

# BOTTLE BASE PACK

2020.1



Hardware requirements	
What is needed?	
Therapeutic tasks database	
Range of motion	Ē
Speed	
Balance	
Movement precision	12
Functional movements	20
Strength	48
Divided attention	49
Memory	5
Problem solving	53
Specialized	56

# 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
- nVidia RTX2060 graphic card
- Azure Kinect sensor





# RANGE OF MOTION CRYSTALS

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

# **CONTROL MODES**

#### **RESULTS**





#### **OBJECTIVES**

- Improve range of motion
- Perceptivity
- Response to negative visual stimuli
- Reaction to the positive visual stimuli

# INSTRUCTION FOR PATIENT

Collect the crystals and avoid the radioactive barrels





# RANGE OF MOTION

# ANGLES EVALUATION

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

# **CONTROL MODES**













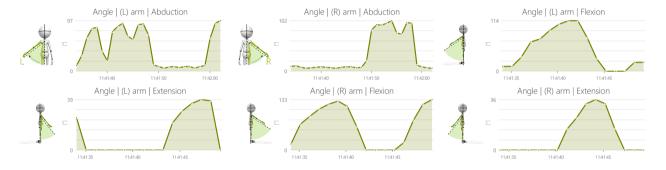








## **RESULTS**



## **ADJUSTMENTS**

• Time to complete action

## **OBJECTIVES**

• Range of motion examination

## **INSTRUCTION FOR PATIENT**

Try to achieve best result

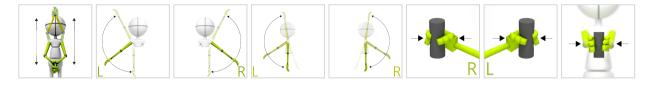




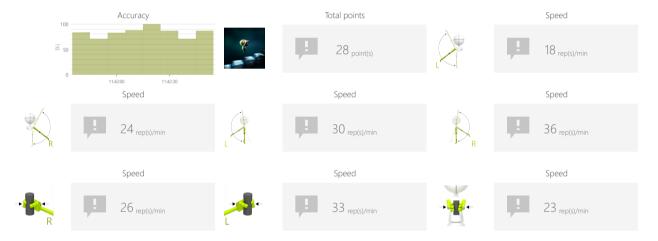
# SPEED STAIRS

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
- Max time per floor
- Number of stairs
- Pause length

## **OBJECTIVES**

- Jumping
- Knees lifting
- Dynamics of planned movements

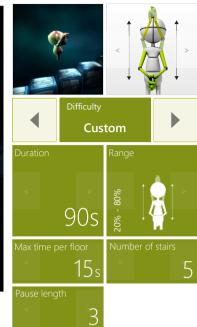
#### INSTRUCTION FOR PATIENT

Climb the stairs before they disappear











# SPEED RABBIT

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

# **CONTROL MODES**

#### **RESULTS**



## **OBJECTIVES**

- Speed of movement
- Repetitive movements

# **INSTRUCTION FOR PATIENT**

Go through the entire route as fast as you can





# SPEED KAYAK

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

# **CONTROL MODES**

## **RESULTS**



## **OBJECTIVES**

- Speed of movement
- Repetitive movements

# **INSTRUCTION FOR PATIENT**

Row as fast as you can

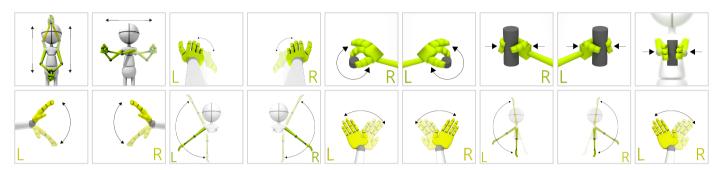




# SPEED TEST

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

## **CONTROL MODES**



## **RESULTS**



# **ADJUSTMENTS**

- Time to complete action
- Range

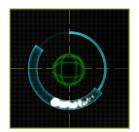
## **OBJECTIVES**

- Speed of movement
- Repetitive movements

#### INSTRUCTION FOR PATIENT

Perform the specified movement pattern as many times as possible





# BALANCE GRID

Measure and train individual's skills to perform specific movement patterns while keeping predefined weight distribution.

