

## Microvascular Disease Due to Diabetes

*You are at more risk for eye and kidney damage with diabetes.*

### Diabetic Retinopathy

This is the most common eye problem from diabetes. It is the leading cause of blindness among U.S. adults. Diabetes can damage the retina; this is the nerve tissue at the back of the eye. This tissue is sensitive to light. And, it sends visual images to the brain. Changes in the tiny blood vessels that send blood here cause eye damage.

There are early and late stages of eye disease, shown in the table.

Stage of Retinopathy	Name	What Happens to the Eye	What Happens to Vision
Early Stage	Nonproliferative Retinopathy	<ul style="list-style-type: none"><li>• Blood vessels of the retina get weak and develop bulges (called “microaneurysms”)</li><li>• These may leak blood (hemorrhage), or they may leak fluid into the tissue around the retina</li></ul>	<ul style="list-style-type: none"><li>• Vision is rarely affected at this stage</li><li>• See an eye doctor (an “ophthalmologist”) for yearly eye exams</li></ul>
Later Stage	Proliferative Retinopathy	<ul style="list-style-type: none"><li>• New, fragile blood vessels start to grow on the retina and into a jelly-like</li></ul>	<ul style="list-style-type: none"><li>• Blurred vision or temporary blindness occurs</li></ul>

		<p>substance inside the back of the eye</p> <ul style="list-style-type: none"> <li>• These abnormal vessels are prone to rupture and bleed into the back of the eye</li> </ul>	
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Studies show that keeping blood sugar in control can:

- Reduce how many people develop eye damage
- Prevent eye damage from getting worse.

If you get eye disease, laser surgery can treat it. And, vision can be preserved if the eye damage is found early. About half of those who do not get treated will become blind in 5 years. But, only 5 percent who do get treated may become blind. Routine eye exams are key; this is the best way to detect eye damage in its treatable stages.

## **Nephropathy**

Kidney disease develops in about:

- 1 out of 3 people with type 1 diabetes
- 1 out of 5 people with type 2 diabetes.

This disease can lead to kidney failure. The number of people who get kidney disease is going down, though. This is because we now know that tight control of blood sugar can help. It cuts the risk of kidney damage in half. And, use of medicine (“ACE inhibitors”) can help stop kidney damage.

***\*\*Authored by Johns Hopkins University and Johns Hopkins Health System\*\****