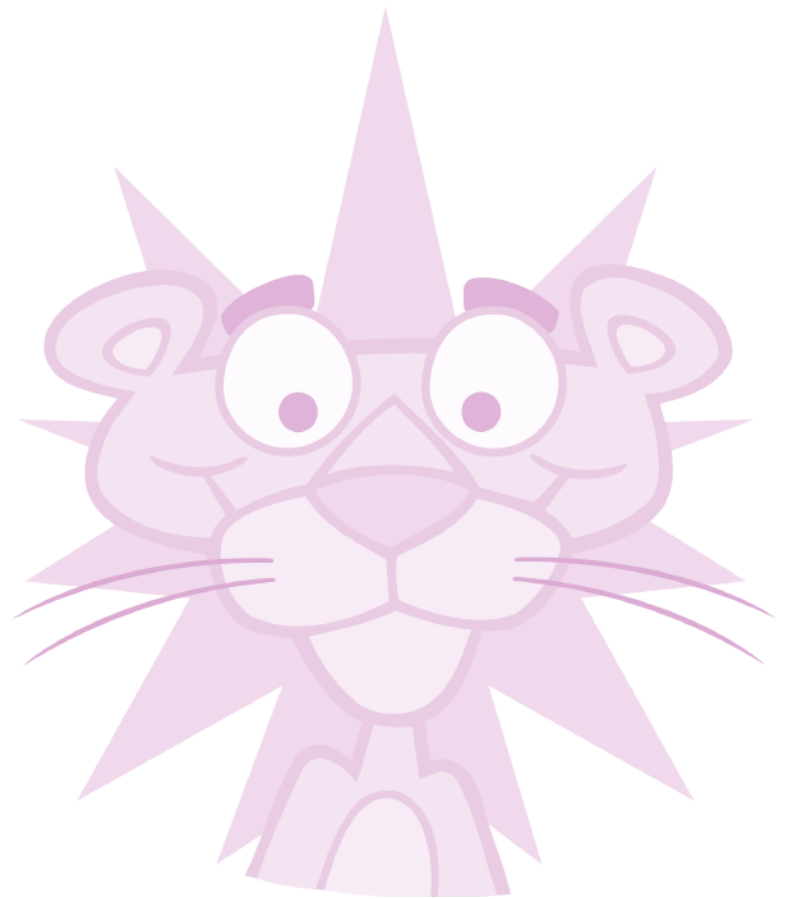


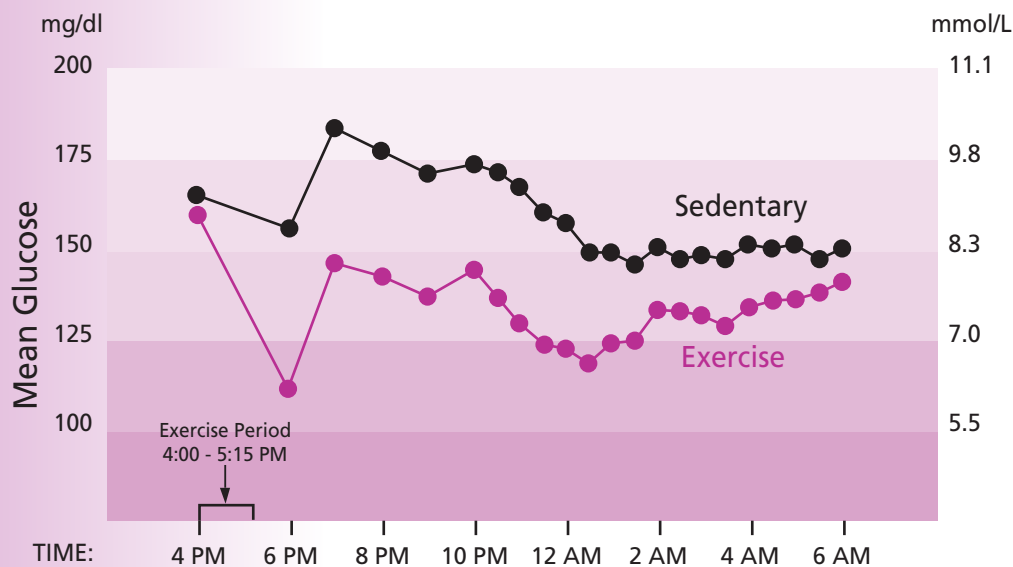
# Chapter 13

# Exercise and Diabetes



Regular exercise is important for everyone. It may be more important for people with diabetes. For people with type 2 diabetes, regular exercise and eating less food are two of the most important parts of treating the diabetes (see Chapter 4).