# **CONTROL MODES**

#### **RESULTS**





#### **OBJECTIVES**

- Balance and equilibrium training
- 3D space movements reproduction
- Activity in a given rhythm

#### INSTRUCTION FOR PATIENT

Keep the white glowing point inside the blue area and make sure the emerging bump stays in the middle of the reticle





# BALANCE BLOCK BUILDER

Measure and train individual's skills to perform specific movement patterns while keeping predefined weight distribution.

# **CONTROL MODES**

#### **RESULTS**





#### **OBJECTIVES**

- Movement precision
- Muscle strengthening
- Balance and equilibrium training

#### INSTRUCTION FOR PATIENT

Build as many stacks as you can. Keep your body balanced.





# **PENDULUM**

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

# **CONTROL MODES**

#### **RESULTS**





#### **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



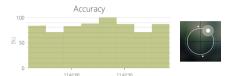


# TRACKING

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

# **CONTROL MODES**

#### **RESULTS**





#### **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





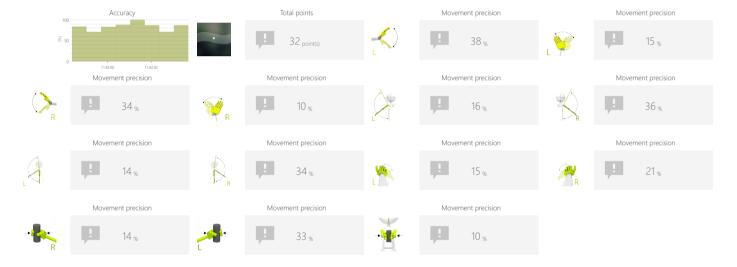
## GRAPH

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

# **CONTROL MODES**



#### **RESULTS**



#### **ADJUSTMENTS**

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

#### **OBJECTIVES**

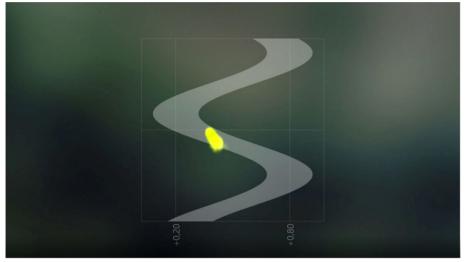
- Movement precision
- Activity in a given rhythm
- Repetitive movements
- Hands raising

