Eyeonic Visual Field Test

Clinician Manual

Eyeonic provides accurate, convenient and secure online visual field testing

Welcome,

The Eyeonic team wish you a warm welcome to the online Eyeonic Visual Field Test.

Visual field testing is critical for modern eyecare. It involves the assessment of a person's peripheral vision, one eye at a time. It detects and monitors diseases of the eye like glaucoma. Glaucoma is common, affecting 76 million people globally, in all populations of the world. People are often unaware of their glaucoma until it is advanced, however if detected early treatment can be given to save sight. And yet, 50% in the most developed countries and 90% in the least developed countries do not know they have glaucoma.

Until recently, visual field testing required dedicated, expensive machines that can only be accessed at an eyecare clinic. This means poorer and more remote regions could not access visual field testing. Even in wealthy regions, the inconvenience of attending an eyecare clinic means many people do not check their eyes leading to more severe visual problems later.

Through its revolutionary technology, the Eyeonic Visual Field Test allows anyone to test their visual field on any computer.

All that is required is a stable internet connection. By improving access to visual field testing, Eyeonic hopes that its technology means easier visual field testing and earlier detection of glaucoma globally. Visual field machines are large, bulky, expensive and difficult to use and maintain; in comparison computers and the internet are cheaper and widely available.

Visual field testing is often not fun. Using the older machines, people find the test stressful, uncomfortable, and often feel out of control. The online Eyeonic visual field test has been designed to be a more comfortable and enjoyable experience, while still accurate. User's love it –84% of users strongly prefer it to conventional visual field machines.

Eyeonic Pty Ltd was founded in 2020 by Ophthalmic specialist Professor Simon Skalicky. Supported by experts at Microsoft it has been designed rigorously to ensure smooth functionality and integrity of data. It uses premium artificial intelligence and mathematical formulae. The Eyeonic team is committed to the scientific process. Several papers published in international Ophthalmology journals have critically evaluated the online Eyeonic Visual Field test and found it to be safe, consistent, reliable and accurate in diagnosing eye disease like glaucoma. A network of global experts continues to research the technology, ensuring its ongoing success.

We hope you enjoy the experience as much as we did bringing the technology to life.

The information provided has been developed to support you in successfully setting up and performing the Eyeonic Visual Field Test. Please read the instructions carefully before commencing your visual field test.

the Eyeonic team

Note: the symbols below denote critical information.

⚠	Caution	📖	Consult instructions for use/user manual
🏭	Manufacturer	LOT	Lot number *The Eyeonic Visual Field Test Lot Number is made up of the software version number and release date.*
📅	Date of manufacture	MD	Medical Device
UKCA	UK Conformity Assessment Marking		

Table of Contents

⚠	**Ensure you are using the correct User Manual and always refer to the latest e-IFU on the Eyeonic website.**

1 Intended Use

The Eyeonic Visual Field Test is an online visual field test intended to be used to perform visual field testing and detect visual field changes, as an aid to supplement but not replace clinical judgement in monitoring or screening for primary, secondary, open or closed angle glaucoma.

Small luminous points (spots) are displayed in various random positions and the patient's response is recorded, these are used as an aid to clinical evaluation and ancillary investigations in the monitoring or detection of glaucoma by a clinician (i.e. ophthalmologist). As a stand-alone device the Eyeonic Visual Field Test is not intended to diagnose or rule out eye disease like glaucoma.

The Eyeonic Visual Field Test is intended to be used in supervised clinical settings and home-use on a standard laptop or desktop personal computer. For these people (who are not performing the test under a clinician's directions) the test advises them to see a clinician to determine if they have any eye condition. The test does not attempt to specifically diagnose any condition on its own - rather directs the individual to further assessment by a clinician.

2 Indications for Use

- Glaucoma patients and suspects who undergo regular monitoring.

- People whom the clinician (Optometrist or Ophthalmologist) is suspicious for diagnosing glaucoma, based on optic disc appearance, intraocular pressure and optic nerve scan (e.g. Optical Coherence Tomography).

