

# EXTENSION PACK FOR X-COGNI

2021.4

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# WHAT IS NEEDED?

## HARDWARE REQUIREMENTS

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
- INTEL i5 processor
- 8GB RAM

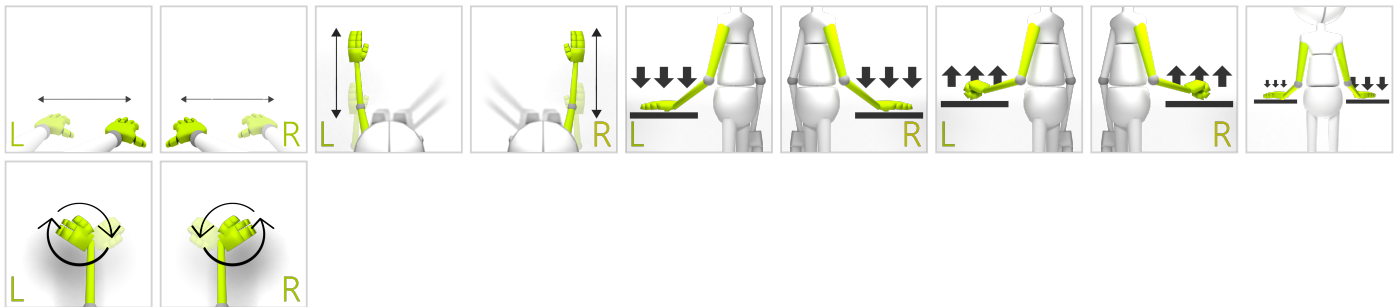


# SPEED

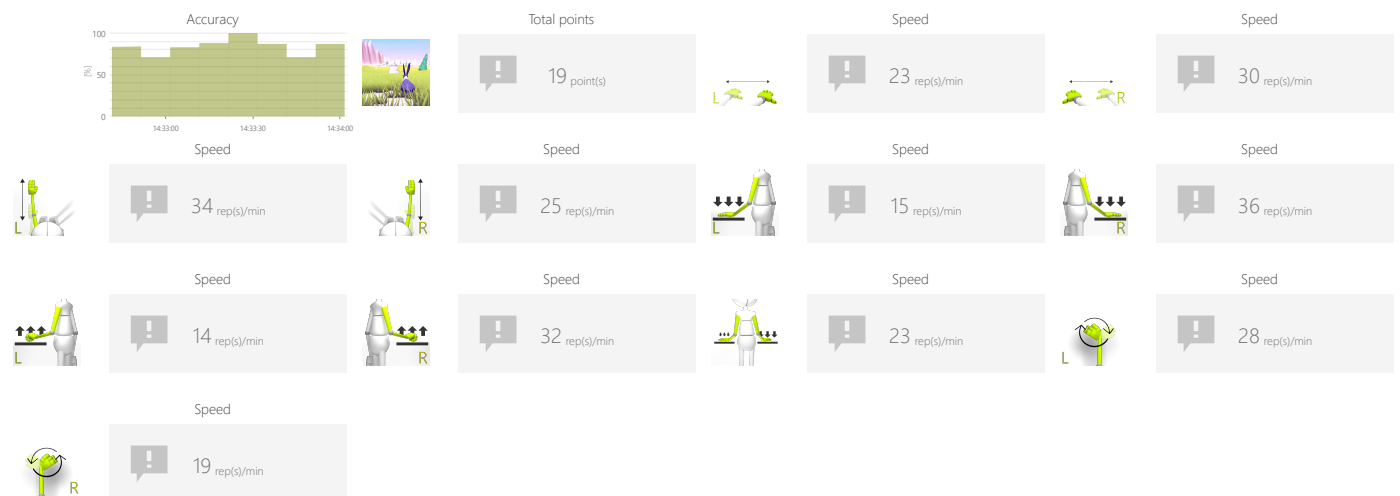
## RABBIT

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

### CONTROL MODES



### RESULTS



### ADJUSTMENTS

- Task duration
- Range
- Distance from edge

### OBJECTIVES

- Speed of movement
- Repetitive movements

### INSTRUCTION FOR PATIENT

Go through the entire route as fast as you can

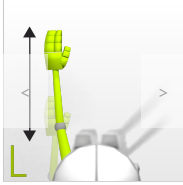





# SPEED RABBIT

## SAMPLE SETTINGS






Duration

< 90s >

Range

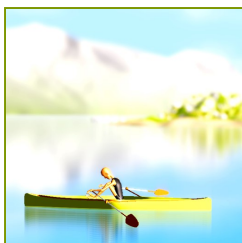
20% 80%



Distance from edge

< [ ] >

← 20%

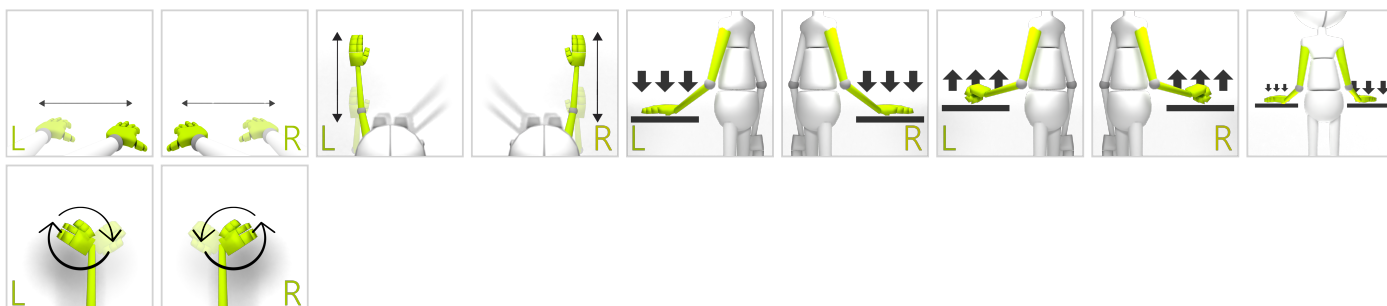


# SPEED

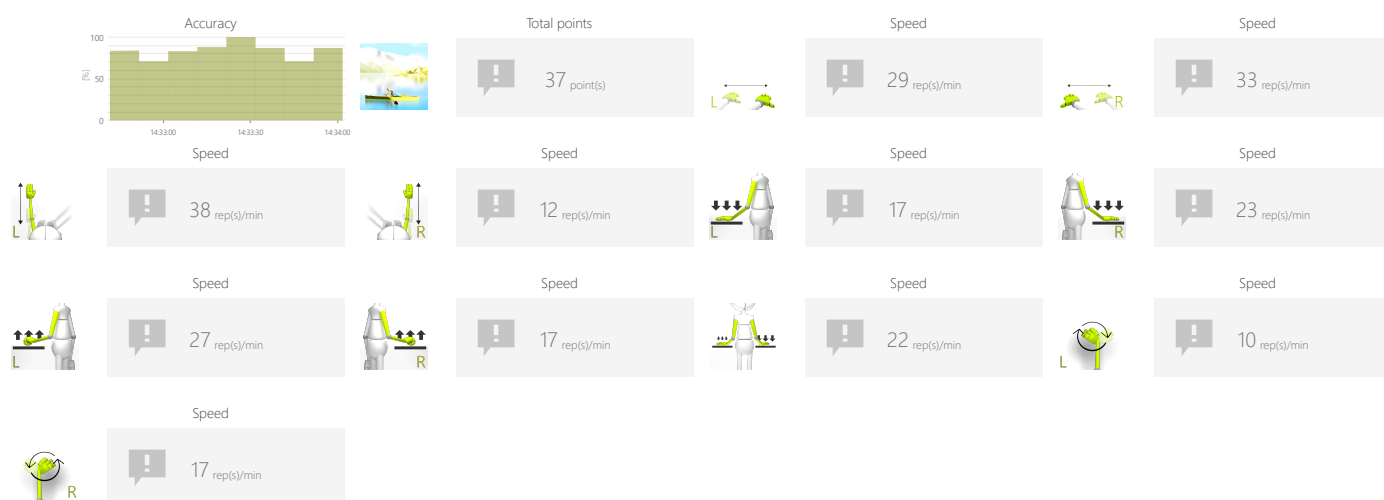
## KAYAK

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