#### **INSTRUCTION FOR PATIENT**

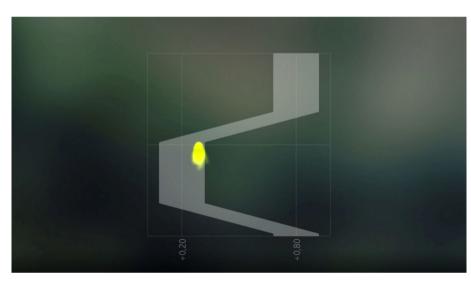
Try to stay within the borders

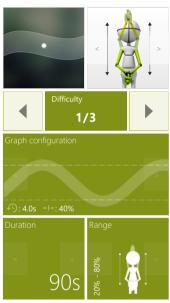


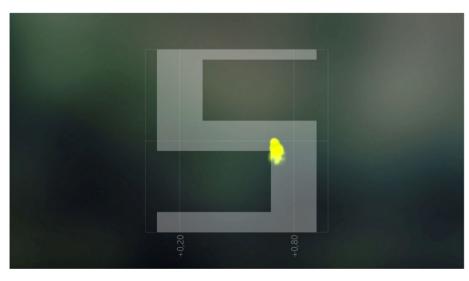


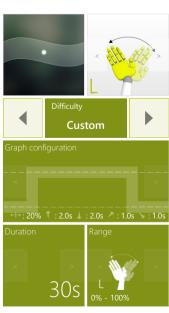
















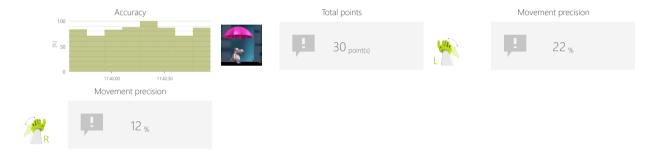
UMBRELLA

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

# **CONTROL MODES**



## **RESULTS**



#### **ADJUSTMENTS**

- Task duration
- Path
- Range
- Umbrella size

#### **OBJECTIVES**

- Movement precision
- Visual motor coordination

#### **INSTRUCTION FOR PATIENT**

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









## **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**



#### **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!





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**



#### **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

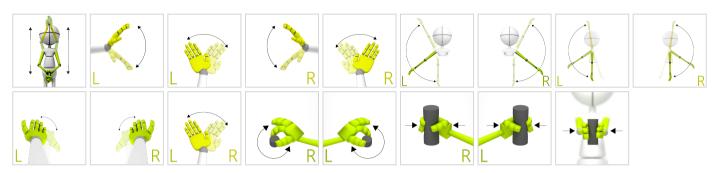




#### **AIRPLANE**

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**



### **ADJUSTMENTS**

- Task duration
- Range
- Player speed

#### **OBJECTIVES**

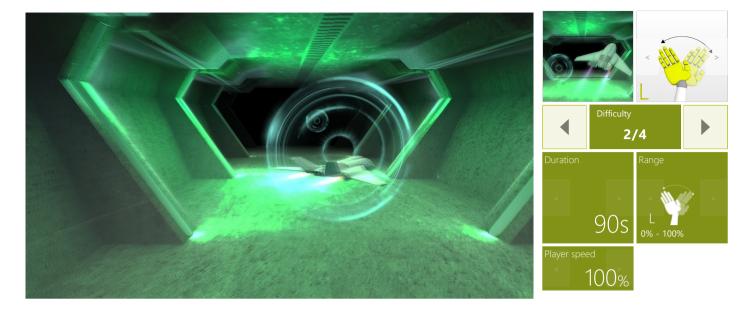
- Focusing
- Perceptivity
- Movement precision
- Predicting the trajectory of objects in 3D space
- Balance and equilibrium training

#### INSTRUCTION FOR PATIENT

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





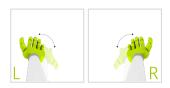




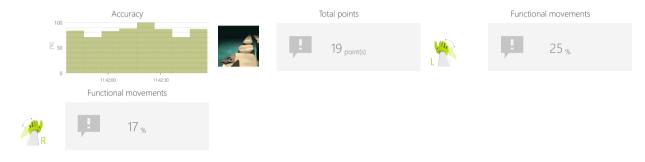
## **STONES**

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**



#### **ADJUSTMENTS**

- Task duration
- Range
- Player speed

#### **OBJECTIVES**

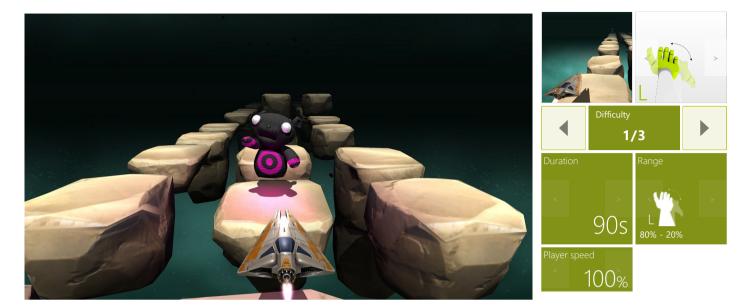
- Perceptivity
- Dynamics of planned movements
- Reaction to the positive visual stimuli
- Response to negative visual stimuli