## Blood Sugars With and Without One Hour of Exercise



This Figure presents blood glucose (sugar) levels for the same 50 children on a sedentary day (black circles) and an exercise day (red circles). The one hour of exercise at 4 p.m. resulted in lower glucose levels for the next 14 hours (through the night). Insulin doses and food intake were identical for the two days.

*(Data complements of the DirecNet Study Group: J Pediatr 147,528, 2005)*



Exercise  
can be  
fun ...

## EXERCISE:

• is one of the “big four,” which, along with insulin or oral medicines, food and stress affects blood sugar levels (see figure in Chapter 14).

• may lower or raise (due to adrenaline output ) the blood sugar level. Over-all it helps to keep the blood sugars in a good range. It does this in part by making us more sensitive to insulin.

• is a primary part of treating type 2 diabetes.

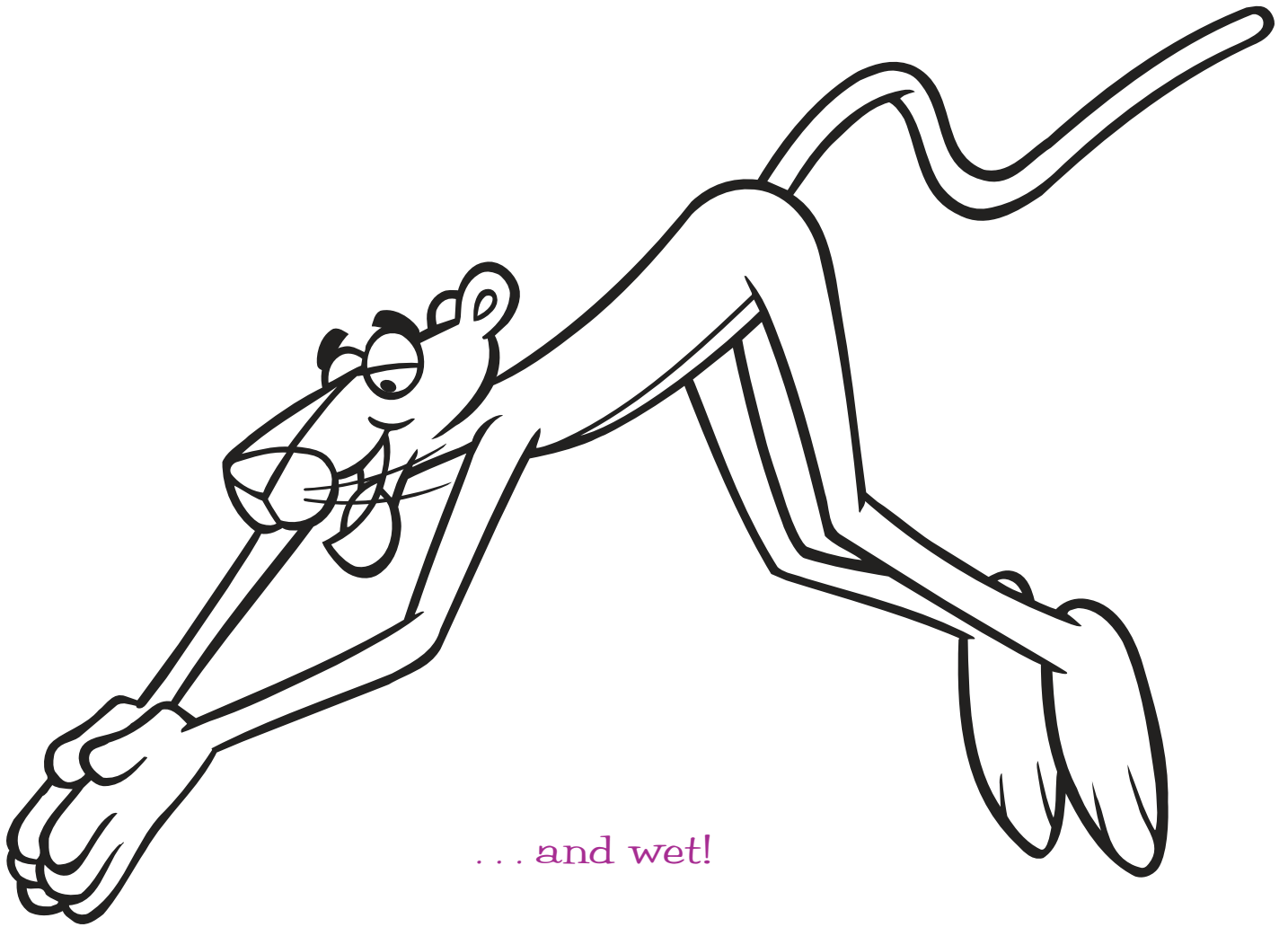
• is essential for weight control.