## CONTROL MODES



## RESULTS



## ADJUSTMENTS

- Task duration
- Range
- Distance from edge

## OBJECTIVES

- Speed of movement
- Repetitive movements

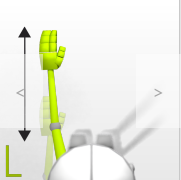

## INSTRUCTION FOR PATIENT

Row as fast as you can



## SAMPLE SETTINGS






Duration

< 90s >

Range

20% 80%



Distance from edge

< [ ] >

← 20%

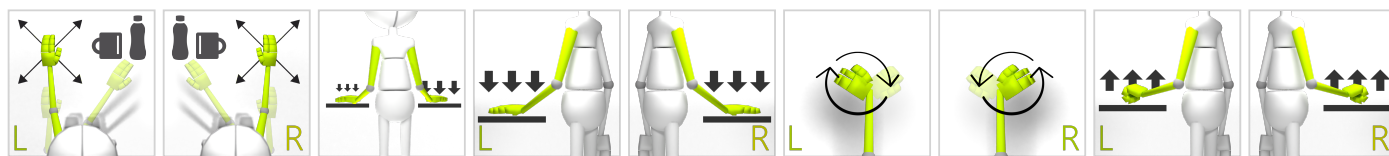


# MOVEMENT PRECISION

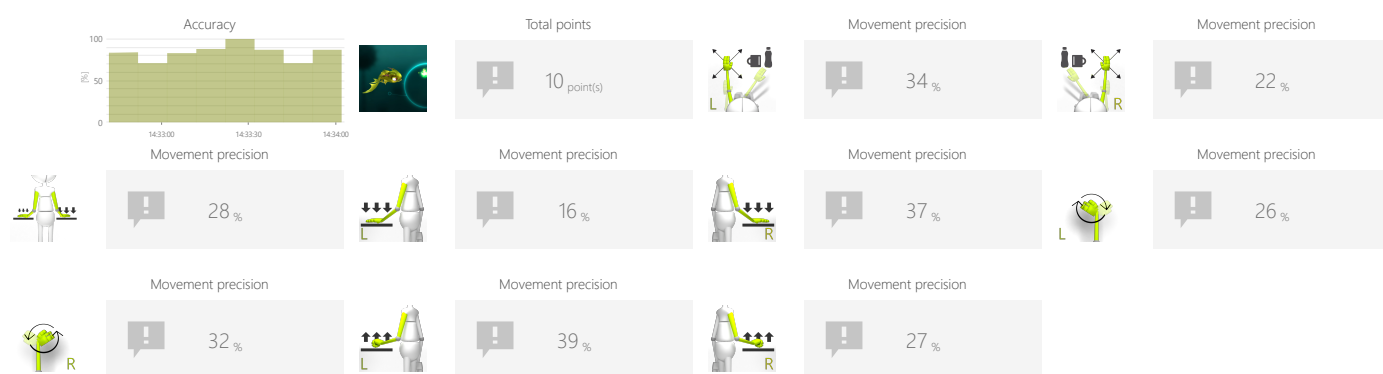
## FISH

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

## CONTROL MODES



## RESULTS



## ADJUSTMENTS

- Task duration
- Movement mode
- Route shape
- Speed of objects

## OBJECTIVES

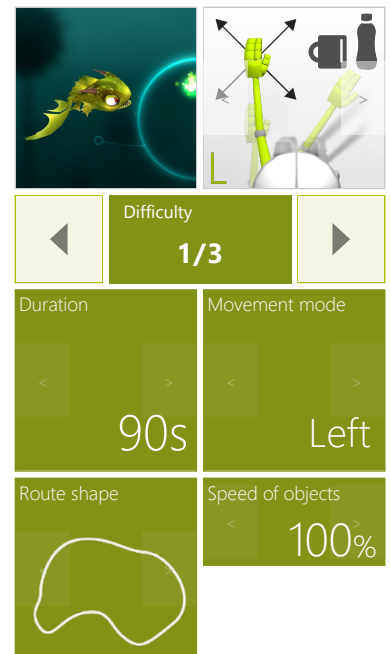
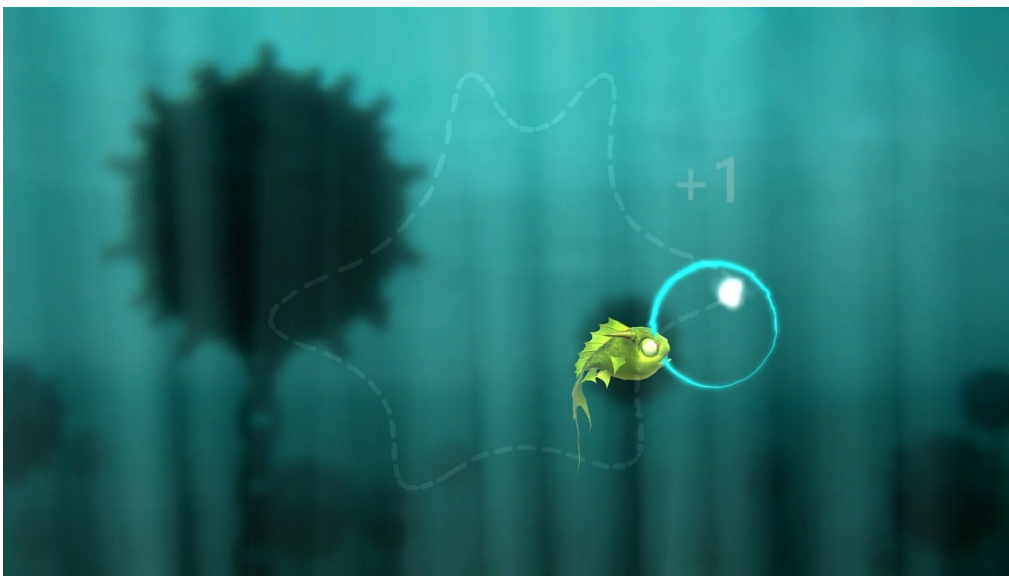
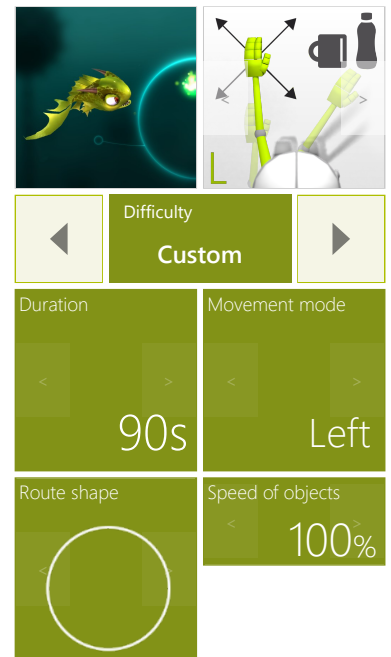
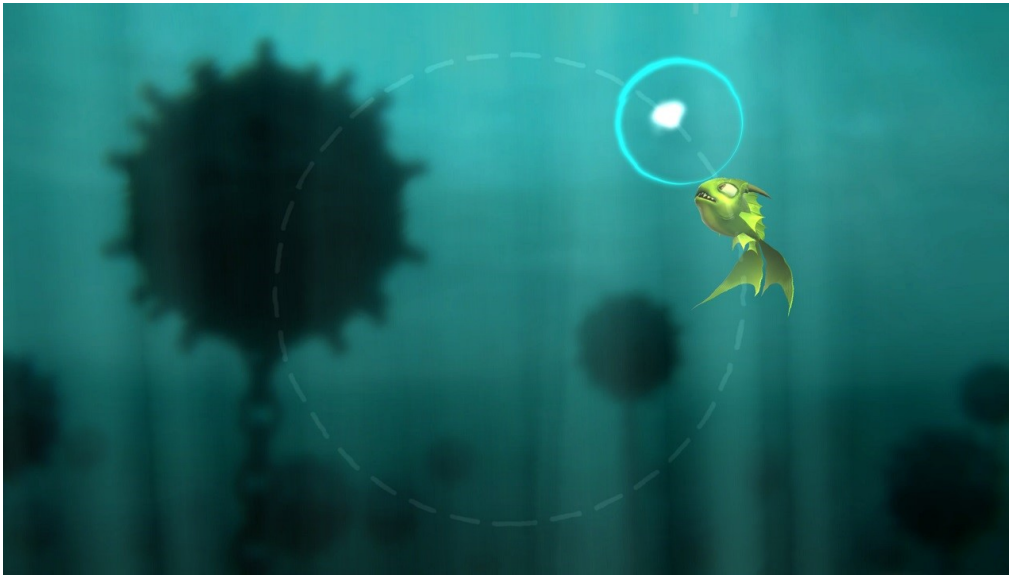
- 3D space movements reproduction
- Planned movements
- Muscle strengthening
- Movement precision
- Visual motor coordination