#### INSTRUCTION FOR PATIENT

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











# **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**



#### **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





# **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**



#### **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





## **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**



#### **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





# **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**



#### **OBJECTIVES**

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

#### INSTRUCTION FOR PATIENT

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





## **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**



#### **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





# **BOX CRUSHER**

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**



## **OBJECTIVES**

- 3D space movements reproduction
- Movement awareness
- Muscle strengthening
- Repetitive movements

#### **INSTRUCTION FOR PATIENT**

Smash boxes with the club

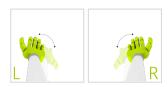




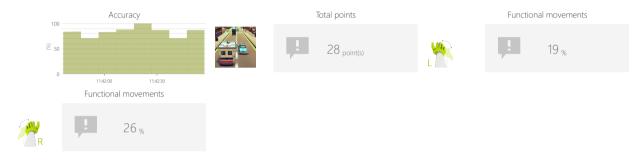
## **AMBULANCE**

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**



#### **ADJUSTMENTS**

- Task duration
- Range
- Distance between cars
- Player speed

#### **OBJECTIVES**

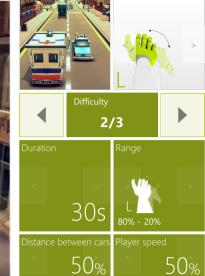
- Balance and equilibrium training
- Dynamics of planned movements
- Focusing
- Speed of decision making
- Visual motor coordination

#### INSTRUCTION FOR PATIENT

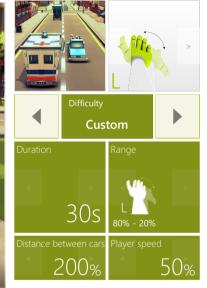
Go as fast as you can and avoid hitting other cars









