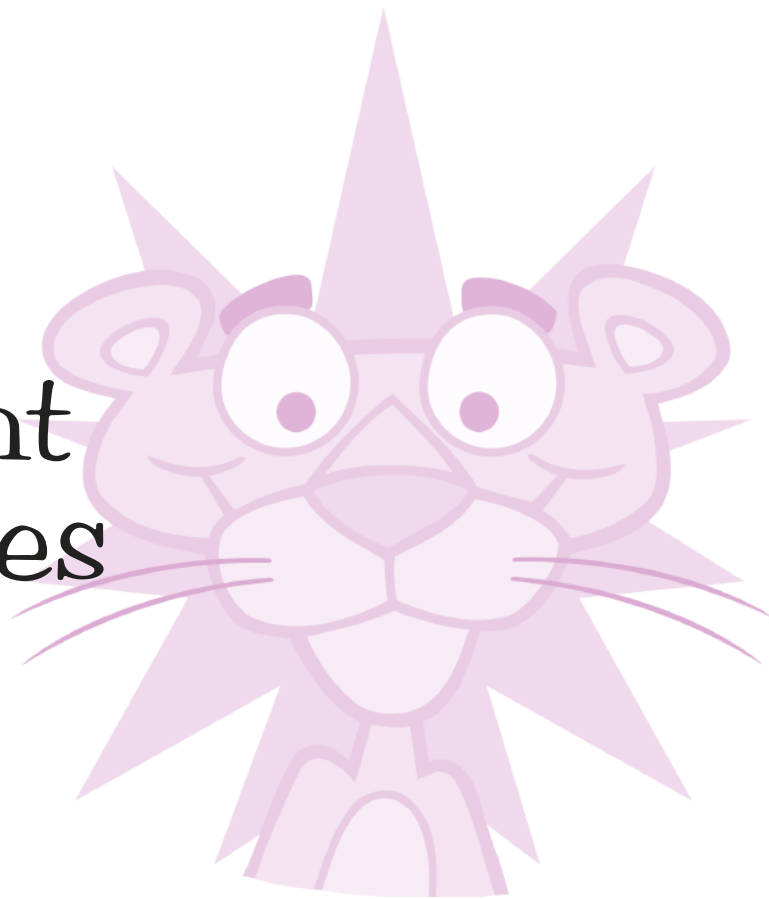


Chapter 12

Food Management and Diabetes



A food plan is important for people with either type 1 or type 2 diabetes. Every family must work out a plan with their dietitian that fits their family.

Type 1 diabetes cannot be treated with diet alone.

People with type 2 diabetes:

- can sometimes be treated with diet and exercise alone
- need to eat foods with fewer calories each day and lose weight
 - must reduce fat calories (fat has nine calories per gram; carbohydrate [carbs] and protein have four calories per gram)
 - should not eat more than once a week at fast food restaurants (burger, fries, pizza)

The two types of food plans that our clinic uses the most are:

- 1 **Constant carbohydrate:** A family often starts with this plan.
 - This plan involves eating about the same amount of carbs for each meal and for each snack from day to day.

- Insulin doses are changed based on the blood sugar level (“sliding scale”), exercise, and other factors such as illness, stress, menses, etc. (“thinking scale”).



Carbohydrate (“carb”) counting:

Families often move to this plan at a later date.

- This plan involves counting the grams of carbohydrate (carbs) in food to be eaten. An amount of rapid-acting insulin is given that matches the number of grams (g) of carbohydrate (I/C ratio = insulin to carb ratio).
- The healthcare team and family choose an insulin-to-carb ratio (I/C ratio).
- The dietitian may want a three-day diet record to be done first.
- The ratio which is often used when starting this plan is one unit of insulin for each 15g of carbohydrate (I/C ratio of 1 to 15).

- Blood sugars are then done 2 hours after meals to see if the I/C ratio is correct.

If the blood sugar level is high (e.g., over 180 mg/dl or 10.0 mmol/L), the ratio could be changed to one unit of insulin for 10g of carbs (I/C ratio of 1 to 10).

If the blood sugar level is low (e.g., less than 60 mg/dl or 3.3 mmol/L), the ratio could be changed to one unit of insulin for 20g of carbs (I/C ratio of 1 to 20).

- Gradually the correct ratios for each meal are found. The I/C ratio may vary between meals.
- A blood sugar is done and an insulin dose “correction factor” (see Chapter 21) is usually added to the I/C ratio dose. This will be the total dose of insulin to be given before the meal or snack.
- If blood sugars are above the desired upper level one or two hours after meals (and the pre-meal blood sugar is above 90 mg/dl [5.0 mmol/L], it may be helpful to give the pre-meal rapid-acting insulin 15 to 30 minutes before meals. This is because blood sugar levels peak in 60 minutes after a meal, whereas Humalog/NovoLog/Apidra insulins do not peak until 100 minutes.

