

CHAPTER 14:

PSYCHOLOGICAL ASPECTS OF INSULIN PUMP USE



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The reasons for wanting to begin insulin pump therapy vary depending on who is asked. Youth receiving multiple daily injections commonly respond, “I am tired of taking so many shots.” Adults/parents hope that the pump can offer more flexibility or more independence. Parents/spouses must be careful to stay involved, as a helpful adult makes diabetes management easier for anyone. Physicians say that they are hopeful the pump will result in improved blood sugar control and a lower risk for diabetes complications. A slight improvement ($\sim 0.5\%$ reduction in HbA1c levels) is likely with pump use, as discussed in Chapter 2. Any consistent decrease in HbA1c levels reduces the later risk for diabetes complications.

Psychological aspects of using an insulin pump have been discussed in many of the previous chapters (especially in Chapters 1 and 2). The first issue relates to **Motivation/Desire**. Children and teens must be motivated to wear the pump and have realistic expectations about pump therapy (i.e., that it will still require work and attention). Parents must also be motivated and prepared to remain involved in care. Otherwise, a pump experience will likely not be successful. A person must never be forced to use pump therapy. The issues discussed in previous chapters – **Realistic Expectations, Compliance and Family Involvement** – are factors judged to be important by a group of diabetes educators in addressing who should be considered for insulin pump therapy. **Flexibility and Freedom** are discussed as advantages of using an insulin pump in Chapter 2.

Challenges of pump therapy are **Remembering to Bolus** and **Psychological Factors**.

REMEMBERING TO BOLUS

Forgetting to bolus, usually resulting in a high HbA1c level, is the main reason for doing poorly as a pump user. The usual reason given by youth for missing a meal bolus was “just forgetting.” (7) Forgetting can be a result of being too busy or never fully establishing the new habit of bolusing for each meal or snack. Unfortunately, it can also be a manifestation of psychological/neurological problems (e.g., rebellion, depression, attention deficit disorder). Regardless, it can be difficult to correct. It can also be a result of not placing one’s diabetes care at a high priority. Establishing a new habit takes weeks to master successfully. Organization and learning styles differ from person to person.

Research from our Center (16) has shown that setting alarms for frequent times of eating can help some people remember to bolus. The use of friends, family members or others giving helpful reminders (without being overbearing) can also be beneficial. This is particularly true now that we know that pre-meal boluses 15 to 30 minutes before eating help to improve blood sugar levels after meals. Remembering to take pre-meal boluses can be a difficult change of habit for some people. It is sometimes helpful just to go through the usual course of events in the pre-meal time to suggest changes. For example, the morning routine could be changed from: bathroom, getting dressed, blood sugar check and bolus, breakfast; to a pattern of bathroom, blood sugar check and bolus, getting dressed, breakfast. Starting with one meal may be the

easiest way to form new habits. People tend to be most insulin resistant at breakfast (due to high growth hormone levels). Thus, this is often the first meal on which to focus changes. The largest meal of the day can then be the next meal on which to focus. Gradually, new habits are formed and will extend to all meals and snacks.

OTHER PSYCHOLOGICAL FACTORS

There are other important factors that contribute to people not wanting to initiate insulin pump therapy. The statement, “I just don’t want to be hooked up to something all the time” is common. Some people are also concerned about disconnecting for sports or other activities and worry about missing insulin. We emphasize to our prospective pump users that they are always welcome to take a pump holiday. This can be done for one day, such as when spending the day swimming, or can be for a longer period. With the long-acting basal insulins (Lantus, Levemir), one can take the same basal insulin dose as used for the total pump basal dose. Remember that the pump must not be restarted for 24 hours after taking the last shot of basal insulin. Bolus dosages (food and correction) using a syringe are similar to bolus dosages taken with the pump. One college athlete changed to shots for three months during a hectic schedule. Some physicians recommend annual pump vacations to give sites a rest or for other reasons.

A major issue for some adults and adolescents with diabetes is not wanting to be different. When taking an injection at home, other people may not be aware of the diabetes. In contrast, seeing the pump may lead to attention and/or questions. Even someone who is very comfortable talking about their diabetes may not want to be asked and have to explain the pump multiple times. Issues listed by adolescents related to living with type 1 diabetes (17) were:

- Not wanting to be treated differently than others
- Wanting to lead a regular life
- Wanting to understand how their bodies work
- Wanting to take care of themselves

Support from their families and the diabetes team is important, but above all, they need support and understanding from their friends. Chapter 19 in [Understanding Diabetes](#) (3) addresses specific issues of teenagers.

Another possible issue for some people using insulin pumps relates to overconfidence. Some pump users develop a false sense of security. They may bolus without first doing a blood sugar level. They may not take the time to accurately count carbohydrates. Basal or bolus insulin dosages may be changed without first doing the essential checking. They may use the “touch bolus” feature to deliver an approximate amount of insulin for convenience instead of using the bolus wizard to calculate the exact amount of insulin needed. When these problems occur, the help of a responsible adult is again essential. Diabetes is an unforgiving disease and can never be taken lightly.

A positive factor associated with pumping is that pump users say, “I seem to feel better,” or “I have more energy.” This may be a reflection of improved glycemic (sugar) control and using the sugar from the blood for energy rather than having sugar spill in the urine. Blood sugar checking is usually initially more frequent after initiating pump therapy. The trick is to convince the person (or have them convince themselves) that the extra effort is beneficial in the long run.

A special advantage of wearing a pump is that the pump user is usually more willing to consider wearing a continuous glucose monitor (CGM) than a person who uses multiple daily injections. The advantages of CGMs are discussed in Chapter 15. The use of CGM will likely lead to the third era of diabetes management. It will lead to increased safety with alarms for high and low blood sugar levels. However, use of a second device can definitely add extra psychological stress for many people.

SUMMARY

Psychological aspects of wearing and using an insulin pump can be both positive and negative. Hopefully, with time the positive will predominate. The result will be optimal benefit and safety for the person using the insulin pump.

REFERENCES

16. Chase, HP, et al, Diabetes Care 29(5); 1012, 2006.
17. Huus, K, and Enskar, K., Paediatr Nurs. 3; 29, 2007.





Am I ready for
continuous glucose
monitoring?