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How Diabetes Leads to Serious Vision Problems

Analysis by Dr. Joseph Mercola | August 13, 2025

STORY AT-A-GLANCE

- In diabetic retinopathy, new, fragile blood vessels triggered by diabetes bleed into your eye and create scar tissue that tears your retina, leading to permanent vision loss if untreated
- Diabetic retinopathy quietly damages your retina for years before you notice symptoms, making early detection through annual eye exams essential for preserving vision
- Blood sugar isn't the only factor — uncontrolled blood pressure and smoking dramatically increase your risk of blindness from diabetic eye disease
- Protecting your mitochondria by eliminating vegetable oils, eating easy-to-digest carbs, and reducing toxin exposure helps restore metabolic balance and lowers your risk of diabetic complications
- A simple HOMA-IR blood test reveals hidden insulin resistance early, giving you time to make lifestyle changes that protect your eyes and overall health

Diabetic retinopathy is the leading cause of vision loss among working-age adults.[1] Nearly 1 in 3 people over the age of 40 with diabetes already show signs of it — and often, they don't even know it.[2] This condition doesn't start with blindness. It begins quietly, invisibly, as blood sugar slowly damages the delicate vessels in the back of your eye, the retina, long before symptoms appear.

You might not notice anything wrong until your vision starts to blur, floaters drift across your field of view, or you struggle to read. That's because the early stages of diabetic retinopathy don't cause pain or obvious symptoms. But once blood vessels start to leak or rupture, the damage progresses fast.

This doesn't just affect people with long-standing or uncontrolled diabetes. According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), eye damage begins during prediabetes, even before a formal diagnosis.[3] And women with gestational diabetes are also at risk.

The longer blood sugar remains elevated, the more damage it causes, and if you're not actively monitoring your eyes, you won't know it's happening. Because vision loss often signals advanced damage, your best defense is understanding how this process begins and how to stop it before symptoms ever appear.

Your Retina Tries to Save Itself — and That's What Starts the Damage

According to the National Eye Institute (NEI), diabetic retinopathy begins when high blood sugar weakens the small blood vessels that supply blood to your retina, the part of your eye responsible for detecting light and sending visual signals to your brain.[4] These early changes are painless and often go unnoticed, which is why the damage tends to progress before you ever realize something's wrong.

- **Blocked and leaking vessels trigger abnormal blood vessel growth —** Once these vessels become blocked or start leaking, the eye reacts by creating new blood vessels to compensate. The problem? These new vessels are abnormal. They grow where they shouldn't and are weak and prone to bleeding. That sets off a cascade of problems inside your eye that destroys your vision.

- **New blood vessels bleed, scar, and tear your retina —** Over time, these fragile vessels bleed into the vitreous — the gel-like fluid inside your eye — causing symptoms like floaters, streaks, or blurred vision. Eventually, the damage leads to

the growth of scar tissue, which pulls on your retina and may cause it to detach. A detached retina is a medical emergency that results in permanent blindness.

- **Early symptoms are subtle or completely missing —** Many don't notice anything until the condition is advanced. In the beginning, you could experience occasional blurry vision or have trouble reading, but these symptoms often come and go, making them easy to ignore. The absence of early warning signs makes regular screening key for catching diabetic retinopathy in time.

  A comprehensive, dilated eye exam is the only way to detect early retinal changes before symptoms show up. The NEI recommends getting this done once a year if you have any form of diabetes, even if you think your vision is fine.

- **Other eye conditions are closely linked —** The same blood vessel damage caused by diabetes also leads to diabetic macular edema, where fluid leaks into the central part of the retina, causing blurred vision. Neovascular glaucoma also develops when abnormal blood vessels block fluid drainage in the eye, raising pressure, and threatening vision. Retinal detachment becomes more likely as scar tissue builds up over time.

Blood Sugar Isn't the Only Number Putting Your Vision at Risk

According to NIDDK, diabetic eye disease isn't just about blood sugar — it's about how glucose interacts with blood pressure, cholesterol, and even smoking habits.[5] These factors combined make up what doctors call the "diabetes ABCs," and ignoring any one of them raises your risk of irreversible vision loss.

- **Some people are more vulnerable due to their ethnicity, age, or reproductive status —** African Americans, Hispanics, American Indians, Alaska Natives, Pacific Islanders, and adults over 65 are all more likely to suffer severe vision loss or go blind from diabetes. Women who are pregnant and already have diabetes are at especially high risk. Eye complications rapidly worsen during pregnancy due to hormonal and blood vessel changes.

