



Executive Summary

Background/Objectives

The American Association of Diabetes Educators (AADE) is interested in exploring the opinions of people in the U.S. who have diabetes and use blood glucose meters, in regard to the importance of blood glucose meter accuracy. The research is intended to examine their knowledge and experiences with blood glucose meters and its role in the proper management of their condition.

Specifically, the AADE wants to know the opinions of U.S. adults who have type 1 or type 2 diabetes who use a blood glucose monitor regarding:

- The length of time they have been testing their blood glucose levels themselves
- The importance of the blood glucose meter in helping them manage their diabetes
- Their confidence that their blood glucose meter provides them with an accurate reading for each use
- Whether they had a choice regarding the blood glucose meter they are currently using, and the top three factors they considered when selecting the device
- Knowledge regarding global standards for accuracy in blood glucose meters
- Potential consequences resulting from an inaccurate blood glucose meter reading
- Whether they had personally experienced health complications due to inaccurate blood glucose readings
- Whether they had discussed the importance of blood glucose meter accuracy with specific people involved in their medical care
- Whether they had ever worked with a diabetes educator

The AADE has commissioned a ten-question online study to explore these issues.

Methodology

This survey was conducted online within the United States by Harris Interactive on behalf of the American Association of Diabetes Educators between November 5-18, 2013 among 507 US adults age 18 or older who have been diagnosed with type 1 or type 2 diabetes, use a blood glucose meter, and administer insulin to treat their condition. Figures for age, gender, race/ethnicity, education, region, household income, and diabetes type were weighted where necessary to bring them into line with their actual proportions in the population. Propensity score weighting was also used to adjust for respondents' propensity to be online.

All sample surveys and polls, whether or not they use probability sampling, are subject to multiple sources of error which are most often not possible to quantify or estimate, including sampling error, coverage error, error associated with nonresponse, error associated with question wording and response options, and post-survey weighting and adjustments. Therefore, Harris Interactive avoids the words "margin of error" as they are misleading. All that can be calculated are different possible sampling errors with different probabilities for pure, unweighted, random samples with 100% response rates. These are only theoretical because no published polls come close to this ideal.

Respondents for this survey were selected from among those who have agreed to participate in Harris Interactive surveys. The data have been weighted to reflect the composition of the populations of US adults who have diabetes and who use insulin. Because the sample is based on those who agreed to participate in the Harris Interactive panel, no estimates of theoretical sampling error can be calculated.

These statements conform to the principles of disclosure of the National Council on Public Polls.

Overview of Key Findings

Many people with diabetes who use a blood glucose meter and administer insulin consider their blood glucose meter to have a great importance in helping them manage their diabetes, especially among people with type 1 diabetes. A large majority of people with diabetes who use this device are highly confident that their meter provides them with an accurate reading every time they use it. Moreover, those who had a choice in their current blood glucose meter rank *accuracy* among the most important factors in their decision. However, there are some widespread misconceptions or lack of knowledge regarding global standards for accuracy of blood glucose meters, and whether these devices approved and/or available in the US meet these standards.

Detailed Findings

How long have you been testing your blood glucose levels yourself?

A majority (56%) of people with diabetes participating in this survey have been testing their blood glucose levels themselves for ten years or more, while nearly a quarter have done so for five to nine years (23%). Fifteen percent have self-tested for two to four years, while 6% have done this for less than one year.

- While substantial majorities in both groups have been testing their blood glucose for five years or more, the percentage among those who have worked with a diabetes educator (n=324) is significantly higher than those who have never worked with a diabetes educator (n=172) – 85% vs. 66%, respectively.

How important is your blood glucose meter in helping you manage your diabetes?

Eighty-four percent of people with diabetes who use a blood glucose meter and administer insulin consider their blood glucose meter to be extremely/very important in helping them manage their diabetes, with nearly half rating it as extremely important (48%).

- Sixty-five percent of those with type 1 diabetes consider their blood glucose meter to be extremely important, which is a significantly higher percentage compared to those with type 2 diabetes (44%).
- While substantial majorities in both groups feel this way, 90% of those who have worked with a diabetes educator describe their blood glucose meter to be extremely/very important in helping manage their condition, which is a significantly higher percentage than those who have never worked with a diabetes educator (78%).

How confident are you that your blood glucose meter provides you with an accurate reading every time you use it?

