Overview Assessments

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The importance of digital assessments

Assessments are an essential part of any training and therapy measure.

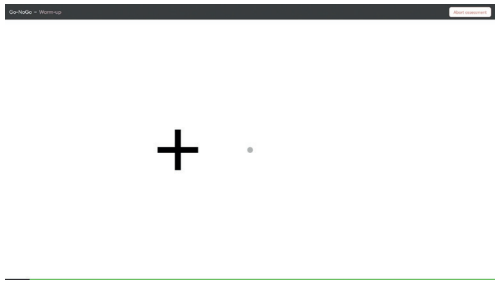
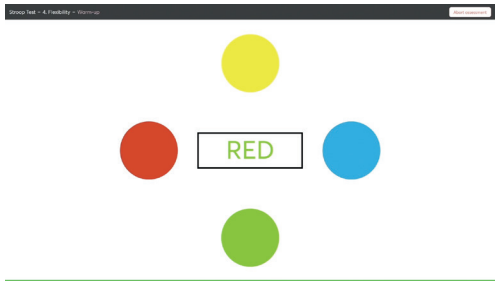
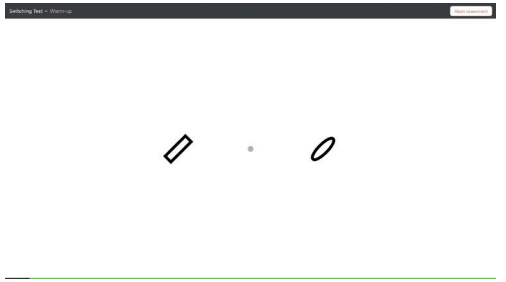
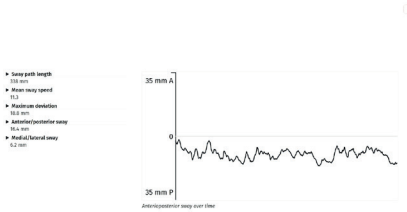
Assessments are standardized procedures that objectively measure performance. Digital assessments, especially, have the advantage of being able to standardize the procedure to a large extent and minimize errors in execution.

Dividat has developed several digital assessments in collaboration with ETH Zurich. Each assessment focuses on a specific physical or cognitive function.

In line with our approach to cognitive-motor training, we also find it highly important to measure brain performance „in motion“, as our daily life relies on the interaction between cognitive and motor abilities.

ETH zürich

List of assessments 1/2

Name	Category	Description	Screenshot
Go-NoGo Test	Reaction & Attention	Measures selective attention and conscious control of reactions	
Stroop Test	Executive Functions	Measures the ability to inhibit irrelevant information and actions	
Switching Test	Executive Functions	Measures cognitive flexibility and ability of switching	
Sway Test	Balance	Measures postural control	

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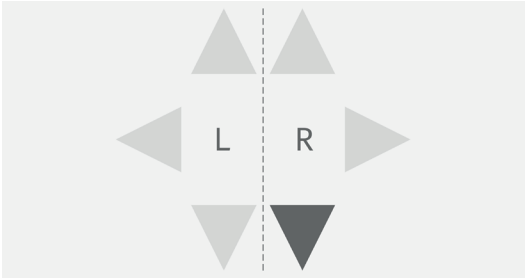
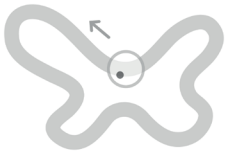
List of assessments 2/2

Name	Category	Description	Screenshot
Inhibition Test	Executive Functions	Measures the ability to inhibit a dominant response to a stimulus	
Reaction Time Test	Reaction & Attention	Measures the average reaction time in six stepping directions	
Coordinated Stability Test	Balance	Measures the ability for static balance control	

Go-NoGo

Reaction & Attention

Measures selective attention and conscious control of reactions

This test measures if specific stimuli are processed and responded to whereby others can be ignored. Selective attention is a fundamental function for focus and orientation in daily life.

Measured Metrics

- Average reaction time
- Average reaction time left
- Average reaction time right
- Errors
- Missed
- Wrong direction

Related Activities


Simple


Divided


Birds


Habitats

Test Description

Intact attention functions are central to efficient action in everyday life. The attention functions control our thought processes, our perception as well as our behavior. Practical activities, mental tasks but also social interactions require a certain amount of concentration.