## 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



## SAMPLE SETTINGS



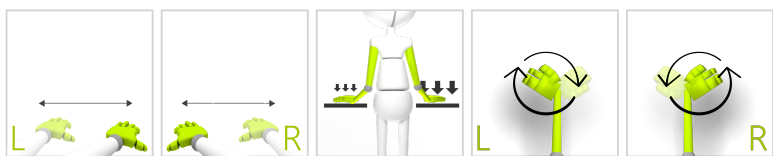


# MOVEMENT PRECISION

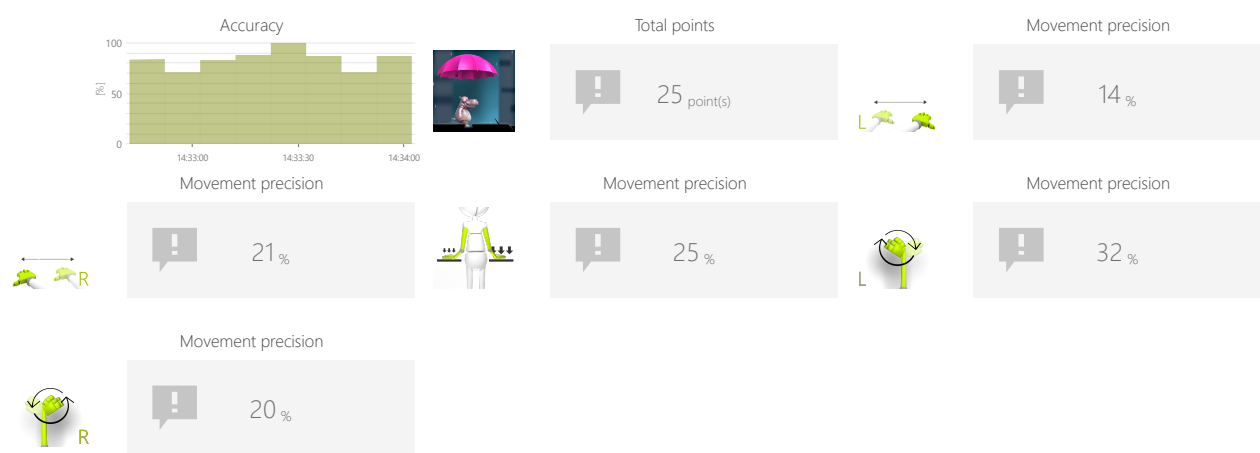
## UMBRELLA

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

### CONTROL MODES



### RESULTS



### ADJUSTMENTS

- Task duration
- Path
- Range
- Distance from edge
- Umbrella size

### OBJECTIVES

- Movement precision
- Visual motor coordination

### INSTRUCTION FOR PATIENT

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

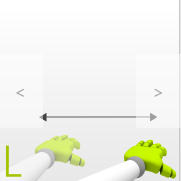



# MOVEMENT PRECISION

## UMBRELLA

### SAMPLE SETTINGS





◀

Difficulty

▶

1/3

◀

Duration

>

60s

◀

Path

>

⌚ : 8.0s

◀

Range

>

20% ↔ 80%

◀

Distance from edge

>

↓ 20%

◀

Umbrella size

>

150%



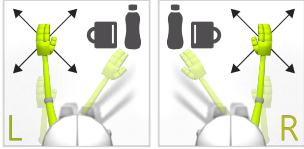


# FUNCTIONAL MOVEMENTS

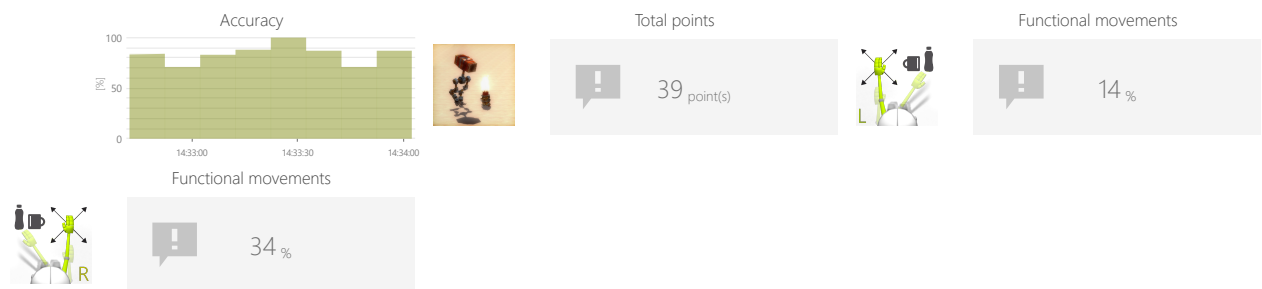
## HAMMER

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



## 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





# FUNCTIONAL MOVEMENTS

## HAMMER

### SAMPLE SETTINGS



◀	Difficulty <b>1/3</b>	▶
Active positions 		Duration < 90s >
Range 20% ↔ 80%		Time to react < 10s >
		Reticle size < 125% >

