

Access Solutions
Sacramento, CA

Accessible Insulin Pump Therapy for blind and visually impaired diabetics.

The PumpMate, now you're talking!!

For decades Diabetes has been treated with multiple injections daily of insulin but with the turn of the century came a new innovation in diabetes treatment. continuous subcutaneous insulin infusion, also known as insulin pump therapy. This form of treatment is a proven, established way to assist diabetics in:

- Lowering the risk of severe hypoglycemia
- Improving metabolic control
- Reducing risks of long-term complications
- Enhancing ability to cope with type 1 diabetes

Management of diabetes using insulin pump therapy provides the user with confident control and a greater amount of flexibility and freedom but for 20% of diabetics this form of therapy is not an option. It may surprise you to know that The American Diabetes Association statistics report that there are 23.6 million people in the United States, or 8% of the population, who have diabetes. The total prevalence of diabetes increased 13.5% from 2005 to 2007 and, is expected to keep rising in the decades to come. Diabetes is associated with an increased risk for a number of serious, sometimes life-threatening complications. Good diabetes control can help reduce your risk, however many people are not even aware that they have diabetes until they develop one of its complications such as blindness caused by diabetic retinopathy.

Diabetes accounts for 8% of all legal blindness cases in America today and is the leading cause of blindness in people ages 20 to 75. Of this percentage 21% already show signs of Diabetic Retinopathy at diagnosis, and those who have had Type1 diabetes for 20 or more years will unavoidably show signs of this visual complication even with tight glucose control. Before now there was no way for blind and visually impaired people to take advantage of Insulin Pump Therapy which in turn greatly limited the choices they had in their therapy. This paper outlines What the PumpMate is and what it does, who would use and benefit from the PumpMate, as well as Key features.

The PumpMate Is a remote control that uses wireless technology to access the features of an insulin pumps. This allows the pump user to control their insulin pump without needing to look at it or remove it from wherever they have chosen to wear it under clothing and such. The pump mate uses high quality prerecorded audio to speak many functions and features of the insulin pump in a clear and easy to understand male or female voice. The PumpMate also has a large print screen which allows the user who is visually impaired to access the pump with or without the voice option and is much larger than the LCD screen on the insulin pump itself. Previously blind diabetics were unable to use this form of therapy because of the menu driven interface on the pumps themselves and many health care professionals refused to prescribe pumps to their patients for fear of insulin overdose. If a patient was approved for pump therapy sighted assistance would be needed to change settings, give boluses and use other features that are non accessible which takes the control of ones disease out of their hands.

With the Pump Mate users would be able to independently:

- Give boluses for meals
- Change settings such as basal rate
- Set the time and date on their pump
- Use the LifeScan glucose meter which comes with the pump
- use software with a home computer to track blood sugars and insulin use

The PumpMate can also be helpful and convenient to all users who desire a higher level of discretion in wearing their pump. Many men, women and children choose to wear their pumps underneath clothing which makes it hard to adjust their pumps without removing it. The PumpMate makes giving boluses and changing settings as easy as changing the channel on a TV. The speech option can be turned off for sighted users and the headphone jack gives blind users more privacy.

PumpMate can also “capture” readings from various blood glucose meters, allow a user to hear the reading, and having determined it is a good reading, subsequently transmit it to the pump. PumpMate will also allow the user to manually input a blood glucose reading if desired.

In summary, the PumpMate is an innovative product that has been in research and development for over two years. As the product continues to evolve, more and more features and functionality are being implemented and evaluated. Currently, functioning prototypes are being evaluated. Test results have been extremely positive and encouraging. This individual, for the first time in his life, can actually fully utilize and control his own pump without assistance.

PumpMate is the solution blind and vision impaired diabetics have been looking for.