

Chapter 21

Adjusting the Insulin Dose, Correction Factors, and “Thinking” Scales



Six to twelve months after the diagnosis of diabetes, many families feel OK with changing the insulin doses on their own.

HOW AND WHEN SHOULD AN INSULIN DOSE BE CHANGED?

Below are four methods:

1. Looking at blood sugar patterns over the last week:

- It is necessary to know which insulin is acting at the time of the highs or lows in order to make the correct changes (see figures in Chapter 8).
- If more than half of the blood sugar values at any time of the day are above the desired range for the age of the person (see table in Chapter 7):
 - The insulin dose acting at the time of the high sugar value should be increased.

- If values are still high after three days, the dose can be increased again.
- If there are more than two lows (below 60 mg/dl [3.3 mmol/L]) at one time of day:
 - The insulin dose acting at that time should be decreased.
 - If more lows occur, the dose can be decreased again the next day.
- With small children, the change in dose may be by one half to one unit.
- With older children and teens, the change in dose may be by one or two units.
- Blood sugars will be lowest the first day after an increase in insulin and highest the first day after a decrease in insulin.
- Tables are given in the larger book, “*Understanding Diabetes*” (Chapter 21) for people wanting more detailed suggestions on changing insulin doses for high or low blood sugars.

2. Using a “correction factor”:

- Some people use a combination of a “**correction factor**” and carbohydrate (carb) counting (see Chapter 12) to determine the dose of rapid-acting insulin before meals and snacks.
- The **correction factor** can be used to “correct” a high blood sugar down to a target blood sugar level (e.g., 150 mg/dl [8.3 mmol/L]).
- The most common **correction factor** is to give one unit of insulin for every 50 mg/dl (2.8 mmol/L) of glucose above 150 mg/dl (8.3 mmol/L), e.g., if the blood sugar is 250 mg/dl (13.9 mmol/L), the correction factor would be 2 units. Many teens correct down to 120 mg/dl (6.7 mmol/L) or even 100 mg/dl (5.5 mmol/L) during the day. However, every person is different and the **correction factor** should be adjusted to fit the individual.
- At bedtime, during the night, or before exercise, the correction factor is usually reduced by half.
- It is generally wise to wait two hours between correction insulin dosages.

3. Using “thinking” scales:

- The insulin dose is figured by considering many factors, including:
 - the blood sugar level
 - illness
 - any exercise that has been or is to be done
 - stress
 - food to be eaten
 - menses

4. Changes for Lantus or Levemir:

- Adjustments are usually made based on the morning (fasting) sugar level.
- Doses are increased or decreased if blood sugar levels are above or below the recommended values for age (see Chapter 7).
- As suggested above, dose changes for a young child may be by one half to one unit, and for older children (and teens), by one to two units.
- Suggested waiting times between dose changes are as given above.

