Carrot

Book a demo

10-2 Visual Field Test
Your Comprehensive Guide

Central vision loss has a significant impact on patients' quality of life, but they don't always notice early signs like blind spots. Some of these visual defects can be so subtle they don't even appear on standard 24-2 or 30-2 tests. But they do exist, and with quick intervention, you can help preserve vision. Incorporating the 10-2 visual field exam can make it possible to detect macular conditions, glaucoma, and optic neuropathies earlier.

The 10-2 visual field test is generally considered a supplemental exam, but it comes standard on all Carrot devices. This guide breaks down how this test works, its applications, and how Carrot upgrades the patient experience so you can gain more precise results.

10-2 Visual Field Test Overview

The 10-2 visual field test assesses 68 points within the central 10 degrees — this is much more detail than the standard 12 points in other visual field tests. With this increased sensitivity and focus on the central vision, you can detect defects that might not register as abnormalities in broader tests.

This more targeted assessment of the macular region is especially useful for identifying gradual changes in progressive conditions, such as age-related macular degeneration and glaucoma. The 10-2 can also support patients who are managing chronic conditions or taking medications that impact vision.

Carrot's 10-2 exam is faster, easier, and more accessible than testing on traditional tabletop perimeters. Our headset doesn't require much space or a darkened room. Carrot can be used almost anywhere in your practice, wherever your patients feel comfortable. This way, you can improve the exam experience, expand your practice's service offerings, and provide more comprehensive eye care to more of your patients.

Academic references and clinical validation

This study found that 10-2 visual field tests often detect central visual field defects that may be missed by 24-2 tests in glaucoma patients, glaucoma suspects, and ocular hypertensives. Abnormal results on the 10-2 test were identified in 61.5% of early glaucoma cases, 39.5% of glaucoma suspects, and 35.4% of ocular hypertensives classified as normal by 24-2 testing.

A recent study compared the 24-2, 24-2C, and 10-2 visual field tests to determine when to incorporate the 10-2. The results suggest that when 24-2 testing shows poorer mean deviation or more central defects, the 10-2 test can offer more detailed insights that help monitor disease progression.

The 24-2C and 10-2 visual field tests perform similarly in detecting overall central vision loss, but the 10-2 stands out by identifying more detailed defect clusters and aligning better with optical coherence tomography (OCT) imaging. While the 24-2C is quicker and more effective for spotting central defects, the 10-2 offers a more thorough look at central vision changes.

The 10-2 Visual Field Test at a Glance

The 10-2 visual field exam pinpoints abnormalities in the central vision, which is, of course, essential for everyday tasks like reading and driving. These tasks may become more difficult for patients, but they might not attribute it to vision changes before symptoms become bothersome. This test's precision is key to monitoring progressive eye conditions and detecting early symptoms. Still, this supplemental test can feel time-consuming to patients; it doesn't offer a full-scope review of the patient's visual field, and because it's so sensitive, there may be a higher risk of false positives.

Pros and cons of the 10-2 test

We know the 10-2 exam is efficient, useful, and widely used, but there are pros and cons to incorporating this test into your routine.

PROS	CONS
This exam offers a high-resolution assessment of the central vision field.	The 10-2 is limited to the central 10 degrees of vision, so additional tests will be required to evaluate the full visual field.
Fine testing detail means you can catch vision changes and intervene sooner.	With older equipment, the 10-2 exam can feel long and stressful to patients.
The 10-2 is indispensable for monitoring macular and optic nerve conditions, especially in the earliest stages.	Like other visual field tests, collecting accurate results depends on patient focus and cooperation.
This exam can be combined with others, like the 24-2 and 30-2, for a more complete map of the patient's visual field.	The 10-2 visual field exam is extremely sensitive, so even small visual defects may register as abnormal results. This could lead to false positives.

List of Ocular Diseases Monitored and Diagnoses Identified by the 10-2 Test

Glaucoma	Glaucoma is a leading cause of irreversible blindness, and patients may miss early-stage symptoms. The 10-2 visual field test can pick up on some of the most minute changes to central vision, so many ophthalmologists offer this test to patients who are glaucoma suspects.
Optic Neuropathy	Inflammation of the optic nerve, non-arteritic anterior ischemic optic neuropathy, and other neuropathies can cause sudden loss of central vision, which can be identified and confirmed with a 10-2 test. Whether through medication, nutrition, or other exposure, central vision loss due to toxic optic neuropathy can be difficult to diagnose without then 10-2 visual field test.
Neurological disorders	Stroke, brain tumors, TBI, and pituitary disorders can all affect the optic nerve or optic chiasm. The 10-2 can help identify changes in the visual field following a cerebrovascular event or other neurological condition.
Macular Degeneration	Blurriness, dark spots, and distortion of the central visual field point to age-related macular degeneration. The 10-2 test can identify and monitor these symptoms, especially in the early stages when structural changes in the retina may still be undetectable in other tests.
Diabetic Retinopathy	Diabetic retinopathy damages blood vessels in the retina, causing bleeding, swelling, and visual field defects. Specifically, macular edema and ischemia can lead to central vision loss that can be identified with the 10-2 test.
Multiple Sclerosis (MS)	MS can cause demyelination in the central nervous system and lead to optic neuritis or lesions. In fact, research shows that nearly all patients with MS will have abnormal visual field results — but not all will notice the gradual changes in vision. The increased sensitivity of the 10-2 exam can help monitor disease progression.
Other Conditions	The 10-2 exam can also be used to monitor or diagnose: Retinal vein/artery occlusion • Retinal detachment • Retinitis pigmentosa • Autoimmune and inflammatory disorders