Several tables of the carb contents of foods and more details about carb counting are found in Chapter 12 of *“Understanding Diabetes.”*

Some beginning rules of good food management, some of which relate more to a constant carb food plan, are:

- eat a well-balanced diet
- keep the diet similar from day to day
- eat meals and snacks at the same time each day
- use snacks to prevent insulin reactions (see suggested snacks in Chapter 12 of *“Understanding Diabetes”*)
- carefully watch how much carbohydrate is eaten
- avoid over-treating low blood sugars
- eat foods with less cholesterol and saturated fats; reduce total fat intake
- keep appropriate growth
- watch weight for height; avoid becoming overweight
- increase the amount of fiber eaten
- eat fewer foods that are high in salt (sodium)
- avoid eating too much protein



A study known as the **DCCT*** found six dietary factors that made sugar control better:

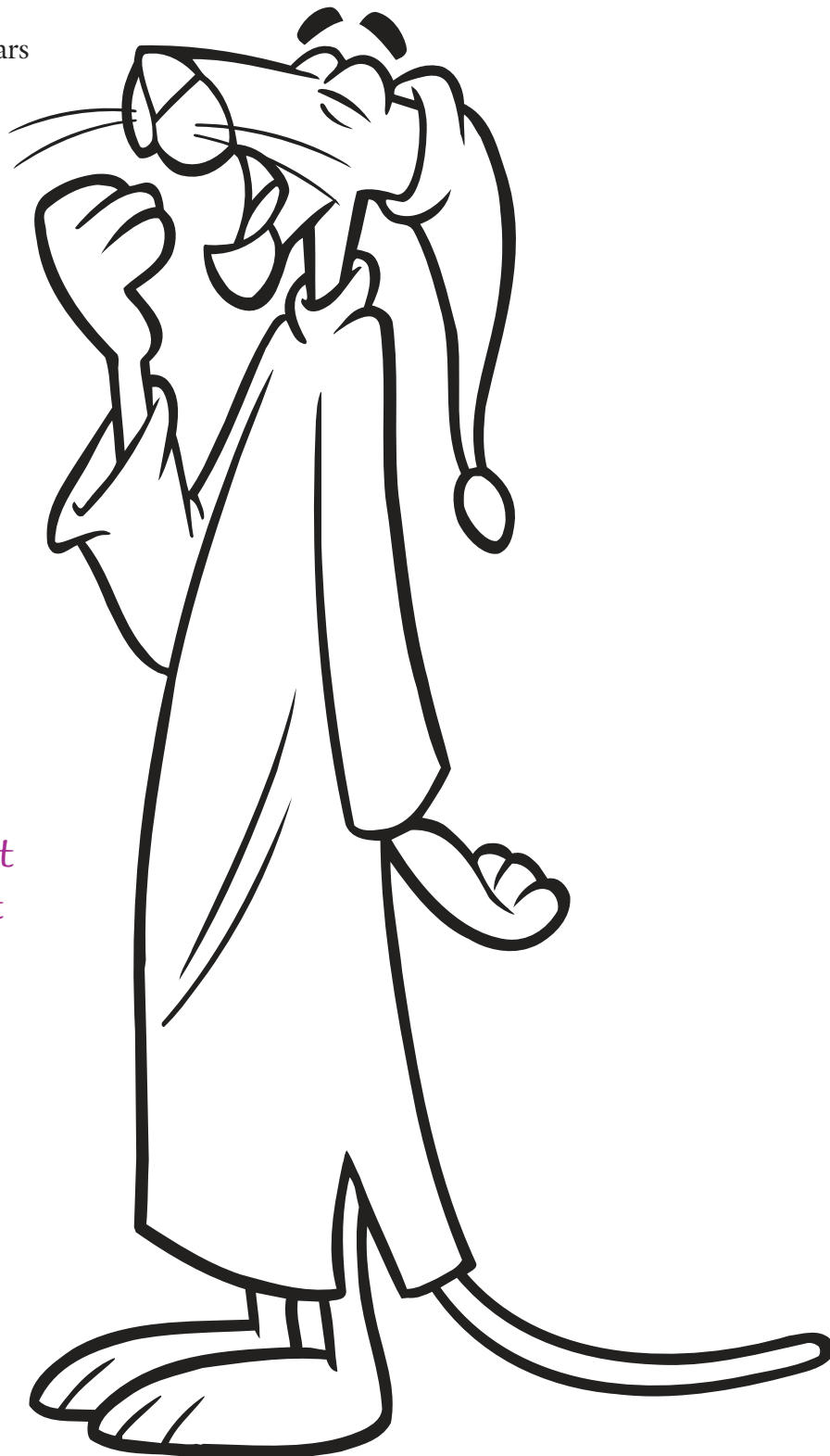
- 1 following some sort of a meal plan
- 2 not eating extra snacks
- 3 not over-treating low blood sugars (hypoglycemia)
- 4 prompt treatment of high blood sugars when found
- 5 adjusting insulin levels for meals
- 6 consistency of bedtime snacks

