

# EXTENSION PACK FOR X-COGNI

2025.1

<b>Hardware requirements</b>	3
What is needed?	3
<b>Therapeutic tasks database</b>	5
Speed	5
Movement precision	9
Functional movements	13
Strength	29
Problem solving	30

# 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).



## CONTROL MODES



- ## OBJECTIVES

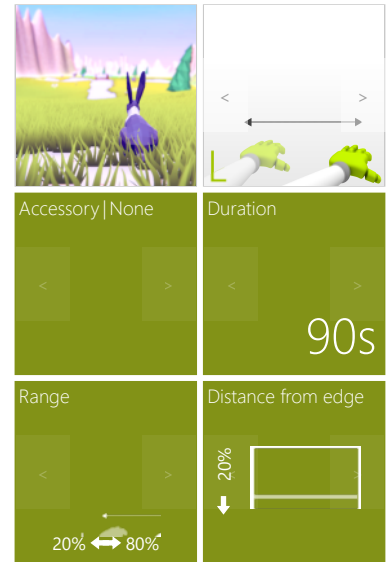
- ## INSTRUCTION FOR PATIENT

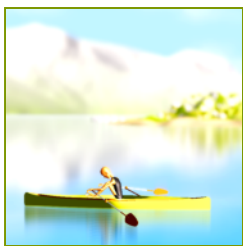
5





## SAMPLE SETTINGS



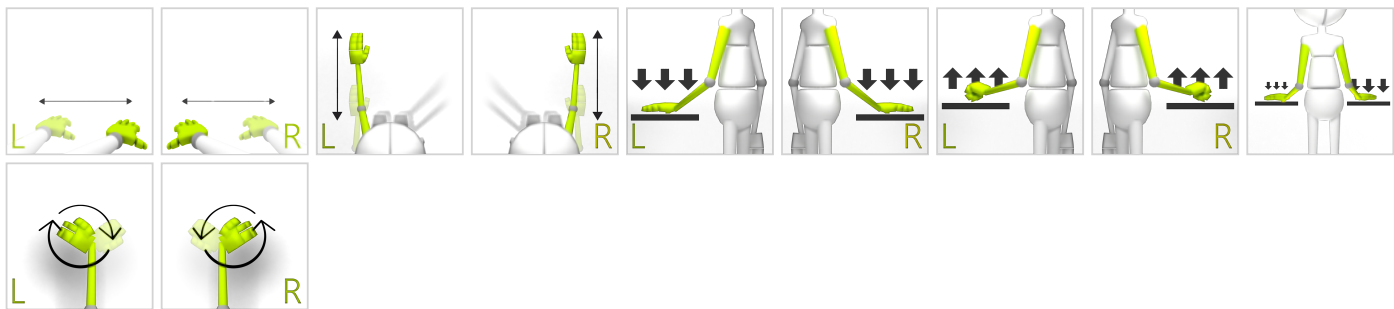


# SPEED

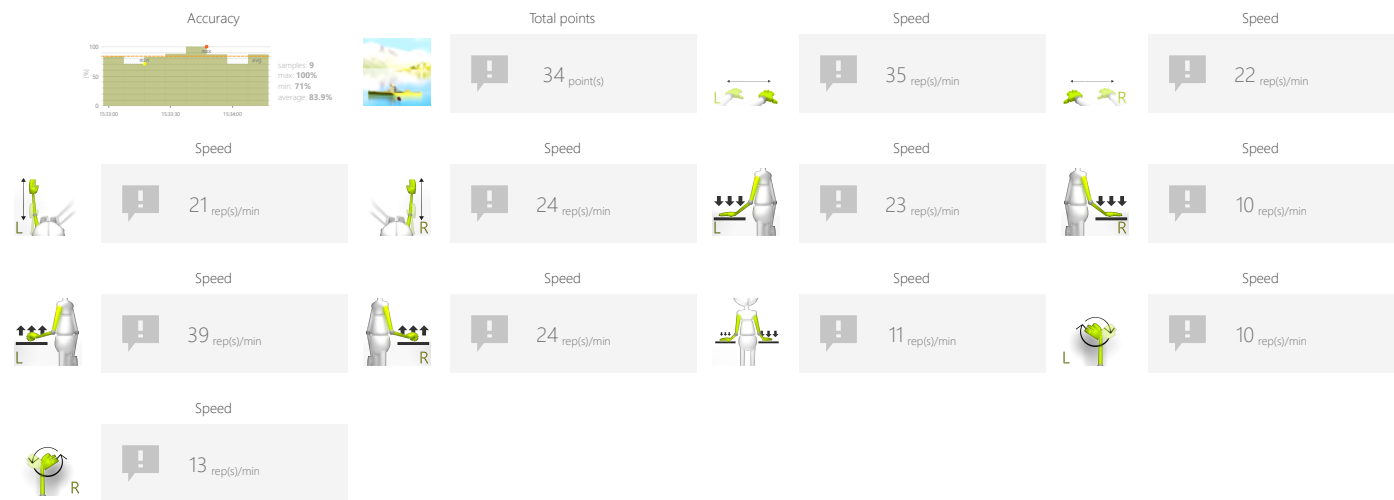
## KAYAK

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

### CONTROL MODES



### RESULTS



### ADJUSTMENTS

- Accessory
- Task duration
- Range
- Distance from edge

### OBJECTIVES

- Speed of movement
- Repetitive movements

### INSTRUCTION FOR PATIENT

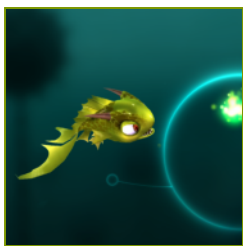
Row as fast as you can.



## SAMPLE SETTINGS



<b>Accessory   None</b> 	<b>Duration</b>  <b>90s</b>
<b>Range</b>  20%  80%	<b>Distance from edge</b> 20%

