

Kinetic Visual Field Exam

Your Comprehensive Guide

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Start Conducting Kinetic Perimetry Exams with Carrot

Kinetic perimetry (often called Goldmann perimetry, named after the device most often used for this test) uses a moving target to reveal visual field defects. Unlike static perimetry testing, kinetic perimetry requires your patient to track the stimulus while you measure their eyes' response.

This test assesses your patient's entire visual field to identify peripheral vision loss and central scotomas. Kinetic perimetry is ideal for Carrot. Our high-resolution screen, automated eye-tracking, and real-time measurements translate to accurate data for quick interpretation and a smooth workflow.

Goldmann Perimetry/Kinetic Visual Field Test Overview

In kinetic perimetry, a suprathreshold stimulus is moved across the visual field, starting outside its edge. The patient watches the stimulus move while the perimeter maps eye movements. This technique reveals the approximate size and location of scotomas, helping diagnose glaucoma, macular degeneration, optic nerve damage, and other common conditions.

The Goldmann perimeter was first developed in [1945](#). In its day, this manual technique was an advanced method for mapping visual fields, but it has since been refined.

Carrot's Pro subscription advances kinetic visual testing with automated eye tracking so you can see your patient's response, real-time monitoring, and immediate data updates. The wearable headset reduces patient discomfort and accelerates the overall testing process. Carrot's version of Goldmann perimetry was the first of its kind, setting the standard for all future virtual kinetic visual field exams.

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Academic references and clinical validation



[Outside research](#) shows that using virtual reality for kinetic perimetry is comparable to using a Goldmann kinetic perimeter in results, but superior in accessibility.



When [compared to static perimetry](#), kinetic visual field testing is shown to provide quality results — especially at the arcuate border.



[Research shows](#) that kinetic visual field testing is useful for patients with severe visual and neurologic deficits or rare genetic conditions like [choroideremia](#).

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The kinetic visual field exam measures peripheral vision by tracking eye movements as a patient views a moving stimulus. This test is especially useful to detect blind spots that static tests might miss. During this exam, the VF3 Pro allows you to monitor the patient’s eye movements in real time using a camera. This capability is as close to a real-world vision test as it’s possible to get. This test does require more patient cooperation and understanding than other exams, so it may be time-consuming or limiting for patients with [language](#) or [physical](#) barriers.

Pros and Cons of the Kinetic Visual Field Test

We know the kinetic visual field exam is efficient, useful, and widely used, but there are pros and cons to incorporating this test into your routine.

PROS	CONS
This exam tracks both central and peripheral vision for a more comprehensive view of the visual field.	Kinetic testing takes longer than other visual field exams, which may lead to patient fatigue.
The moving target simulates real-world conditions, so its results are highly relevant.	Patient cooperation is mandatory, so those who struggle with fatigue, attention, anxiety, or disabilities may find this test challenging.
Some studies indicate that kinetic testing is more effective at identifying early peripheral vision loss than static tests.	Small defects may still go unnoticed. This exam is best suited for identifying more significant defects in the peripheral vision.
Kinetic perimetry is well-suited for virtual reality using the VF3 Pro.	Other tests are more sensitive to central vision, so patients with subtle defects may need additional testing.

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Glaucoma	Peripheral vision loss is often one of the first signs of glaucoma. Kinetic testing excels at identifying blind spots in the peripheral vision, especially at the edge of the visual field.
Diabetic Retinopathy	As many as 26% of people with diabetes will develop diabetic retinopathy, which can lead to peripheral vision effects. Kinetic testing helps reveal these defects, especially those that aren't evident using static tests.
Optic Neuropathy	Kinetic testing is particularly useful for identifying vision loss from optic neuropathies, such as ischemic optic neuropathy or optic neuritis, by detecting early peripheral vision defects.
Macular Degeneration	For most patients with age-related macular degeneration, scotomas first appear in the central vision. You may find that kinetic testing is an effective way to map these blind spots, especially with more significant defects.
Stroke	Patients who have suffered a stroke or other cerebrovascular events often experience hemianopia or quadrantanopia. The kinetic exam can map out the loss of peripheral vision, which is crucial for understanding the extent of brain damage.
Autoimmune Conditions	These conditions, especially multiple sclerosis, can lead to optic nerve damage. Kinetic testing helps identify the extent of this damage and inform treatment.
Other Conditions	Kinetic visual field testing can also be used to monitor or diagnose: Retinal vein/artery occlusion • Retinal detachment • Retinitis pigmentosa • Pituitary tumors • Temporal arteritis