- Ancillary assessment for other disorders of vision that can cause visual field changes – such as certain retinopathies, non-glaucomatous optic neuropathies, or central nervous system visual pathway disorders.

3 Contraindications

- Very unstable seizure activity

- Uncontrolled vertigo

- Severe loss of central vison and visual acuity below 6/48 (20/160)

- Significant cognitive impairment resulting in inability to perform test correctly

4 Precautions

- Ensure the computer used for testing is adequately powered to complete the test and you have internet access.

- Users with cognitive impairment or unfamiliar with using a computer may not be suitable to perform the Eyeonic Visual Field Test unsupervised. Clinicians must use judgement as to which patients are suitable for unsupervised, home perimetry.

- If you are not comfortable following instructions in English, you may not be suitable to perform the Eyeonic Visual Field Test unsupervised. Consult your clinician if you have concerns.

- Users with postural issues of the back and neck (e.g., severe scoliosis, kyphosis) may find it difficult to maintain their head in position for the duration of the test and may not be suitable to complete the test unsupervised.

- Ensure your screen is clean before performing the test.

5 Warnings

- If your patient has unstable epilepsy the stimuli of the app might exacerbate seizure activity. The spinning yellow star (fixation target) might exacerbate uncontrolled vertigo.

- Visual field testing alone should not be used to diagnose eye disease, rather it should be interpreted in the context of clinical examination and other tests.

- A normal visual field test does not exclude glaucoma as up to 40% of the optic nerve must be damaged before a perimetry test shows any abnormality.

- Only severe glaucoma is symptomatic. Early detection requires visual field tests to be completed regularly, every 1-2 years or more frequently as required.

- Risk factors for glaucoma include a family history of glaucoma, high eye pressure, African or Asian descent, age > 50, diabetes, high or low blood pressure or obstructive sleep apnoea. If patients have one or more risk factors, then you should consider regular visual field tests to detect early signs of glaucoma every 1-2 years or more frequently as required.

- Ensure the distance between your patients' eyes and the computer monitor is set to the correct distance. Sitting too far away from or too close to the monitor can lead to inaccurate results.

- Do not share your password and login details with anyone else.

- Should the application cease mid-test (e.g., power outage) the user can check to see how much progress was saved by reviewing their last saved visual field test. They can then restart the test once the power or internet issue has been resolved.

- The test is best performed in an indoor, undisturbed, quiet environment, in a darkened room.

- The device has been extensively clinically evaluated, however not vigorously in the following sub-groups, among whom it should be used with caution:

  - Individuals with secondary glaucoma or closed angle glaucoma.

  - Individuals having undergone recent ocular surgery.

  - Children or adults under the age of 40.

- Studies are underway to evaluate the device within these populations.

- The device can be used by patients in clinic or at home. For optimal home use prior training in a supervised in-clinic setting is strongly recommended.

- The clinical evidence does not verify the performance of the device on curved monitors.

6 Equipment requirements

The Eyeonic Visual Field Test is an online software web application, installation is not required however access to the internet is required.

The web application can be accessed on any device connected to the internet, namely smartphones, tablets or personal computers, but the testing strategy cannot be performed on a smartphone and is best performed on a computer monitor.

Minimum equipment requirements for using the application on a computer:

- Desktop or laptop computer with speakers

- A computer mouse and/or keyboard

- A webcam is recommended however not necessary (it is necessary for the binocular **Driving Vision Test**).

- Access to the internet

- Antivirus software installed on your computer

- Up-to-date operating system, either:

  - Windows 10 version 21H2 or later; or

  - MacOS 12 (Montery) or later

- Sufficient system resources:

- Available storage space: minimum 4GB

- System memory (RAM): minimum 4GB, recommended 8GB

- Web browser – Google Chrome, Mozilla Firefox, or Safari

Minimum equipment requirements for using the application on a tablet computer or iPad:

- Android tablet or Apple iPad with speakers and touchscreen

- A user-facing camera is recommended however not necessary (it is necessary for the binocular **Driving Vision Test**).