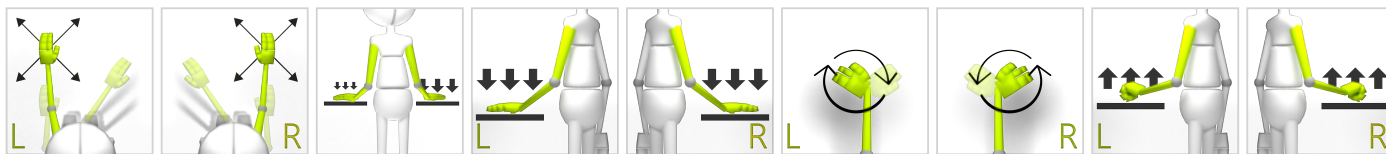


# MOVEMENT PRECISION

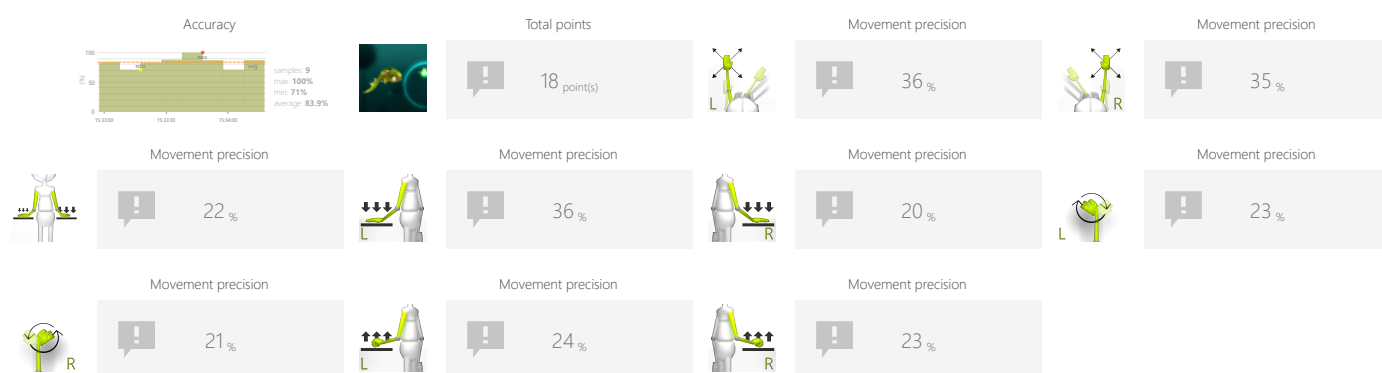
## FISH

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

## CONTROL MODES



## RESULTS



## ADJUSTMENTS

- Accessory
- 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

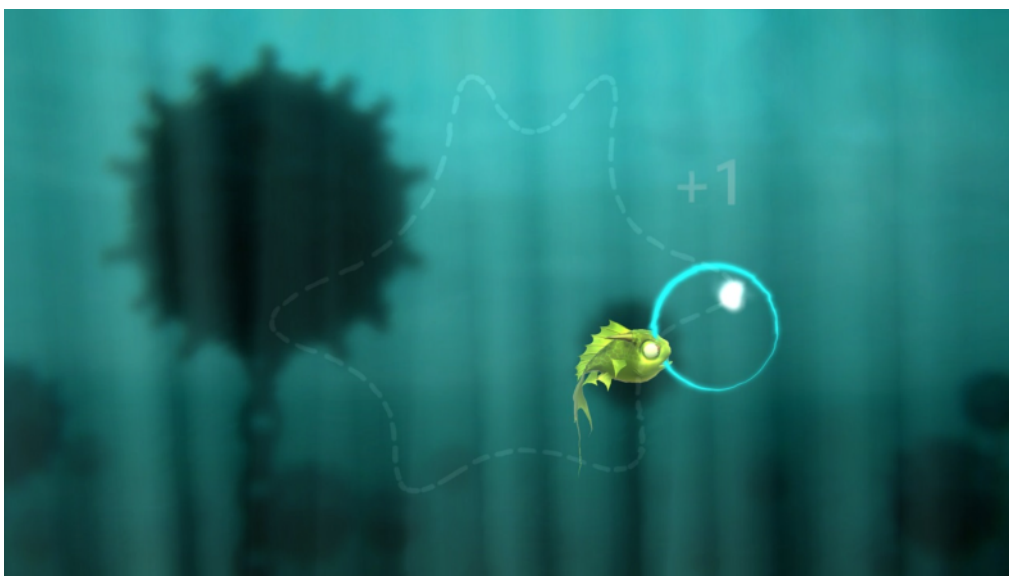
Move the blue circle to protect the sparks source from the fish.  
When the sparks source is inside the circle it is safe.



## SAMPLE SETTINGS



◀	Difficulty <b>custom</b>	▶
Accessory   None		Duration 90s
Movement mode Left		Route shape 
Speed of objects 100%		



◀	Difficulty <b>1/3</b>	▶
Accessory   None		Duration 90s
Movement mode Left		Route shape 
Speed of objects 100%		

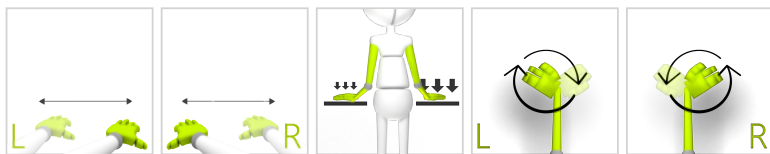


# MOVEMENT PRECISION

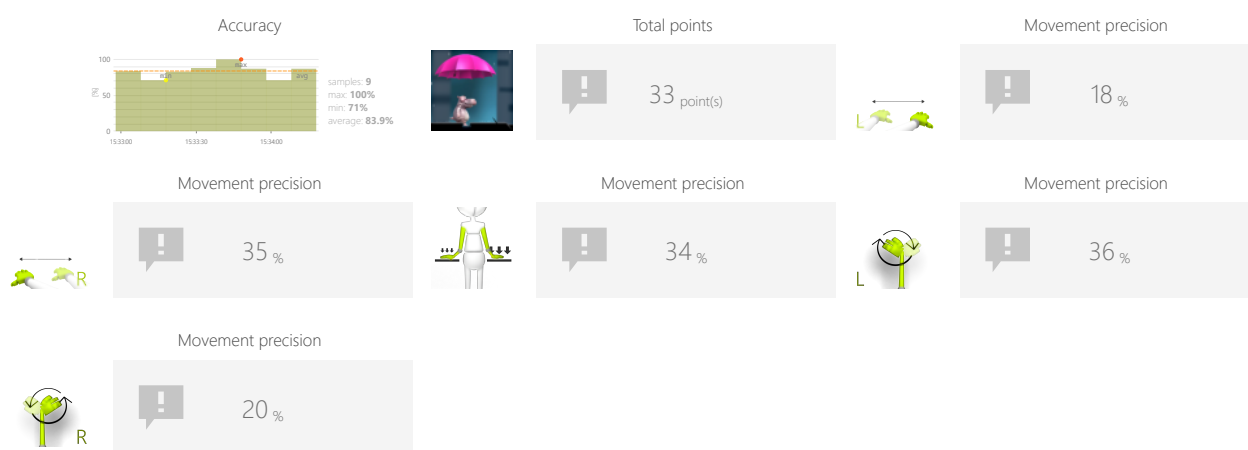
## UMBRELLA

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

## CONTROL MODES



## RESULTS



## ADJUSTMENTS

- Accessory
- 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!

