

RightEye

SYSTEM SETUP



Indications for Use: RightEye Vision System intended for recording, viewing, and analyzing eye movements in support of identifying visual tracking impairment in human subjects.

Table of Contents

Full training documentation can be accessed online at
<https://www.righteye.com/training>

Section 1: Assembling Your System

- Page 3. [Labeled Part List](#)
- Page 4. [System Ports](#)
- Page 5. [Connecting System Peripherals](#)

Section 2: Setting Up Your System

- Page 6. [Placing Your System](#)
- Page 7. [Connecting to the Internet](#)
- Page 7. [Installing a Printer](#)

Section 3: Operating Your System

- Page 8. [Accessing Your RightEye Tests](#)
- Page 9. [Selecting a Protocol](#)
- Page 10. [Calibration and Calibration Tips](#)

Section 4: Navigating The Portal

- Page 11. [Portal Overview](#)
- Page 12. [Assessments](#)
- Page 13. [Printing Assessments](#)
- Page 14. [RightEye Resources and Vision Training Videos](#)
- Page 15. [Creating Custom Protocols](#)
- Page 17. [User Management](#)
- Page 18. [Patient Management](#)

Section 5: Additional Information

- Page 19. [RightEye Vision System Description](#)
- Page 20. [Warning and Caution](#)
- Page 21. [Tests included in RightEye Vision System](#)
- Page 22. [Nystagmus \(Horizontal Random Saccades\)](#)
- Page 23. [Circular Smooth Pursuit Tracking](#)
- Page 24. [Circular Smooth Pursuit Metrics](#)
- Page 25. [Horizontal Smooth Pursuit Tracking and Metrics](#)
- Page 26. [Vertical Smooth Pursuit Tracking and Metrics](#)
- Page 27. [Horizontal Saccade Metrics](#)
- Page 28. [Vertical Saccade Metrics](#)
- Page 29. [Technical Specifications](#)

Assembling Your System

Labeled Part List

- 1 RightEye System



- 2 Computer power A/B



- 3 Ethernet



- 4 Wired/wireless keyboard/mouse



- 5 Eye occluder



- 6 Wired number keypad



Note: Keyboard equivalents when using the wired keypad for testing:

- Enter is Space bar
- 2 is down arrow
- 4 is left arrow
- 6 is right arrow
- 8 is up arrow

- 7 Eye flipper (+/- 1)



Assembling Your System

System Ports



3

Ethernet



Power

2

(2) USB 2.0 to be used with:

- 4 Mouse/Keyboard dongle located inside keyboard battery compartment
- 6 Wired number keypad

Note: Use only the cables and ports specified in this manual

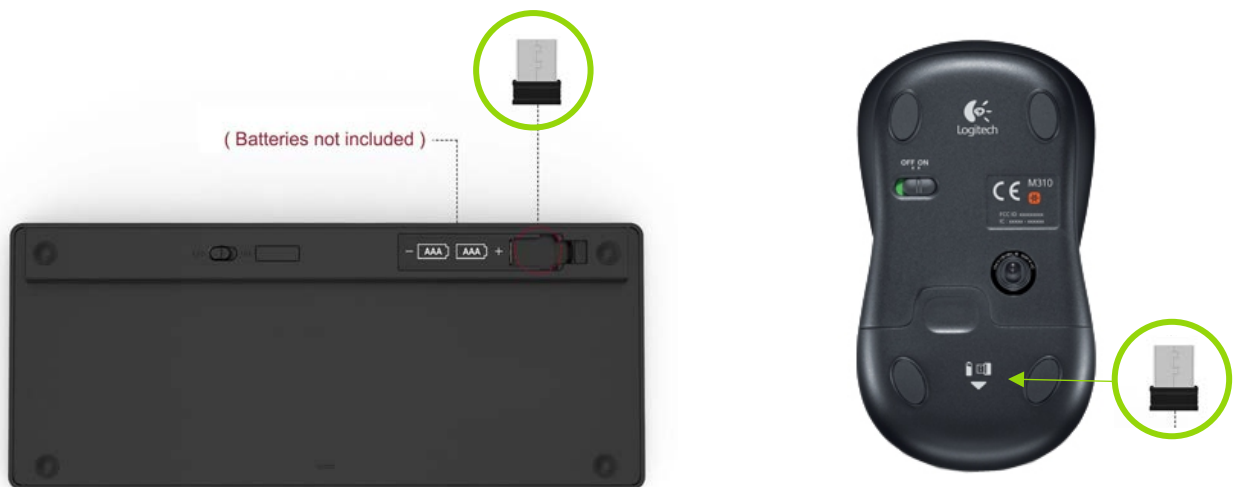


On/Off

Assembling Your System

Connecting System Peripherals

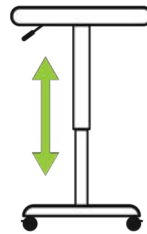
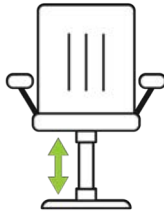
- Your system includes a wired or wireless keyboard and mouse which are paired using a single USB dongle (pictured below). The receiver is located inside the keyboard or mouse next to the battery.



- Plug the wireless dongle (4) and wired number keypad into the (2) USB slots located on the side of system (page 4)
- Connect the provided AC adapter (2) to the right side of the system (page 4)
- Wired Internet: Connect the ethernet cable (not provided) to the ethernet port (3) on the left side of the system (page 4)

Setting Up Your System

Placing Your System



- No direct sunlight should be on the eye tracker, monitor or test taker's glasses. Place system away from windows.
- System should be set up towards the back of a table. You want plenty of room for keyboard, arms, and mouse.
- Use a height adjustable chair or table while testing. The chair should be without wheels and have a stable, firm back. The table should be adjusted for each test taker.
- Test taker should be sitting in a natural relaxed position with **back against the chair**. They should not “sit at attention”. Instruct them to “get comfortable”.
- If the person is VERY tall then they can slouch in the chair a bit and move their bottom forward – but move chair forward so test taker has back against chair.
- Keep chin down. NOTE – Test takers with bifocal lenses often tip their chins up to see through the bottom lens.
- The eye-tracker, located at the base of the system, should be kept clean using a microfiber cloth.

Setting Up Your System

Connect Your System to the Internet

The RightEye application will walk you through the steps to set up an internet connection



You have the option of either a wired or wireless internet connection.



A minimum of 5 megabits per second (Mbps) up/down is required for testing.

Once your internet connection is established, you also have the option to install a printer for use with your RightEye system.