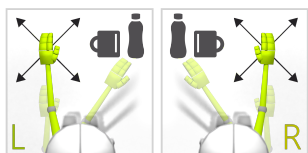


# FUNCTIONAL MOVEMENTS

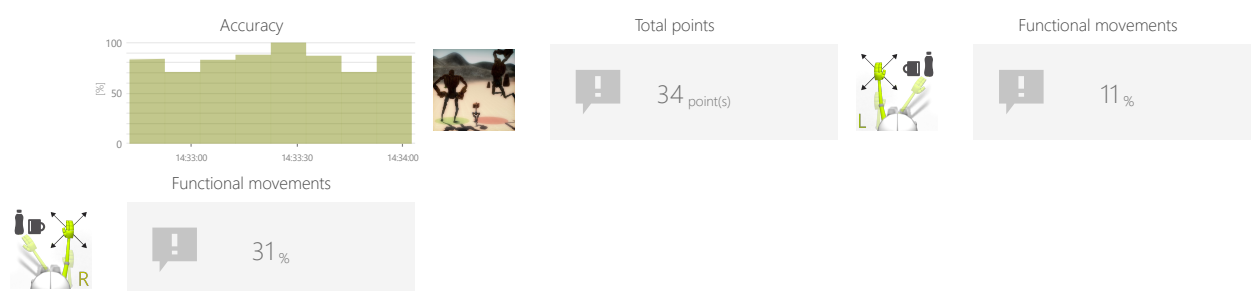
## RUNAWAY

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



## 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



# FUNCTIONAL MOVEMENTS

RUNAWAY

## SAMPLE SETTINGS



Difficulty	1/3
Duration	90s
Range	20% 80%
Number of enemies	2
Enemies speed	100%



Difficulty	Custom
Duration	90s
Range	20% 80%
Number of enemies	4
Enemies speed	100%

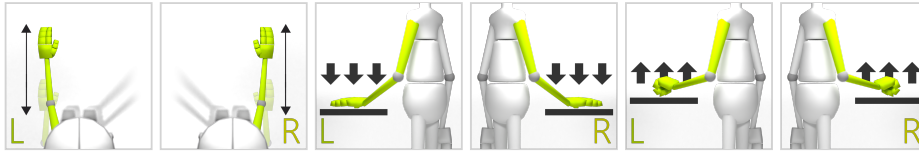


# FUNCTIONAL MOVEMENTS

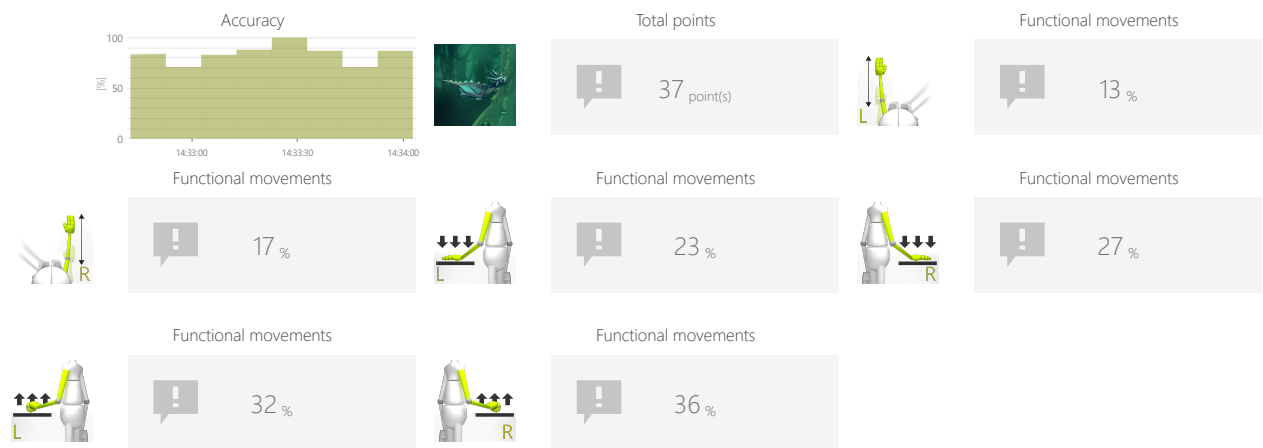
## DRAGON

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



## 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





# FUNCTIONAL MOVEMENTS

## DRAGON

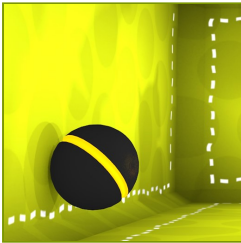
### SAMPLE SETTINGS



	Difficulty <b>Custom</b>	
Duration 90s		Range 20% 80%
Coins group size 3		Distance between coins 250%
Gravity force 100%		



	Difficulty <b>1/3</b>	
Duration 90s		Range 20% 80%
Coins group size 5		Distance between coins 250%
Gravity force 100%		