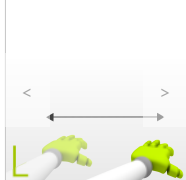



# MOVEMENT PRECISION

## UMBRELLA

### SAMPLE SETTINGS





◀

Difficulty

▶

1/3

Accessory | None

< >

Duration

< >

60s

Path

⌛ : 8.0s

< >


Range

< >

20% ↔ 80%

Distance from edge

20% ↓



Umbrella size

< >

150%

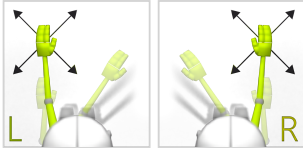


# FUNCTIONAL MOVEMENTS

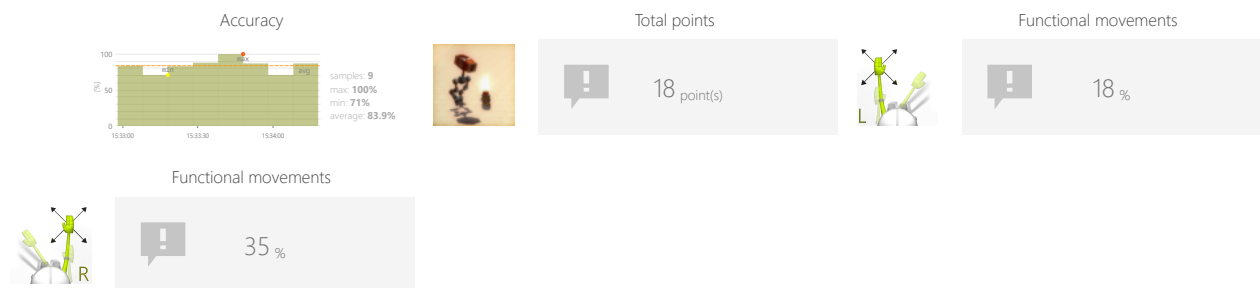
## HAMMER

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

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

## OBJECTIVES

- Planning and Strategy
- Speed of decision making

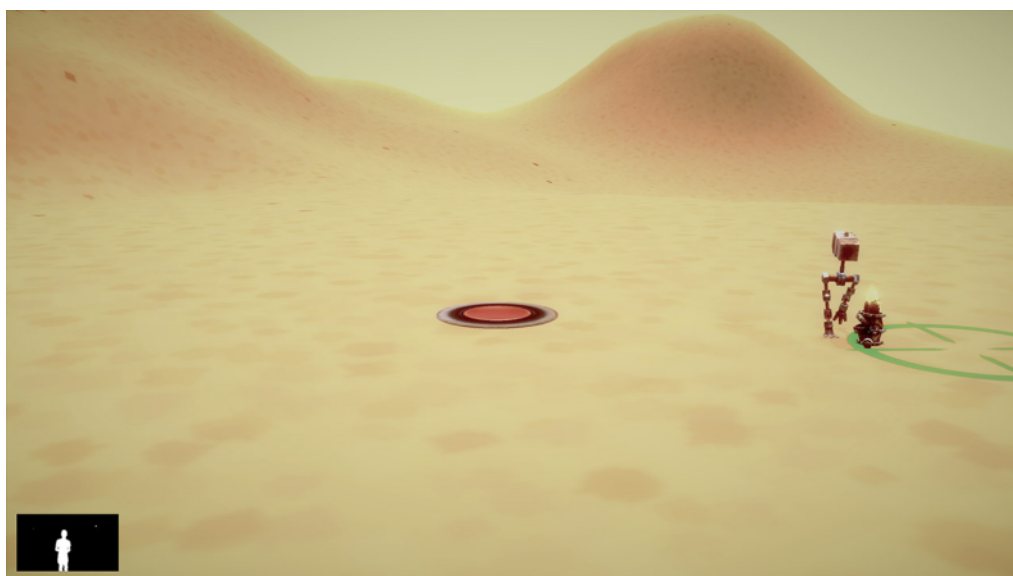
## INSTRUCTION FOR PATIENT





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





## SAMPLE SETTINGS



			
◀		Difficulty <b>1/3</b>	▶
Accessory   None ◀ ▶		Active positions 	
Duration ◀ ▶ <b>90s</b>		Range 20% 80% 	
Time to react ◀ ▶ <b>10s</b>		Reticle size ◀ ▶ <b>125%</b>	

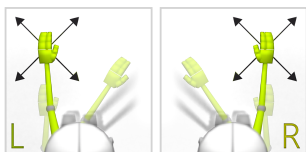


# FUNCTIONAL MOVEMENTS

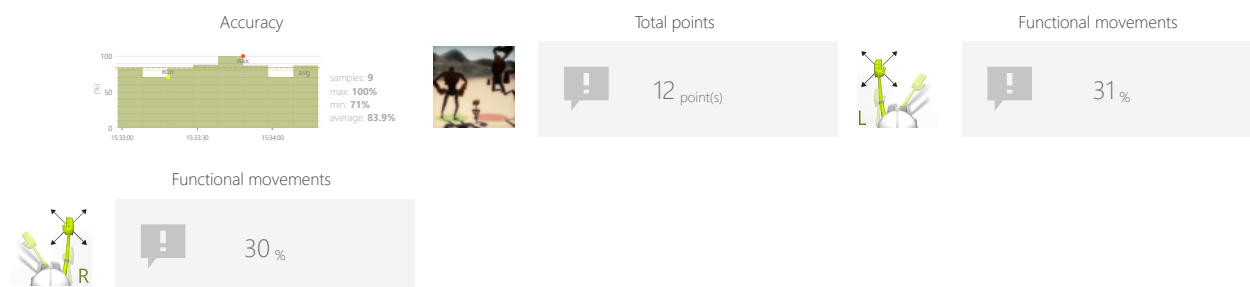
## RUNAWAY

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

- Accessory
- Task duration
- Range
- Number of enemies
- Enemies speed

## OBJECTIVES

- Predicting the trajectory of objects in 3D space
- Response to negative visual stimuli
- Focusing
- Perceptivity