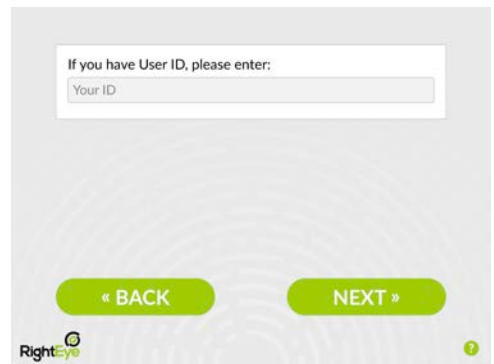
Operating Your System

Accessing Your RightEye Tests

Select **Take a Test** from the RightEye home screen



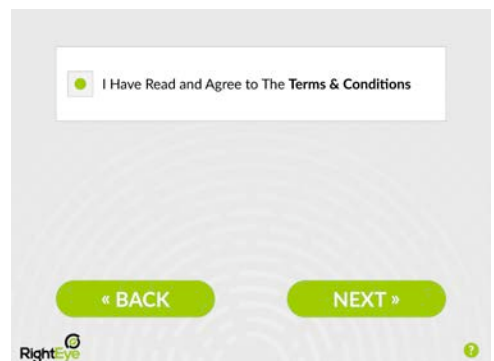
Enter the existing User ID or create a User ID for a new test-taker. Be sure test-takers use the same ID every time. **Never have two test-takers use the same ID.** User ID can contain numbers and/or letters



Fill in the required demographic and health data. This data is only required when adding a new test-taker.



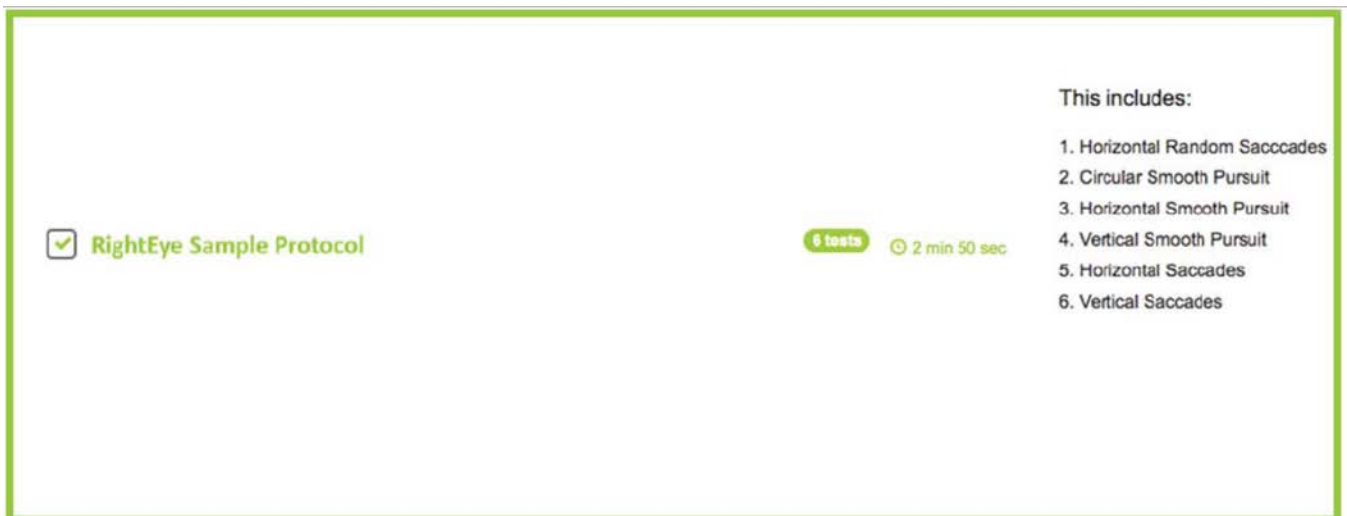
Check the Terms & Conditions and proceed using the **Next** button



Operating Your System

Selecting a Protocol

Testing protocols are selected prior to calibration using the Assessment page (pictured below)

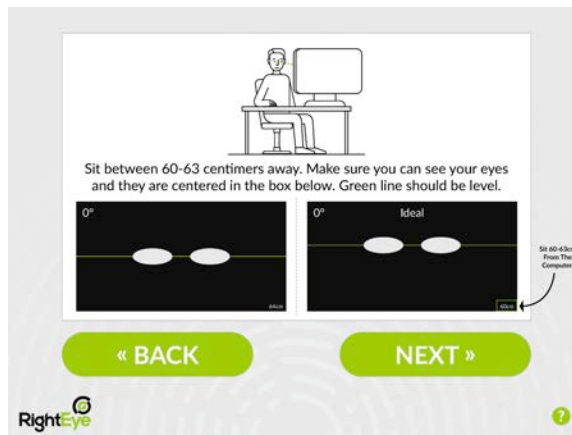


- Both **Default** and **Custom** protocols are accessible. For instructions on how to create your own testing protocols, see page 15
- More than one protocol can be selected per session

Operating Your System

Calibrating

- A live eye-box will be presented prior to calibration
 - Use this eye-box to correctly position yourself relative to the tracker



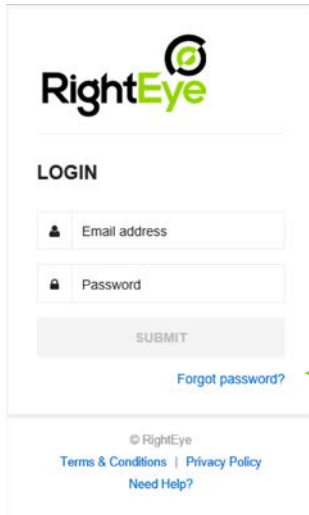
- Test takers should be as close to centered as possible
- **Ideal z-distance range (eyes to tracker) is 56cm-60cm**
 - Operating outside these boundaries can result in data loss during testing
 - The eye-box will present a live reading of your z distance in white text (cm)

Calibration Tips

- Test takers will see 9 calibration dots with a central red dot.
- Test takers should remain as focused as possible on the red calibration dot.
- If a test taker is unable to track the red dot in real time, they may wait for the dot to finish traveling to the next screen position before moving their eyes.
- Up to three **X**'s are permitted within the calibration results.

Navigating the Portal

Portal Overview



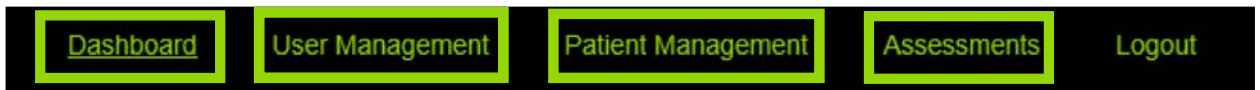
Accessing the Portal

All reports are accessible via the RightEye portal located at www.portal.righteye.io

Sign in to your account using your account email and password

Note: if you forget your password, or would like to change it, simply use the Forgot Password function located on the login page

Upon login, you will be redirected to the **Assessments** page. The portal is divided into 4 sections – Dashboard, User Management, Patient Management and Assessments.