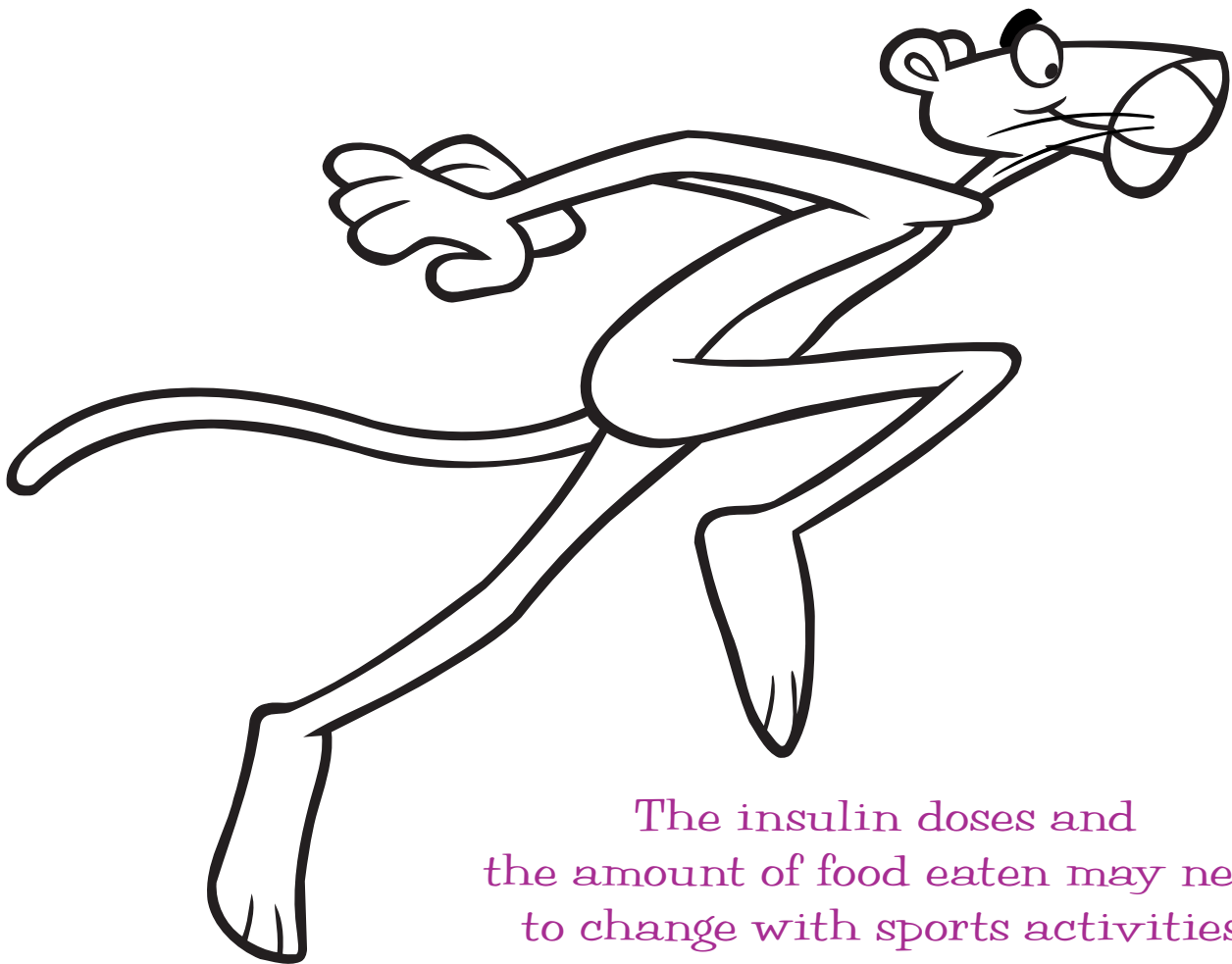


Table
Example of Insulin Adjustments

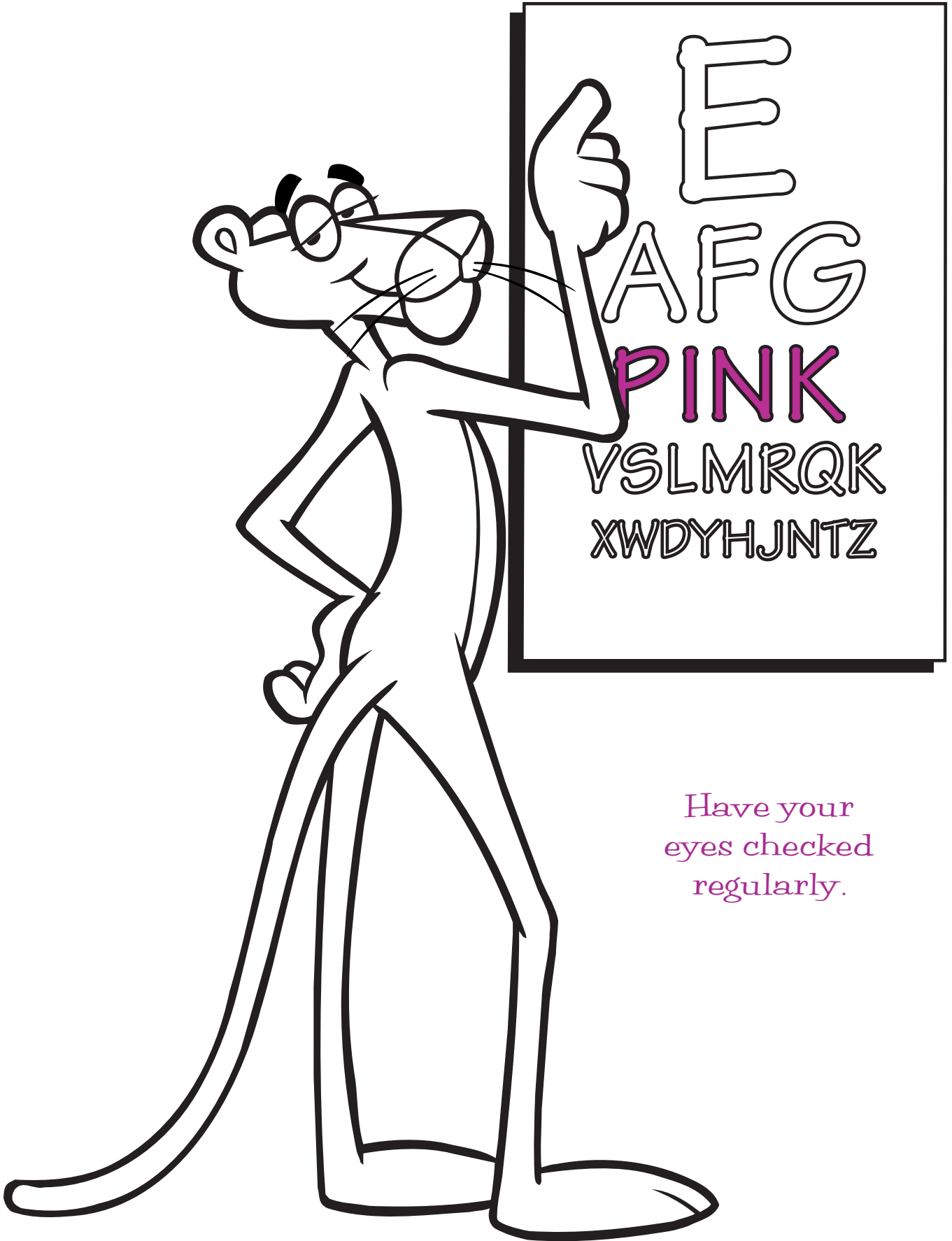
Blood Sugar		Correction Factor*	Carb Choices**	Total Units
mg/dl	mmol/L	Units of Insulin	(15g carb)	of Insulin
Less than 150	8.3	0	1	1
200	11.1	1	2	3
250	13.9	2	3	5
300	16.7	3	4	7
350	19.4	4	5	9

*Assuming a correction factor of 1 unit of rapid-acting insulin per 50 mg/dl (2.8 mmol/L) above 150 mg/dl (8.3 mmol/L).

** One carb choice = 15g carbohydrate. In this example, 1 unit of insulin is given for each 15g carb choice. In the U.K., carb choices are usually 10g of carbohydrates.



The insulin doses and the amount of food eaten may need to change with sports activities.



Have your
eyes checked
regularly.