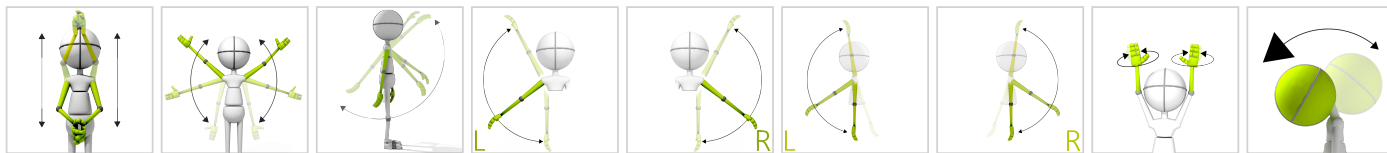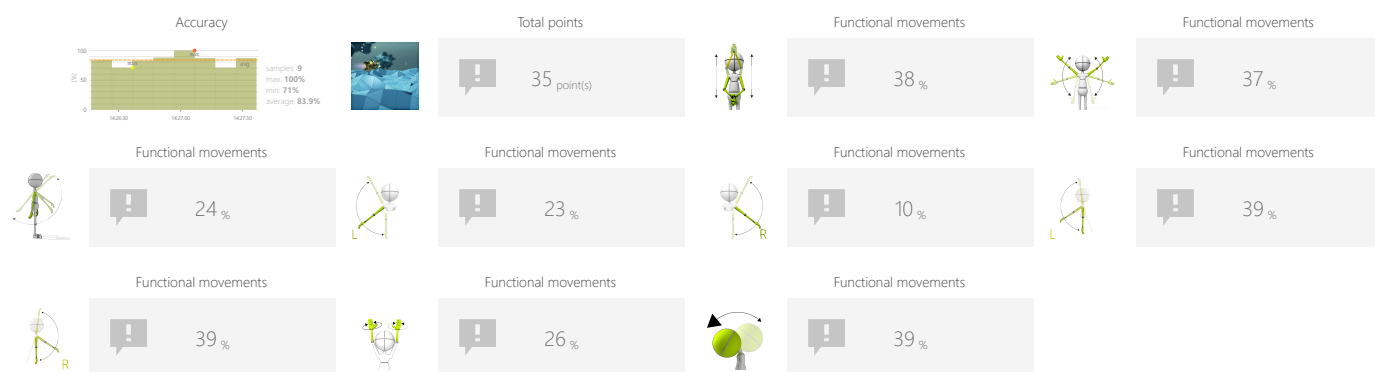
ADJUSTMENTS

• 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
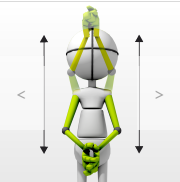
FUNCTIONAL MOVEMENTS
GEOMETRY FLIER

