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.