

# Millions of low-risk people with diabetes may be testing their blood sugar too often

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For people with Type 2 diabetes, the task of testing their blood sugar with a fingertip prick and a drop of blood on a special strip of paper becomes part of everyday life.

But a new study suggests that some of them test more often than they need to.

In fact, the research shows, 14 percent of people with Type 2 diabetes who don't require insulin are buying enough test strips to test their [blood](#) sugar two or more times a day—when they don't need to test nearly that frequently according to medical guidelines.

That's costing them time—and sometimes worry—while their insurance plans pay hundreds of dollars a year for their supplies. Multiplied over the millions of Americans who have Type 2 diabetes, the findings could mean millions of unneeded blood sugar tests and millions of dollars spent for no good reason.

The study, published in *JAMA Internal Medicine* by a team from the University of Michigan, focuses on the subset of people with Type 2 diabetes who research has shown don't get a benefit from daily tracking of blood sugar levels. This includes both patients who don't take any medicines to reduce their blood sugar, and those who take oral medicines that don't require monitoring.

In fact, three different medical societies—the American Academy of Family Physicians, the Society of General Internal Medicine and the Endocrine Society—have all issued guidance for physicians stating that such patients don't need to regularly test their sugar levels.

The study didn't include patients who clearly need daily monitoring: those who need to inject insulin and those who take medications that carry a risk of causing too-low blood sugar levels.

## Notebooks full of numbers

Kevin Platt, M.D., the internal [medicine](#) resident who led the analysis of

insurance data from 370,740 people with Type 2 diabetes, cautions that every patient is different, and no one should stop testing their blood sugar without first talking with their physician.

Platt, who sees patients in the General Medicine clinic at Michigan Medicine, U-M's academic medical center, started the study after noting that some of his patients would come to clinic with notebooks filled with multiple daily blood sugar levels that they'd carefully kept for years.

Such logs might help a patient feel in control of their condition, he notes. But they have no clinical value for physicians if the patient is stable on their medications or lifestyle adjustments, and isn't on insulin or a type of diabetes medication that carries a risk of hypoglycemia.

Patients who only take metformin—the most commonly prescribed blood sugar lowering medication—don't have this risk. So most don't need to test at all, much less multiple times daily.

The national professional society statements about daily testing are based on years of research. They're part of the Choosing Wisely initiative led by physician groups that has identified tests and treatments that may be used too often.

## **How the study was done**

Platt and senior author A. Mark Fendrick, M.D., a professor in General Medicine, decided to look at information from a national insurance database made available through U-M's Institute for Healthcare Policy and Innovation, of which Fendrick is a member.

They focused on data from after the Endocrine Society and Society of General Internal Medicine issued their guidelines to reduce inappropriate home testing in 2013—and looked at patterns of test-strip prescription

fills over one year of each patient's records.

The study included patients with private insurance—whether obtained through a job or through Medicare Advantage plans that cover about a third of people over age 65.

They only studied Type 2 diabetes patients who were not taking insulin, and who filled prescriptions for packets of 90 test strips three or more times a year, suggesting that they were testing their blood sugar regularly. They also looked at data from patients who didn't fill any test strip prescriptions.

In all, 23 percent of the study population—86,747 people—filled test strip prescriptions three or more times. But more than 20 percent of this subset didn't fill any prescriptions for diabetes medications medicine at all—and another 43 percent filled prescriptions only for metformin or other medicines that didn't carry a risk of hypoglycemia. After the patient has found the dose of these medications needed to keep their sugar levels stable, they don't need to do daily testing.

But even though these two groups of patients didn't need to be testing daily, they were using an average of two test strips a day.

## **Costly implications**

Test strips didn't cost the patients in the study very much—about \$18 a year in co-pays, on average. But for their insurance plans, the annual average total cost was about \$325.

"One of my patients who didn't need to be testing daily told me that her previous doctor had told her to test his sugars two or three times a day," says Platt. "These data show that over-testing is quite common—and with the appropriate guidance can be reduced significantly".

Patients who don't have insurance coverage for their test strips are likely paying much more out of their own pockets, he notes—and the study didn't look at the cost of the lancets needed to prick the skin to obtain the drops of blood needed to test.

Platt and Fendrick note that even if they don't have to [test](#) multiple times daily, or once a day, some people with Type 2 diabetes may choose to do so in order to "know their numbers" and keep tabs on how their diet, exercise and any medicine are affecting their sugar levels.

But for those who are testing daily, and don't have to be, their providers should tell them they have the option to stop and offer more helpful tests that tell [patients](#) their average blood [sugar](#) level over the past 2 to 3 months.

"Health care costs and access to care are an important issue for many Americans," says Fendrick. "The savings that result from reducing the use of unnecessary care—such as needless home [blood sugar](#) testing—can create 'headroom' to spend more on those clinical services that we need to buy more often".

**More information:** Kevin D. Platt et al, Assessment of Self-monitoring of Blood Glucose in Individuals With Type 2 Diabetes Not Using Insulin, *JAMA Internal Medicine* (2018). [DOI: 10.1001/jamainternmed.2018.5700](#)

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