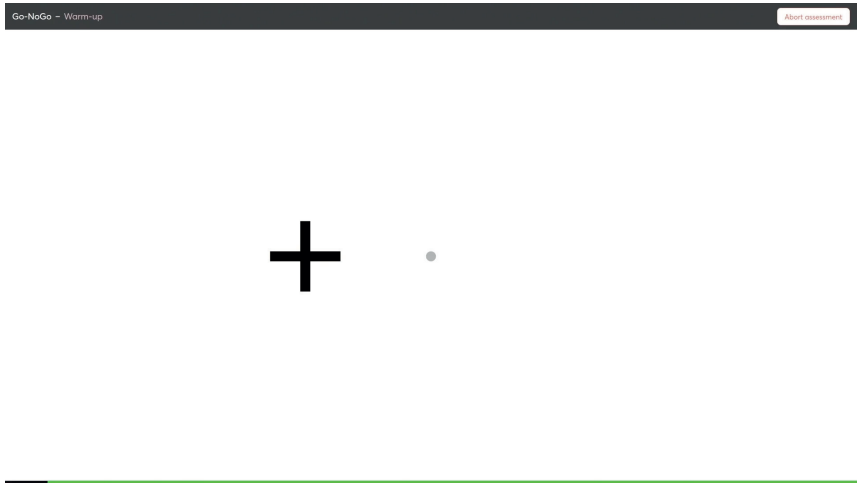
The Go-Nogo test measures the function of selective attention. The test measures whether under time pressure specific stimuli (target stimuli, Go stimuli) can be reacted to, while others (Nogo stimuli) have to be ignored.

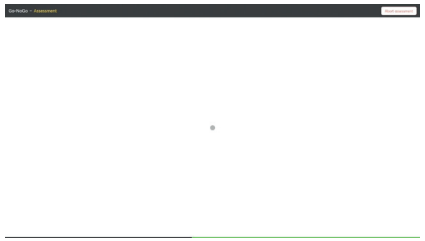
Instruction

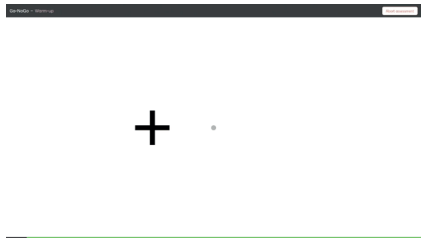
Start with both feet on the center plate. Look at the small gray dot at the center of the screen. To the right or left of this dot a **x** or **+** symbol will appear.

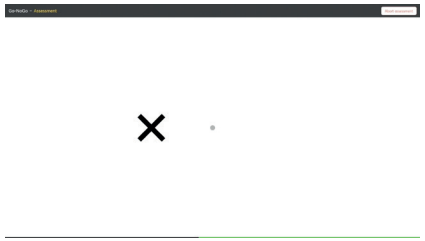
x: React by stepping into the direction of appearance as fast as possible

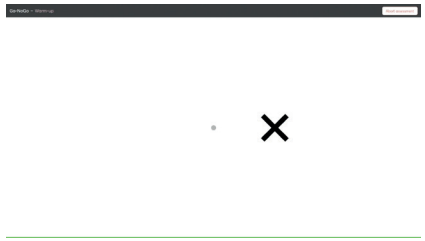
+: Do not react.




Wait for a symbol to appear


Do not react


React with a step to the left


React with a step to the right

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Stroop

Executive Functions

Measures the ability to inhibit irrelevant information and actions

This test measures the ability to inhibit not relevant stimuli and provoked reactions. Inhibition is a fundamental function to be able to focus on important information and act adequately in daily life.

Measured Metrics

- Average reaction time
- Errors

Related Activities

Targets | Flexi | Evolve | Drops | Arrows

Instruction

1. Assigning colors

A colored square will appear in the center of the screen. Match the color of the square to the matching circle with a step in the corresponding direction.

2. Reading words

A word will appear in the center of the screen. Read the word and assign the color to the matching circle with a step in the corresponding direction.