- Access to the internet

- Antivirus software installed on your device

- Up-to-date operating system, either:

  - Android 12 or later; or

  - Apple iOS 15 or later

- Sufficient system resources:

  - Available storage space: minimum 4GB

  - System memory (RAM): minimum 4GB, recommended 8GB

- Web browser – Google Chrome, Mozilla Firefox, or Safari

⚠️	**The Eyeonic Visual Field Test is not a replacement for clinical review. Even if the test is normal, your patient may still have serious eye health conditions.** **Please ensure they see an eyecare clinician regularly.**

7 Who can use the Eyeonic Visual Field Test?

Clinicians trained as Ophthalmologists, Optometrists, Orthoptists or other healthcare providers can use the Eyeonic Visual Field Test.

If your patient can use a computer, they can use this software web application.

⚠	Users with cognitive impairment or unfamiliar with using a computer may not be suitable to perform the Eyeonic Visual Field Test unsupervised. Clinicians must use judgement as to which patients are suitable for unsupervised, home perimetry.

8 Registration

Registration to the Eyeonic Visual Field Test is easy, using any electronic device with access to the internet open the Eyeonic website https://eyeonic.com and click on the **REGISTER** button located at the top right of the screen.

It is important that Eyeonic verifies your identity as a clinician when setting up your account. Please take care to provide all the registration requirements, listed within this section, especially all the details required for the photo ID.

You will need to provide your **first name**, **last name** and a valid **email address**.

You are required to set a unique password; this must meet the criteria defined below:

- At least **8 characters** or more, and
- Contain at least 1 **number** digit, and
- Contain at least one **UPPERCASE** letter, and
- Contain at least one **lowercase** letter, and
- Contain at least one **special character**, for example: ! @ # $ %

Select **YES** when asked "Are you a clinician" from the dropdown box.

You are required to:

- enter your **title**
- enter your **qualifications** and provide your **clinician registration (e.g. AHPRA) number**
- provide a copy of your valid **photo ID** which must contain a clear, passport style headshot of you, as well as your full name and date of birth.
- enter the **name** and **full address** of your practice. Your practice address must be a valid address according to Google Maps (Google),

Once you have registered, your account details will be reviewed manually by the Eyeonic administration team. If any details are missing or incorrect, your account access will be paused until the correct information is provided.

By clicking **REGISTER**, you agree to our **terms and conditions** and **privacy policy**,

⚠	**DO NOT share your password and login details with anyone else.**

9 Logging in

Using any electronic device with access to the internet open the Eyeonic website https://eyeonic.com and click on the **LOGIN** button located at the top right of the screen enter your credentials and click **CONTINUE**.

If you forget your password, click on the **FORGOT PASSWORD** and follow the prompts to reset.

10 Adding patients

Once you have logged into the Eyeonic Visual Field Test, click on the **PATIENTS** button located at the top of the screen.

If patients have requested you as their clinician, they will appear on your list of **Pending Patients**. You will have received an email advising that "You have a new patient in Eyeonic", with links to your Pending Patient list.

Click **ACCEPT PATIENT** to the far right of their name to add them to your list of **Current Patients**.

What if my patient has not yet created an Eyeonic account?

Invite new patients to join Eyeonic by clicking on the **INVITE A PATIENT YOU KNOW TO JOIN THE SITE**.

Simply enter their name and email address, click **INVITE** and they will automatically receive an email invitation to join Eyeonic.

What if a patient has multiple clinicians? What is a primary clinician?

Patients can select up to 4 clinicians to view their test results. However, only one clinician can be their **primary clinician**, who is responsible for setting their test frequency and reviewing results.

Patients can choose which of their clinicians is the **primary clinician**. If they have only one clinician selected, that clinician is by default the **primary clinician**.

⚠	**Where you have been nominated as a patient's primary clinician you are responsible for setting their visual field testing schedule/frequency, the test type and reviewing their test results.**

11 Searching for patients

Your current patients are displayed in the **Current Patients** list, arranged in order of most recent visual field test to last. Patients who have performed tests that have not yet been reviewed by you are marked with a red circle to the left.

