

# Better diabetes blood sugar management leads to fewer eye surgeries

April 30 2015, by Serena Gordon, Healthday Reporter

---



Intensive therapy cut risk of needing a procedure in half, researchers report.

(HealthDay)—Intensive management of type 1 diabetes can reduce the risk of having a diabetes-related eye surgery by nearly 50 percent, according to a new report.

But even for people who couldn't meet the very stringent [blood sugar](#) targets set for the study participants, just a 10 percent improvement in hemoglobin A1C—a two- to three-month estimate of average blood sugar levels—led to a 35 percent reduction in the risk of diabetes-related [eye surgery](#), the study found.

"We're showing how a modest period of tight blood sugar control can lower the need for eye surgery, even way downstream," said the study's senior author, Dr. David Nathan, director of the Massachusetts General

Hospital Diabetes Center and Clinical Research Center in Boston.

In general, the A1C goal for people with type 1 diabetes—an autoimmune disease that destroys the body's ability to produce the hormone insulin—is under 7 percent, according to JDRF (formerly the Juvenile Diabetes Research Foundation).

"So, a drop from 7.7 to 7—or from 8.5 to 7.7—would lead to a 35 percent reduction in diabetes-related eye procedures. A lower A1C is better, as long as you're doing it as safely as possible," Nathan said.

Lowering [blood sugar levels](#) too much can be dangerous, while elevated blood sugar can lead to long-term health consequences, including diabetic eye disease.

How does diabetes damage eyes? In several ways, according to Nathan. "The eyeball is tiny in relation to the rest of the body, but the eyes have enormous blood flow through very fine, small-caliber vessels," he explained.

"Diabetes can cause abnormalities to develop in these vessels. The vessels can break down, which causes leakage of blood. Or, the vessels try to repair [themselves] by developing new vessels, but these new vessels are thin and can bleed or leak fluid," Nathan said.

These problems can lead to conditions called macular edema and diabetic retinopathy. People with diabetes are also more likely to get cataracts earlier in life. "The development of cataracts is advanced by a decade or more in people with diabetes," Nathan noted.

The new research included two studies and about 1,400 people with type 1 diabetes. The first study from the early 1980s had two groups of people—one that received intensive diabetes management, while the

other group received standard care. That study lasted about 10 years. The second study followed most of the people from the initial study over the long term, though the intensive management stopped.

"In the initial study, the goal was to get the A1C to 6.05, which is the upper limit of normal for nondiabetics," Nathan said, adding that the average A1C ended up being 7 percent.

During the 23-year follow-up, 63 people out of 711 receiving intensive management ended up having diabetes-related eye surgery. Ninety-eight of the 730 people in the conventional therapy group had diabetes-related eye surgery.

For the intensive therapy group, the risk of needing cataract surgery was 48 percent lower. The risk of a procedure called vitrectomy, or retinal-detachment surgery—or both surgeries—was reduced 45 percent in the intensive management group, according to the study.

The costs of diabetes-related eye surgeries were 32 percent less for the group that received intensive management—\$429,000 versus \$635,000, the study authors said.

"Interventions to control glucose [blood sugar] levels can improve outcomes, preserve life and prevent disabilities," said Helen Nickerson, director of translational development for JDRF.

"But it's also important to capture the economics of an intervention. This intervention cut the number of ocular [eye] surgeries by half—you can put a cost on that and save health care resources," she added.

The study authors noted that cataract surgery is the top surgical expense for Medicare. Charges topped \$2 billion during 2009 to 2010, the study said. And although cataracts aren't specific to people with diabetes,

cataracts do occur more frequently in people with diabetes, the researchers noted.

"Given that the worldwide prevalence of type 1 diabetes is approaching 38 million persons, the potential benefits of intensive therapy to reduce morbidity and health care costs are substantial," the study authors wrote.

The study didn't include people with type 2 diabetes, so it's not clear if these benefits would be similar for them. The number of people with type 2 diabetes is estimated to be 10 to 20 times higher than those with type 1 [diabetes](#), according to the study.

However, Nickerson said previous research has shown that people with [type 1 diabetes](#) are slightly more likely to have eye disease.

Results of the study are published in the April 30 issue of the *New England Journal of Medicine*.

**More information:** Learn more about eye complications from diabetes from the U.S. [National Eye Institute](#).

Copyright © 2015 [HealthDay](#). All rights reserved.

Citation: Better diabetes blood sugar management leads to fewer eye surgeries (2015, April 30) retrieved 27 April 2024 from <https://medicalxpress.com/news/2015-04-diabetes-blood-sugar-eye-surgeries.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--