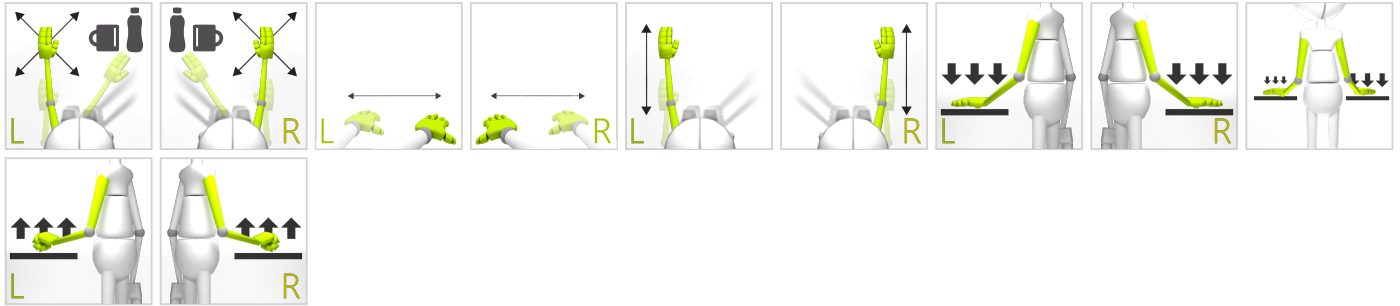


# FUNCTIONAL MOVEMENTS

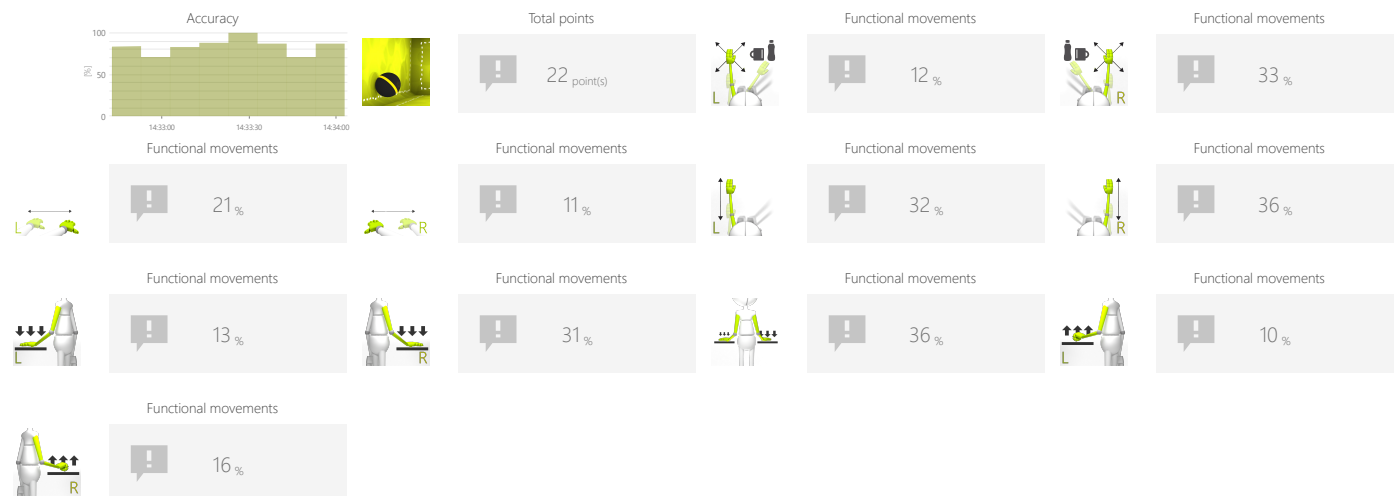
## ARCANOID

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



## ADJUSTMENTS

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

## OBJECTIVES

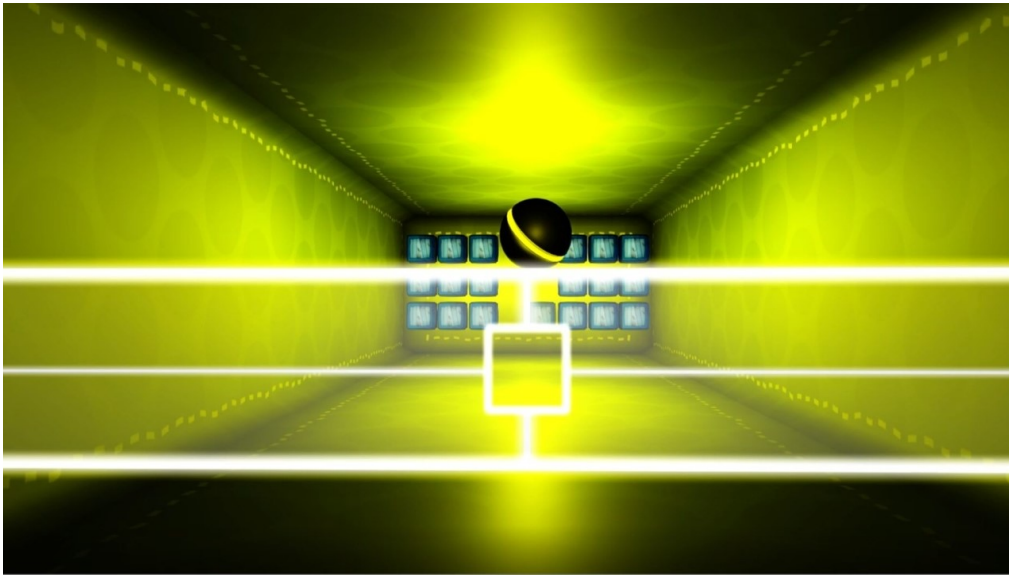
- Dynamics of planned movements
- Predicting the trajectory of objects in 3D space
- Visual motor coordination