Dashboard	Quick Access to Create Custom Protocols or Add Users
User Management	Add, Edit or Inactivate User Accounts
Patient Management	Add and Edit Patient Information
Assessments	Access and Print Reports, Add/Edit Assessment Notes, Print Reports, Access Training Resources, View Vision Training Exercises

Navigating the Portal

[Dashboard](#)[User Management](#)[Patient Management](#)[Assessments](#)[Logout](#)

Assessments

Filter assessments by Participant ID, Participant Name, Type or Date. You can also sort by clicking on the column headings.

Filter by:	Type	Enter search criteria	SEARCH		
Date	Participant Name	Participant ID	Type	View Report	
01/14/18 09:39 PM (America/New_York)	CES 2018	CES 2018	CES 2018	Delete Standard	--
01/14/18 09:36 PM (America/New_York)	CES 2018	CES 2018	Reading	Delete Standard Reading EyeQ (1)	--

Select "Standard" (or "EyeQ" if available) to view the results of a specific assessment

Filter by:	Type	Enter search criteria	SEARCH		
Date	Participant Name	Participant ID	Type	View Report	
01/14/18 09:39 PM (America/New_York)	CES 2018	CES 2018	CES 2018	Delete Standard	--
01/14/18 09:36 PM (America/New_York)	CES 2018	CES 2018	Reading	Delete Standard Reading EyeQ (1)	--

At the end of each test protocol, users are prompted to enter Assessment Notes. To add or modify notes for a specific assessment, simply click on the notes.

Navigating the Portal

[Dashboard](#)

[User Management](#)

[Patient Management](#)

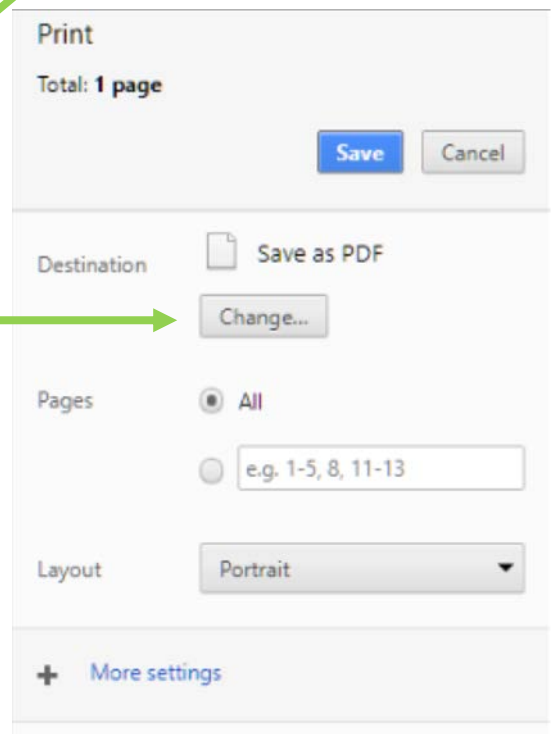
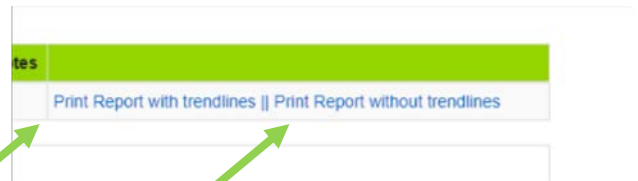
[Assessments](#)

[Logout](#)

Printing Assessments

Date	Participant Name	Participant ID	Type	View Report		
01/14/18 09:39 PM (America/New_York)	CES 2018	CES 2018	CES 2018	Delete	Standard	--
01/14/18 09:36 PM (America/New_York)	CES 2018	CES 2018	Reading	Delete	Standard	Reading EyeQ (1) --

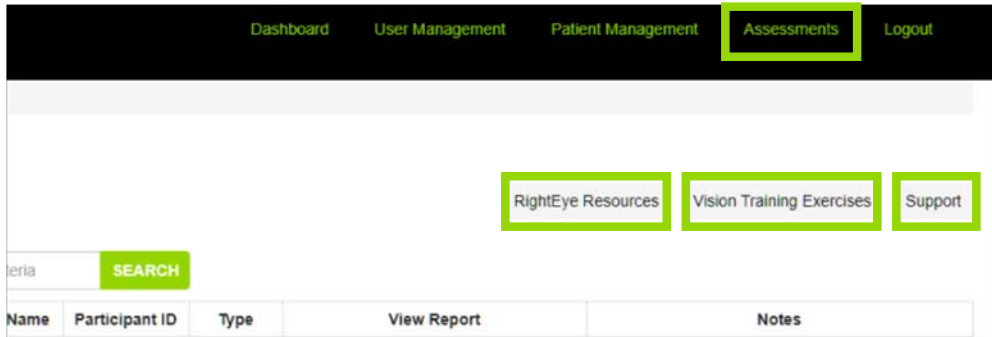
- After selecting a report from the assessments page, you can save a PDF copy or print a report from the report page
- If this is a returning patient with previous RightEye tests, you can print a report showing their trendlines for certain tests by selecting **Print Report with trendlines**
- If this is a new patient or returning patient and you do not need to see the trendlines, select **Print Report without trendlines**
- The print dialog will default to **Save as PDF**. If you installed a printer during your initial setup, you can select this under **Change...**



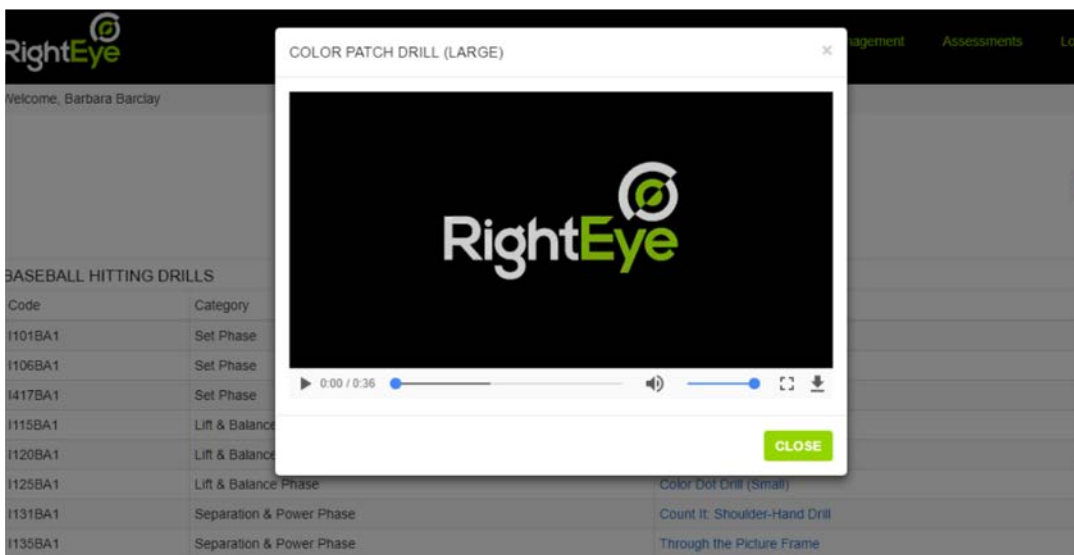
Navigating the Portal

RightEye Resources and Vision Training Videos

- On the Assessments page, you can access the RightEye Resources page, view Vision Training Exercises or contact RightEye Support.



