

Abbott Freestyle Navigator

Monday, 01 December 2008

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TCOYD Newsletter, Vol. 27, 2008

Almost one year ago, the FDA approved Abbott's FreeStyle Navigator continuous glucose monitoring (“CGM”) system. There are now three CGM devices available in the U.S. by prescription: MiniMed’s Paradigm Real-Time system, Dexcom Seven, and Abbott Navigator. Thankfully, more and more insurance companies are admitting to the reality of this lifesaving, life-prolonging, and complication-deterring tool; see related article .

What’s CGM Again?

To review, CGM is technology that continuously measures the glucose level in the body’s interstitial fluid that floats around between our cells. It does this through a small sensor that the user places under the skin. The interstitial fluid glucose value is interpreted and calculated into a blood sugar value—in the units we are accustomed to—mg/dl or mmol. The blood sugar numbers are transmitted to a receiver, a hand held device, about the size of a cell phone.

What Are the Advantages?

CGM makes us a little less metabolically handicapped. It enables us to see the variability in our blood sugars, and actively maintain steadier, healthier glucose levels—spending a little less time REACTING to when we are out of range. Testing your blood sugar six times a day gives you six data points; CGM provides a steady stream of information—including blood sugar trends, unexpected patterns, and essential warnings for out of range glucose.

The Device

The Navigator comes with a disposable insertion device for the sensor. When the 6 mm sensor is inserted, a plastic shell remains into which the transmitter is snapped. The total footprint is about 2" by 1 1/4". The glucose values are read on a monitor (3" x 2.5") that doubles as a Freestyle Flash blood glucose meter. I like this feature, as it means one less thing to carry around.

Calibration

The Navigator has a 10-hour wait period when you first put in a new sensor while the body and the sensor get used to talking to each other. At the end of that period, the Navigator requests a "calibration" finger stick—taking a blood sugar using the meter built into the monitor—after which continuous sensing commences. All CGM devices require a start up calibration and all need recalibrations at intervals; however, it seems that over the 5 day (indicated) life of the Navigator sensor, there was far less calibrating necessary than with other devices. Another noticeable difference for me was the intelligent design that rejects calibrations taken when the blood sugar is rapidly rising or falling.

Using the Navigator

The Navigator's wireless range is officially 10 feet, but I have left the monitor in a colleague's office down the hall, and returning an hour later, found an uninterrupted string of glucose values. The Navigator displays the blood sugar in big numbers on the screen, and provides updated glucose values every minute. It also displays an arrow—either straight across, indicating a steady blood sugar; an arrow at a 45 degree angle, indicating blood sugars changing at a rate of 60 mg/dl per hour; or an arrow pointing straight up or down meaning the blood sugar is rising or falling at a rate faster than 120 mg/dl. Advance Warning of

Highs and Lows

Ten to 30 minutes in advance of going outside the range the user sets for for high/low alarms, the Navigator will predict and warn the user of the potential problem ahead. The first few times this happened, I found the beeping irritating (I was within range, and felt fine) until I unexpectedly

crashed, or shot up like a rocket. The Navigator is, in some ways, smarter than I am. This is a great feature.

For more information on the Navigator visit www.freestylenavigator.com , read the diabetes bloggers, or visit www.childrenwithdiabetes.com for a side-by-side feature/spec comparison.

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