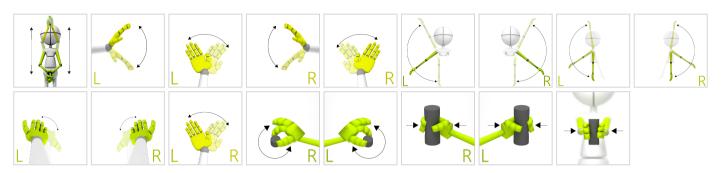




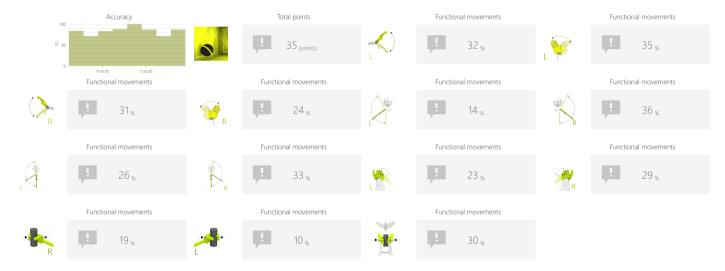
## **ARCANOID**

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**

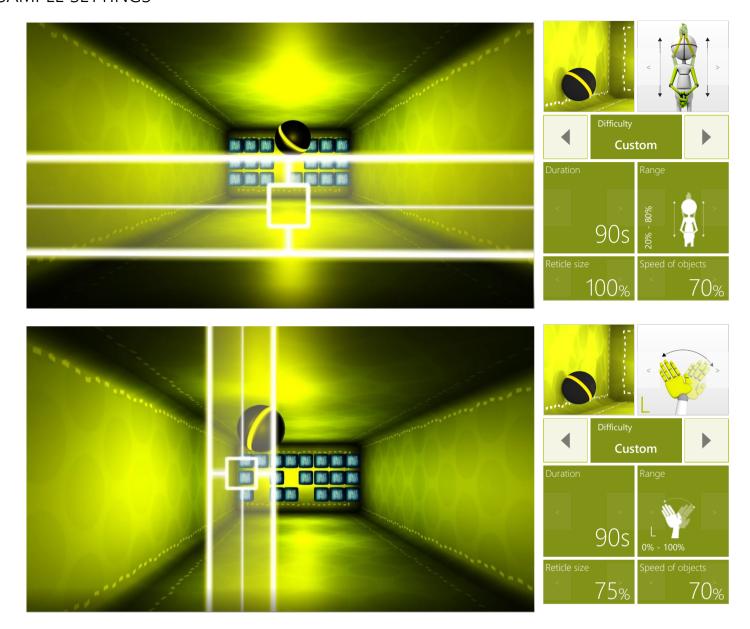
- Dynamics of planned movements
- Predicting the trajectory of objects in 3D space
- Visual motor coordination

#### **INSTRUCTION FOR PATIENT**

Destroy as many boxes as you can





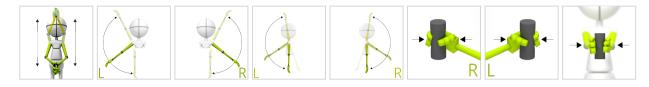




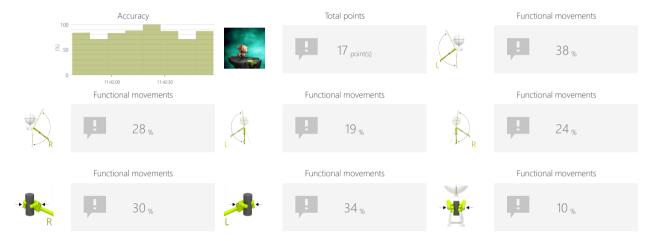
## **ROCKET JUMPING**

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**



#### **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.









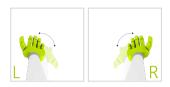




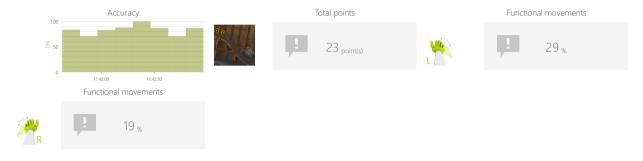
#### **RAILS**

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
- 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











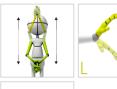




#### **MOTOCROSS**

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
- 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.