- **The best protection involves tracking several health metrics, not just glucose —** Managing your A1c and blood pressure, and optimizing cholesterol, offers the most effective protection against diabetic eye damage. A1c reflects your average blood sugar over the last three months, and it's essential to keep that number within your target range to avoid long-term complications.

- **Smoking multiplies the damage to your eye's blood vessels —** While it's often overlooked in diabetes discussions, smoking significantly worsens outcomes by tightening blood vessels and reducing oxygen to your eye tissues. NIDDK urges anyone with diabetes who smokes to quit, as this directly improves circulation to the retina and reduces inflammation.

- **Conventional treatment involves drugs, lasers, or surgery — but prevention is easier and safer —** Advanced cases are often treated with injections, laser coagulation, or even surgery to remove blood and scar tissue, but most of this is avoidable. Addressing the underlying causes of diabetes, scheduling your annual eye exam, and addressing any vision changes right away gives you the best chance to avoid major interventions.

When Left Untreated, Only Light Perception Remains

SEE International, a nonprofit organization aimed at helping end preventable blindness, warns that in advanced diabetic retinopathy, many patients lose all functional vision and are left with only the ability to detect light and dark — nothing more.[6] Once this point is reached, there's no way to restore sight, which is why early detection and prevention are far more effective than treatment after the fact.

- **Roughly 3 million people worldwide are already affected, and that number is rising —** Diabetic retinopathy makes up 0.36% of all blindness cases. With diabetes rates expected to rise dramatically, especially in developing countries where access to care is limited, the number of people facing blindness from this condition is expected to skyrocket.

- **SEE emphasizes the need for accessible, lower-cost treatment options —** One of their primary recommendations is the use of a treatment called pan-retinal photocoagulation. This laser therapy targets and shuts down abnormal blood vessel growth, helping prevent new bleeds. It's less invasive and more affordable than many injected drug therapies, though it often requires repeated sessions based on how well your diabetes is managed.

- **Your long-term outcome depends on how well you manage your diabetes —** According to SEE, patients who control their blood sugar levels consistently have a much lower risk of serious complications. The quality of your daily habits — especially diet, activity, and glucose management — directly shapes whether the disease stays stable or progresses toward vision loss.

Protect Your Vision by Fixing What's Damaging Your Cells

If you have diabetes or pre-diabetes — or want to prevent these conditions — the most important step is protecting your mitochondria. These are the tiny power plants inside your cells, and they're the first to break down when your diet, toxin load, or lifestyle starts to shift out of balance. When your mitochondria fail, your blood sugar rises.

And when that happens, your retina is one of the first places that damage shows up. Ideally, focus on fixing the real issue — not just managing symptoms. Here's how to get started:

1. **Eliminate vegetable oils and processed foods immediately —** Every single bite of food you eat either helps or harms your mitochondria. Vegetable oils like canola, soybean, corn, and even organic nut oils are loaded with linoleic acid (LA), a polyunsaturated fat that shuts down your mitochondria's ability to make energy.

   Nuts and seeds, which are also high in LA, should also be avoided, along with packaged snacks, sauces, and almost all restaurant food. Instead, cook at home with tallow, ghee, or grass fed butter. If you're eating chicken or pork, you're also

getting a hidden dose of LA, so reduce those too. Keep your daily LA intake under 5 grams — and ideally under 2. Use a food tracking app to check.

2. **Fuel your cells with the right kind of carbohydrates —** Glucose is your cells' preferred fuel source. But most people don't get enough of the right kind. I recommend starting with whole fruits and white rice — these are easier to digest, especially if your gut is damaged. Gradually add root vegetables, then legumes and well-tolerated whole grains if your gut is healthy. Most people need 250 grams of healthy carbohydrates daily to support cellular energy production.

3. **Avoid fiber if your gut is inflamed or compromised —** If you have digestive issues like bloating, gas, or irregular bowel movements, now's not the time to bulk up on fiber. In a damaged gut, fiber feeds the wrong bacteria, which die off and release endotoxins like lipopolysaccharide (LPS). This leads to systemic inflammation and worsens insulin resistance. Focus on simple, low-fiber carbs until your gut heals — then reintroduce fiber slowly once your gut is healed.