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John Doe

7.16.1979 (44)

MRN pa_8b6621be	FOVEA Disabled	DURATION 1:10	STIMULUS SIZE & DECIBELS WHITE: III / 0db
PATTERN Full Field 70-16	STRATEGY Kinetic	FIXATION LOSSES -	OUTER LIMIT
VELOCITY 5.0°/s	FIXATION TARGET Central Point	FALSE POSITIVES 16%	
RX +0.0 DS +0.0 DC +0.0 AX +0.0 EQ			

Up

Down

NOTES

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Kinetic Visual Field Testing Device Pricing

When considering your kinetic visual field tester price options, it's crucial to consider the full range of testing devices available on the market. A traditional tabletop device, such as the Goldmann perimeter, may cost \$2,500 to \$6,000 upfront. A new Haag-Streit Octopus 900 Pro costs around \$35,500.

Alternatively, a Goldmann perimetry alternative device and modern VR-based solution, such as the Carrot Pro, delivers Goldmann-style kinetic perimetry in a portable headset at a [low, affordable monthly subscription cost](#) with no additional hardware maintenance requirements. By replacing bulky legacy equipment with advanced wearables, clinics can expand access to kinetic visual field exams without the high overhead or space requirements, giving more patients the benefits of comprehensive kinetic testing at a sustainable price.

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Billing and Coding for Kinetic Visual Field Testing

Whether you use traditional Goldmann visual field assessments or modern tools like Carrot with a Pro subscription, kinetic testing is [billable to insurance](#). For an intermediate exam with two isopters, use CPT code 92082. For extended exams with 3 or more isopters and additional details, use CPT code 92083.

Intermediate exams are reimbursed at \$19 to \$60, while extended tests are reimbursed at \$40 to \$90 per exam. Refer to the [Medicare Physician Fee Schedule \(MPFS\)](#) for fee details, and remember that your location, practice setting, modifiers, and other details will impact your reimbursement amount.

When is kinetic testing required?

Use the kinetic visual field exam to screen patients with suspected or known glaucoma, stroke, pituitary tumors, or optic neuropathy. This test is beneficial among patients who have defects in their peripheral vision or complain of tunnel vision. For patients with progressive conditions, you may wish to repeat this exam regularly to collect data about how the patient's visual field changes over time.

Is the kinetic perimetry test required for driver's licenses?

No, this exam isn't standard for driver's license evaluations. That said, peripheral vision is crucial to licensing in all states, and patients with suspected or diagnosed peripheral vision loss may need additional testing before getting a driver's license. In these cases, the Esterman or FullField 120 exams are usually recommended.

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The kinetic visual field exam provides a dynamic, real-world assessment of visual function. You can use it to diagnose and monitor a whole host of conditions, and with Carrot's accurate, automated eye-tracking technology, your workflow will be even faster. Patients prefer our comfortable, portable headset over bulky tabletop machinery, allowing you to provide a better patient experience while collecting all the necessary data to make informed treatment decisions.

Ready to get started?

Schedule a demo or begin your 30-day free trial of Carrot to offer an exceptional eye exam experience in your practice.

[Book a demo](#)

[Start your 30-day trial](#)



Questions? Contact sales@carrot.io talk to a Carrot expert today.