

STORIES OF HOPE

Doctor Seeks to Save Vision



Thomas W. Gardner, M.D., strives to diagnose and treat the earliest signs of retina damage.

Thomas W. Gardner, M.D., an ophthalmologist, is part of a 12-member clinical and research team that joined the University of Michigan, Ann Arbor, in 2010 to investigate the effects of diabetes on the retina and to develop better treatments for diabetic retinopathy. He received research funding from the American Diabetes Association in 2011 and recently became a member of the Pinnacle Society, signifying a donation of at least \$10,000 to the Association.

Q: What led you to become a retina specialist?

A: "My father was a physician in radiology, and my uncle was a surgeon, so I had wonderful role models. In my training as an ophthalmologist, diabetes obviously was a big part of the problems we treat. My fellowship in vitreoretinal diseases and surgery was under the guidance of a leader in diabetic retinopathy research, and he inspired me. My first faculty position was at Penn State University, a great place to get started in eye research.

"Systemic disease often shows up in the eye, so I'm able to practice internal medicine and neurology while helping patients who have lost vision.

"I see a lot of people who have tried to take care of themselves for a long time and still get complications. Changes in the retina occur slowly. Today, we diagnose retinopathy based on hemorrhages on the retina. That's a useful finding, but we're able to intervene only after damage has occurred.

"In addition to being a surgeon, I'm motivated to conduct research to understand vision problems and find better ways to diagnose and treat them. Diabetes research is my personal passion because my two brothers have type 1 diabetes. It's my professional passion because about half of my patients have diabetes."

Q: Retinopathy is described as ruptures in tiny blood vessels in the retina, but your research suggests a new definition.

A: "Retinopathy isn't just a blood-vessel problem. Our view is that retinopathy is a sensory neuropathy, similar to the neuropathy that causes decreased sensation in the feet. The retina is made up of sensory neurons. When those nerve cells become damaged, that's neuropathy."

Q: What do you hope to accomplish with your Association-funded research?

A: "Complications research is moving toward earlier diagnosis and treatment and toward better understanding of the metabolic influences that cause organ damage. We hope to understand the events that lead to early retinal damage, identify and quantify early retinal dysfunction, and treat the earliest aspects of retinal damage to help people with diabetes maintain their vision.

"We're looking at ways to measure retina function that reflect damage from retinopathy. If we find that reduced sensitivity in the retina occurs in early retinopathy, developing a test for that would allow us to diagnose and intervene earlier, when patients still have good vision.

"It's important work because the ability to develop drugs to treat retinopathy depends on our ability to measure their effect. We have developed tests and, once we determine the best measure, that could accelerate development of new therapies for retinopathy."

Q: What motivated you to make such a generous gift to the Association?

A: "My brothers have type 1 diabetes, and a lot of my patients have diabetes. I'm trying to contribute to the organization and the process of supporting research. We made small contributions in the past, but it took several years to be in a position to make a larger gift. The future for people with diabetes is all about research, so we have to support it." ▲

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Learn more about Association-funded research and what you can do to accelerate progress at diabetes.org/news-research.