- RightEye Resources contains training documents and publications
- Vision Training Exercises provides over 150 instructional videos of vision training you can provide in your office or your patients can complete at home.



Navigating the Portal

Dashboard

User Management

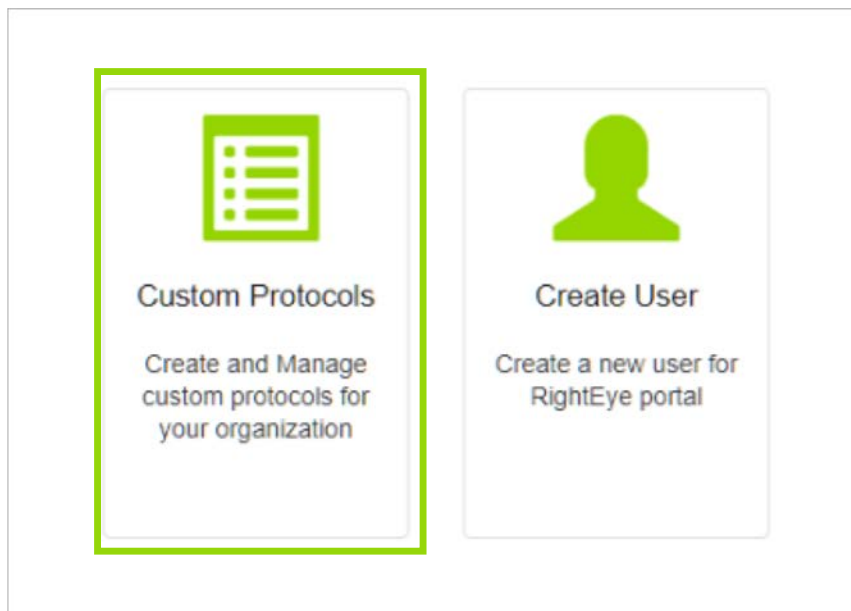
Patient Management

Assessments

Logout

Creating Custom Protocols

- RightEye tests can be grouped and organized into protocols
- To view, edit or create custom protocols, click **Dashboard** in the top banner, then **Custom Protocols**



- Select **New Protocol** to create a custom protocol

Name	Description	Number of Tests	Created By	Created Date	Action
					New Protocol

Your Custom Protocol Here

Navigating the Portal

Creating Custom Protocols (cont.)

- All custom protocols require a Protocol Name and Description
- The left hand column contains individual tests that can be selected for a new protocol
- Add tests to your custom protocol by checking the box to the left of the desired test and pressing the middle arrow pointing to the right

Add Edit Custom Protocol

Protocol Name *

Description *

Select Test Types:

Geometric Preference Autism (1 min 30 sec)
 Circular Smooth Pursuit (35 sec)
 Horizontal Smooth Pursuit (42 sec)
 Vertical Smooth Pursuit (40 sec)
 Horizontal Saccades (27 sec)
 Vertical Saccades (26 sec)
 Pupillary Distance (20 sec)
 Fixation Stability (1 min 43 sec)
 Static Visual Acuity (1 min 8 sec)

- Autism - Neuro - Essential - Performance - 2D - 3D

* The time mentioned here for each test is average time only. The actual time taken for testing might exceed this mentioned time.
* 2D and 3D tests can't be merged. 2D tests are on the top followed by 3D tests.

Estimated Time: 0 sec

- Tests can be manually organized using the up and down arrows once selected
- To remove tests from your custom protocol, select the individual tests and press the middle arrow pointing to the left.
- Once the test list is complete, create your custom protocol using the “Create” button located at the bottom of the page
 - If the “Create” button is grey, check that you have given your protocol a name and description
 - Custom protocols will be immediately available within the RightEye client

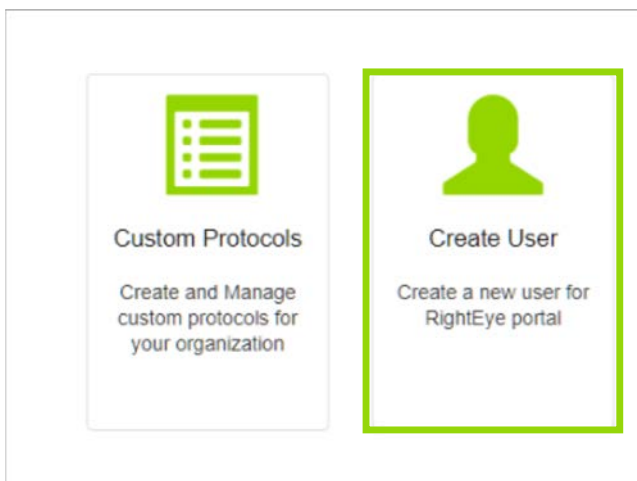
Navigating the Portal

User Management Client Admins Only

- Users can be added through the **Dashboard** or **User Management** links in the top banner
- Editing and deleting users is only available through **User Management**



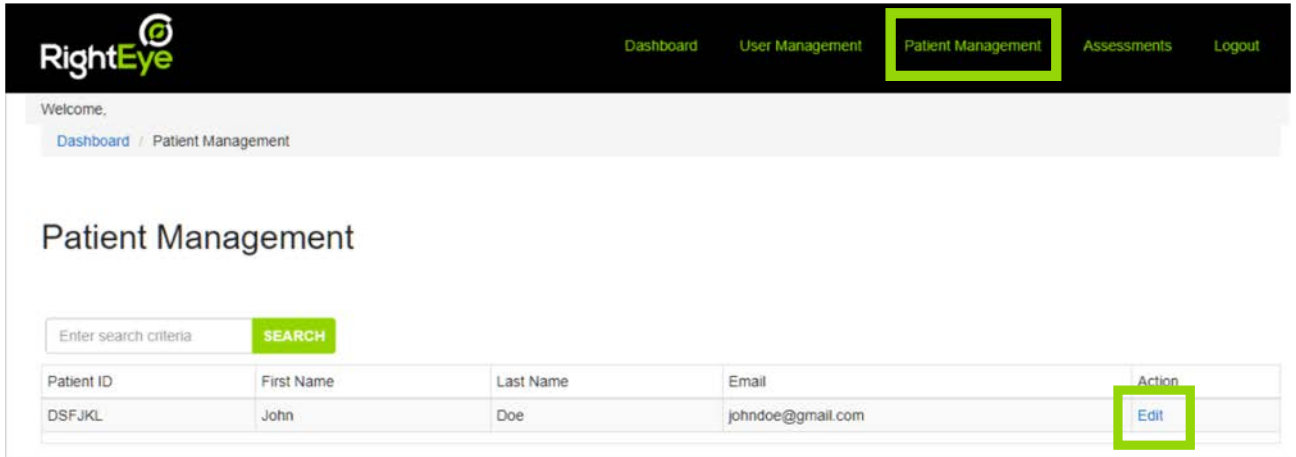
- To add a user:
 - Via **Dashboard**, select **Create User**
 - Or via **User Management**, select **New User**
- Email address and Password will be used to log into the portal.
- Only one option will be available under Company, unless you are an administrator of multiple systems, in which case you should select a specific company.
- Role provides the level of access for a user:
 - **Client User**: access reports
 - **Client Admin**: access reports, add users, create custom protocols

