

Nurse-Directed Care Cuts Risk Of Emergencies

Type 1 & Type 2 An ounce of prevention can go a long way in cutting your risk of urgent care hospital visits, say researchers in Los Angeles and Santa Monica. In a study of 331 people with diabetes, detailed care provided by a nurse over the course of 1 year reduced the participants' rate of urgent care and emergency room visits and hospitalizations by 50 percent.

The researchers first reviewed the participants' medical records for the year prior to the study. Then the participants were enrolled in a program in which a specially trained nurse provided diabetes care and education based on detailed treatment formulas and plans. The program covered several methods of blood glucose control ranging from diet alone to different combinations of diabetes drugs and insulin; ways of evaluating and treating blood cholesterol; and methods of assessing kidney function and treating microalbuminuria (protein in the urine, a sign of kidney damage). The nurse also taught the participants how to manage their diabetes.

In the year before enrolling in the program, there were 94 urgent care and emergency room visits or hospitalizations among the participants. During the treatment year, there were only 46 such visits.



Preventable diabetes-related episodes, including dangerously high blood glucose levels and infections such as cellulitis (rapidly spreading infection under the skin) dropped from 21 incidents to 6.

What's more, the participants' blood glucose improved. In the year before enrolling in the program, the participants' average A1C was 8.8 percent, which is considered much too high. For the year in the program, the average A1C fell to 7.1 percent, which demonstrated much better control. (The A1C provides an estimate of blood glucose levels over 3 months.)

There were financial benefits to the program as well. The charges for care for the year prior to the program came to \$129,176. During the treatment year, the total charges came to \$24,630.

The researchers credit the program's success to diabetes education. In their conclusion, they attributed the positive results, in part, to "the self-management skills taught to the patients by the nurse during their year under her care."

This study was published in the February 2007 issue of *Diabetes Care*.

—Terri D'Arrigo

The Research Shorts section features articles about cutting-edge research relating to diabetes. The studies presented in this section involve products, technologies, and theories that are in the early stages of testing and development. Because there's no way to know which studies will pass the test of time, it's important that readers not base any treatment decisions on these results.

At-Home A1C Device Flawed

Type 1 A1cNow, an at-home device for estimating blood glucose control, gives inaccurate readings in children with type 1 diabetes, according to a recent study. Therefore, the researchers are not recommending that children use the A1cNow device, manufactured by Metrika in Sunnyvale, Calif.

Since the study was done, Metrika has stopped manufacturing and selling A1cNow. Any devices still in patients' hands are expired, the company says. It does have a new product, called A1cNow+, but it's only available to physicians and not directly to consumers.

A1C is an estimate of blood glucose control over 3 months and is an integral part of diabetes care. At-home A1C devices are relatively new and are designed to give people the flexibility to check their A1C numbers at home within 5 minutes.

Typically, patients have a blood sample taken at the doctor's office to measure A1C. The blood sample is either analyzed in the office using a machine called the DCA2000 analyzer or sent to a laboratory for analysis.

Larry A. Fox, MD, of Nemours Children's Clinic in Jacksonville, Fla., led the small study carried out in five clinics

across the United States by a group of researchers called the DirecNet group.

Fox and his colleagues recruited 32 children with type 1 diabetes to be part of the study. The children visited a clinic where staff took two consecutive readings using A1cNow. During the clinic visit, staff also used a DCA2000 analyzer to test A1C and took a blood sample, which was then shipped to a central laboratory for analysis.

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As part of the study, children or their parents also used A1cNow to check the children's A1C twice at home.

The researchers found that 32 percent of the time the A1cNow readings were off by 0.5 or more when compared with laboratory readings. In other words, if a child's A1C was 7 percent according to the laboratory, A1cNow gave a reading of less than 6.5 percent or more than 7.5 percent 32 percent of the time. These results held whether children, parents, or staff took the measurements.

In comparison, only 3 percent of readings from the in-office DCA2000 analyzer

differed from laboratory readings by this amount.

In addition, there were differences between A1cNow values taken consecutively, either at home or in the clinic. For example, 34 percent of A1cNow readings taken consecutively by staff at the clinic differed by 0.5 or more. Thirty-two percent of A1cNow values taken consecutively at home differed by similar amounts.

"Thus, variability was not due to errors in performing the test," says Fox, adding that it appears to be inherent to the machine itself.

"The accuracy is too low to recommend using it," says Fox. Fox initiated the study after several families came to him and said they'd found their device gave inconsistent readings.

The study did not assess the accuracy of A1cNow in adults. It appeared in the January 2007 issue of *Diabetes Care*. The device-maker, Metrika, was bought by Bayer Diabetes Care last summer.

Susan Yarin, a spokesperson for Bayer Diabetes Care, says: "We are not taking issue with the results. The test in the study is an old test that is no longer being sold."

