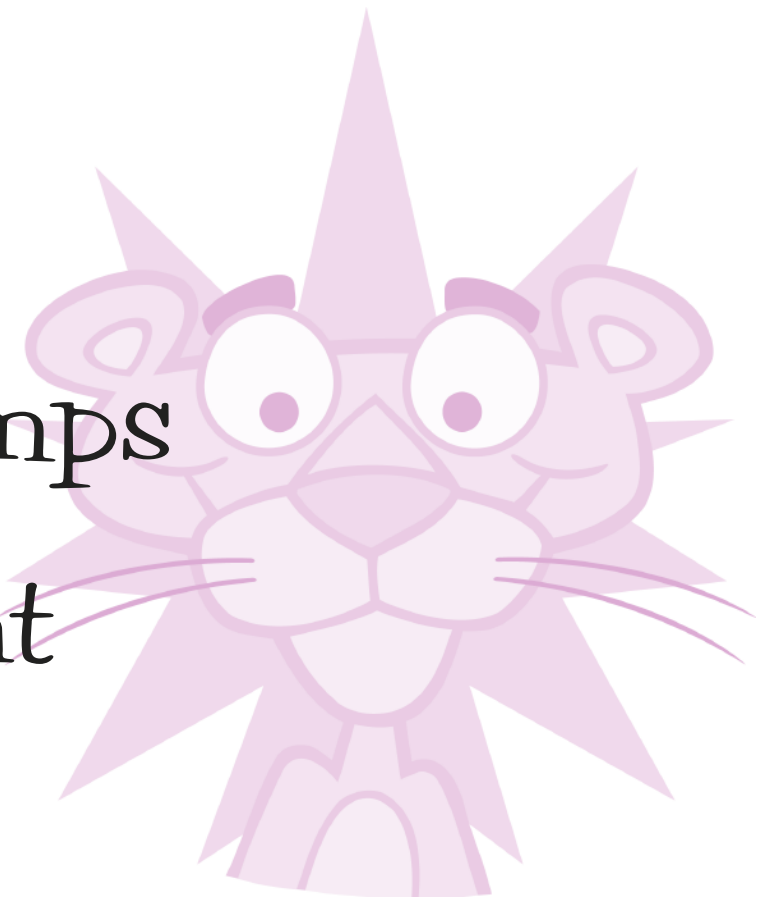


Chapter 26

Use of Insulin Pumps in Diabetes Management



THE PUMP

An insulin pump is a microcomputer (the size of a pager) that constantly provides insulin. It is important to realize that the current insulin pumps do not vary the insulin dose administered based on the blood sugar level. *Only rapid-acting insulin is used in pumps.* Pumps have become more popular in recent years. Advantages and disadvantages of pumps are discussed in Chapter 26 in the larger book, “*Understanding Diabetes.*”

HOW IS INSULIN GIVEN BY THE PUMP?

- The **basal** dose delivers a preset amount of insulin each hour.
- A **bolus** dose is entered/given by the person wearing the pump (or by an adult) each time food is eaten or if a high blood sugar is found.

WHAT IS INVOLVED WHEN STARTING ON A PUMP?