SAMPLE SETTINGS
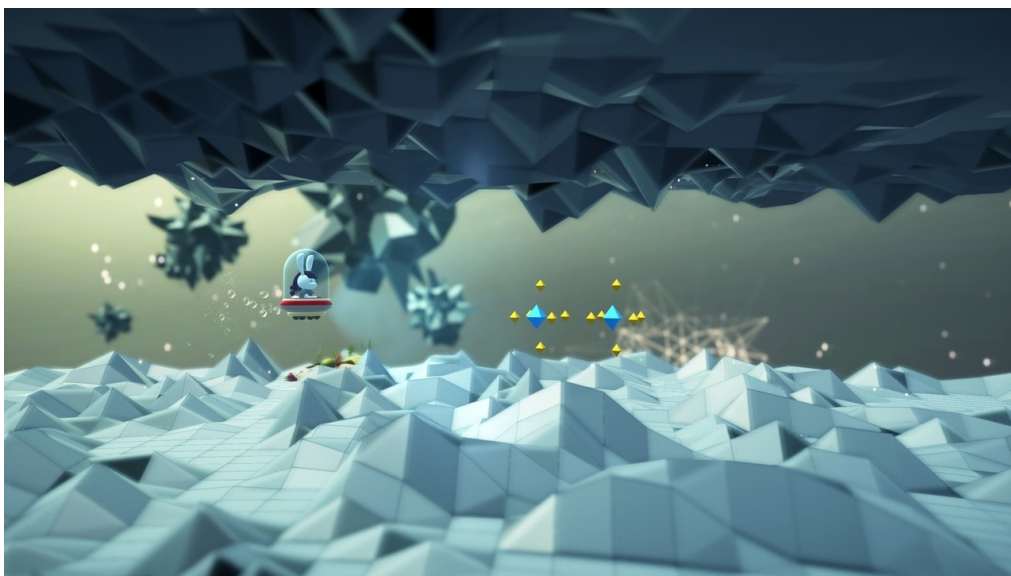
Difficulty
1/3

Speed
100%
speed set automatically

Duration
30s

Range
20% 80%

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY
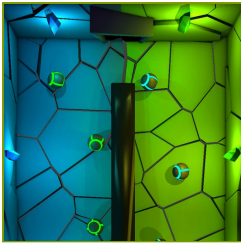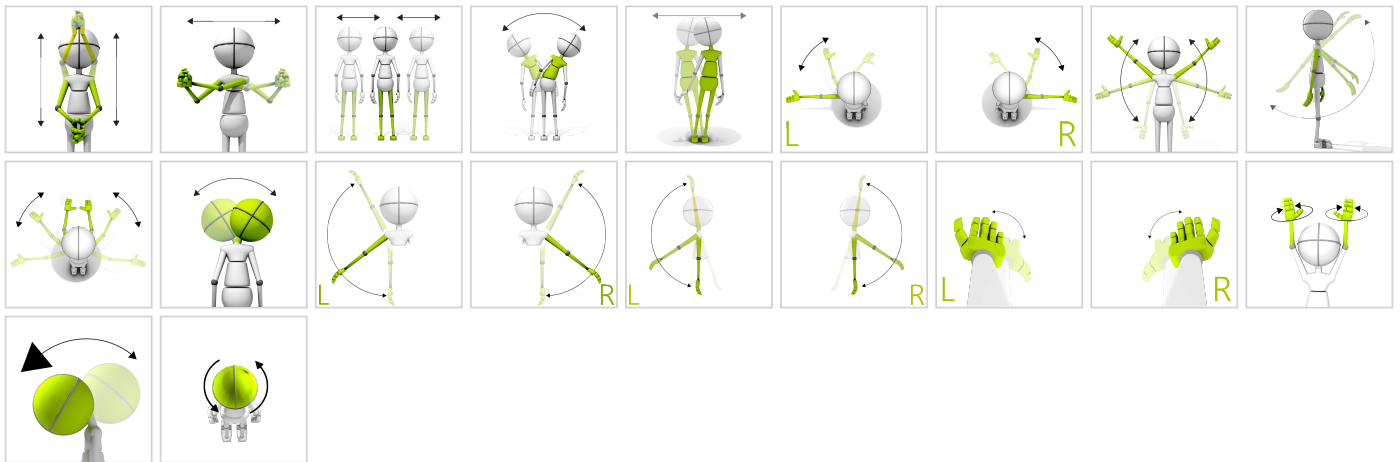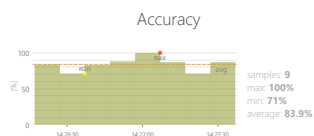
DIVIDED ATTENTION
SORTER

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

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

Total points

38 point(s)

Divided attention

11 %

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
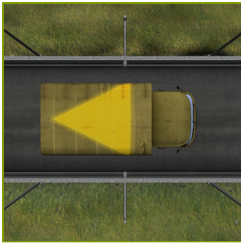REHABILITATION IN VIRTUAL REALITY