#### **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**



#### **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.

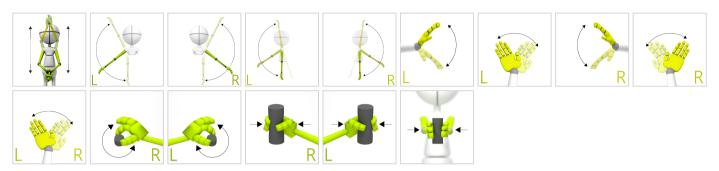




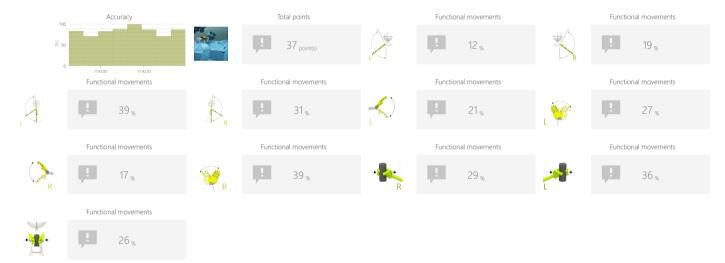
#### **GEOMETRY FLIER**

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
- Player speed

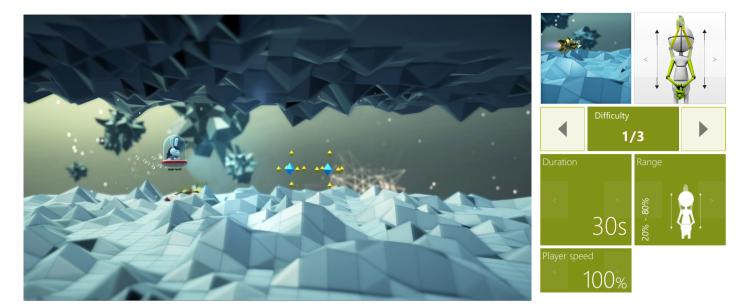
#### **OBJECTIVES**

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

#### INSTRUCTION FOR PATIENT

Control the vehicle to avoid the obstacles



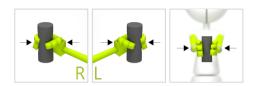




#### DANCEMAN

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

#### **CONTROL MODES**



#### **RESULTS**



#### **ADJUSTMENTS**

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

#### **OBJECTIVES**

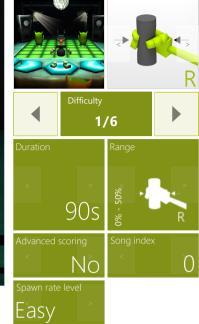
- · Activity in a given rhythm
- Spontaneous movements
- Visual motor coordination

#### INSTRUCTION FOR PATIENT

Hit the green characters when they come close









#### **PONG**

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**



#### **OBJECTIVES**

- Planned movements
- Focusing
- Predicting the trajectory of objects

#### INSTRUCTION FOR PATIENT

Use the paddles to hit a ball back and forth

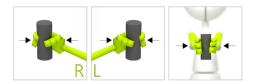




# STRENGTH STRENGTH TEST

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

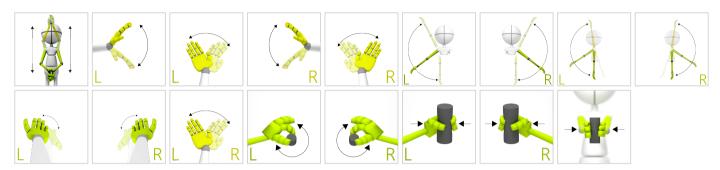




# DIVIDED ATTENTION SORTER

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**



#### **ADJUSTMENTS**

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

#### **OBJECTIVES**

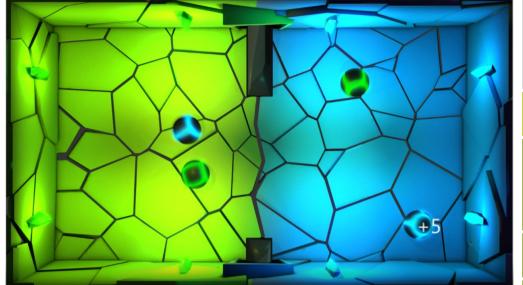
- Predicting the trajectory of objects
- Focusing
- Perceptivity
- Movement precision
- Exercise with or without support from healthy limb

#### INSTRUCTION FOR PATIENT

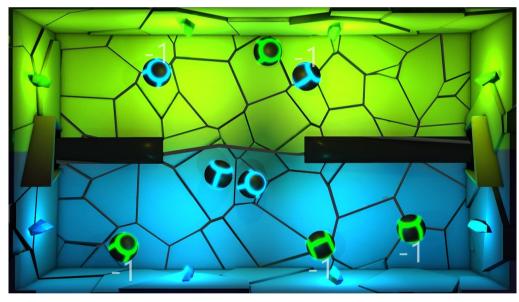
Pass or block the balls so that the blue balls are on the blue side and the green balls are on the green side of the screen.















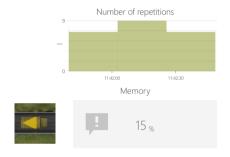
### MEMORY TRUCKS

Measure and train individual's skills to memorize information.