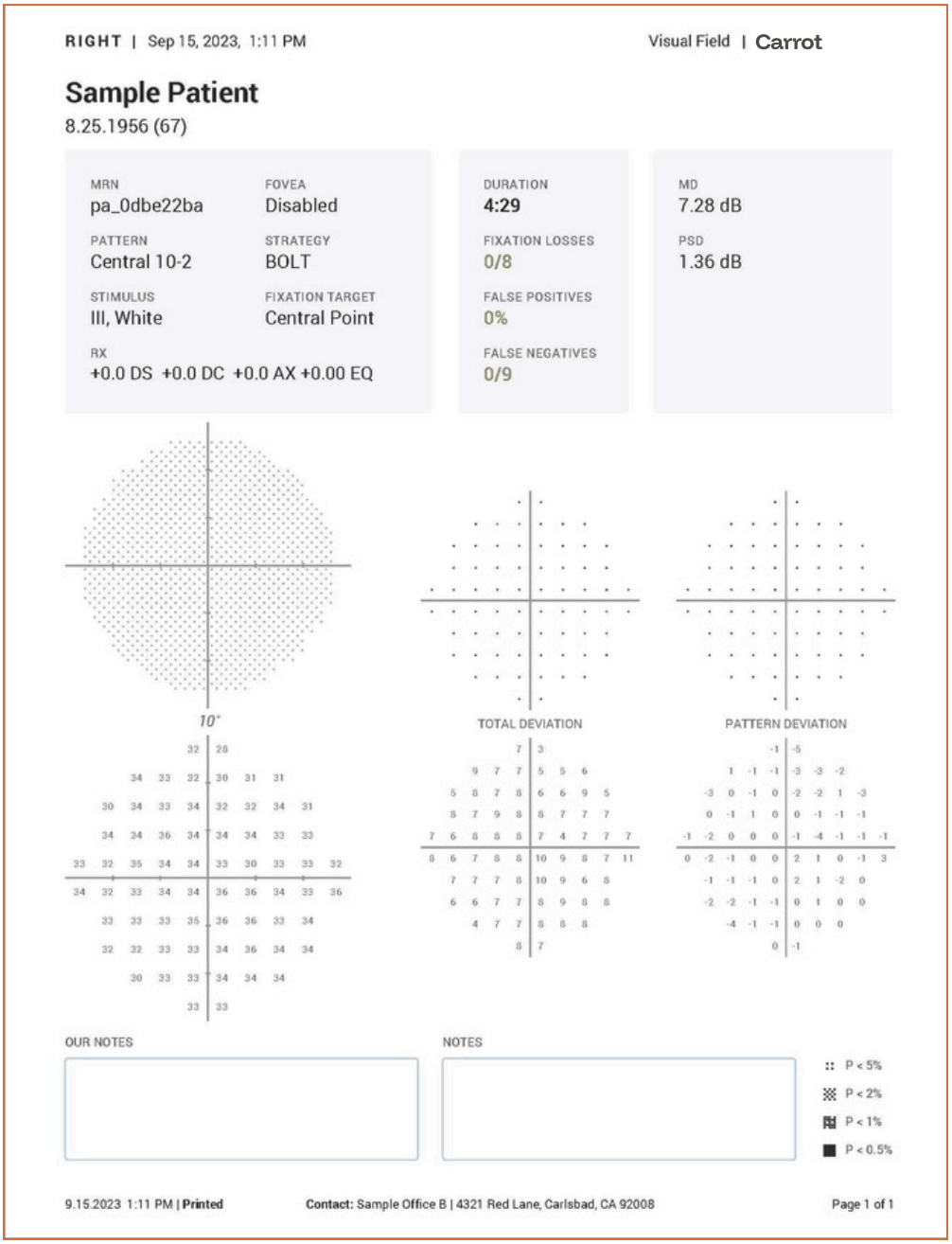
11%

of Americans have diabetes

+25%

over a quarter of them will experience diabetic retinopathy

Example 10-2 Report



Billing and Coding for the 10-2 Eye Test

The 10-2 visual field exam is billable to insurance under CPT code 92083, which is designated for extended visual field exams.

According to the Medicare Physician Fee Schedule (MPFS), reimbursement usually ranges from $40 to $90 per test. Your exact fees will depend on your location, setting, and other payer-specific factors.

When is the 10-2 visual field test required?

The 10-2 visual field exam is particularly useful for glaucoma, macular degeneration, diabetic retinopathy, neurological conditions, trauma-related vision loss, and toxic retinopathy. For patients with moderate to advanced glaucoma or those showing central visual field defects on a 24-2 exam, the 10-2 can be conducted every three to six months to track progression.

This test may also be ordered for individuals taking medications like hydroxychloroquine or people with diabetes, hypertension, and neurological conditions that increase the risk of central vision loss. The 10-2 test is best used to detect subtle changes in the macular region that patients may not notice on their own.

Is the 10-2 visual field test required for driver's licenses?

In most U.S. states and Canada, basic field-of-vision checks are all that's required for driver's licensing. The 10-2 is a more advanced, targeted screening, so it's not mandatory for drivers.

Start Conducting the 10-2 Exam with Carrot

The 10-2 visual field test is an opportunity to diagnose and monitor a range of eye and neurological conditions, especially when broader tests are inconclusive. More data points in the central 10 degrees can reveal the earliest signs of glaucoma, help diagnose neurological conditions and neuropathies, and monitor macular degeneration with better precision.

You can improve the patient experience and collect pinpoint accurate data with Carrot. Our advanced tools make the 10-2 visual field testing process faster, more efficient, and far more accessible to your most vulnerable patients.

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