



Blood glucose monitoring: innovative meter provides more information

The **digital** diabetes assistant

Many people with diabetes have to measure their current levels of blood glucose several times a day. They need reliable data, and their blood glucose readings have to be interpreted correctly, so that they can adapt their treatment and lifestyle accordingly. Diabetes experts from Bayer HealthCare are now offering a blood glucose meter which provides patients with an improved overview of their measurements. Integrated software enables the readings to be analyzed easily on a PC and sent to the patient's doctor for review.

Everything in the life of a person with diabetes revolves around the same thing: the blood glucose level. If this gets out of control, the person is in danger. "An extreme lack of glucose can lead to impaired brain function or even loss of consciousness," explains Dr. Thorsten Petruschke, Director Medical, Clinical & Scientific Affairs Europe Diabetes Care at Bayer HealthCare. By

measuring regularly before and after meals and administering the right amounts of insulin, a diabetic can keep his or her blood glucose values within the normal range and avoid hypoglycemia or hyperglycemia. This gives patients more independence and security. But this only works if the patient is able to interpret the measured values correctly. "Blood glucose measurements

have to be analyzed in a structured fashion to reveal recurring patterns and trends," Petruschke explains. A good blood glucose evaluation provides the essential basis for optimal adjustment of the diabetic's therapy and lifestyle. Physical activity, for example, causes the results to fluctuate. It is sometimes difficult for patients to identify deviant results of this kind in their data.



Diabetes tool: the new blood glucose meter (right) sends physician Stephan Hartz (large photo, right) data on his patient by e-mail which can then be analyzed jointly with her on the computer using special software. Bayer expert Dr. Thorsten Petruschke (center) is certain that more knowledge will help people with diabetes get their condition under control instead of the disease taking over.

And there is another problem. "Hand-written diaries often contain mistakes and gaps in the information," says Professor Oliver Schnell from the Institute for Diabetes Research in Munich. As a result, the mean blood glucose figures calculated from these data are often wrong, and that makes it much more difficult to adjust the patient's blood glucose correctly. After all, only reliable data provide a good basis for managing therapy.

Blood glucose data sent via e-mail to the doctor

This is why the diabetes experts at Bayer HealthCare are now offering an innovative blood glucose meter designed to make it easier for diabetics to evaluate their data. Contour® USB can store up to 2,000 blood glucose measurements plus additional information about external factors such as exercise, stress and illnesses, and can upload these data to a computer via a USB interface. "The software integrated into the device enables patients to display their measurements as bar charts or graphs, and they can of course print them out," Petruschke explains.

The device – which is only slightly larger than a USB stick – not only makes it easier for the diabetic patient to manage his or her condition; the doctor benefits too. "The measured data naturally still have to be interpreted by the patient's doctor or diabetes nurse," Petruschke says, "but Contour USB enables patients to take the software

and the data to the doctor, or to e-mail them in advance." This well-structured data analysis enables the doctor to adjust the therapy much more accurately to the individual patient's lifestyle. "The new blood glucose meters make it easier for the patient to identify the immediate effect of therapy, diet, sport and stress on the blood glucose level," Schnell comments.

A study carried out in 2007 documented patients' positive response to evaluation of blood glucose measurements with Bayer's special software. Ninety-five percent of users said that the printouts generated by the software helped them to better understand their doctors' explanations. Seventy percent said that they would always like to have this type of evaluation in the future. And a recent post-marketing study in which 1,100 insulin-using diabetics in Germany participated showed that the patient's assessment of the new meter was consistently positive. Petruschke carried out the joint study headed by Hamburg-based diabetes expert Professor Ulrich Schwedes to investigate the everyday performance of the meter in routine use.

"Patients who measure their blood glucose are playing an active part in their therapy," says Petruschke. "Diabetics who have a good overview of their blood glucose levels are highly motivated to get their condition under control." Their quality of life improves as a result. The new blood glucose meter turns data gatherers into responsible data managers.

Interview



"Diabetics need to know their bodies well"

Professor Oliver Schnell is a doctor at the Institute for Diabetes Research and a lecturer at Ludwig Maximilian University in Munich. *research* talked to him about diabetes and self-monitoring of blood glucose.

What are the main points that diabetic patients need to observe?

They need to know their own bodies very well and have to learn how the body reacts in certain situations. It's important for patients to receive good training and to have a way of knowing their body's immediate response. This can be achieved by self-monitoring their blood glucose levels. Diabetics also need to learn to recognize the signs of hypoglycemia and to avoid this situation as far as possible.

How do modern blood glucose meters like Contour USB help patients and doctors to monitor blood glucose levels?

They store measured values and allow them to be displayed visually. Patients can display their daily, weekly and monthly reports on the computer screen and can print them out. The values can also be e-mailed quickly to the patient's doctor, making the doctor-patient interaction simpler. Consultations can be prepared more effectively and errors prevented.

How can diabetes be prevented?

By a balanced lifestyle, for example, physical activity and a healthy diet – because obesity is one of the risk factors for diabetes. However, it's not possible to prevent it entirely. An individual who has several diabetics in his or her family should talk to a doctor early on and have his or her blood glucose tested. The earlier the condition is diagnosed, the better.

 www.research.bayer.com/diabetes
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