DIVIDED ATTENTION
SORTER

SAMPLE SETTINGS

Difficulty
1/3

Duration	Range
30s	20% 80%

Number of objects	Gap size
4	150%

Speed of objects
100%

Difficulty
1/3

Duration	Range
30s	20% 80%

Number of objects	Gap size
4	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**
min: **7**
sum: **31**
average: **7.67**

Accuracy

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

Total points

23 point(s)

Memory

22 %
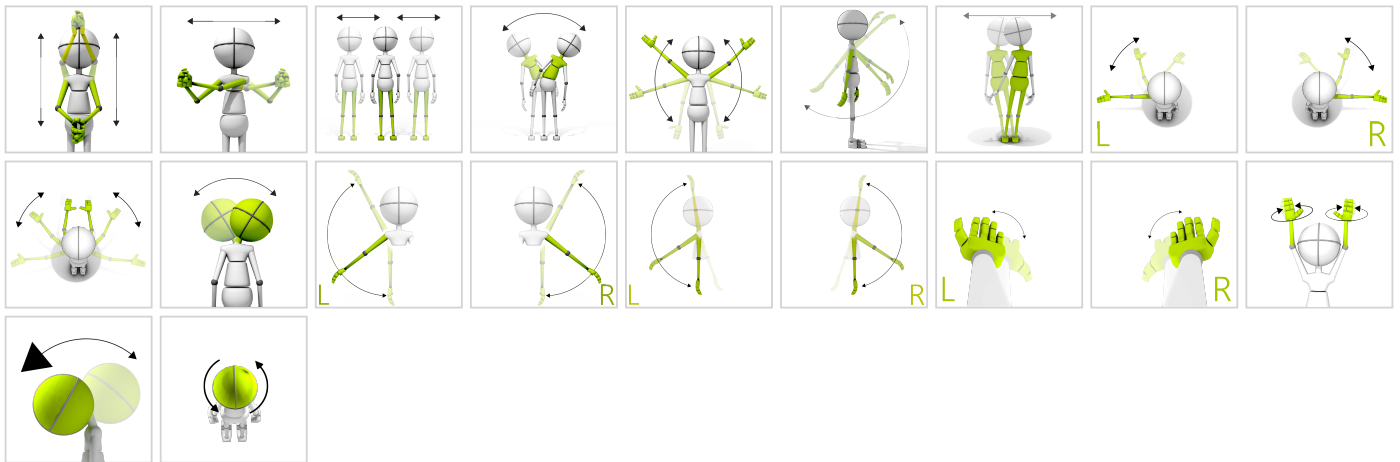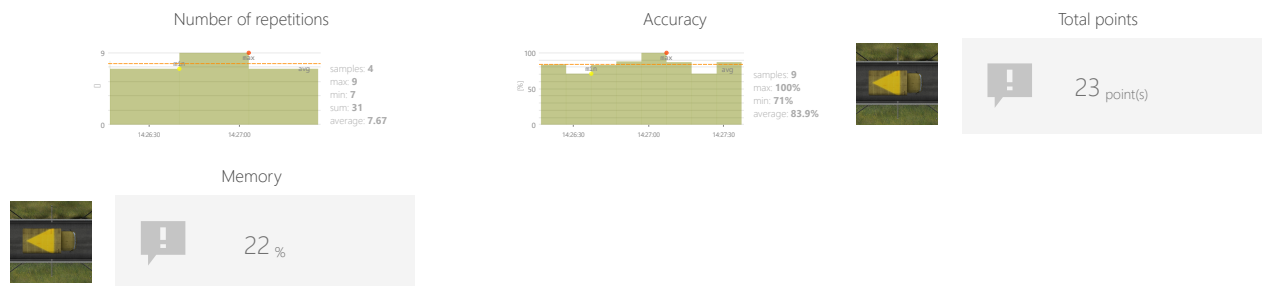
ADJUSTMENTS

• 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.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

