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Most people with type 1 diabetes do not use diabetes devices to get long-term data

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Almost 70 percent of adults with Type 1 diabetes never use their blood glucose self-monitoring devices or insulin pumps to download historical data about their blood sugar levels and insulin doses—information that likely would help them manage their disease better. These new survey results, which were presented Sunday at the joint meeting of the International Society of Endocrinology and the Endocrine Society: ICE/ENDO 2014 in Chicago, also show that only 12 percent of patients regularly review their past glucose and insulin pump data at home.

"This research highlights the fact that these devices used to manage Type 1 diabetes are not being used to their full potential," said Jenise Wong, MD, PhD, the study's principal investigator and an assistant adjunct professor of pediatrics at the University of California, San Francisco. "These devices can be useful not only for real-time disease self-management but also in helping to review past data to guide future treatment decision making."

Glucose monitoring devices include continuous glucose monitors, which automatically measure blood sugar levels every few minutes via a sensor inserted under the skin, and blood glucose meters, used with a fingerstick drop of blood. People with diabetes also use insulin pumps to deliver basal insulin and insulin boluses for high blood sugar levels or when they eat carbohydrates. These devices typically collect and store information such as the response of glucose levels to physical activity and food, as well as the individual's carbohydrate intake and insulin doses. Most insulin-dependent patients use the information displayed on

the screen to make immediate decisions about insulin dosing, according to Wong.

She said many health care providers encourage their diabetic patients to download the information from their devices to their computers and look at the data collected for the past few days, weeks or months. "However, we know very little about how often people with Type 1 diabetes look at their past data on their own between visits with their providers," Wong said.

Through an online survey, Wong and her colleagues asked 155 adults with Type 1 diabetes how often they download the past data from their glucose monitoring devices. Seventy-seven survey participants were men, and 78 were women, and their average age was 34.5. Nearly all subjects used a glucose meter, and many used more than one device. A total of 106 individuals used an insulin pump, which either communicated with a glucose meter or allowed the user to manually enter glucose values from a glucose meter. Forty-three used continuous glucose monitors.

The researchers found that only 31 percent of survey respondents (48 of 154) reported ever downloading past data from their devices at home. Even fewer did so four or more times a year and actually read the information before giving it to their health care provider: 12 percent, or 18 of 154 participants. Users of continuous glucose monitors regularly downloaded and reviewed their data more often than users of the other devices: 28 percent versus 5 to 7 percent.

Older adults also were more likely to download their past data, Wong said. For every decade increase in age, there was 1.5 times the chance of the patient downloading and reviewing data from any device.

"Future studies are needed to understand why people with Type 1

diabetes rarely look at past data from their blood glucose monitoring devices," she said.

Few diabetes devices work with smart phones. Wong speculated that patients might find it too technically complicated to download and review the data, or they might not find the data helpful or may not understand how to use the past data to help them manage their diabetes in the future.

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