## INSTRUCTION FOR PATIENT

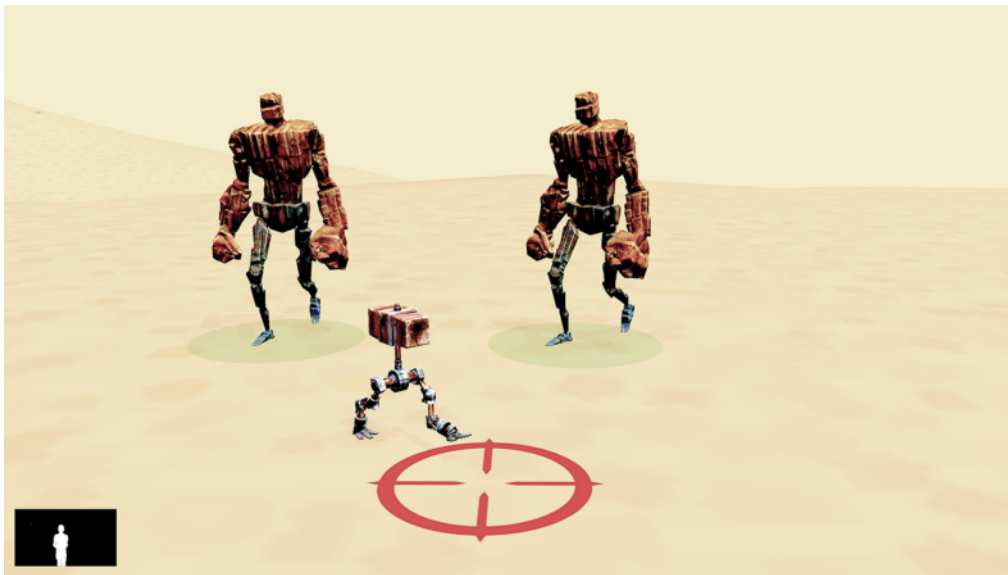
Keep away from the big robots.





# FUNCTIONAL MOVEMENTS

RUNAWAY

## SAMPLE SETTINGS





◀

Difficulty  
**1/3**

▶

Accessory | None

< >

Duration

< >

90s

Range

80%  
20% ↔ 80%

Number of enemies

< >

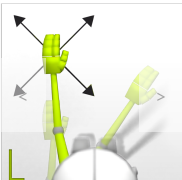

2

Enemies speed

< >

100%





◀

Difficulty  
**custom**

▶

Accessory | None

< >

Duration

< >

90s

Range

80%  
20% ↔ 80%

Number of enemies

< >

4

Enemies speed

< >

100%

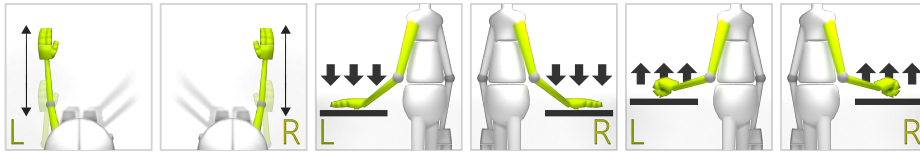


# FUNCTIONAL MOVEMENTS

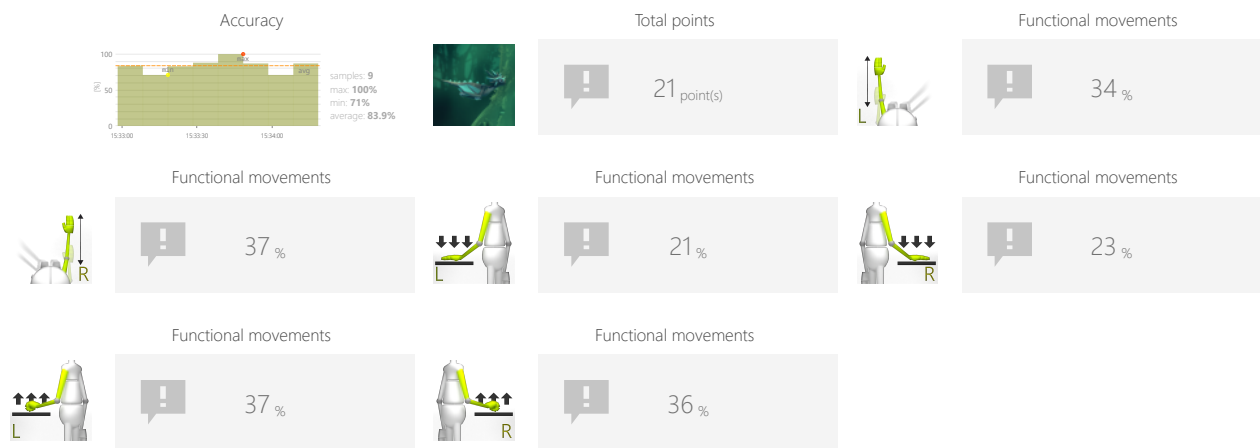
## DRAGON

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

- Accessory
- Task duration
- Range
- Distance from edge
- 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.