Once you have logged into the Eyeonic Visual Field Test, click on the **PATIENTS** button located at the top of the screen. Here you can either search for individual patients or search through your Current Patient list:

Search for individual Patients

Under Your Patients is a box with suggestion to "Search patients by name". Start typing the patient's given name or surname in the **Search patients by name** field on your screen, a narrowing list of potential patients will appear. Click on the correct patient's name or details.

Search through Current Patients list

Five (5) patient's details are displayed per page. Scroll through the pages by selecting **FIRST**, **PREVIOUS**, **NEXT** or **LAST** toggle buttons located at the bottom of the display. Click on the correct patient's name or details.

12 Reviewing individual patient details

Once you have selected an individual patient, you will be able to review their visual field test results. These will be ordered from most recent to oldest, with pagination after 5 monocular tests, in **Left eye** and **Right eye** columns.

Binocular **Driving Test** results can be viewed below the monocular tests. After performing three complete 24-2 visual field tests for one eye, **progression analysis** display will be available. Un-reviewed tests will be highlighted within a red box.

If you are the patient's **primary clinician**, you will be able to set the **test frequency** and **test type** (24-2 v 10-2). Refer to Section 13 of this User Manual for details.

13 Reviewing patient test results

Select any of the tests on the patient's page, or progression analysis, to review results. The display is clear and concise, easy-to-understand for clinicians trained in visual field interpretation.

14 Set test type and frequency

By default, the standard monocular visual field test is 24-2 protocol. If you set the **test type** to 10-2 then they will perform 10-2 protocol when they log into their account

By default, all patient's test frequency is set to **NEVER.** Other options include **EVERY 3 MONTHS**, **EVERY 6 MONTHS**, **YEARLY**, and **EVERY 2 YEARS**. If one of these frequencies are set, then the patient will receive an email invitation to perform the visual field test at that time. You will receive an email notification once the patient has completed their scheduled visual field test, with an email link to their results.

What if a patient does not complete their scheduled visual field test?

If they fail to complete their scheduled visual field test, your patient will receive an email reminder at 7 days and then a repeat reminder at 14 days. If they still do not complete the visual field test, after another 7 days their **primary clinician** will be notified.

15 Clinic Computers

You will be able to allocate an unlimited number of clinic computers to your account. Once you have allocated a computer to be a **clinic computer**, any patient who uses the Eyeonic Visual Field Test on that computer will be able to:

- perform an unlimited number of visual field tests

- change test type (24-2 v 10-2) for monocular testing

They will be asked which clinician they are seeing today in case multiple clinicians share the same **clinic computer**. If they click you, you will become their **primary clinician**, and the cost of all their testing will be covered by your account.

Clinic computers are recommended for use by clinicians who use the Eyeonic Visual Field Test for visual field testing in their practice.

To setup a **clinic computer**:

Step 1: Log in or register.

Step 2: Click on the **CLINIC COMPUTERS** button located at the top of the screen.

Step 3: If the computer has not been assigned to be a **clinic computer** yet, you will read "This device is not currently registered as a Clinic Testing Computer". Click the button **REGISTER THIS DEVICE** to register the computer as a **clinic computer.**

Step 4: Add a name for the computer, and the clinic location.

Step 5: Click **REGISTER COMPUTER** to complete setup

16 Test setup

The Eyeonic Visual Field Test has been designed to provide users with the necessary instructions when they are logged in and using the software.

It takes 3-6 minutes per eye to complete the Eyeonic Visual Field Test. Prior to setting up ensure the user has enough time to complete the Eyeonic Visual Field Test.

⚠	**Ensure your computer sound and camera are turned on before commencing Test Setup.**

Have the user login to their Eyeonic account and select the appropriate visual field test. They will be presented with the Test Setup page, which includes instructions on setting up:
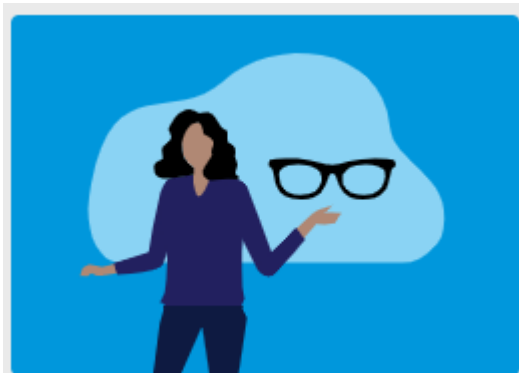
We will test **one eye** at a time; **close** the other eye firmly.