3. Inhibition

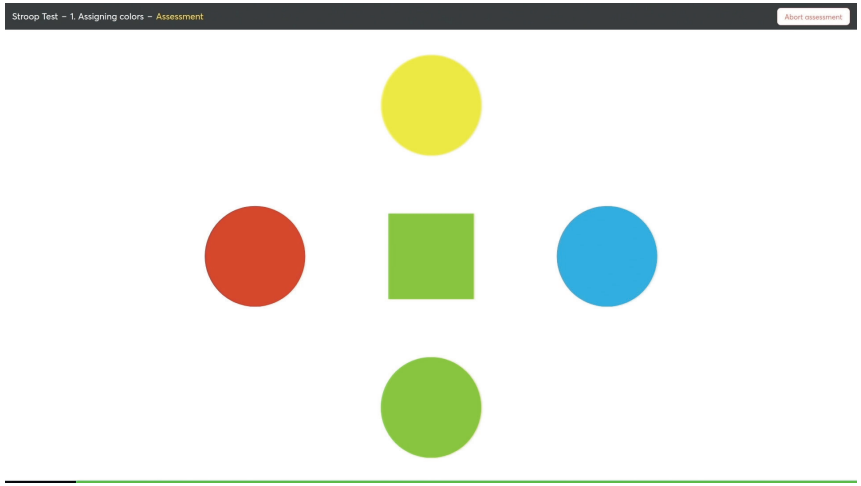
A word written in color will appear in the center of the screen. Assign the color in which the word is written to the matching circle with a step in the corresponding direction.

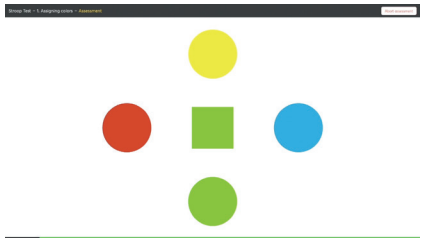
4. Flexibility

A word with or without a frame will appear in the center of the screen.

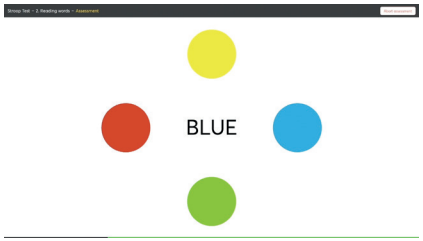
→ Word with frame: Read the word and match the color you read to the appropriate circle.

→ Word without frame: Match the color in which the word is written to the appropriate circle.

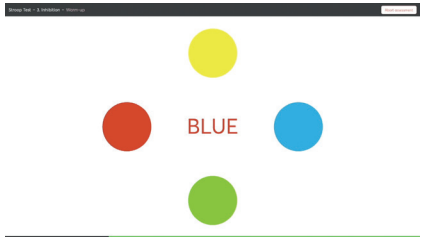




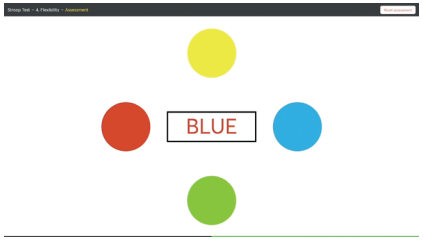
1. Assigning Colors. React with a step down (Green)



2. Reading words. React with a step to the right (Blue)



3. Inhibition. React with a step to the left (Red)



Flexibility. React with a step to the right (Blue)

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Switching

Executive Functions

Measures cognitive flexibility and ability of switching

This test measures the ability to mentally switch between different concepts. Cognitive flexibility enables fast switching between different (thinking)content in daily life.

Measured Metrics

- Average reaction time
- Errors

Related Activities

Targets Flexi Evolve Drops Arrows

Test Description

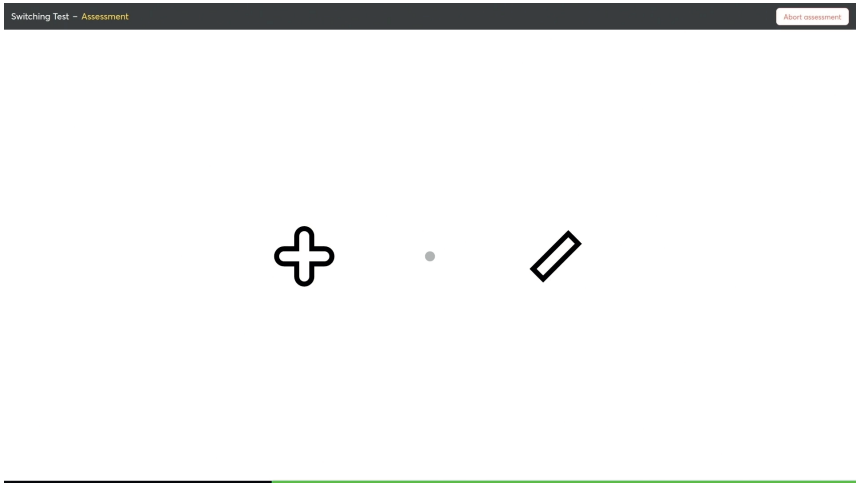
Our everyday actions often require switching between different relevant aspects in addition to focusing on the relevant aspects and suppressing irrelevant aspects. Efficient behavior requires a flexible change of the focus of attention (in perception as well as in thinking)