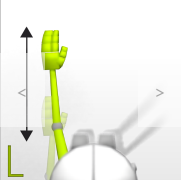



# FUNCTIONAL MOVEMENTS

## DRAGON

### SAMPLE SETTINGS





◀

Difficulty

▶

custom

Accessory | None

<

>

Duration

<

>

90s

Range

20%

80%

<

>

Distance from edge

<

>

20%

Coins group size

<

>

3

Distance between coins

<

>

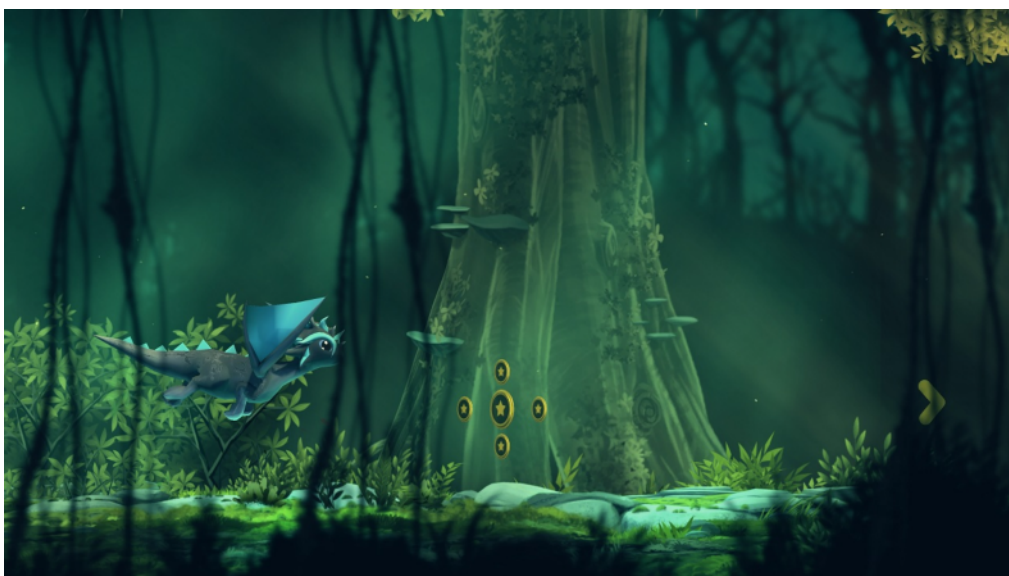
250%

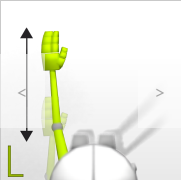

Gravity force

<

>

100%





◀

Difficulty

▶

1/3

Accessory | None

<

>

Duration

<

>

90s

Range

20%

80%

<

>

Distance from edge

<

>

20%

Coins group size

<

>

5

Distance between coins

<

>

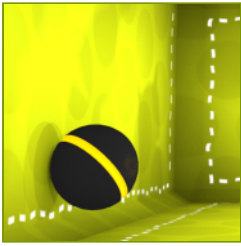
250%

Gravity force

<

>

100%

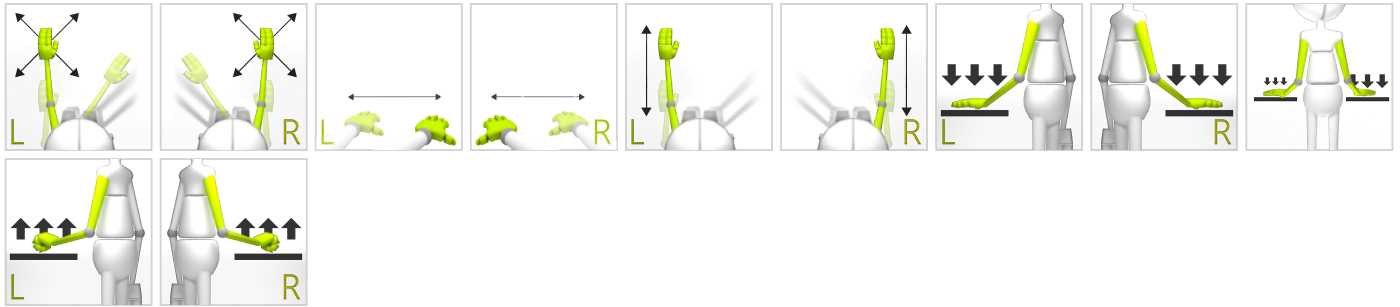


# FUNCTIONAL MOVEMENTS

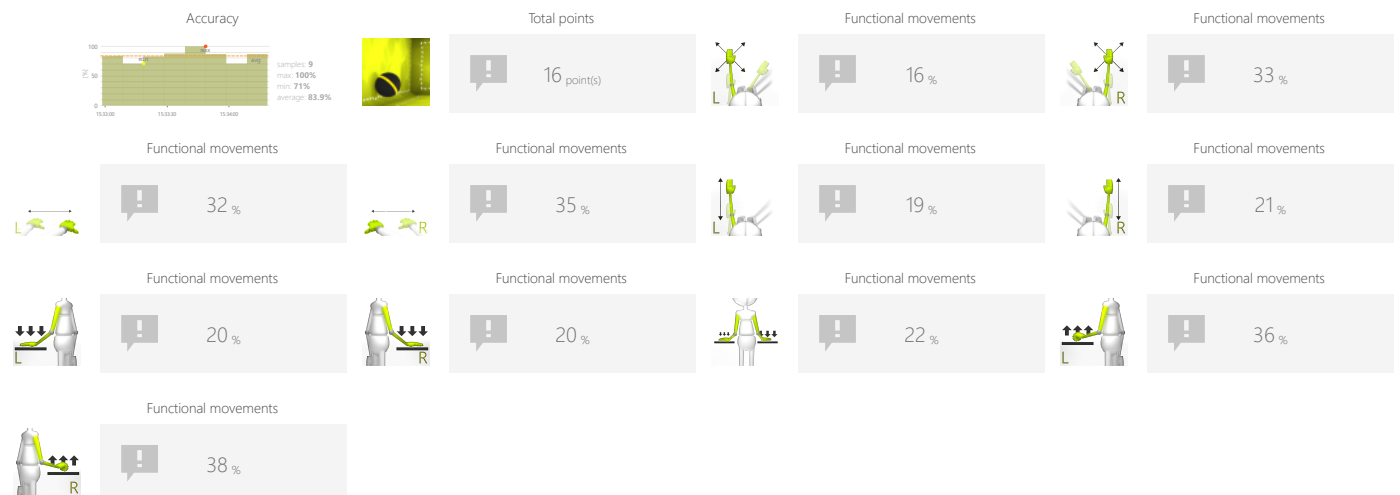
## ARCANOID

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

- Accessory
- 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.