A 'Create User' form with various input fields. Green arrows point to the 'Email address', 'Password', 'Company', and 'Role' fields. The fields include: Email address, Password, First name, Middle name, Last name, Phone, Mobile, Address 1, Address 2, City, Country (United States of America), State (- Select State -), Company (- Select Company -), and Role (- Select Role -). A 'REGISTER' button is at the bottom.

Navigating the Portal

Patient Management

- Patient Information can be accessed under Patient Management



Welcome,

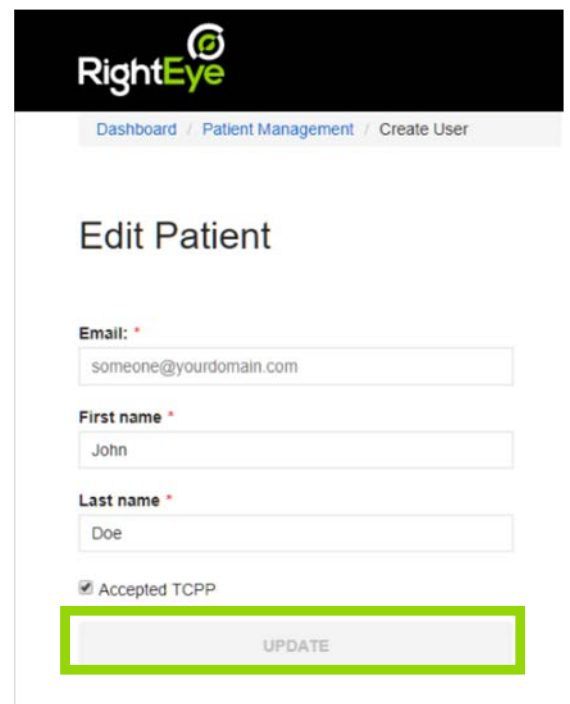
[Dashboard](#) / [Patient Management](#)

Patient Management

Enter search criteria

Patient ID	First Name	Last Name	Email	Action
DSFJKL	John	Doe	johndoe@gmail.com	Edit

- To modify a patient's email address, first name or last name, select **Edit** on the **Patient Management** screen.
- Click **Update** to save your changes



[Dashboard](#) / [Patient Management](#) / [Create User](#)

Edit Patient

Email: *

First name: *

Last name: *

Accepted TCPP

Additional Information

The RightEye Vision System is designed to provide accurate and reliable information for all users based on involuntary eye movements to supplement and inform clinical decision making. RightEye Vision System provides objective metrics that are not clinically observable. The software quantifies those metrics, provides quantitative output data and supporting graphics. The software can track the results over time showing changes in metrics, trendlines, graphs, visuals and gaze replay.

Indications for use: The RightEye Vision System is intended for recording, viewing, and analyzing eye movements in support of identifying visual tracking impairment in human subjects.

Additional Information

WARNING:

The RightEye Vision System provides no diagnosis, nor does it provide diagnostic recommendations.

CAUTION:

- i. Rx only. Federal law restricts this device to sale by or on the order of a physician or clinician licensed to use or order the use of the device.
- ii. Do not use the RightEye Vision System for any purpose other than its intended use.
- iii. The RightEye Vision System reports eye-tracking outcomes based on the ability of the equipment to accurately track and measure eye movement. While the RightEye Vision System is designed to remove inaccurate data, some environmental conditions may not be detected and may reduce accuracy of device outcomes. Use of the device with conditions that can degrade data quality should be avoided including: direct sunlight, excessive movement, closed eyes, thick mascara, thick, dirty or bi-focal eye glasses, contact lenses, any physical block between the system and the users eye for example hand or arm. Do not locate the system near windows.
- iv. Tobii Dynavox i15 technology is using NIR (Near Infrared) light. If other devices, close by to the Tobii Dynavox i15 technology, are emitting NIR light then the Tobii Dynavox i15 technology or other device(s) disturbed and reduce data collection and accuracy of the device.

The safety and effectiveness of the RightEye Vision System has not been evaluated for use in providing diagnostic or screening information including:

1. Assessment of cognitive function
2. Monitoring of cognitive status and/or performance
3. Identifying individuals with cognitive impairments
4. Identifying individuals with concussions or neuro-cognitive deficits
5. Identifying individuals with traumatic brain injury

Additional Information

The safety and effectiveness of the RightEye Vision System has not been evaluated for use in providing diagnostic or screening information including:

1. Assessment of cognitive function
2. Monitoring of cognitive status and/or performance
3. Identifying individuals with cognitive impairments
4. Identifying individuals with concussions or neuro-cognitive deficits
5. Identifying individuals with traumatic brain injury

The following tests are included in the RightEye Vision System:

RightEye Vision Assessment

Nystagmus (Horizontal Random Saccades): participants are required to track a small dot that moves randomly on the horizontal axis, for 60 seconds.

Circular: Smooth Pursuit Tracking: participants are required to track a small dot around in a circle in a clockwise direction, for 15 seconds.

Horizontal: Smooth Pursuit Tracking: participants are required to track a small dot left and right in a horizontal plane, for 25 seconds.

Vertical: Smooth Pursuit Tracking: participants are required to track a small dot up and down in a vertical plane, for 25 seconds.

Horizontal Saccades: Participants are required to move their eyes quickly and accurately, back and forth, between a target on the left side of the screen and one on the right side for 10 seconds.

Horizontal Saccades: Participants are required to move their eyes quickly and accurately, back and forth, between a target on the top part of the screen and one on the lower part for 10 seconds.

Additional Information

Nystagmus (Horizontal Random Saccades): participants are required to track a small dot that moves randomly on the horizontal axis, for 60 seconds. Nystagmus, a voluntary eye movement, is captured when the dot stops in the central gaze position (0 degrees) and eccentric gaze positions (20 and 23 degrees).