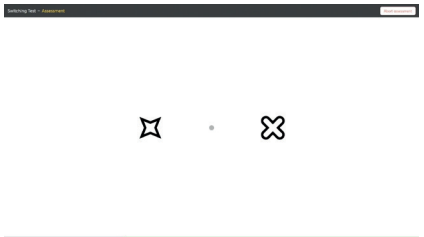
The Switching Test measures the function of cognitive flexibility. The test measures the ability to switch mentally flexibly between different aspects/concepts. This test uses figures that are either square or round in shape.

Instruction

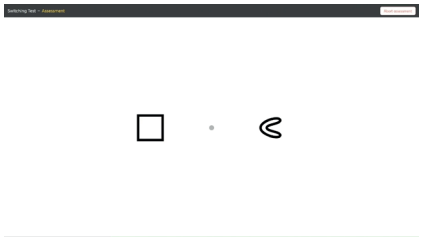
Look at the small gray dot at the center of the screen. Rounded and angular figures will appear to its sides. Respond by alternating between stepping towards the rounded and angular figure.

First the rounded figure, then the angular figure, then the rounded figure, and so on.

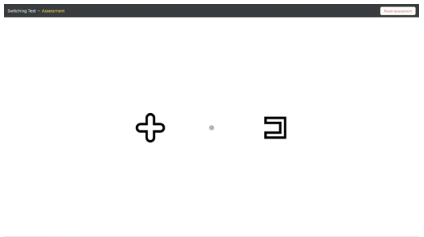




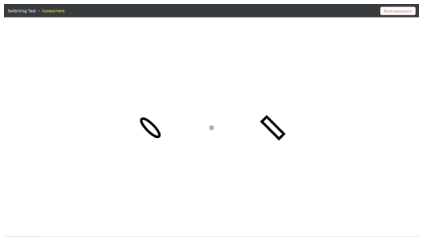
Start 1st Sequence: Step to the right (round)



2nd Sequence: Step to the left (angular)



3rd Sequence: Step to the left (round)



4th Sequence: Step to the right (angular)

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Sway Test

Balance

Measures postural control

This test measures the static balance and postural control, which is fundamental for safe standing and secure mobility in daily life.

Measured Metrics

- Maximum deviation
- Mean sway speed
- Sway path length
- Anterior/posterior sway
- Medial/lateral sway