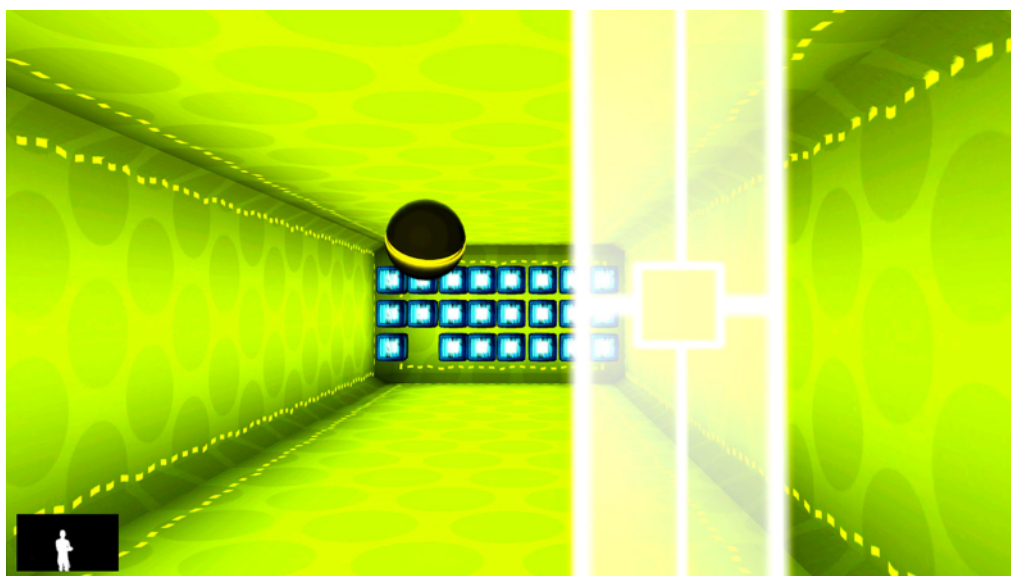




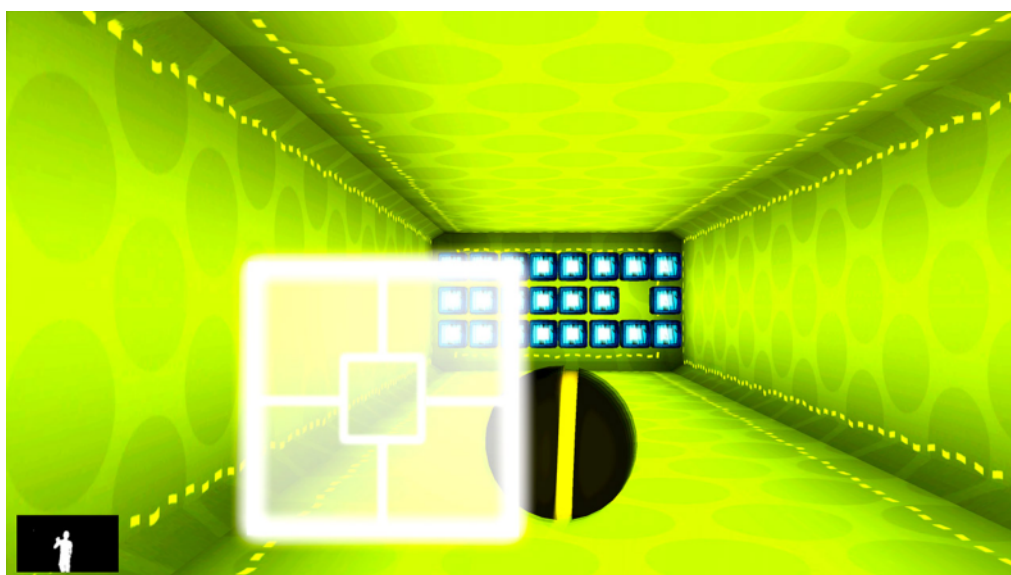
# FUNCTIONAL MOVEMENTS

## ARCANOID

### SAMPLE SETTINGS



◀	Difficulty <b>custom</b>	▶
Accessory   None		Duration < > <b>90s</b>
Range 20% 80% 20% 80%		Reticle size < > <b>100%</b>
		Speed of objects < > <b>70%</b>



◀	Difficulty <b>custom</b>	▶
Accessory   None		Duration < > <b>90s</b>
Range 20% 80% 20% 80%		Reticle size < > <b>75%</b>
		Speed of objects < > <b>70%</b>

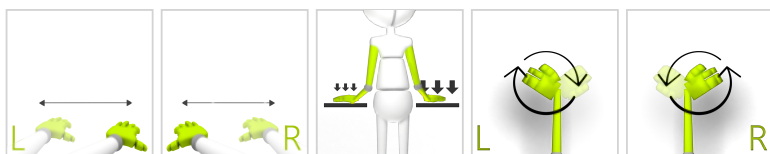


# FUNCTIONAL MOVEMENTS

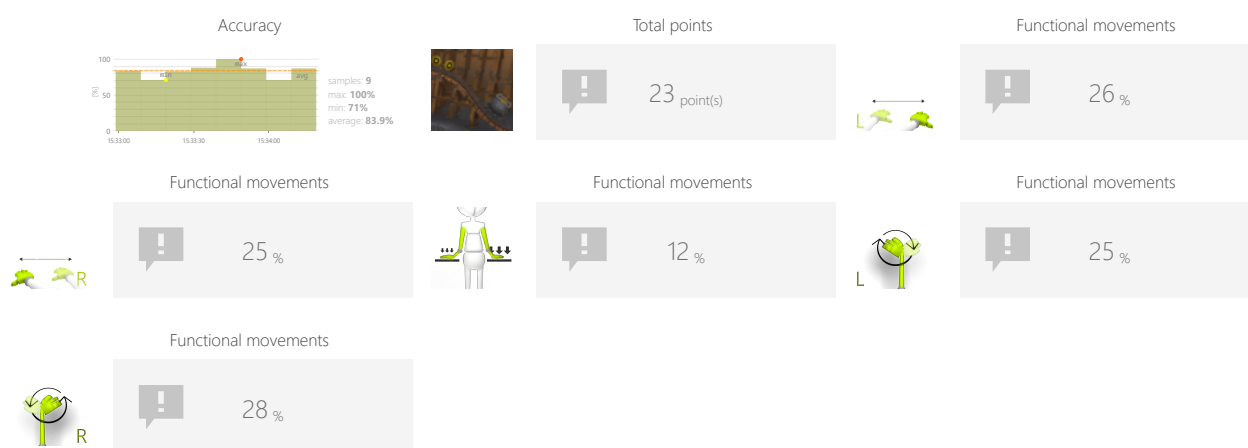
## RAILS

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

- Speed
- Accessory
- Task duration
- Range
- Route shape
- Distance from edge
- 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.








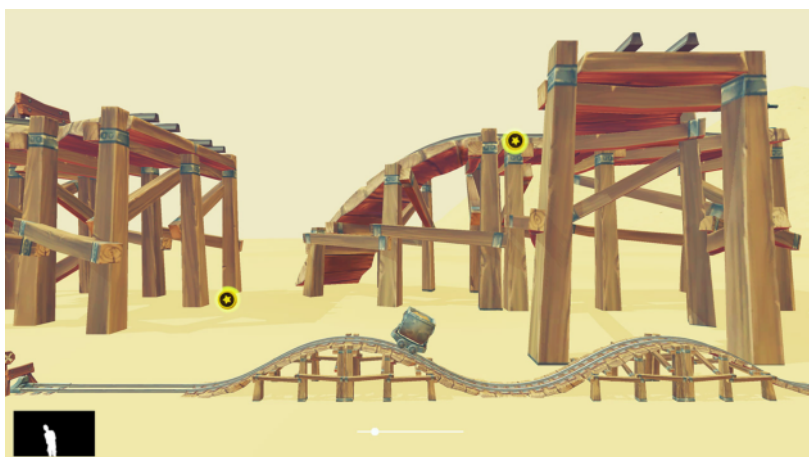
# FUNCTIONAL MOVEMENTS

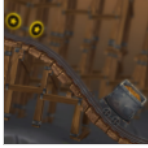


RAILS

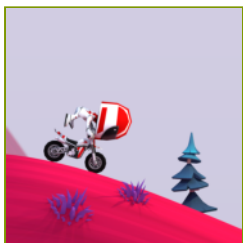
## SAMPLE SETTINGS



			
Difficulty		1/3	
Speed			
100%			
speed set automatically			
Accessory   None		Duration	
		90s	
Range		Route shape	
20% ↔ 80%			
Distance from edge		Enable derailing	
20% ↓		No	
		Enable obstacles	
		No	
Time between objects			
5s			



			
Difficulty		custom	
Speed			
100%			
speed set automatically			
Accessory   None		Duration	
		90s	
Range		Route shape	
20% ↔ 80%			
Distance from edge		Enable derailing	
20% ↓		No	
		Enable obstacles	
		No	
Time between objects			
5s			