	Metrics	Both Eyes
		Actual
1	0 degrees velocity fast phase (Mean)	0.97
2	0 degrees velocity fast phase (SD)	0.40
3	0 degrees velocity slow phase (Mean)	1.39
4	0 degrees velocity slow phase (SD)	1.13
5	0 degrees duration fast phase (Mean)	175.57
6	0 degrees duration fast phase (SD)	82.81
7	0 degrees duration slow phase (Mean)	160.84
8	0 degrees duration slow phase (SD)	119.16
1	20 degrees velocity right fast phase (Mean)	1.902
2	20 degrees velocity right fast phase (SD)	1.30
3	20 degrees velocity right slow phase (Mean)	5.701
4	20 degrees velocity right slow phase (SD)	5.28
5	20 degrees duration right fast phase (Mean)	399.57
6	20 degrees duration right fast phase (SD)	180.89
7	20 degrees duration right slow phase (Mean)	507.36
8	20 degrees duration right slow phase (SD)	143.26
1	20 degrees velocity left fast phase (Mean)	2.40
2	20 degrees velocity left fast phase (SD)	1.90
3	20 degrees velocity left slow phase (Mean)	5.54
4	20 degrees velocity left slow phase (SD)	3.87
5	20 degrees duration left fast phase (Mean)	368.84
6	20 degrees duration left fast phase (SD)	143.23
7	20 degrees duration left slow phase (Mean)	522.10
8	20 degrees duration left slow phase (SD)	195.24
1	23 degrees velocity left fast phase (Mean)	2.62
2	23 degrees velocity left fast phase (SD)	1.53
3	23 degrees velocity left slow phase (Mean)	5.80
4	23 degrees velocity left slow phase (SD)	3.68
5	23 degrees duration left fast phase (Mean)	376.21
6	23 degrees duration left fast phase (SD)	180.55
7	23 degrees duration left slow phase (Mean)	470.73
8	23 degrees duration left slow phase (SD)	175.90

- [0, 20, 23] Degrees Velocity Fast Phase (Mean): the mean velocity of eye movements in deg/sec that are within 3 cm of the stimuli and moving in the direction from the center of the screen and passing the stimuli to one edge of the screen.
- [0, 20, 23] Degrees Velocity Fast Phase (SD): the standard deviation of the velocity of eye movements that are within 3 cm of the stimuli and moving in the direction from the center of the screen and passing the stimuli to one edge of the screen.
- [0, 20, 23] Degrees Velocity Slow Phase (Mean): the mean velocity of eye movements in deg/sec that are within 3 cm of the stimuli and moving in the direction from the edge of the screen and passing the stimuli to the center of the screen.
- [0, 20, 23] Degrees Velocity Slow Phase (SD): the standard deviation of the velocity of eye movements that are within 3 cm of the stimuli and moving in the direction from the edge of the screen and passing the stimuli to the center of the screen.
- [0, 20, 23] Degrees Duration Fast Phase (Mean): the mean duration of the eye movements in milliseconds that are within 3 cm of the stimuli and moving in the direction from the center of the screen and passing the stimuli to one edge of the screen.
- [0, 20, 23] Degrees Duration Fast Phase (SD): the standard deviation of the duration of the eye movements that are within 3 cm of the stimuli and moving in the direction from the center of the screen and passing the stimuli to one edge of the screen.
- [0, 20, 23] Degrees Duration Slow Phase (Mean): the mean duration of the eye movements in milliseconds that are within 3 cm of the stimuli and moving in the direction from the edge of the screen and passing the stimuli to the center of the screen.
- [0, 20, 23] Degrees Duration Slow Phase (SD): the standard deviation of the duration of the eye movements that are within 3 cm of the stimuli and moving in the direction from the edge of the screen and passing the stimuli to the center of the screen.

Additional Information

Circular: Smooth Pursuit Tracking: participants are required to track a small dot around in a circle in a clockwise direction, for 15 seconds.



Metrics	Right Eye	Left Eye
	Actual	Actual
1 Smooth Pursuit (%)	95.39	97.04
2 Saccade (%)	2.06	1.21
3 Fixation (%)	2.55	1.75
Eye Target Velocity Error (")	13.40	13.07
Horizontal Synchronization SP (0-1)	0.91	0.93
Vertical Synchronization SP (0-1)	0.89	0.92
Sub-Metrics	Right Eye	Left Eye
	Actual	Actual
On Target Smooth Pursuit (%)	65.42	87.46
Predictive Smooth Pursuit (%)	27.00	3.39
Latent Smooth Pursuit (%)	2.97	6.19

1. Smooth Pursuit (%): eye movements that follow the target within a velocity range of the target, and are reported as a percentage of the test time. SP% refers to % of time spent in SP with acceptable distance (1.2 degrees) and speed (>0.25 degrees dispersion and <30 degrees per second speed). 100% means the eye was within these pre- specified ranges for the entire duration of the test. Smooth Pursuit + Saccade + Fixation sum to 100%.
2. Saccade(s) (%): are fast eye movements that move the eyes from one point of interest to the next. They are calculated outside (above or below) the velocity range of the target and reported as a percentage of test time. Smooth Pursuit + Saccade + Fixation sum to 100%.
3. Fixation (%): Fixation is a stopping point of the eye that allows the user to see in detail, and are reported as a percentage of the test time. Fixation and Saccade % should be low.

Additional Information

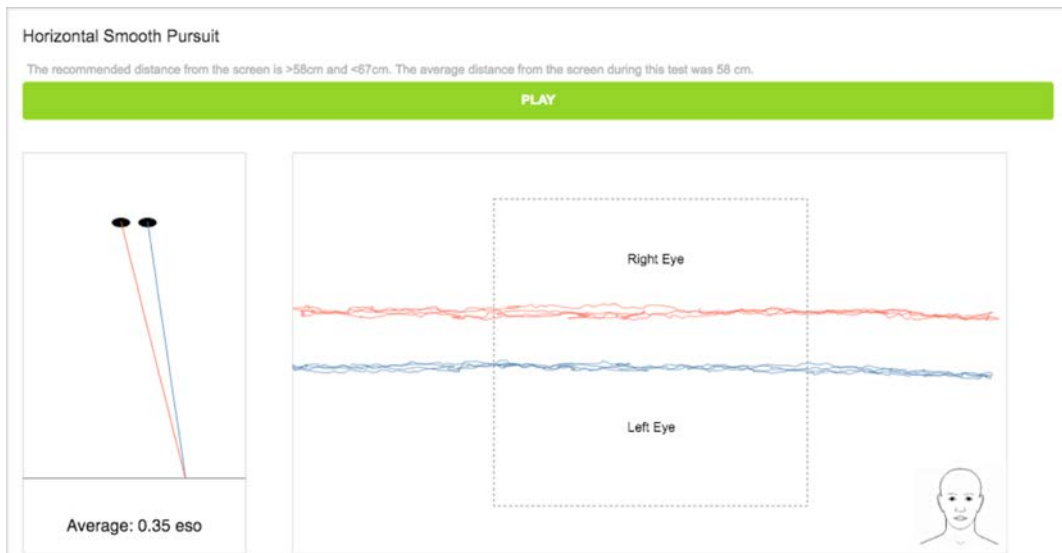
Circular: Smooth Pursuit Tracking (continued)

