

Continuous Glucose Monitoring Is Here

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The goals for glycemic control have changed dramatically since the results of the Diabetes Control and Complications Trial (DCCT) were announced in 1993. Since that time, caregivers have stressed that getting glucose values to as close to normal as possible is urgently needed to avoid blindness, nerve disease, amputations and dialysis-those dreaded complications all of us with diabetes and our loved ones fear. However, this puts people with diabetes at serious risk for hypoglycemia. This is especially true as the goals for glycemic control become tighter and tighter with the ultimate goal of normalizing the A1c to below 6.5%.

People with diabetes are living longer. But unfortunately, the ability to detect hypoglycemia, or low blood sugar, declines the longer people live with the disease. Hypoglycemia unawareness and fear of hypoglycemia are major problems and obstacles in achieving tight glycemic control. Hypoglycemia commonly leads to not only a reduced quality of life, but also work related absenteeism and on-the-job accidents, automobile accidents with personal injury and property damage, expensive paramedic and emergency room visits and hospitalizations, coma and not uncommonly death.

Recently, I went to a memorial service for a friend, patient and TCOYD volunteer who passed away from severe hypoglycemia. She had hypoglycemia unawareness, meaning that the symptoms of low blood sugar many people experience, such as shakiness and sweating, did not occur to warn her of her dropping blood glucose level. She was determined not to become blind or lose a leg or go on dialysis. But by keeping such tight control, she was at risk for hypoglycemia. Any suggestion to relax her glycemic control was contrary to her goal of avoiding the complications she fought against. Unfortunately this is not an uncommon scenario. There is no question in my mind that a continuous glucose monitor (CGM) with an alarm set at 80 or 90mg/dl would have saved her life.

People living with diabetes have many day-to-day struggles and this is especially true with type 1 and insulin requiring type 2 diabetes. There are so many factors that go into insulin dose decisions several times each day, 7 days a week, 12 months a year, year after year. Some of these factors include type and amount of food to be ingested, prior type and intensity of exercise, anticipated type and intensity of exercise, other illnesses and stresses, the blood sugar level at that time, AND the trend of blood sugar levels preceding the current test (important information that too few people currently have). In addition, the way we give insulin is not physiologic; subcutaneous insulin delivery can be inconsistent and lead to unpredictable blood sugar results.

Home glucose monitoring has been one of the most important advances in diabetes care but it does have limitations. There are 1,440 minutes in a day and even when people are testing frequently they see only a partial snapshot of what is happening. We do not lack knowledge about how to treat the disease, but rather, we lack constant information about what our blood sugar levels are doing in order to effectively respond. CGM can now fill those wide and potentially dangerous gaps.

Like millions of Americans living with diabetes, for the past 36 years, I have struggled to control my blood sugar levels as best I could while avoiding the lows. I personally have avoided unconsciousness from hypoglycemia but at a price. I have diabetic retinopathy, kidney dysfunction and neuropathy. The best way to describe how I felt when I used CGM technology for the first time was like finally being able to see clearly after 36 years of partial blindness. CGM devices include the Dexcom Short Term Sensor (www.Dexcom.com) which is available now. The Abbott Navigator (www.abbottdiabetescare.com) is currently in development and may be approved this year, and the Medtronic Minimed Guardian RT (www.Minimed.com) is available in limited markets.

The challenge now is to get this technology into the hands of the people who could benefit the most. This will take a concerted effort to educate the people living with diabetes, the professional community and the insurers.ng into text here.

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