#### **CONTROL MODES**



#### **RESULTS**





#### **ADJUSTMENTS**

- Task duration
- Range
- Variations

#### **OBJECTIVES**

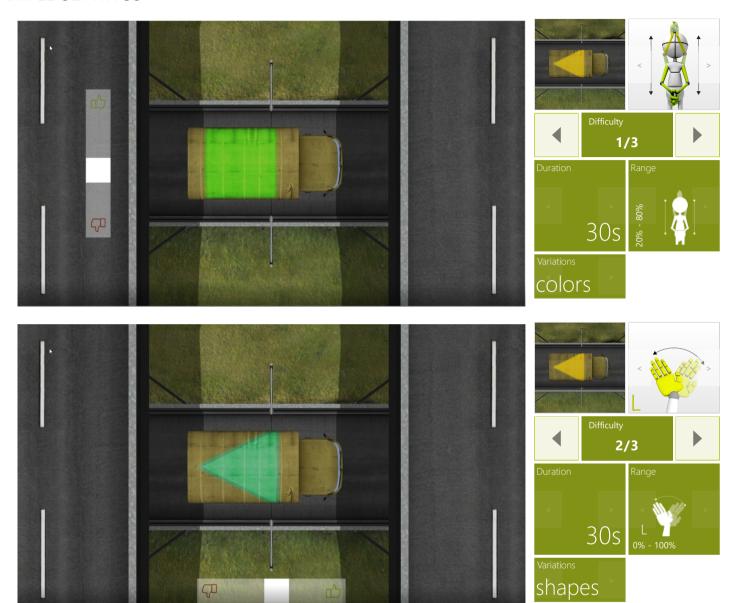
- Logical tasks
- Focusing
- Perceptivity

#### **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.











# PROBLEM SOLVING

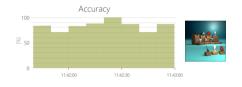
#### **CLONES**

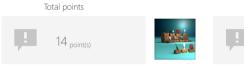
Measure and train individual's skills to reach a solution of specific problems. Problem solving may include mathematical or systematic operations and can be a gauge of an individual's critical thinking skills.

#### **CONTROL MODES**



#### **RESULTS**







#### **ADJUSTMENTS**

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

#### **OBJECTIVES**

- Perceptivity
- Visual motor coordination
- Logical tasks

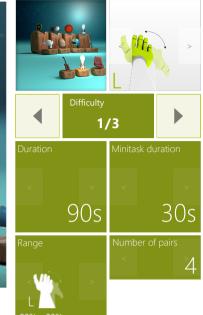
#### INSTRUCTION FOR PATIENT

Select the item which has a pair on the screen











# 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**



#### **OBJECTIVES**

- Logical tasks
- Planned movements
- Planning and Strategy

#### INSTRUCTION FOR PATIENT

Lead the hippo through the maze to the glowing target.





# SPECIALIZED BLOOD PRESSURE

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

#### **CONTROL MODES**

#### **OBJECTIVES**

• Monitor external parameters

#### **INSTRUCTION FOR PATIENT**

Measure yourself your blood pressure and type it in the result





# SPECIALIZED

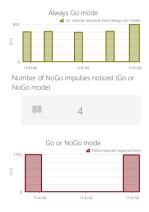
**GONOGO TEST** 

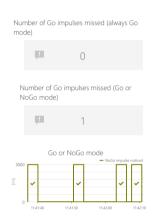
Specialized tasks and evaluations that collect data from multiple categories or do have a unique objectives.

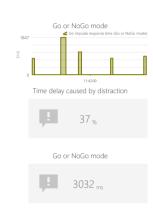
#### **CONTROL MODES**



#### **RESULTS**









#### **ADJUSTMENTS**

- Range
- Required proper repetitions
- Hit if

#### **OBJECTIVES**

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

#### INSTRUCTION FOR PATIENT

Hit the button when positive trigger appears