Metrics		Right Eye	Left Eye
		Actual	Actual
①	Smooth Pursuit (%)	95.39	97.04
②	Saccade (%)	2.06	1.21
③	Fixation (%)	2.55	1.75
④	Eye Target Velocity Error (°)	13.40	13.07
⑤	Horizontal Synchronization SP (0-1)	0.91	0.93
⑥	Vertical Synchronization SP (0-1)	0.89	0.92
Sub-Metrics		Right Eye	Left Eye
		Actual	Actual
⑦	On Target Smooth Pursuit (%)	65.42	87.46
⑧	Predictive Smooth Pursuit (%)	27.00	3.39
⑨	Latent Smooth Pursuit (%)	2.97	6.19

4. Eye/Target Velocity Error (°/s): refers to how far the user's eyes were away from the target (non-directional). This metric is calculated by subtracting the location of the stimuli and the user's eyes at same sample time, and reported as degrees per second. Eye/Target Velocity Error refers to speed represented in degrees/second off target. A low number is better.
5. Horizontal synchronization SPEM (0-1): refers to how far off on the X plane (co-ordinate) the user's eyes were during the test. A score of 1.0 means there is no distance discrepancy (measured in pixels) between the eye and target for the duration of the test when in smooth pursuit.
6. Vertical Synchronization SPEM (0-1): refers to how far off on the Y plane (co-ordinate) the user's eyes were during the test. A score of 1.0 means there is no distance discrepancy (measured in pixels) between the eye and target for the duration of the test when in smooth pursuit.
7. On Target Smooth Pursuit (%): refers to the user's eyes within a velocity range of the target, positioned on the stimuli within 2 cm, and reported as a percentage. On Target SP refers to % of time within 9 mm of the target while in SP. This varies by person. On Target Smooth Pursuit + Predictive Smooth Pursuit + Latent Smooth Pursuit sum to 100%.
8. Predictive Smooth Pursuit (%): refers to the user's eyes within a velocity range of the target and positioned ahead or in-front-of the stimuli between 2 and 5 cm and reported as a percentage. On Target Smooth Pursuit + Predictive Smooth Pursuit + Latent Smooth Pursuit sum to 100%.
9. Latent Smooth Pursuit (%): refers to the user's eyes within a velocity range of the target and positioned behind the stimuli between 2 and 5 cm and reported as a percentage. On Target Smooth Pursuit + Predictive Smooth Pursuit + Latent Smooth Pursuit sum to 100%.

Additional Information

Horizontal: Smooth Pursuit Tracking: participants are required to track a small dot left and right in a horizontal plane, for 25 seconds.



Metrics	Right Eye	Left Eye
	Actual	Actual
① Smooth Pursuit (%)	97.74	95.28
② Saccade (%)	0.54	0.55
③ Fixation (%)	1.71	4.16
④ Eye Target Velocity Error	17.12	17.00
⑤ Horizontal Synchronization SP (0-1)	0.98	0.98

1. Smooth Pursuit (%): eye movements that follow the target within a velocity range of the target, and are reported as a percentage of the test time. SP% refers to % of time spent in SP with acceptable distance (1.2 degrees) and speed (>0.25 degrees dispersion and <30 degrees per second speed). 100% means the eye was within these pre-specified ranges for the entire duration of the test. Smooth Pursuit + Saccade + Fixation sum to 100%.
2. Saccade(s) (%): are fast eye movements that move the eyes from one point of interest to the next. They are calculated outside (above or below) the velocity range of the target and reported as a percentage of test time.
3. Fixation (%): is a stopping point of the eye that allows the user to see in detail, and are reported as a percentage of the test time. Fixation and Saccade % should be low.
4. Eye/Target Velocity Error ($^{\circ}/s$): refers to how far the user's eyes were away from the target (non- directional). This metric is calculated by subtracting the location of the stimuli and the user's eyes at same sample time, and reported as degrees per second. Eye/Target Velocity Error refers to speed represented in degrees/second off target. A low number is better.
5. Horizontal synchronization SPEM (0-1): refers to how far off on the X plane (co-ordinate) the user's eyes were during the test. A score of 1.0 means there is no distance discrepancy (measured in pixels) between the eye and target for the duration of the test when in smooth pursuit.

Additional Information

Vertical: Smooth Pursuit Tracking: participants are required to track a small dot up and down in a vertical plane, for 25 seconds.

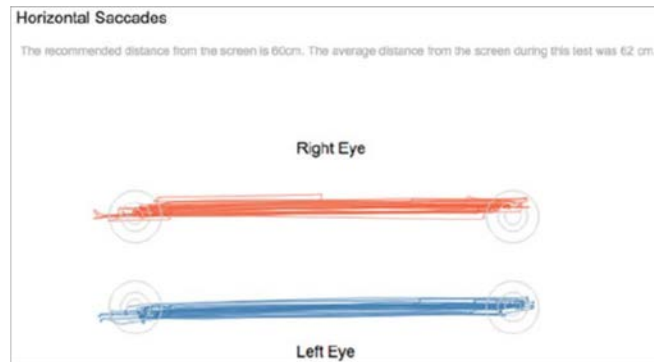


Metrics	Right Eye	Left Eye
	Actual	Actual
1 Smooth Pursuit (%)	71.67	65.20
2 Saccade (%)	14.44	14.32
3 Fixation (%)	13.89	20.48
4 Eye Target Velocity Error	12.35	13.11
5 Vertical Synchronization SP (0-1)	0.74	0.74

1. Smooth Pursuit (%): eye movements that follow the target within a velocity range of the target, and are reported as a percentage of the test time. SP% refers to % of time spent in SP with acceptable distance (1.2 degrees) and speed (>0.25 degrees dispersion and <30 degrees per second speed). 100% means the eye was within these pre-specified ranges for the entire duration of the test. Smooth Pursuit + Saccade + Fixation sum to 100%.
2. Saccade(s) (%): are fast eye movements that move the eyes from one point of interest to the next. They are calculated outside (above or below) the velocity range of the target and reported as a percentage of test time.
3. Fixation (%): is a stopping point of the eye that allows the user to see in detail, and are reported as a percentage of the test time. Fixation and Saccade % should be low.
4. Eye/Target Velocity Error (°/s): refers to how far the user's eyes were away from the target (non-directional). This metric is calculated by subtracting the location of the stimuli and the user's eyes at same sample time, and reported as degrees per second. Eye/Target Velocity Error refers to speed represented in degrees/second off target. A low number is better.
5. Horizontal synchronization SPEM (0-1): refers to how far off on the X plane (co-ordinate) the user's eyes were during the test. A score of 1.0 means there is no distance discrepancy (measured in pixels) between the eye and target for the duration of the test when in smooth pursuit.