Related Activities

Ski

Cloudy

Lumina

Ladybug

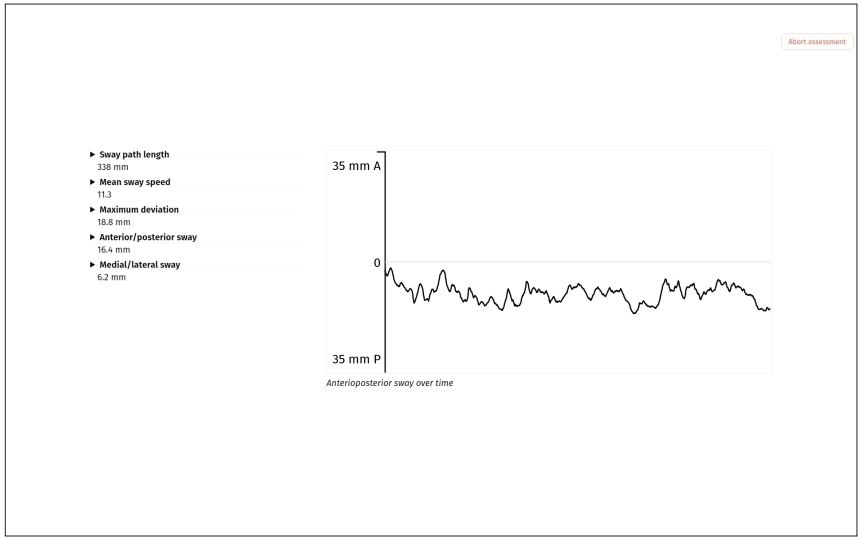
Test Description

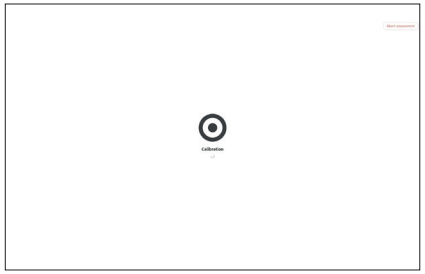
This test measures static balance and postural control, which are important for most standing activities.

Instruction

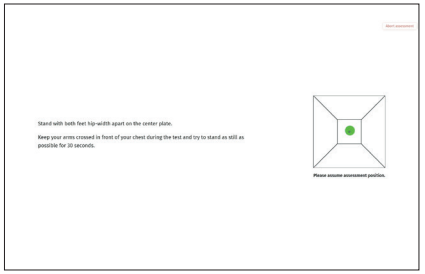
Stand with both feet hip-width apart on the center plate.

Keep your arms crossed in front of your chest during the test and try to stand as still as possible for 30 seconds.

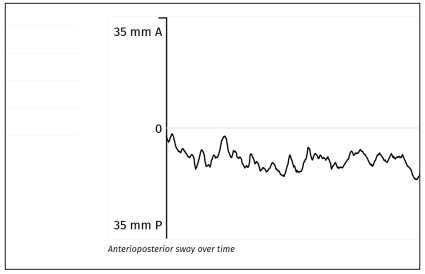




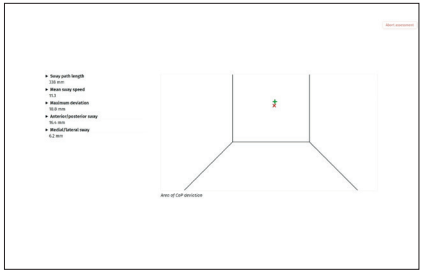
First wait for the device to calibrate



Position yourself in the middle plate



See the results of the different outcomes



See the results of the different outcomes

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Inhibition

Executive Functions

Measures the ability to inhibit an automatic response to a stimulus

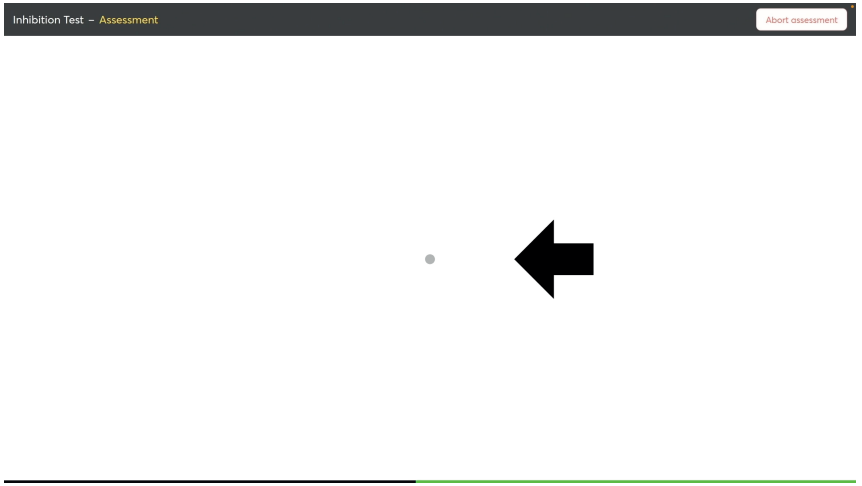
This test measures the ability of inhibition, that is, whether a visually triggered motor response can be inhibited.