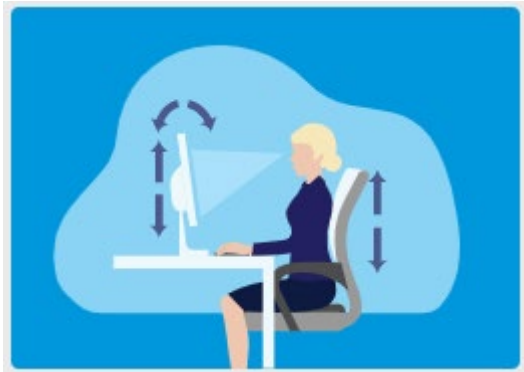If you use **eye glasses** for reading, put them on.

Darken your room (complete darkness is not required).

Avoid lights shining directly on the screen or in your eyes.
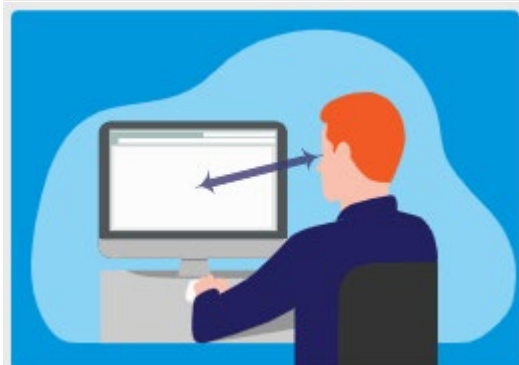
Sit at the recommended distance from the screen, face-on. The suggested distance will vary between different devices, but is usually 40-55cm.

Alter your **seat** or **screen** height, or **tilt screen** for comfortable seating.

Sounds will guide you; turn on **speakers** or use **earphones** to hear.

It is recommended that users watch the setup video provided on this page prior to commencing the test.

When the user is ready to commence click on the **Begin Visual Field Test** button.

⚠	**If you use night mode on your computer, please turn it OFF.**

⚠	**Please turn your screen brightness up to at least 75%.**

⚠	**Please ensure your patient is correctly positioned in front of the computer.**

⚠	**Please ask your patient to wear their appropriate spectacles for reading.**

⚠	**Ensure your screen is clean before performing the test.**

17 Assisting your patient to take the Eyeonic Visual Field Test

Step 1: Your patient must keep the eye being tested open. They may use their hand to cover their eye if required.

Step 2: Your patient should click the left button on the computer mouse to commence the test.

Step 3: Your patient should focus on the spinning gold star at all times.

Step 4: Your patient should click the left button on the mouse when the target appears on the screen.

The test will conduct a few initial test points to familiarise your patient with the targets.

To find their physiological blind spot, your patient will be tested with smaller, dark targets over a predetermined grid. The blind spot location is indicative of their position relative to the screen. They may be asked to move forward or backward, until the blind spot has been found in the correct location.

During the test, each locus in their peripheral vision will be assessed for sensitivity. Occasionally small, dark spots will be shone in the blind spot to assess for fixation accuracy.

Throughout the test sound is used to guide your patient. A positive, reassuring noise is produced every time they click at a correct time – like the noise when finding a coin on a computer game and a negative sound, like the noise when an error occurs when using computers or computer games, is produced when they click at an incorrect time. Verbal cues will also guide and encourage your patient during the test.

During the test, the fixation target may move to maximise the sampling area.

A progress bar under the fixation target will give your patient a sense of how far along the test they have progressed. On completion of the test they will be advised to click the mouse to access their results or perform further testing.

If at any point throughout the test your patient needs to pause, they can do so by clicking the **space bar** on the keyboard. To resume the test click the **space bar** on the keyboard again.

To exit the test click the **backspace** on the keyboard.

