



FACT SHEET

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Continuous Glucose Monitoring System

What is the Continuous Glucose Monitoring System?

The CGMS™ system is used by healthcare professionals to continuously monitor glucose levels in people with diabetes. The system contains two key components: an external glucose sensor and a monitor. A healthcare professional inserts the sensor into subcutaneous tissue, typically in the abdominal area, using a patented insertion device, the Sen-serter™. The sensor is typically worn for a period of 24 to 72 hours, and provides electronic signals to the monitor every ten seconds. The monitor averages glucose measurements every five minutes, and also stores glucose data and event information that has been entered manually by a patient. Healthcare professionals are able to download comprehensive information from the monitor into a computer, enabling them to view retrospective data and proactively adjust diabetes therapy in the patients they treat.

Why might a healthcare professional need to use the CGMS system?

Traditionally, intermittent measurements taken by strips and meters have been the method of monitoring glucose levels for the treatment of diabetes. People intensively monitoring their blood sugar typically stick their fingers four or more times per day. Such measurements do not always provide sufficient information regarding whether the glucose level is changing, and if so, how fast, and in which direction. Without more information, diabetes patients may have difficulty selecting the proper action to take. The CGMS system enables healthcare professionals to view comprehensive data and glycemic patterns, which can be useful in managing a patient's diabetes by identifying patterns of high or low glucose concentrations.

How often can a patient use the CGMS system?

In general, healthcare professionals can have patients wear the CGMS system as many times as necessary to evaluate a patient's condition. The CGMS system is intended for occasional rather than everyday use, and is to be used as a supplement to, and not a replacement for, standard blood glucose monitoring.

Are glucose values displayed on the monitor?

The CGMS system does not display glucose values. Rather, the monitor stores data recorded from the sensor, which is then downloaded into a personal computer for retrospective analysis by the healthcare professional.

Must patients test their blood glucose while wearing the CGMS system?

The CGMS system is to be used as a supplement to, and not a replacement for, standard blood glucose monitoring. The CGMS system requires periodic calibration using meter blood glucose readings. A minimum of three calibrations is recommended each calendar day.

How does the sensor measure glucose in interstitial fluid?

The sensor is composed of a microelectrode with a thin coating of glucose oxidase beneath several layers of biocompatible membrane. It continuously converts glucose from the patient's interstitial fluid (liquid found between the cells of the body) into an electronic signal, the strength of which is proportional to the amount of glucose present.

How do glucose levels in blood correspond to glucose levels in interstitial fluid?

Blood glucose and interstitial fluid glucose levels are essentially equal when blood glucose is not changing rapidly. However, since glucose must enter the central blood supply, pass into peripheral circulation and cross a capillary boundary prior to entering the interstitial fluid, rapidly changing glucose levels create a lag between blood and interstitial fluid measurements. Overall, the differences between blood and interstitial fluid glucose levels do not affect the clinical utility of the glucose sensor data because they are considered to be minor (lags in glucose levels usually last less than 10 minutes) and because the data is analyzed retrospectively in such a way that minor differences are negligible.

What type of information do reports generated by the CGMS system provide?

Healthcare professionals using the company's Solutions™ CGMS Sensor Software program are able to obtain graphs and statistical reports, which provide comprehensive yet easy-to-use information from which to assess diabetes management and potential treatment changes. Sensor values, meter blood glucose readings and other important events are entered into the monitor by the patient.

Are there CGMS system outcomes studies to which I can refer?

Over 70 abstracts and articles on the usage and experience with the CGMS system have been published since the product's introduction in 1999. In fact, successful results from a pilot study were published in the December 1999 issue of *Diabetes Research and Clinical Practice*, and indicated that patients' HbA1c levels were reduced an average of more than 1% after only five weeks following use of the CGMS system.¹ The lead investigator of the pilot study noted that HbA1c levels had never before been lowered so quickly and that therapy adjustments resulting in this reduction would not have been made on the basis of intermittent information obtained through traditional glucose meters. Furthermore, a 10-week follow up showed that HbA1c levels remained as low or lower, without any additional intervention by the healthcare team, thus demonstrating the sustainability of these results.

How are healthcare professionals reimbursed for using the CGMS system?

In late 2001, a CPT code was awarded for the technical component (hook-up and download) of the CGMS system: Code # 95250. Physicians are able to receive payment using this new technical code. In addition, Evaluation and Management Codes may be used as appropriate when reviewing and interpreting data during office visits from reports generated by the CGMS system.

How can a healthcare professional obtain a CGMS system?

Healthcare professionals can obtain information about the CGMS system by calling 1-866-MiniMed, or (818) 362-5958 outside the U.S., or by visiting the company's website at www.minimed.com. Medtronic MiniMed is dedicated to customer service, and providing training and educational support for the CGMS system, as well as insulin pump therapy.

For a brief statement about the use of the CGMS system, please [click here](#).

¹ Bode BW, Gross TM, Thornton KR, Mastrototaro JJ. Continuous glucose monitoring used to adjust diabetes therapy improves glycosylated hemoglobin: a pilot study. *Diabetes Research and Clinical Practice* 1999;46:183-190.