MEMORY
TRUCKS

SAMPLE SETTINGS

Difficulty
1/3

Duration
30s

Range
20% ↕ 80%

Variations
colors

Difficulty
2/3

Duration
30s

Range
20% ↔ 80%

Variations
shapes

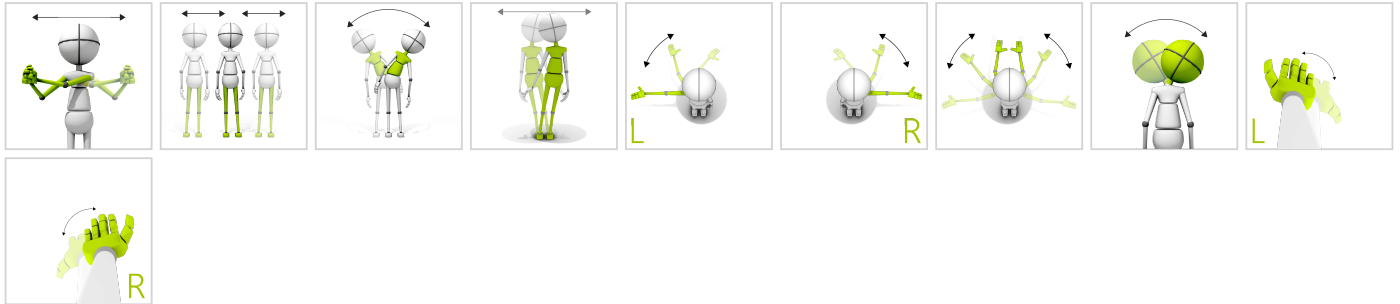**VAST.Rehab**
REHABILITATION IN VIRTUAL REALITY