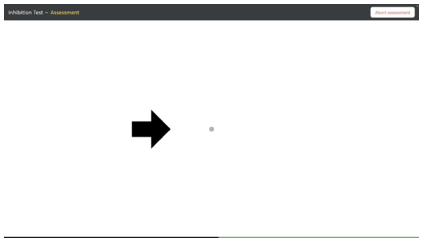
Measured Metrics

- Reaction time (compatible)
- Reaction time (incompatible)
- Reaction time (all)
- Wrong reaction (compatible)
- Wrong reaction (incompatible)
- Wrong reaction (all)
- Misses

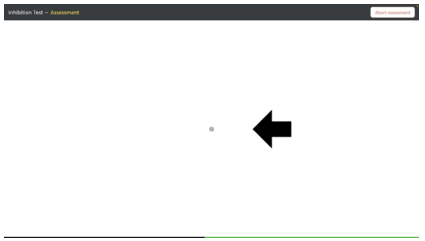
Related Activities

Targets | Flexi | Evolve | Drops | Arrows





Step to the right



Step to the left

Test Description

Inhibition (or inhibitory control) is the ability to control or inhibit automatic/impulsive/provoked responses. Our everyday actions require us to focus on the relevant stimuli and ignore/suppress non-relevant stimuli. This is especially difficult when the stimulus information is in conflict or when these stimuli almost „demand“ a response from us. The ability to inhibit is central to practically every behavior in our everyday life, e.g. at home but also on the road in traffic or at work. Brain damage as well as the aging process have an influence on the ability of inhibition.

Instruction

Focus on the small gray dot in the middle of the screen. When you see an arrow appear on either side of the dot, step in the direction that the arrow points. Always respond as quickly as you can.

Reaction Time

Reaction & Attention

Measures the average reaction time in six stepping directions

This test measures step reaction speed (psychomotor speed) in six directions. Fast reaction time is the basis of all everyday actions.

Measured Metrics

- Reaction time (left)
- Reaction time (right)
- Reaction time (all)
- Wrong reaction (left)
- Wrong reaction (right)
- Wrong reaction (all)

Related Activities


Simple


Divided


Birds

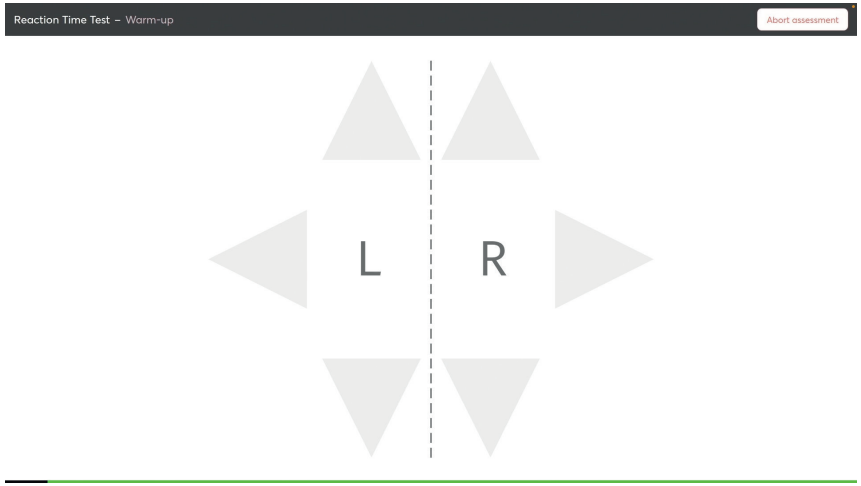

Habitats

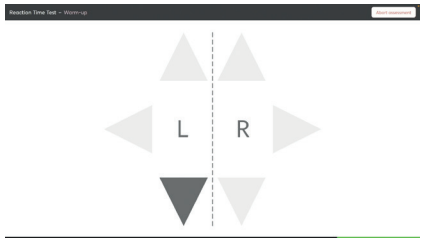
Test Description

A fast reaction speed is fundamental for everyday life. A prerequisite for being able to react quickly and appropriately to concrete demands is first of all the „general state of alertness“, which is also referred to as „alertness“ or „arousal“ in technical terminology. The alert, ready-to-react state is the fudament of any adequate action and thus represents the basis of any attentional performance. In simple reaction time measurements (with or without cue stimuli), „alertness“ can be measured.

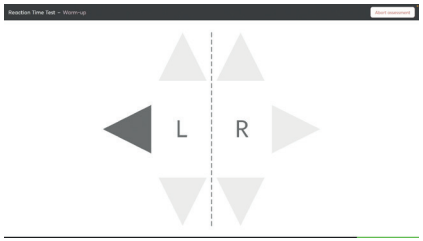
Instruction

There are six triangles in front of you. When you see a triangle change to a dark color, step towards it. Use your right foot for triangles on the right side of the dotted line, and your left foot for triangles on the left side. Always respond as quickly as you can.

