

---

*Dakota Diabetes Coalition is proud to offer this column on diabetes and related concerns every other Friday.*



Dr. Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv. If you have comments, or questions for Dr. Johnson to address in future columns, please contact [gailhand@q.com](mailto:gailhand@q.com)



DAKOTA DIABETES  
COALITION

Visit the Coalition's website!

<http://www.ndhealth.gov/diabetescoalition/>

**News Flash: Tight is right!**

# Intensive Treatment Reduces Complications

Intensive treatment of type 1 diabetes to achieve an A1C of <7% leads to fewer diabetes complications. We all accept this as the case in treating type 1 diabetes patients. A simple thought, but how did this originate, and what is the current state of data to support this concept?

The Diabetes Complications and Control Trial (DCCT) started in 1983, and published in 1993 in the *New England Journal of Medicine*, was a study with 1,441 patients with type 1 diabetes. The idea was simple: attempt to keep

blood sugars at near normal levels in an intensively treated group, and compare their complication rates to a “conventional” treatment group.

Although NPH, Lente, and Regular insulins were the only available insulins at the time, the group treated intensively with multiple daily injections had lower rates of long-term diabetes complications, including retinopathy (eye disease) and nephropathy (kidney disease). With the advent of analog insulins in the late 1990's, the concept of multiple daily injections with long-acting (basal) and rapid-acting (bolus) insulin became more widespread, and today, most all type 1 patients are treated with this regimen. Even if the patient is on a pump, the concept of multiple daily dosing is common practice.

In July, the journal Archives of Internal Medicine published **30 year follow-up data** on the original DCCT participants along with a group from the Pittsburgh Epidemiology of Diabetes Complication Experience (EDC). As hoped, long-term complication rates were dramatically lower in the intensively treated groups in these studies, similar to the shorter-term data reported in the original studies. At 30 years, incidences of those in the “conventional” group were 50% for retinopathy, 25% for nephropathy, and 14% for cardiovascular disease. These were similar to the rates in the EDC “conventional” group: 47%, 17%, and 14%, respectively.

The intensively managed (target of A1C <7%) group had a 21% cumulative incidence of retinopathy, a 9% rate of nephropathy, and a 9% rate of cardiovascular disease. Over 30 years' follow-up, only **1%** of patients in the DCCT intensive therapy group developed blindness or required kidney replacement or amputation because of diabetes.

I tell patients that one of the truly great things in treating patients with diabetes is the **strength of data to support what we do in treatment**. For over 15 years, intensive management in type 1 diabetes (A1C <7%) has been thought to be beneficial in reducing long term complications. This important 30-year, long-term data confirms that **managing these patients according to established guidelines makes a large difference** in their outcome, and continues to be a worthy standard in patients with type 1 diabetes.

\*\*\*

Eric L. Johnson, M.D., is a member of the Dakota Diabetes Coalition. He serves as Assistant Medical Director at Altru Diabetes Center and is an Assistant Professor in the Department of Family and Community Medicine at the University of North Dakota School of Medicine and Health Sciences.

---

[Treating Type 1, Dr. Johnson's Column #51, Aug. 7, 2009](#)