## INSTRUCTION FOR PATIENT

Destroy as many boxes as you can



## SAMPLE SETTINGS



Difficulty  
**Custom**

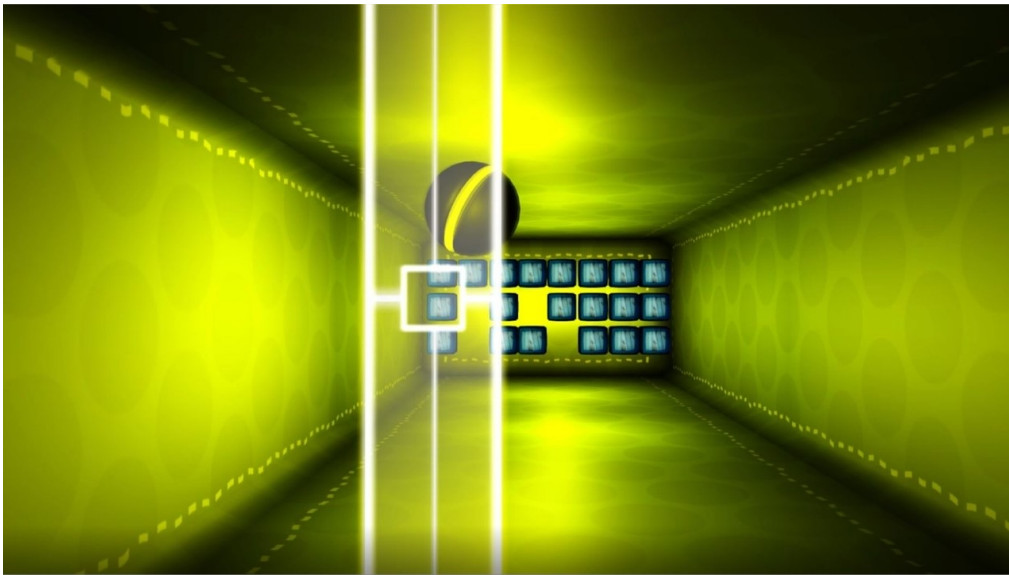
Duration  
90s

Range  
20% 80%

Distance from edge  
20%

Reticle size  
100%

Speed of objects  
70%



Difficulty  
**Custom**

Duration  
90s

Range  
20% 80%

Distance from edge  
20%

Reticle size  
75%

Speed of objects  
70%

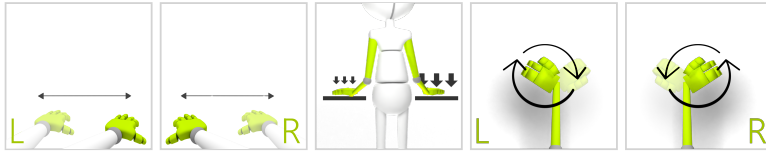


# FUNCTIONAL MOVEMENTS

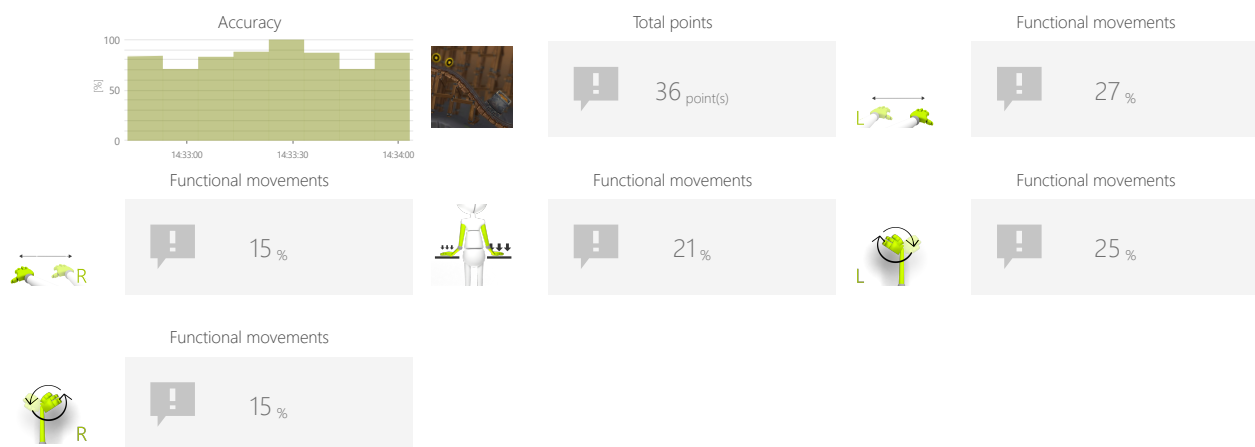
## RAILS

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



## ADJUSTMENTS

- Task duration
- Range
- Route shape
- Distance from edge
- Enable derailing
- Enable obstacles
- Time between objects
- Player speed

## OBJECTIVES

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

## INSTRUCTION FOR PATIENT

Tilt the world to let the trolley collect the coins





# FUNCTIONAL MOVEMENTS

## RAILS

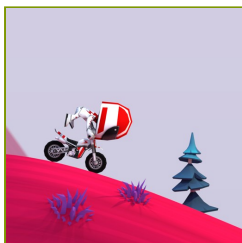
### SAMPLE SETTINGS



	Difficulty <b>1/3</b>
Duration <b>90s</b>	Range 20%  80%
Route shape 	Distance from edge 20%
Enable derailling <b>No</b>	Enable obstacles <b>No</b>
Time between objects <b>5s</b>	Player speed <b>100%</b>



	Difficulty <b>3/3</b>
Duration <b>90s</b>	Range 20%  80%
Route shape 	Distance from edge 20%
Enable derailling <b>Yes</b>	Enable obstacles <b>No</b>
Time between objects <b>5s</b>	Player speed <b>200%</b>

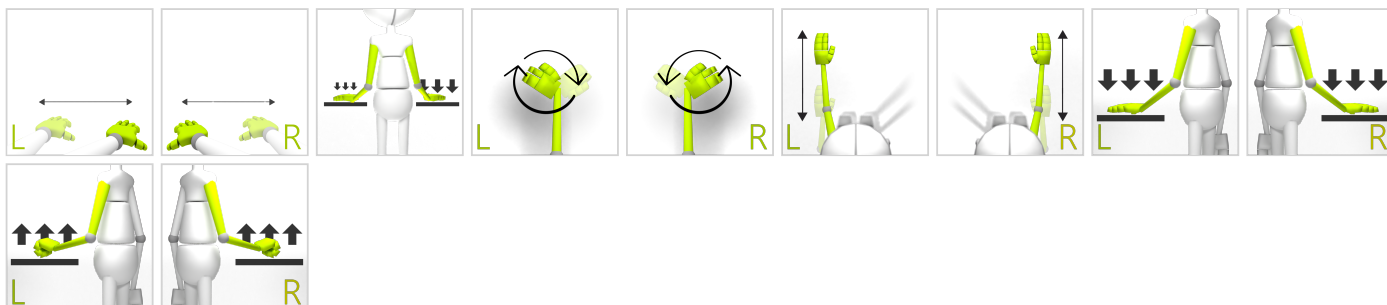


# FUNCTIONAL MOVEMENTS

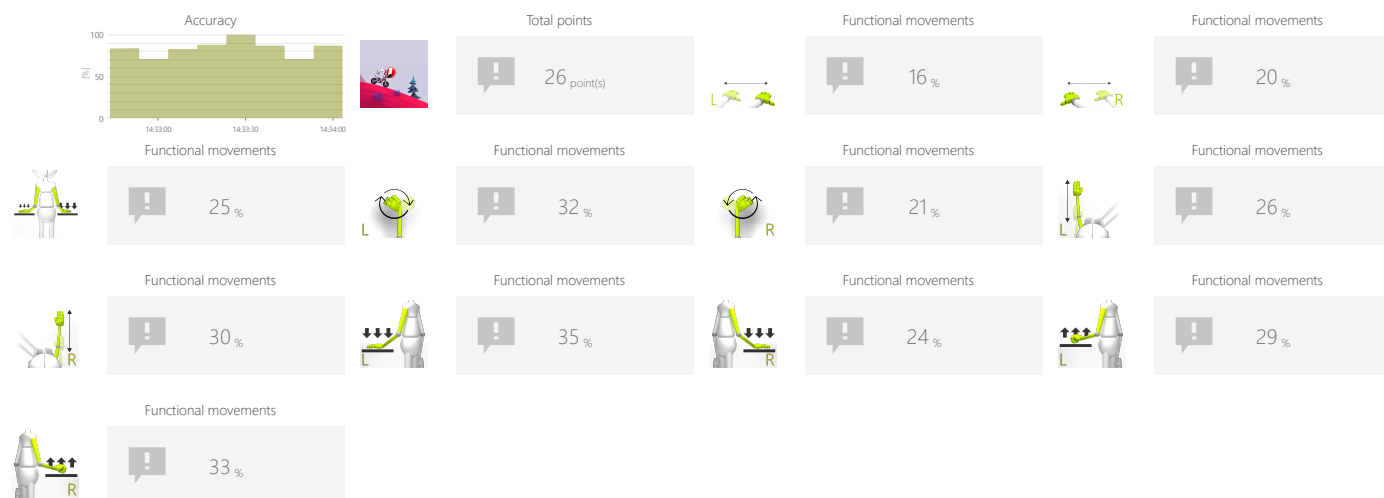
## MOTOCROSS

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



## ADJUSTMENTS

- Task duration
- Range
- Distance from edge
- Route shape

## OBJECTIVES

- Dynamics of planned movements
- Planning and Strategy

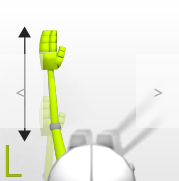
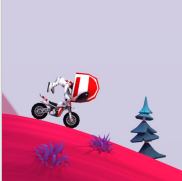
## INSTRUCTION FOR PATIENT