4. **Lower your daily toxin exposure from plastics and EMFs —** Your mitochondria are highly sensitive to **xenoestrogens from plastics** and **electromagnetic fields** (EMFs). Both interfere with your cellular energy output and hormone balance. Store food in glass or stainless steel, ditch plastic wrap and disposable plastic bottles, and avoid using wireless devices near your body, especially while sleeping. These daily changes support mitochondrial function.

5. **Use the HOMA-IR test to see if your insulin is silently failing —** The HOMA-IR (Homeostatic Model Assessment of Insulin Resistance) test is a valuable diagnostic tool that helps assess insulin resistance through a simple blood test, so you can spot issues early and make necessary lifestyle changes, like eating more vitamin C-rich foods.

   Created in 1985, it calculates the relationship between your fasting glucose and insulin levels to evaluate how effectively your body uses insulin. Unlike other more complex tests, HOMA-IR requires just one fasting blood sample, making it both

practical and accessible. The HOMA-IR formula is as follows:

HOMA-IR = (Fasting Glucose x Fasting Insulin) / 405, where

- Fasting glucose is measured in mg/dL
- Fasting insulin is measured in μIU/mL (microinternational units per milliliter)
- 405 is a constant that normalizes the values

If you're using mmol/L for glucose instead of mg/dL, the formula changes slightly:

HOMA-IR = (Fasting Glucose x Fasting Insulin) / 22.5, where

- Fasting glucose is measured in mmol/L
- Fasting insulin is measured in μIU/mL
- 22.5 is the normalizing factor for this unit of measurement

Anything below 1.0 is considered a healthy HOMA-IR score. If you're above that, you're considered insulin resistant. The higher your values, the greater your insulin resistance. Conversely, the lower your HOMA-IR score, the less insulin resistance you have, assuming you are not a Type 1 diabetic who makes no insulin.

Interestingly, my personal HOMA-IR score stands at a low 0.2. This low score is a testament to my body's enhanced efficiency in burning fuel, a result of increased glucose availability. By incorporating additional carbohydrates into my diet, I provided my cells with the necessary energy to operate more effectively.

This improved cellular function has significantly boosted my metabolic health, demonstrating how strategic dietary adjustments lead to better insulin sensitivity and overall metabolic performance.

FAQs About Diabetic Retinopathy

Q: What is diabetic retinopathy, and how does it start?

A: Diabetic retinopathy is a complication of diabetes that damages your retina's blood vessels due to elevated blood sugar. It begins silently, without pain or noticeable symptoms, making early stages easy to miss until vision problems arise. The condition develops as weakened blood vessels leak, prompting the growth of fragile new vessels that bleed and scar the retina.

Q: Who is at risk for diabetic eye disease?

A: Anyone with diabetes, including those with prediabetes and gestational diabetes, is at risk. Additional risk factors include being over 65, smoking, high blood pressure, or imbalanced cholesterol, and belonging to ethnic groups such as African American, Hispanic, American Indian, Alaska Native, or Pacific Islander. Pregnant women with diabetes are also particularly vulnerable to rapid progression of the condition.

Q: What symptoms indicate diabetic eye damage?

A: Early symptoms are often mild or absent. As the condition progresses, individuals often notice blurred vision, floaters, or difficulty reading. In advanced cases, blood and scar tissue cause retinal detachment, leading to permanent vision loss.

Q: How can you prevent or slow vision damage from diabetes?

A: Targeting root causes such as mitochondrial dysfunction through diet and lifestyle improve metabolic resilience and protect your eyes. Regular comprehensive dilated eye exams, at least once a year, are essential for early detection. Controlling A1c and blood pressure, and quitting smoking, significantly reduce risk.

Q: What treatments are available if diabetic retinopathy progresses?

A: Conventional treatments include laser therapy, injected medications, and surgery to remove scar tissue or stop bleeding. However, prevention through supporting mitochondrial health is safer and often more effective. SEE International also recommends pan-retinal photocoagulation as a lower-cost laser option to prevent further damage.

Sources and References

- [1] U.S. CDC, Vision Loss and Diabetes
- [2, 3, 5] National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Diabetic Eye Disease
- [4] National Institutes of Health, National Eye Institute, Diabetic Retinopathy
- [6] SEE, Diabetic Retinopathy