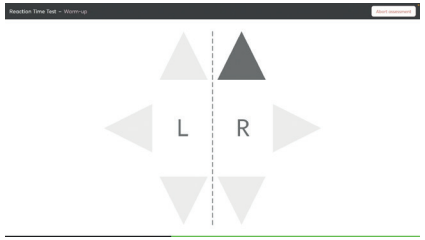




Step Down with your left foot



Step Left with your left foot



Step Up with your right foot

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Coordinated Stability

Balance

Measures the active control of body balance

The Coordinated Stability Test is a test that requires participants to adjust balance by leaning or rotating their body without moving their feet. It measures the participant's ability to adjust balance in a steady and coordinated way while placing them near or at the limits of their equilibrium.

Measured Metrics

- Coordinated Stability Score
- Completenesss (%)
- Relative path length (%)
- Duration (ms)

Related Activities


Ski


Cloudy


Lumina


Ladybug

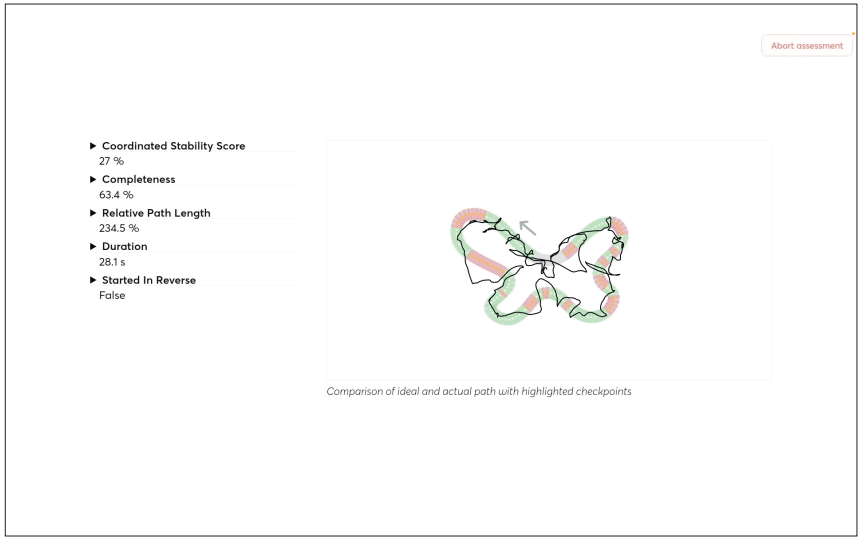
Test Description

The Coordinated Stability Test assesses the body's ability to control balance, stability and coordinated movements in different positions. This test is often used in physical therapy, athletic training or sports medicine examinations to obtain information about neuromuscular control and the functional stability of the musculoskeletal system.

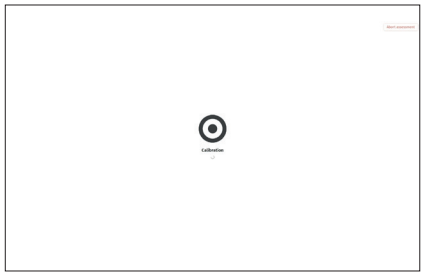
Instruction

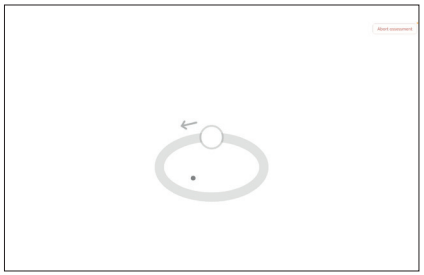
Stay quiet on the middle platform with heels around 8cm apart. Adjust your balance by bending or rotating the body without moving the feet (i.e. move the centre of mass), so that the point follows and remains within the convoluted track.

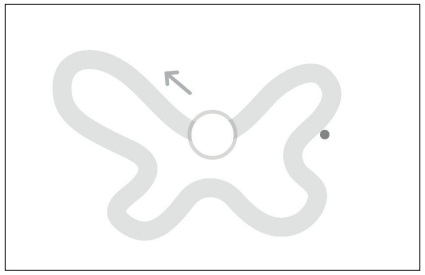
We begin with a short warm-up phase to make sure the assessment is understood. The results of this phase will not be recorded.



Comparison of ideal and actual path with highlighted checkpoints


First wait for the device to calibrate


Start the warmp up. Follow the line as close as possible.


Start the test. Follow the line. Start point is also the end point

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