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



## SAMPLE SETTINGS





◀

Difficulty

2/3

▶

Duration

90s

Range

80%

20%

↑

↓

◀

▶

Distance from edge

◀ 20% ▶

Route shape

Medium

▶

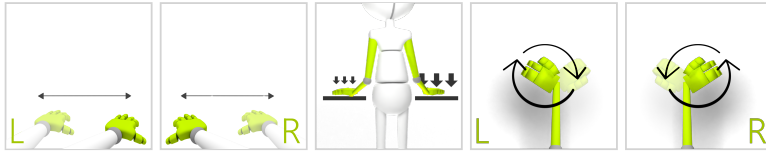


# FUNCTIONAL MOVEMENTS

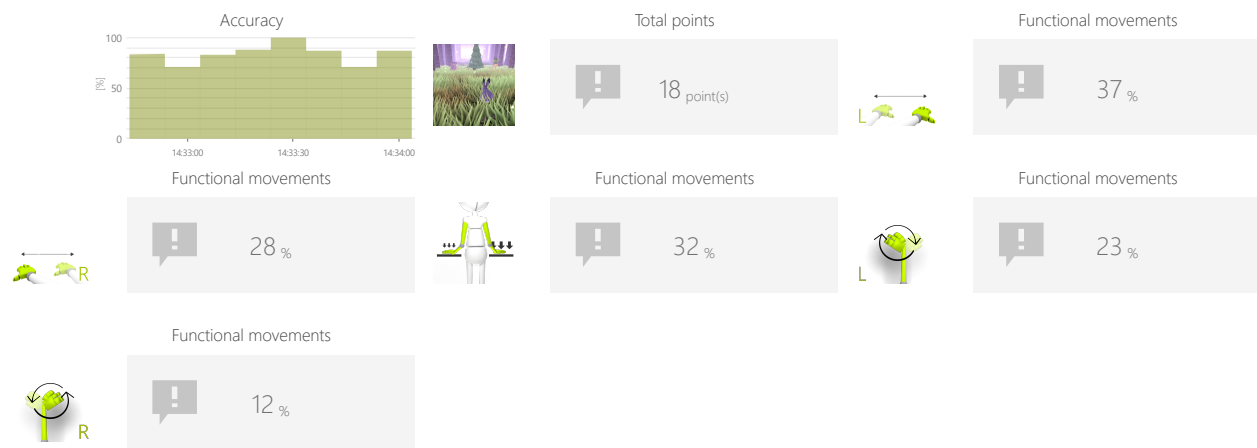
## FOREST RUNNER

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



## ADJUSTMENTS

- Task duration
- Range
- Distance from edge
- Player speed

## OBJECTIVES

- Dynamics of planned movements
- Focusing
- Planned movements
- Speed of movement

## INSTRUCTION FOR PATIENT

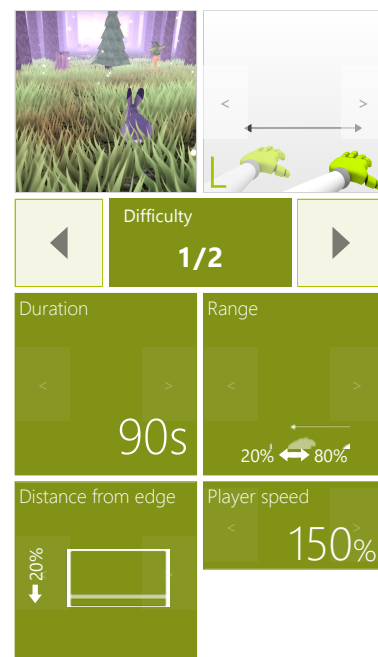
Keep the hare on the run, avoid obstacles and collect as many carrots as you can.



# FUNCTIONAL MOVEMENTS

## FOREST RUNNER

### SAMPLE SETTINGS



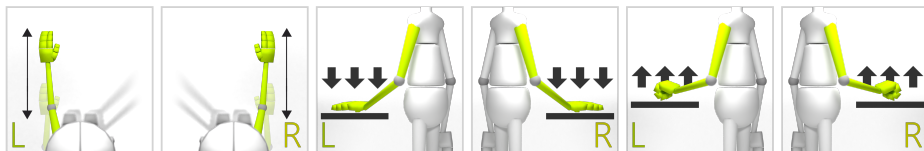


# FUNCTIONAL MOVEMENTS

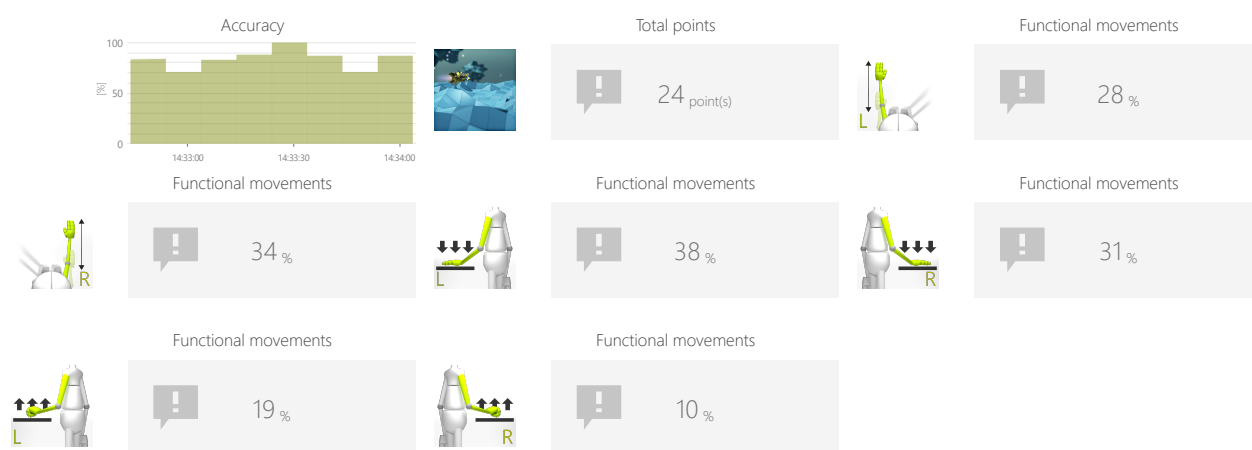
## GEOMETRY FLIER

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



## ADJUSTMENTS

- Task duration
- Range
- Distance from edge
- Player speed

## OBJECTIVES

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

## INSTRUCTION FOR PATIENT

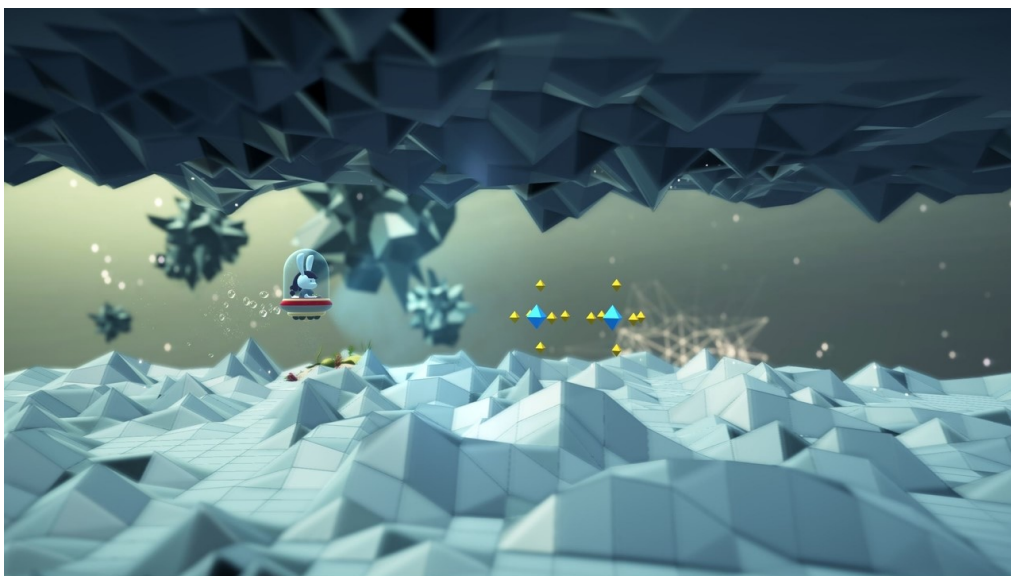
Control the vehicle to avoid the obstacles

