

INSULIN PUMPS IN THE SCHOOL SETTING

is a

student in your school who has diabetes and is wearing an insulin pump. An insulin pump is a device that provides small amounts of fast-acting insulin (basal) every few minutes through a small catheter under the skin. The student then takes an additional amount of insulin doses (boluses) through the pump for meals and snacks. We would like to emphasize that problems and complications with insulin pumps are seldom seen. For the most part, you will not be aware that the student is using the pump, although you may hear an occasional quiet beep when insulin is taken for a meal or a snack. The following information may assist you in helping the student wearing an insulin pump.

LOW AND HIGH BLOOD SUGARS

These occur with the students receiving insulin pump therapy just as they do with children receiving insulin shots. They are handled similarly, and this should be outlined in the specific student's Emergency Response Plan. If a severe low did occur in a person using a pump, it is important for the school personnel to know how to disconnect the plastic tube from the pump to the person's insertion under the skin. High blood sugars with moderate to large urine or blood ketones (levels > 0.6) will necessitate administration of an injection of fast-acting insulin with a syringe immediately. The student may need to perform a change of infusion set at school.

BASAL AND BOLUS INSULIN PUMP DOSAGES

Insulin pumps give a constant basal dose of insulin that is set by the doctor and family. The school personnel will not be involved with the basal settings. A bolus insulin dose is given before or after food intake. It may require assistance from the school staff to help to calculate the bolus dose. Some children need help from the school staff in remembering to administer their bolus dose, particularly at lunch. Missing bolus dosages of insulin is the main reason for poor diabetes control (high blood sugars) in people who use pumps.

CALCULATING THE BOLUS DOSE

This is usually done by counting grams of carbohydrate and giving a unit of insulin for a certain number of grams of carbohydrate (carb). One unit per 15 grams of carb is most common, but everyone is different. The ratio used by our child is:

_____ Unit per _____ grams

_____ of carbohydrate.

In addition, a correction bolus to bring the blood sugar into the desired range (70-150) is often added to the above dose. The most common dose is one unit per 50 mg glucose above 150.

Thus, using these two "most common" doses, a person eating 45 grams of carbs would take three units. If their blood sugar was 250 mg/dl, they would also take a correction dose of two units (two 50 mg amounts above 150). Their total bolus in this case would be five units.

EXERCISE

During times of vigorous exercise, the student may need to disconnect the pump. For this, the student needs to place the pump in a safe place where it will not be damaged. During prolonged exercise, many students reconnect the pump periodically and take insulin. Some students wear their pump during exercise and use a special case to protect it.

ALARMS

Pumps are programmed to alarm under various circumstances, e.g., low battery, no insulin delivery, out of insulin, etc. There is a 1-800 number on the back of all pumps to call for assistance.