

The Role of CGM for Management of Type 2 Diabetes

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The advent of continuous glucose monitoring (CGM) is a significant stride forward in our ability to better understand the glycemic status of our patients. This is particularly important in view of the recent recognition of the limitations of using HbA1C to assess short-term glycemic control in many patients. HbA1C reflects an average glucose but recent studies have shown that there are widely varying average glucoses for the same HbA1C, e.g., an HbA1C of 7% may be 123 mg/dl (6.8 mmol/L) in one person and 185 mg/dL (10.3 mmol/L) in another. This is most likely due to varying glycation rates, red cell survival, and genetic effects. Hemoglobinopathies and other clinical conditions like anemia and uremia can affect the accuracy of HbA1C. CGM allows us to go “beyond HbA1C” to accurately capture and understand glucose levels and their variability in the short-term rather than the surrogate marker of HbA1C. There are two forms of CGM: professional (retrospective or “masked”) and personal (real-time) to evaluate and/or monitor glycemic control. Most early studies using professional and personal CGM have been done in those with type 1 diabetes. However, this technology is agnostic to the type of diabetes and is also used in type 2 diabetes (T2D). The value of professional CGM in T2D for physicians, patients, and researchers is derived from its ability to: (1) to discover previously unknown hyper- and hypoglycemia (silent and symptomatic); (2) capture a wide variety of metrics that include glycemic variability, the percent of time within, below and above target glucose levels, the severity of hypo- and hyperglycemia throughout the day and night; (3) provide actionable information for healthcare providers who use professional CGM and for patients who use personal CGM; (4) better manage patients on hemodialysis; and (5) effectively and efficiently analyze the glycemic effects of new pharmaceuticals (duration of action, pharmacodynamics, safety, and efficacy), devices, or psycho-educational interventions. Personal CGM has also been successfully used in a small number of studies as a behavior modification tool in those with T2D.