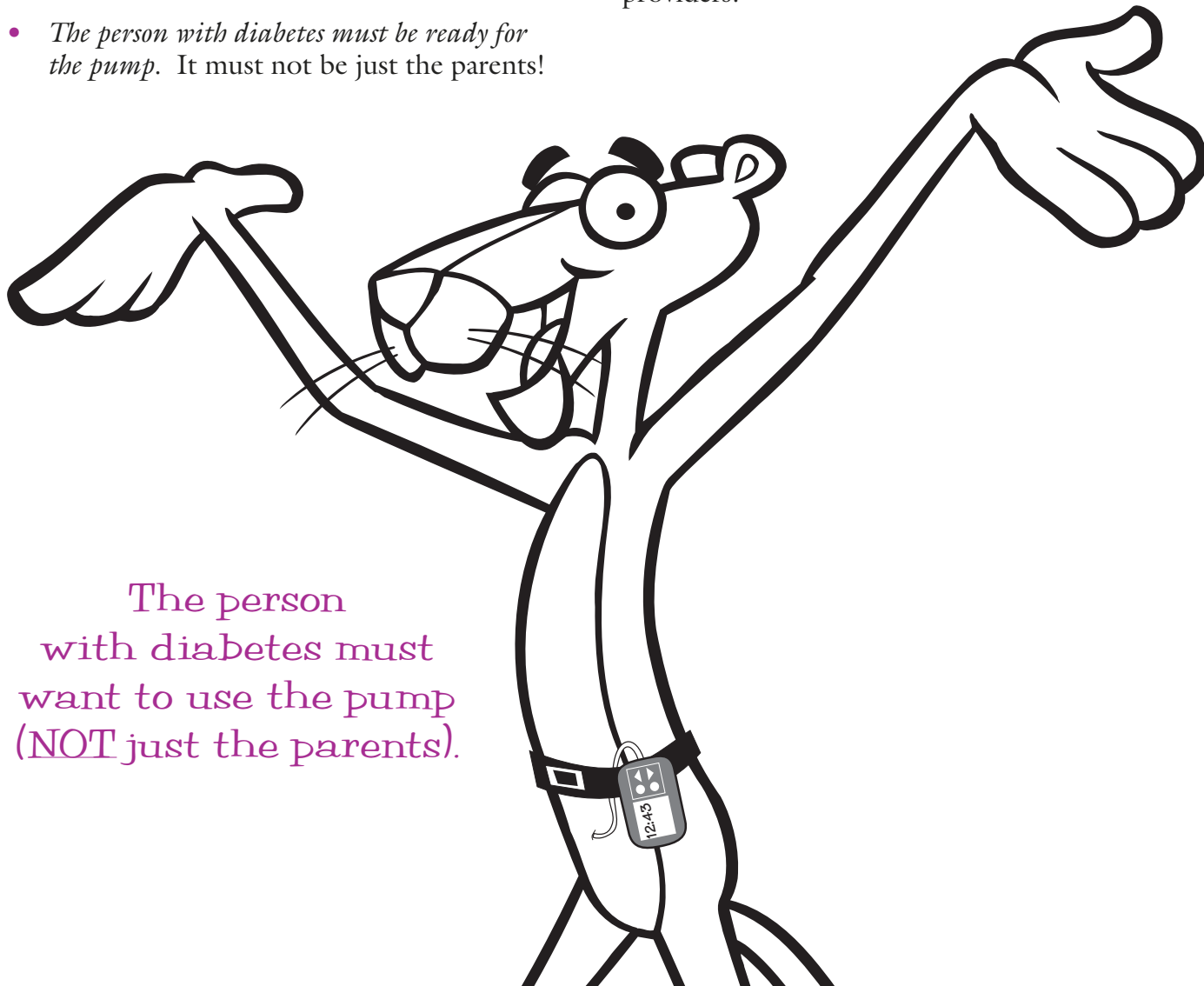
- The pump is more work than shots, not less. The first week (and for some, the first month) is the most difficult.
- At least four blood sugar tests must be done each day.
- Carbohydrate counting (see Chapter 12) and correction factors (Chapter 21) are usually used to determine bolus doses.
- Bolus dosages for food are best taken prior to the meal (and often 10-15 minutes before eating).
- When young children are treated with a pump, the parents are generally responsible for counting carbohydrates and giving the bolus insulin doses.