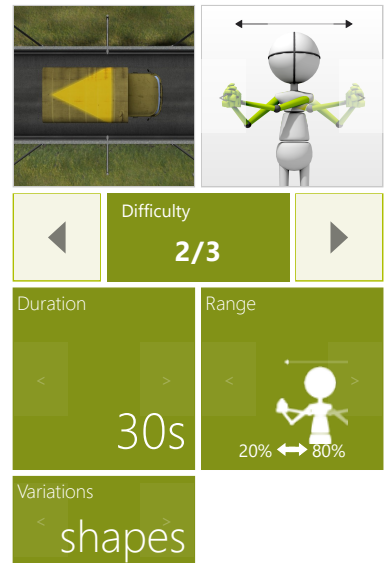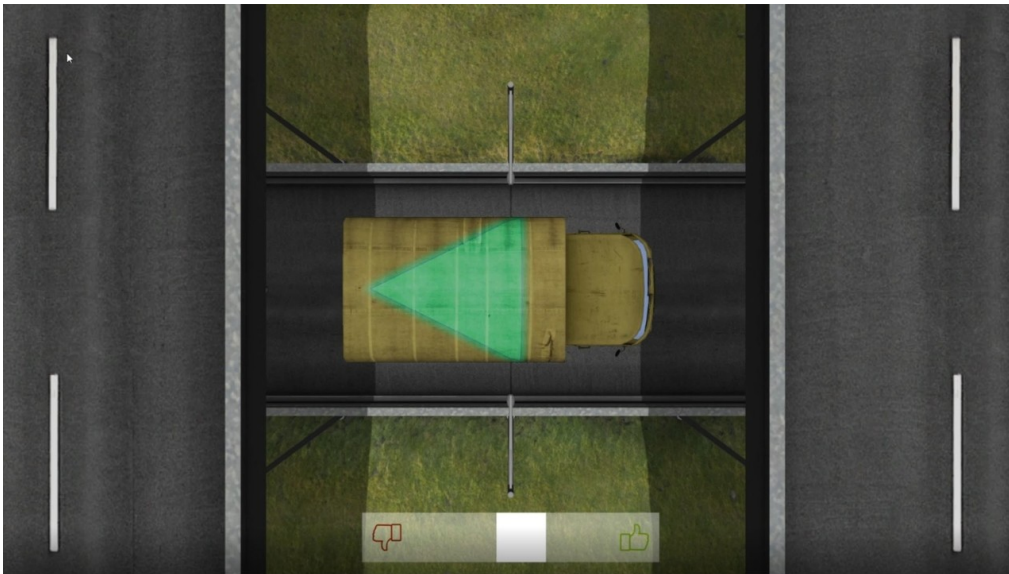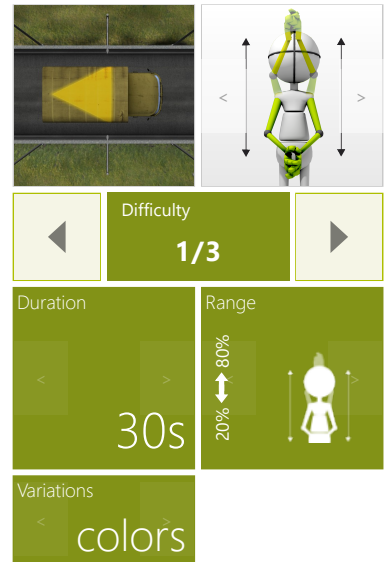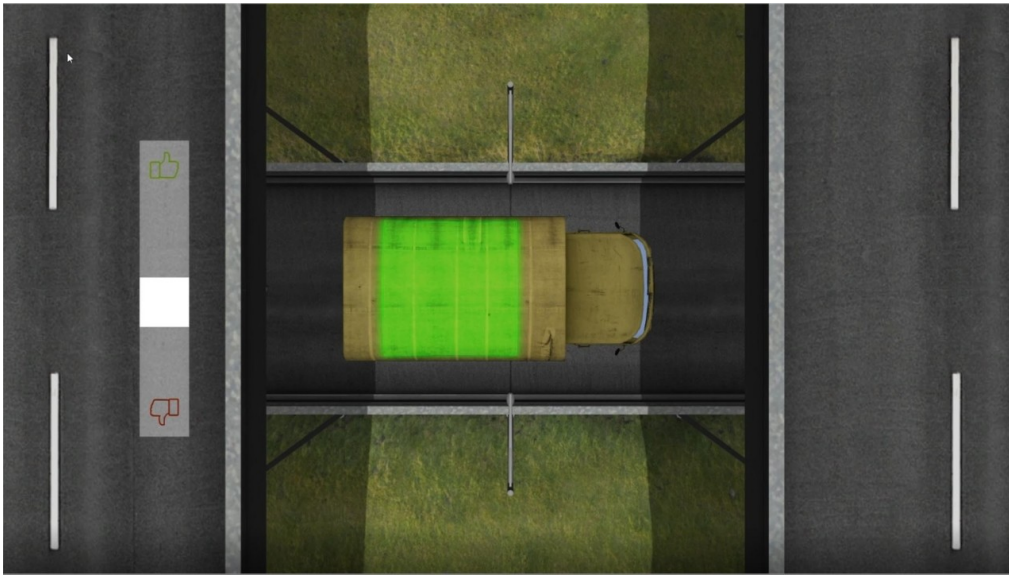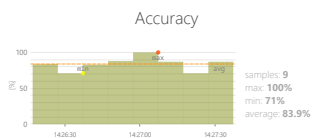
PROBLEM SOLVING
CLONES