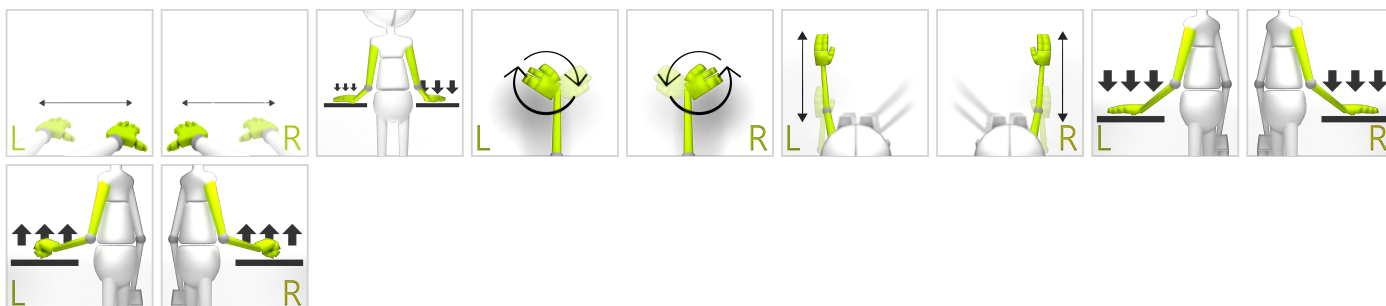


# FUNCTIONAL MOVEMENTS

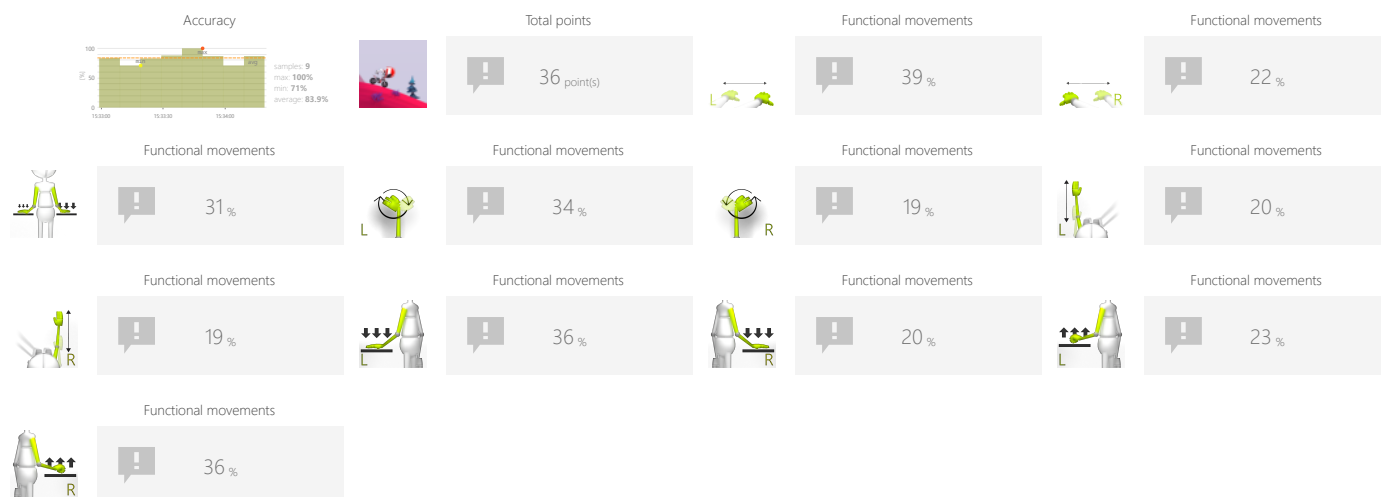
## MOTOCROSS

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

- Accessory
- 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.

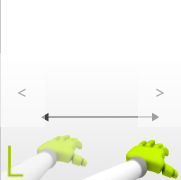
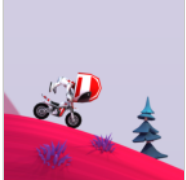