Step 5: Once the patient has completed the test you will receive an email confirming they have completed the test with a link to their results to review.

⚠	**If a patient is unable to complete the test for any reason, please ask them to restart and reperform the test. If they are then unable to complete the test for any reason, consider alternative methods of assessment.**

18 Subscription and Billing

To access your patient's results and set their testing frequency, you will need a monthly subscription to Eyeonic. There are 3 levels of subscription, all of which allow your patients to perform the following test numbers:

☆☆☆	☆☆☆	☆☆☆
BASIC	**STANDARD**	**PREMIUM**
50 tests per month	100 tests per month	Unlimited tests per month

Your first month's subscription is free, and all subscriptions come with full access to your patient's results.

Once you set a patient's test frequency and they receive an email recommending them to perform a visual field test, the cost of that scheduled test will be covered by your subscription account. Billing is only completed once the patient completes their test.

To purchase a subscription:

> **Step 1:** Click on the **SUBSCRIPTION** button at the top of your screen.

> **Step 2:** Click on the blue **PURCHASE** button beneath the type of subscription you would like to purchase.

How do I change my subscription?

You may adjust your subscription at any time.

In the **SUBSCRIPTION** page click on the blue 'upgrade' or 'downgrade' button below the subscription of your choice.

The Eyeonic Visual Field Test is a token based system. If your patient performs additional testing (outside of the recommended test frequency schedule) they will be required to purchase tokens to perform that testing.

When your patient performs the Eyeonic Visual Field Test at home, each Visual Field Test costs one token per eye, a full Visual Field Test (both eyes) will cost two tokens. All new users will be supplied with one free token on completing your registration, but further testing may require purchase of tokens.

To purchase tokens, your patients should:

> **Step 1:** Click on the **BILLING** button at the top of your screen.

Step 2: Click on the blue **PURCHASE** button beneath the number of tokens you would like to purchase.

19 Cleaning and reuse

The Eyeonic Visual Field Test is an online software web application, no cleaning, disinfection, packaging or re-sterilisation requirements apply to the device itself.

The computer monitor and webcam should be kept clean and wiped with a lint free cloth prior to performing the Eyeonic Visual Field Test to ensure that dust or dirt build up does not affect the display.

⚠	**Your Eyeonic account should not be used by anyone else.** **DO NOT allow another person to perform actions on your behalf.**

20 Troubleshooting

I can't remember my password. How do I login?

Click on the link **FORGOT PASSWORD?** when you are in the login screen. Enter your email address and click **Continue**. You will receive an email with detail on resetting your password. Follow the links in your email account to change the password.

I don't have a webcam on my computer. Can my patients still perform the test?

The standard Visual Field Test will still work without a webcam, although may not be as accurate. Don't worry, the reduction in accuracy is small and unlikely to be greatly influential.

My screen froze while I was performing my test, should I do it again?

If your screen freezes while you are in the middle of a test press refresh and begin again. Ensure your internet connection is stable.

Can the Eyeonic Visual Field Test be performed on a smartphone or tablet?

The Eyeonic Visual Field Test is accessible from any device however it cannot be performed on smartphone devices but most protocols can be performed on tablet devices. If the user attempts to commence the Eyeonic Visual Field Test on a smartphone, they will be prompted to use a computer or tablet.

Are there any requirements for computers e.g. screen size?

The online Eyeonic Visual Field Test will work on all computer types and sizes, laptop or desktop.

Does it matter if the user tests their left or right eye first?

No it does not matter which eye is tested first.

21 Technical Support

For technical support you can email us at support@eyeonic.com or complete our online customer service form by clicking on the **CONTACT US** button located at the bottom of the screen while using the Eyeonic Visual Field Test.

Eyeonic Visual Field Test User Manual, FRM-093, Version 7 (CR025-24), 04 July 2024

Eyeonic Pty Ltd 330 Balaclava Road, Caulfield North Victoria 3161, Australia	**UK Responsible Person** **Donawa Lifescience Ltd (UK)** Aviation Business Park, Christchurch BH23 6NX UK

Registered Trademark: Eyeonic Vision Test