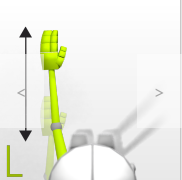



# FUNCTIONAL MOVEMENTS

GEOMETRY FLIER

## SAMPLE SETTINGS







◀

Difficulty  
**1/3**

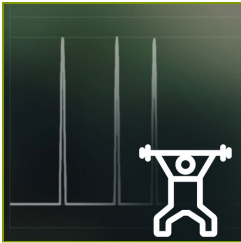
▶

Duration  
**30s**

Range  
20% 80%  


Distance from edge  
  
← 20%

Player speed  
100%

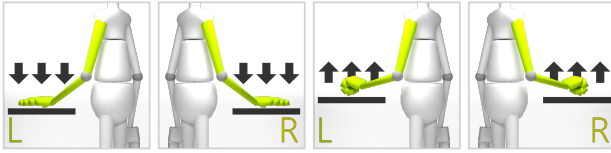


# STRENGTH

## STRENGTH TEST

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

### CONTROL MODES



### ADJUSTMENTS

- Time to complete action

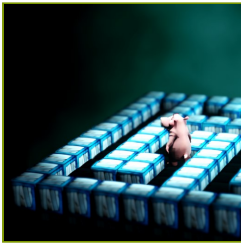
### OBJECTIVES

- Strength examination
- Muscle strengthening

### INSTRUCTION FOR PATIENT

Try to achieve best result



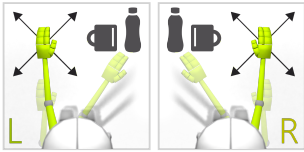


# PROBLEM SOLVING

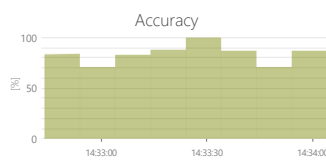
## MAZE

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



Total points

38 point(s)



Problem solving

29 %

## ADJUSTMENTS

- Task duration
- Range
- Show path
- Maze size

## OBJECTIVES

- Logical tasks
- Planned movements
- Planning and Strategy

## INSTRUCTION FOR PATIENT

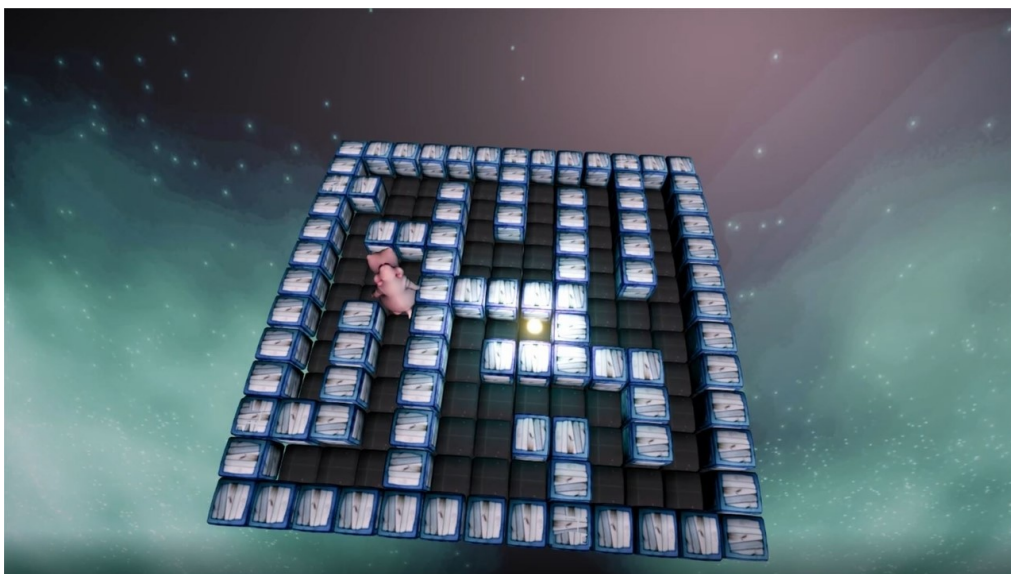
Lead the hippo through the maze to the glowing target.





# PROBLEM SOLVING

MAZE

## SAMPLE SETTINGS





◀

Difficulty  
**2/4**

▶

Duration

< 90s >

Range

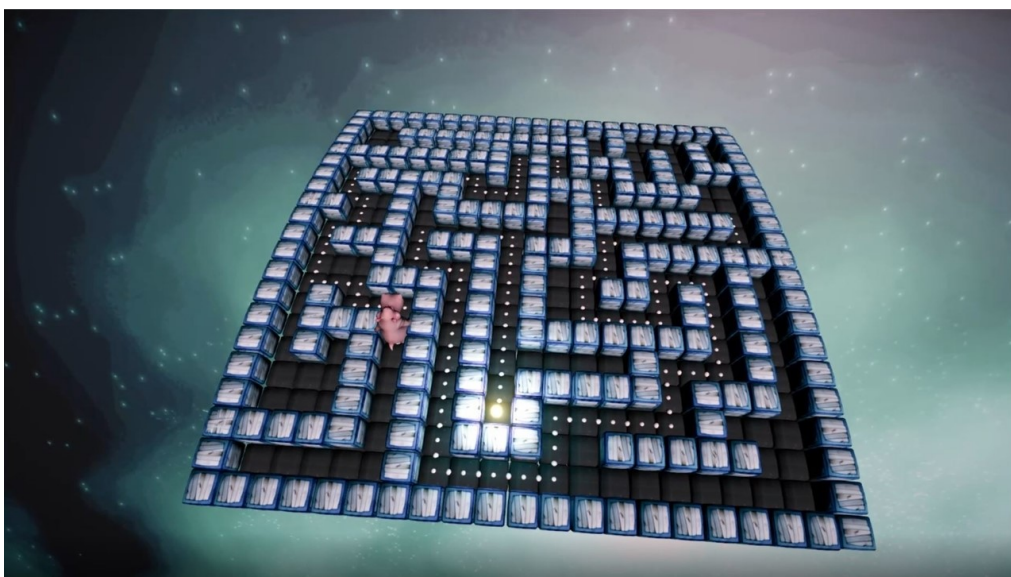
80%  
20% ↔ 80%  
20%



Show path

< No >

Maze size

< 6 >





◀

Difficulty  
**Custom**

▶

Duration

< 90s >

Range

80%  
20% ↔ 80%  
20%

Show path

< Yes >

Maze size

< 10 >