

## Continuous glucose monitoring

### Abstract

Doctors and patients have shared the trouble of diabetes management for quite some time. Until two decades ago there were only a few options available for management of diabetes. Today, we are fortunate to be in an era in which diabetes research has progressed exponentially. The advancement in diabetes has not only led to better understanding of diabetes, but new medications and technology has come up such as insulin pen, insulin pumps, and continuous glucose monitors which has made diabetes a much more manageable disease. All patients with diabetes who take insulin or some forms of glucose lowering medications are required to monitor their glucose to help maintain a safe and steady glucose level. How frequently and how aggressively the glucose monitoring has to be done varies from patient to patient.

Continuous glucose monitoring provides the greatest glycemic benefits. Continuous glucose monitor is a device used to monitor glucose and measures glucose in the interstitial fluid every 5 to 15 minutes. Glucose in the interstitial fluid is assessed by a sensor placed subcutaneously on the patient and changed every seven to 14 days. Glucose readings are transmitted from the sensor to a special receiver, a smart phone or smart watch from where the information can be reviewed and downloaded. There are two main types of CGM devices available. One is the real time and the other one requires intermittent scanning. Real time devices like Dexcom G5 and G6 continuous glucose monitors measures and transport glucose readings every five minutes, they have the capability to detect hypoglycemia and hyperglycemia.

This allows timely intervention to treat the high end glucose levels and to prevent complications like severe hypoglycemia. Real time monitors also allow sharing of data in real time, with friends, relatives and caregivers who can monitor them remotely. The second kind of continuous glucose monitor is the intermittently scanning CGM device, which measures glucose every five minutes and record every 15 minutes. To review the glucose reading the user has to scan the receiver or a smart phone over the sensor. Both monitors can be downloaded by the user to review the information.

Data downloaded from the device includes mean glucose, time in target range, time in hyperglycemic range, time and hypoglycemic range and glucose numbers. Multiple studies have shown improvement in Hga1c and hypoglycemic episodes with the use of continuous glucose monitors both in type 1 as well as type 2 diabetic patients who are on multiple dose insulin regime or have had frequent hypoglycemia or hypoglycemic unawareness. It is important to understand that continuous glucose monitor is only a monitoring device and not a therapeutic option. Patients must be able to understand the technology and analyze the data obtained from the continuous glucose monitor to make the necessary therapeutic adjustment.



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### Biography

Nuzhat Chalisa is a Clinical Endocrinologist practicing in Chicago IL for past 20 years. She started her career in United States as a research assistant in Hepatology with Dr. David Vanthiel at Loyola university medical center in Chicago IL. She completed her Internal medicine training at Loyola university Hospital in Chicago. She did fellowship in Endocrinology Diabetes and metabolism at the Rosalind Franklin University of Health Sciences. She's primary interest has been in the area of Diabetes.



[3<sup>rd</sup> Global experts meet on Advanced Technologies in Diabetes Research and Therapy](#) | November 02-03, 2020

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