# FUNCTIONAL MOVEMENTS

## MOTOCROSS

### SAMPLE SETTINGS





◀

Difficulty  
**1/3**

▶

Accessory | None

Duration  
90s

Range  
20% ↔ 80%

Distance from edge  
20% ↓

Route shape  
Easy

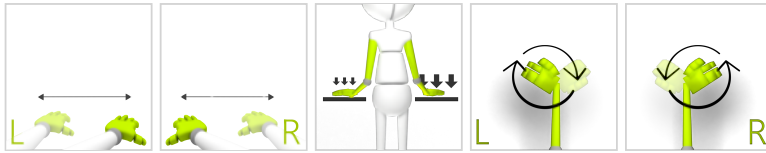


# FUNCTIONAL MOVEMENTS

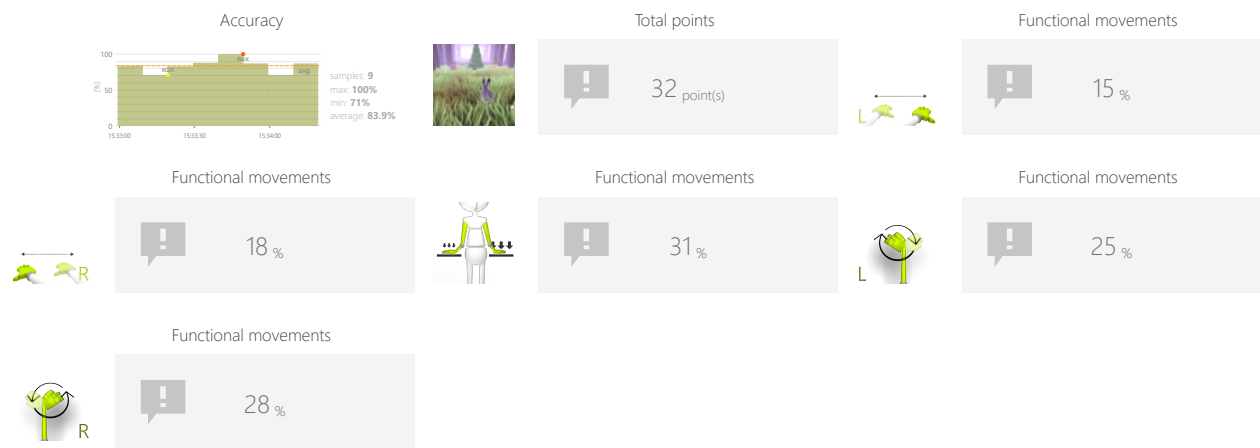
## FOREST RUNNER

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

- Speed
- Accessory
- Task duration
- Range
- Distance from edge

## 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.

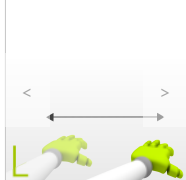



# FUNCTIONAL MOVEMENTS

## FOREST RUNNER

### SAMPLE SETTINGS





◀

Difficulty

▶

1/2

<

Speed

>

150%

speed set automatically

<

Accessory | None

>

<

Duration

>

90s

<

Range

>


20% ↔ 80%

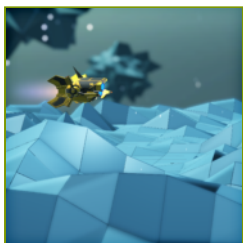
<

Distance from edge

>

20% ↓



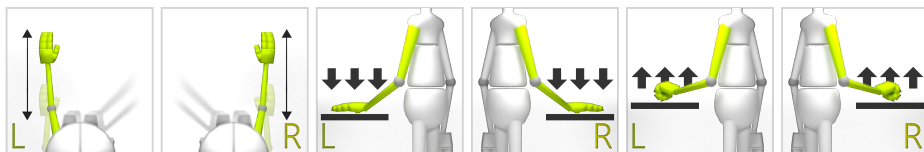


# FUNCTIONAL MOVEMENTS

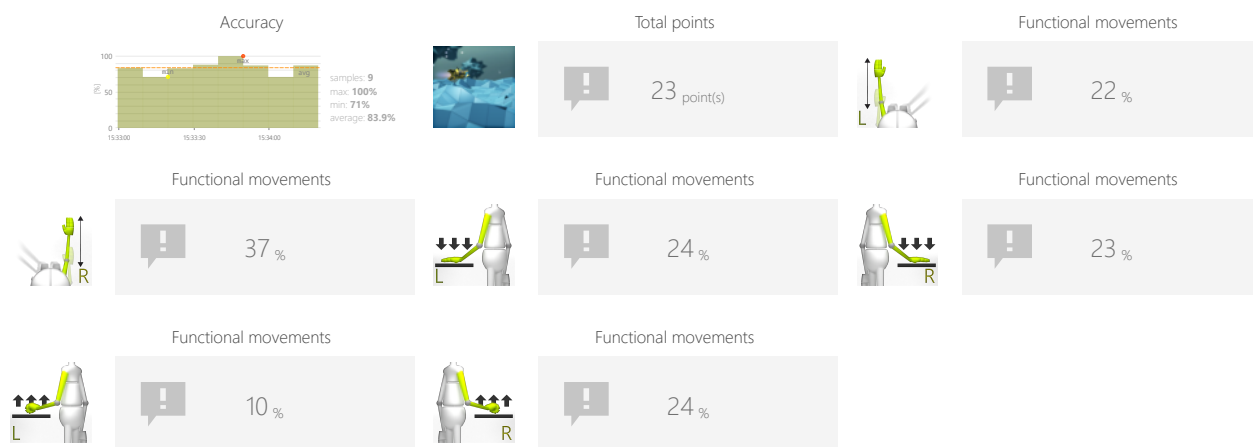
## GEOMETRY FLIER

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

- Speed
- Accessory
- Task duration
- Range
- Distance from edge

## OBJECTIVES

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

## INSTRUCTION FOR PATIENT

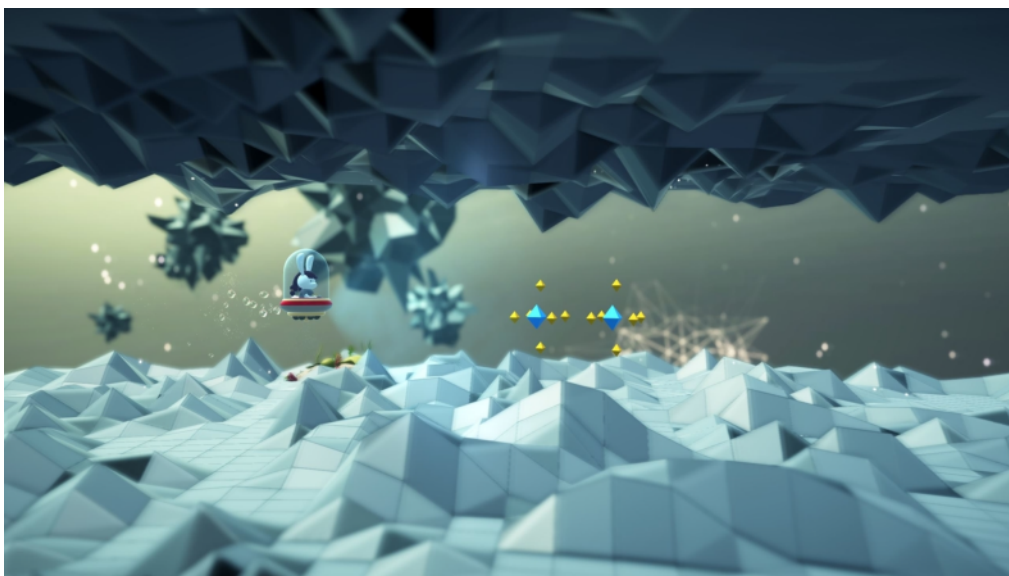
Control the vehicle to avoid the obstacles.

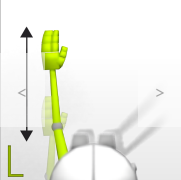



# FUNCTIONAL MOVEMENTS

GEOMETRY FLIER

## SAMPLE SETTINGS





◀

Difficulty

▶

1/3

Speed

< 100% >

speed set automatically

Accessory | None

< >

Duration

< 90s >

Range

20% 80%

Distance from edge

< 20% >

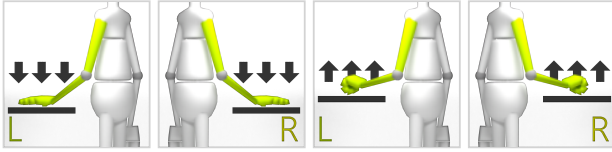


# STRENGTH

## 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



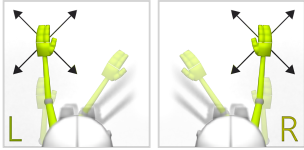


# PROBLEM SOLVING

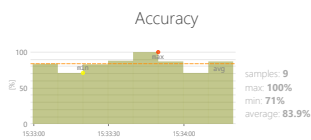
## MAZE

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

34 point(s)



Problem solving

33 %

## ADJUSTMENTS

- Accessory
- 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	1/4
Accessory   None	Duration
< >	< >
Range	Show path
20% 80% 20% 80%	< >
	No
	Maze size
	< >
	4



Difficulty	4/4
Accessory   None	Duration
< >	< >
Range	Show path
20% 80% 20% 80%	< >
	No
	Maze size
	< >
	10