Eighty percent of people with diabetes who use a blood glucose meter and administer insulin are extremely/very confident that their blood glucose meter provides them with an accurate reading every time they use it, with nearly one in three (31%) feeling extremely confident. Almost half (49%) feel very confident, while 17% feel somewhat confident, and only 2% are not confident at all.

- A significantly higher percentage of patients with type 1 diabetes (42%) feel extremely confident, compared to those with type 2 diabetes (28%).

Did you have a choice regarding the blood glucose meter that you are currently using, or was it selected for you?

Fifty-two percent of people with diabetes who use a blood glucose meter and administer insulin report that they had a choice regarding the blood glucose meter they are currently using, with 36% having no restrictions, and 16% having a limited set of options. Forty-eight percent say the meter was selected for them.

What are the top three most important factors you considered when selecting your blood glucose meter? Please rank the top three most important factors by placing a “1” next to the most important, a “2” next to the second-most important, and a “3” next to the third-most important factor.

Among those who had a choice of blood glucose meter (n=271), 29% ranked “accuracy” as the number one most important factor they considered when selecting their blood glucose meter. Following this, in terms of number one ratings, are: cost of test strips (19%), price (14%), ease of use (11%), blood sample size requirement (8%), features (such as test result storage, insulin pump communication, or display backlight) (6%), recommendation from a healthcare professional or friend/family member (4%), size (4%), design (2%), acquisition convenience (<1%), and other (3%).

In terms of top three ratings, accuracy (60%) again ranks the highest, followed by ease of use (57%), blood sample size requirements (44%), cost of test strips (42%), price (33%), features (18%), size (15%), design (10%), recommendation from a healthcare professional or friend/family member (10%), acquisition convenience (7%), and other (4%).

Please read the following statements and tell us whether you believe they are true or false.

Nearly half (49%) of people with diabetes who use a blood glucose meter and administer insulin incorrectly believe the false statement “All blood glucose meters approved by the U.S. Food and Drug Administration (FDA) are required to meet the global standard for accuracy” is actually true; 45% are not sure. Only 38% of people with diabetes correctly identify the true statement “There are global standards for blood glucose meter accuracy” as being true, while 52% are not sure. Likewise, just under a third (32%) correctly identify that the true statement “Some meters available for use today do not meet the global standard for accuracy” is true, but 56% are not sure.

- For all three statements, there are no statistically significant differences in the percentages answering correctly between those who have worked with a diabetes educator and those who have not.

To the best of your knowledge, an inaccurate blood glucose meter reading can lead to which of the following actions or results? Please select all that apply.

Ninety-two percent of people with diabetes who use a blood glucose meter and administer insulin identify any listed actions or results that can occur from an inaccurate blood glucose reading, including giving yourself too little insulin (84%), giving yourself too much insulin (83%), hypoglycemia (73%), nausea (31%), or migraine (19%). Eight percent identified none of these.

- A significantly higher percentage of those who have worked with a diabetes educator identify “giving yourself too little insulin” as a potential consequence, compared to those who have not worked with an educator (88% vs. 78%, respectively). For the other items though, there are directional but not statistically significant differences between the two groups.

Have you ever experienced health complications due to inaccurate blood glucose readings?

Thirteen percent of people with diabetes who use a blood glucose meter and administer insulin have experienced health complications due to inaccurate blood glucose readings. Seventy-two percent have not, while 16% are not sure.

- Twenty-seven percent of people with type 1 diabetes have experienced health complications due to inaccurate blood glucose readings, a significantly higher percentage than among people with type 2 diabetes (9%).

Which, if any, of the following people involved in your medical care have spoken with you about the importance of selecting a blood glucose meter that gives accurate readings? Please select all that apply.

Nearly two-thirds (64%) of people with diabetes who use a blood glucose meter and administer insulin identify anyone involved in their medical care who has spoken with them about the importance of selecting a blood

glucose meter that gives accurate readings. Specifically, these include doctor (48%), diabetes educator (33%), pharmacist (17%), nurse (16%), medical equipment supplier (6%), or other (3%).

Have you ever worked with a diabetes educator?

Sixty-two percent of people with diabetes who use a blood glucose meter and administer insulin report that they have ever worked with a diabetes educator. Thirty-five percent have not, and 3% don't know.