Yarin says the company did not undertake its own studies examining inaccuracies of A1cNow. "Moving forward we'll take the study [by Fox et al.] into consideration."

—Kate Ruder

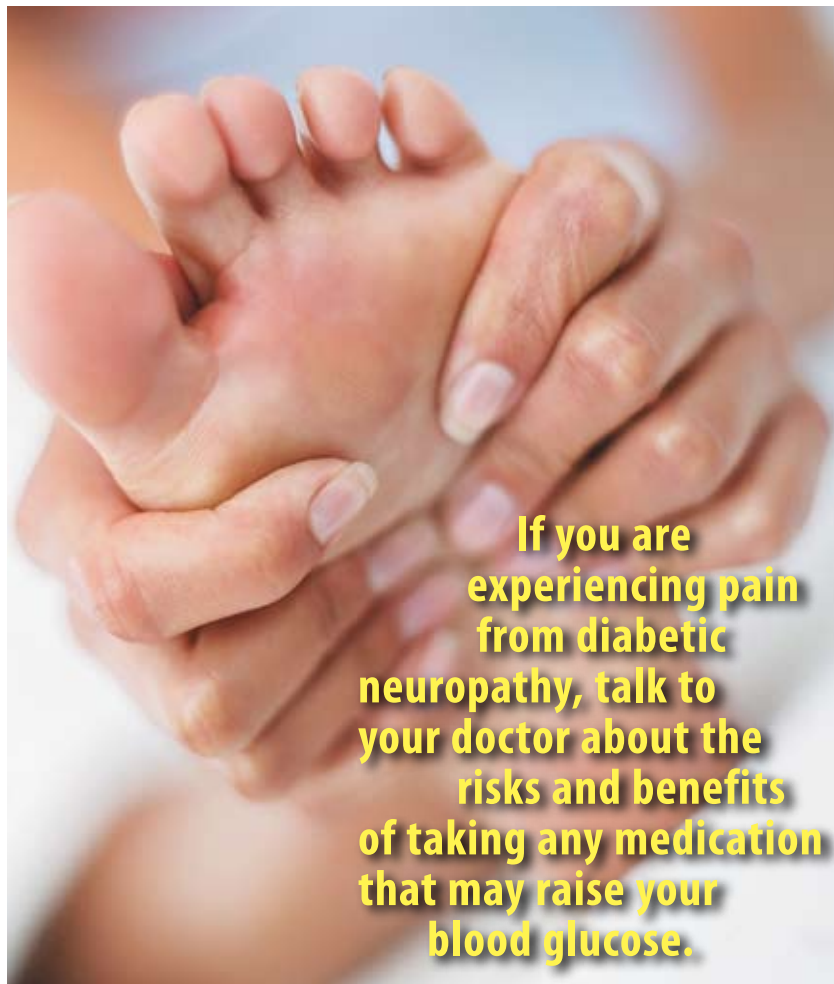
Cymbalta And Your Blood Glucose

Type 1 & Type 2 Cymbalta (duloxetine), an anti-depressant also used to treat painful symptoms of diabetic neuropathy (nerve damage), may raise your fasting blood glucose, according to researchers in multicenter clinical trials of the drug.

In one trial 1,024 adults with diabetes were separated into two groups. For 12 weeks, one group took Cymbalta (the treatment group) and one group took placebo (dummy pills). After 12 weeks, the average fasting blood glucose in the treatment group increased about 9 mg/dl. The placebo group experienced a slight decrease of 2 mg/dl. However, there was a slight decrease in A1C among all participants, whether they took Cymbalta or placebo.

In an extension of the first study, 867 participants were then separated into two groups. For a year, one group took Cymbalta and one took placebo. At study's end, the average fasting blood glucose increased in the treatment group by about 12 mg/dl, but decreased in the placebo group by 11 mg/dl.

This time, the average A1C rose for both groups: from 7.9 percent to about 8.1 percent in the placebo group and from



about 7.7 percent to about 8.3 percent in the treatment group. (The American Diabetes Association recommends an A1C of 7 percent or lower to help prevent diabetes-related complications.)

The researchers note that although higher blood glucose can worsen painful symptoms of neuropathy, the drug kept the pain in check, and there was no further decline in nerve function over the course of the study.

If you are experiencing pain

from diabetic neuropathy, talk to your doctor about the risks and benefits of taking any medication that may raise your blood glucose. And if you are taking Cymbalta—or any prescribed medicine—do *not* discontinue use on your own. Be sure to discuss the matter with your doctor first.

This study was funded by Eli Lilly and Company, the makers of Cymbalta. It appeared in the January 2007 issue of *Diabetes Care*.

—Terri D'Arrigo