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

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

Total points

19 point(s)

Problem solving

34 %

ADJUSTMENTS

- Task duration
- Time to complete action
- Range
- Number of pairs

OBJECTIVES

- Perceptivity
- Visual motor coordination
- Logical tasks

INSTRUCTION FOR PATIENT
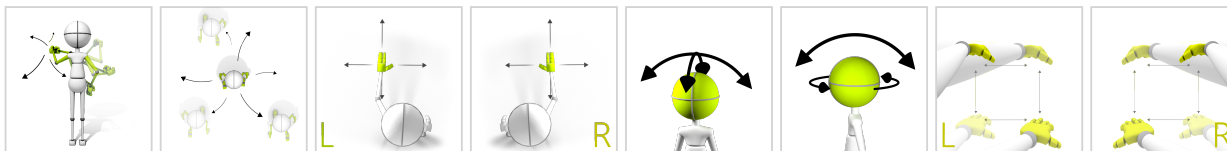
Select the item which has a pair on the screen.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

PROBLEM SOLVING
CLONES

SAMPLE SETTINGS
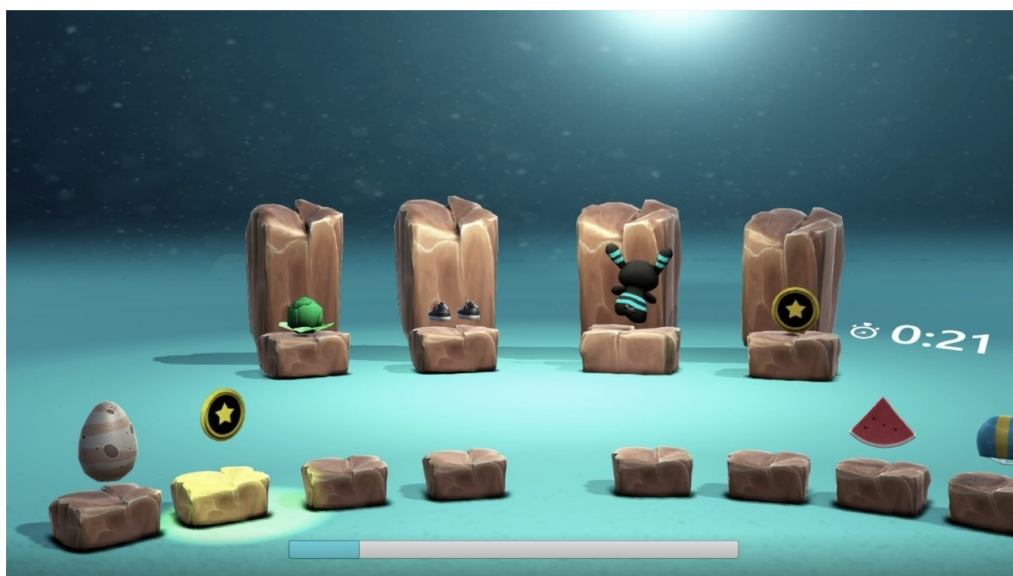
Difficulty	
◀	**1/3**	▶

Duration	Minitask duration
< >	< >
90s	**30s**

Range	Number of pairs
< >	< >
20% ⟷ 80%	**4**

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY

PROBLEM SOLVING
MAZE

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%**	16 point(s)	31 %
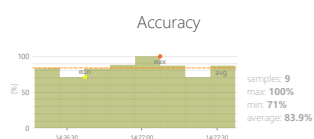
ADJUSTMENTS

• Task duration
• Range
• Show path
• Maze size

OBJECTIVES

• Logical tasks
• Planned movements
• Planning and Strategy

INSTRUCTION FOR PATIENT

Lead the hippo through the maze to the glowing target.