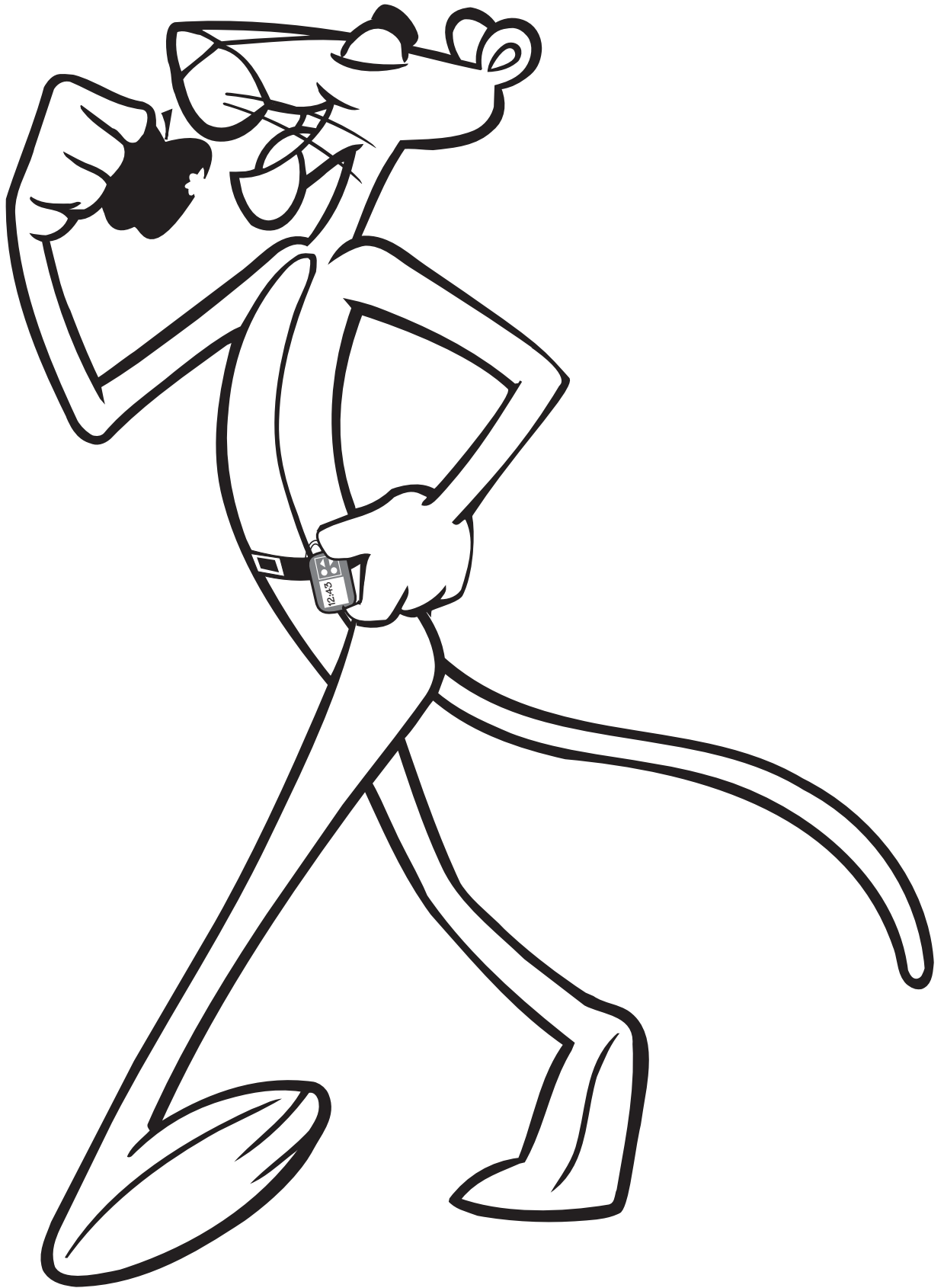
- The “smart pumps” have insulin-to-carbohydrate (I/C) ratios and correction factors programmed into them per the physician and family. Then when a blood sugar and/or grams of carbohydrate to be eaten are entered, the pump suggests an appropriate insulin dose. This dose can be given as suggested or it can be changed.
- Basal and bolus insulin doses are individualized for each person. The physician usually suggests initial basal rates.
- Close contact with the health care providers is essential.
- Our experience shows that children do well if they and their parents are both highly motivated.
- *The person with diabetes must be ready for the pump.* It must not be just the parents!

THREE MAIN PROBLEMS SEEN WITH INSULIN “PUMPERS”:

- 1 forgetting to give bolus doses
- 2 getting lazy and not doing at least four blood sugar tests per day
- 3 the cannula (tube) coming out from under the skin, causing blood sugars (\pm ketones) to rapidly rise (remember: only rapid-acting insulin is used in a pump)

When a family is ready to consider use of an insulin pump, Chapter 26 in the larger book should be read. They should then discuss the possibility with their diabetes care providers.





FOOD IN MOUTH, HAND ON PUMP!



Good sugar control prior to pregnancy
is essential!