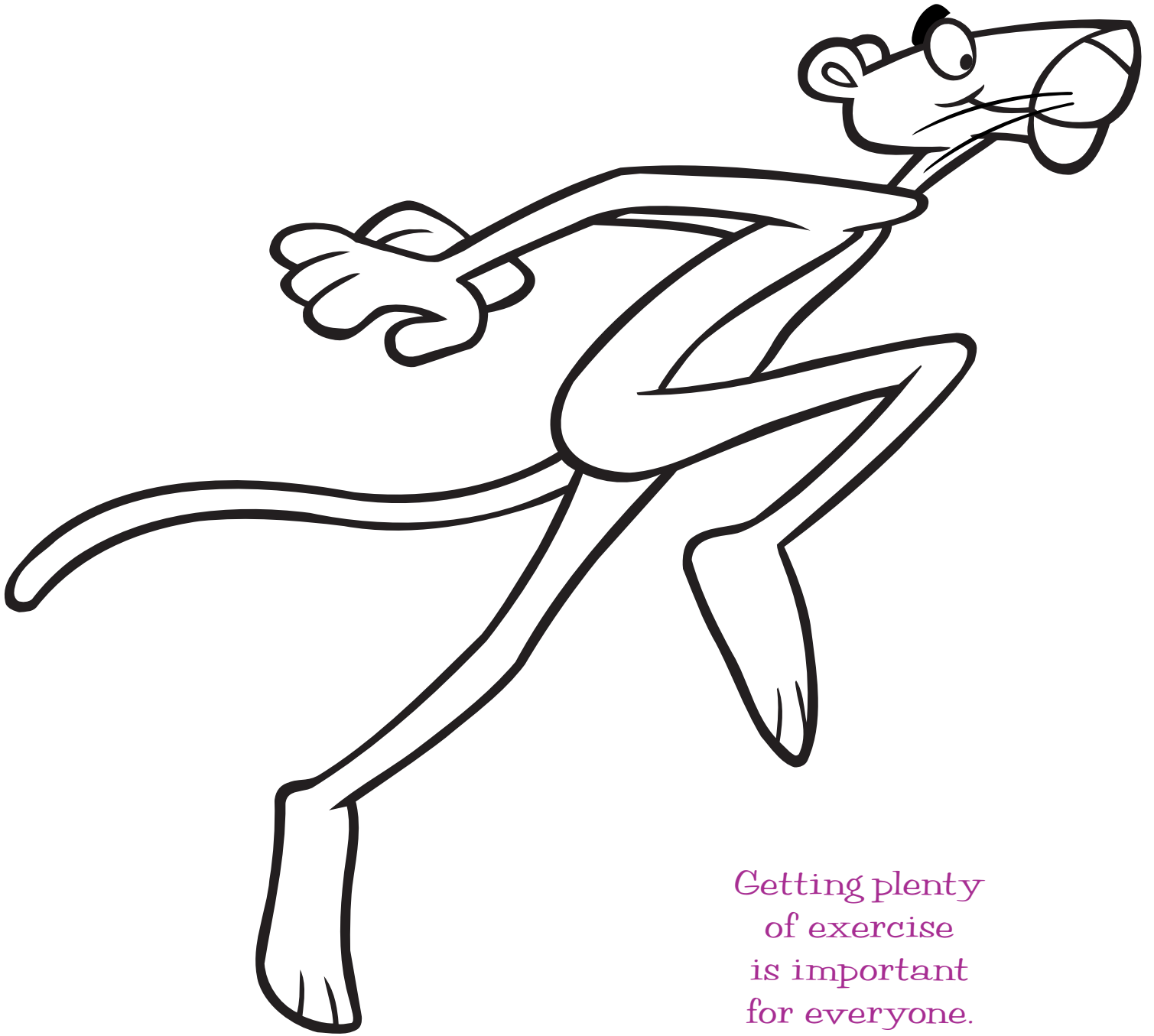
As shown in the diagram in Chapter 14, food is one of the four major influences on blood sugar control.

***DCCT:** Diabetes Control and Complications Trial (see Chapter 14).

Make sure you eat a bedtime snack that has solid protein, fat and carbohydrate

(especially if a heavy exercise day, if the blood sugar is below 130 mg/dl [7.3 mmol/L] or if a peak [NPH, Lente] insulin is taken at night).





Getting plenty
of exercise
is important
for everyone.