VAST. Rehab
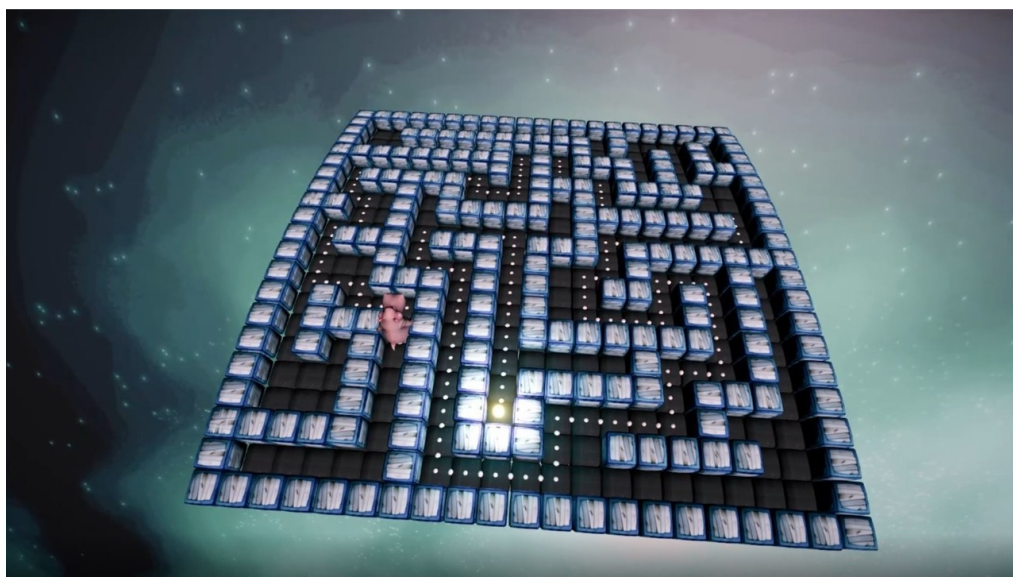REHABILITATION IN VIRTUAL REALITY

SAMPLE SETTINGS

Difficulty	
◀	**2/4** ▶

Duration	Range
< >	↕ 80% / 20% ↔ 80% / 20%
90s	
Show path	Maze size
No	**6**

Difficulty	
◀	**custom** ▶

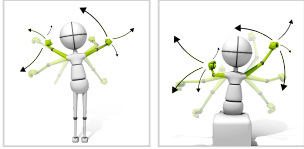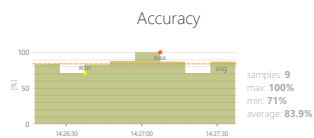| Duration	Range
< >	↕ 80% / 20% ↔ 80% / 20%
90s	
Show path	Maze size
Yes	**10**

PROBLEM SOLVING
KITCHEN DISH SORTER

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

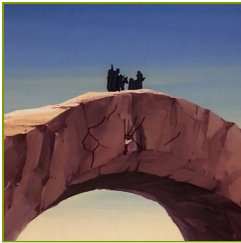| Accuracy	Total points	Problem solving
samples: **9** max: **100%** min: **71%** average: **83.9%**	28 point(s)	29 %

ADJUSTMENTS

• Positions to have targets on

• Task duration

• Show hints

OBJECTIVES

INSTRUCTION FOR PATIENT

Put all the dishes in the kitchen cabinets. To open drawers and cabinets, you need to pull their handles. Be careful not to drop the dishes on the floor, or they will break! If you are using touch controllers, pressing the grip button under your middle finger will activate the controller.
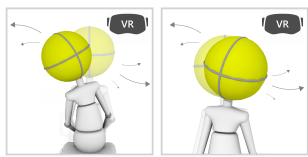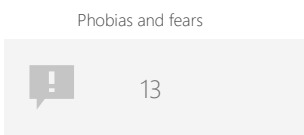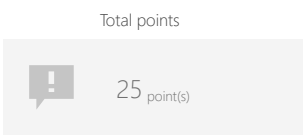
VAST.Rehab
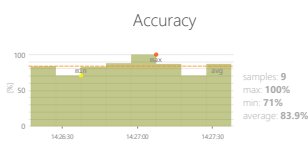REHABILITATION IN VIRTUAL REALITY

PHOBIAS AND FEARS
CANYON

toAdd(catDesc550)

CONTROL MODES

RESULTS

Accuracy		Total points	Phobias and fears

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

Total points
25 point(s)

Phobias and fears
13

ADJUSTMENTS

• Task duration
• Object size width

OBJECTIVES

INSTRUCTION FOR PATIENT

Collect as many flowers as you can. Look straight onto it to collect one.

VAST.Rehab
REHABILITATION IN VIRTUAL REALITY