Additional Information

Horizontal Saccades: Participants are required to move their eyes quickly and accurately, back and forth, between a target on the left side of the screen and one on the right side for 10 seconds.

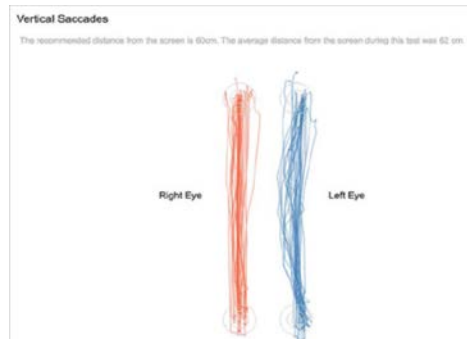


Metrics	Right Eye	Left Eye
	Actual	Actual
1 Saccade (#)	20	21
2 Fixation (#)	23	23
3 On-Target (#) - within 9mm	5	9
4 Overshot Target (#) - 9-18mm	1	2
5 Undershot Target (#) - 9-18mm	11	3
6 Overshot Target (#) - 18-36mm	0	0
7 Undershot Target (#) - 18-36mm	6	9
8 Missed (#) > 36mm	0	0

1. Saccade(s) (%): are fast eye movements that cross from the left to right of the side of the screen or from the right to the left side of the screen. Saccades are tallied throughout the duration of the test and reported as the total number of saccades. Saccade (#) refers to number of saccades tallied for a single test. 1 saccade is from one black dot to the other. Smooth Pursuit + Saccade + Fixation sum to 100%.
2. Fixation (%): are stopping points or about-turn of the user's gaze. Fixations are tallied throughout the duration of the test and reported as the total number of fixations. Fixation (#) refers to number of times user stops moving their eye.
3. On-Target (9mm, #): is a tally of x, y coordinates within the left and right targets. These "hits" are tallied across the length of the test and are reported as a total number of target hits. On-Target refers to accuracy of the saccade and proximity of eye gaze point to the dot when fixating.
4. Bandwidth 2 Overshot Target (9-18 mm, #): is a tally of x, y coordinates that appear beyond the targets to the far left and far right side. These "hits" are tallied across the length of the test and are reported as a total number of target overshoot. Bandwidth refers to the distance from eye gaze point to dot.
5. Bandwidth 2 Undershot Target (9-18 mm, #): are a tally of x, y coordinates that appear closer to the center of the screen, inside the targets to the inner left and inner right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target undershot.
6. Bandwidth 3 Overshot Target (18-36 mm, #): are a tally of x, y coordinates that appear beyond the targets to the far left and far right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target overshoot.
7. Bandwidth 3 Undershot Target (18-36 mm, #): are a tally of x, y coordinates that appear closer to the center of the screen, inside the targets to the inner left and inner right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target undershot.
8. Missed (>36 mm, #): A target miss is recorded when no target is hit and the user has passed the center of the screen in the direction of the target

Additional Information

Vertical Saccades: Participants are required to move their eyes quickly and accurately, up and down, between a target on the top part of the screen and one on the lower part for 10 seconds.



Metrics	Right Eye	Left Eye
	Actual	Actual
1 Saccade (#)	15	19
2 Fixation (#)	21	22
3 On-Target (#) - within 9mm	3	6
4 Overshot Target (#) - 9-18mm	2	0
5 Undershot Target (#) - 9-18mm	8	6
6 Overshot Target (#) - 18-36mm	0	0
7 Undershot Target (#) - 18-36mm	7	10
8 Missed (#) > 36mm	1	0

1. Saccade(s) (%): are fast eye movements that cross from the left to right of the side of the screen or from the right to the left side of the screen. Saccades are tallied throughout the duration of the test and reported as the total number of saccades. Saccade (#) refers to number of saccades tallied for a single test. 1 saccade is from one black dot to the other. Smooth Pursuit + Saccade + Fixation sum to 100%.
2. Fixation (%): are stopping points or about-turn of the user's gaze. Fixations are tallied throughout the duration of the test and reported as the total number of fixations. Fixation (#) refers to number of times user stops moving their eye.
3. On-Target (9mm, #): is a tally of x, y coordinates within the left and right targets. These "hits" are tallied across the length of the test and are reported as a total number of target hits. On-Target refers to accuracy of the saccade and proximity of eye gaze point to the dot when fixating.
4. Bandwidth 2 Overshot Target (9-18 mm, #): is a tally of x, y coordinates that appear beyond the targets to the far left and far right side. These "hits" are tallied across the length of the test and are reported as a total number of target overshoot. Bandwidth refers to the distance from eye gaze point to dot.
5. Bandwidth 2 Undershot Target (9-18 mm, #): are a tally of x, y coordinates that appear closer to the center of the screen, inside the targets to the inner left and inner right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target undershot.
6. Bandwidth 3 Overshot Target (18-36 mm, #): are a tally of x, y coordinates that appear beyond the targets to the far left and far right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target overshoot.
7. Bandwidth 3 Undershot Target (18-36 mm, #): are a tally of x, y coordinates that appear closer to the center of the screen, inside the targets to the inner left and inner right side of the targets. These "hits" are tallied across the length of the test (10 seconds) and are reported as a total number of target undershot.
8. Missed (>36 mm, #): A target miss is recorded when no target is hit and the user has passed the center of the screen in the direction of the target

Additional Information

Please keep your RightEye system online so it can receive security updates from Microsoft. The system is setup to automatically install security updates by itself.

This will help ensure the cybersecurity of the RightEye system.

The Tobii Dynavox i15

The Tobii Dynavox system is a component of the RightEye Vision System. General specifications of this system include:

- Weight: 3.8kg; 8.41lbs
- Power requirements:
 - Input: Universal 100 ~ 240 VAC / 50 ~ 60 Hz
 - Output: +24VDC / 0~2.71A
- Environmental Use: best used indoors with minimal interference of outdoor light. Do not display near windows.
- Environmental Conditions for Operation: indoors with minimal outside light. Do not operate below 55F or above 109F.
- Electrical Safety: Compliant with IEC 60601-1 ed.3 /EN 60601-1:2006 / ANSI/AAMI 60601-1:2005
- Electromagnetic Compatibility: Compliant with Part 15 of the FCC Rules & EN 60601-1-2:2007 + AC:2010
- Dimensions:
 - 36,9 x 32,6 x 11,2 cm
 - 14.5 x 12.8 x 4.4s inches