• should be done daily for at least 30 minutes by people with type 1 or type 2 diabetes.


• can cause **low blood sugars** (Chapter 6) so it is important to plan ahead.

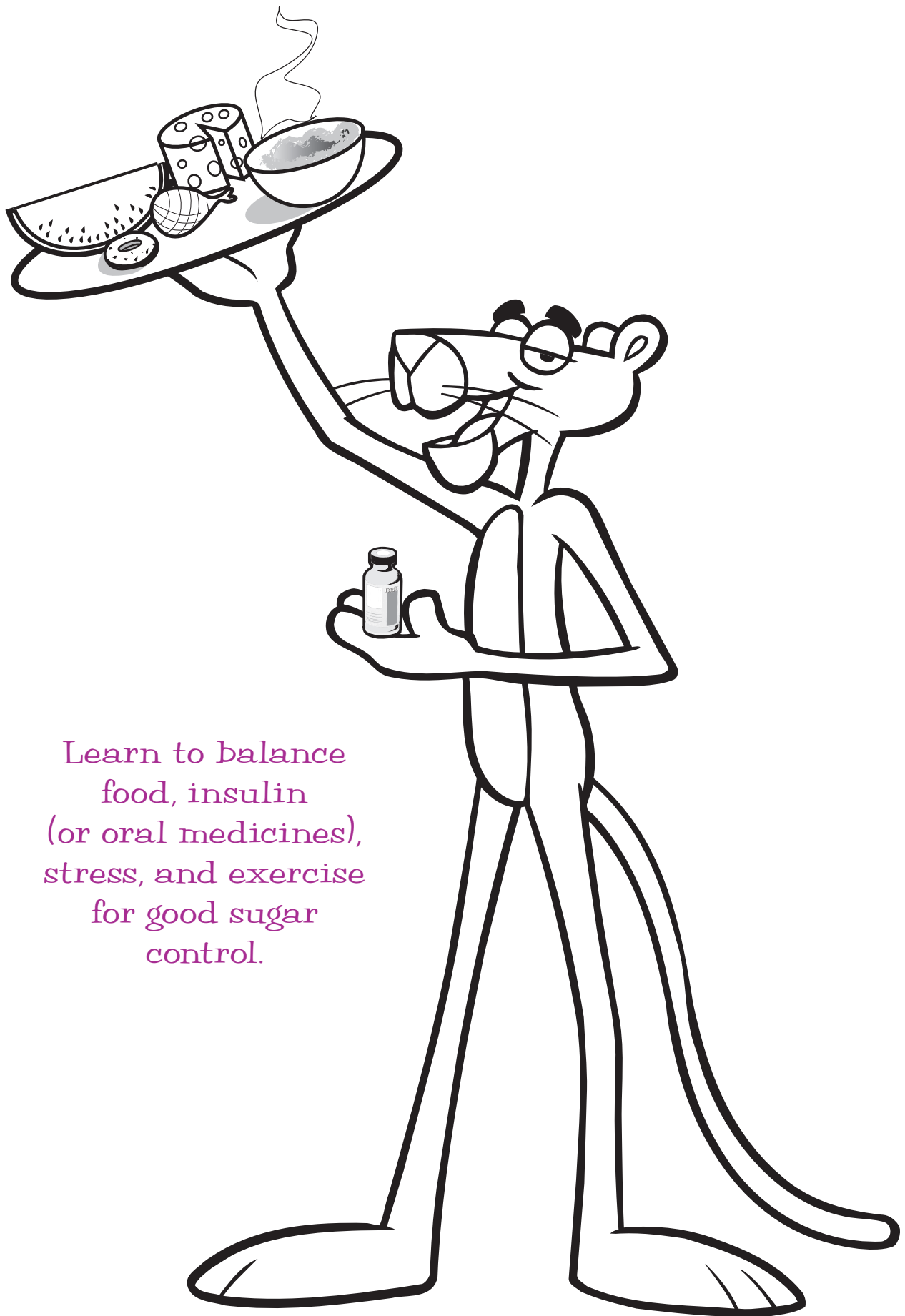
The following may help:

- Extra snacks or less insulin may be needed.
- Aiming for a higher blood sugar level before exercise (e.g., 180 mg/dl [10.0 mmol/L]).



... and wet!

- Thinking ahead to prevent low blood sugars during or up to 12 hours after (“delayed hypoglycemia”) the exercise.
  - ~ The evening insulin dose may need to be reduced.
  - ~ Adding an extra 15 or 30 grams of carbohydrate at bedtime if afternoon or evening exercise has been strenuous.
  - ~ Making sure the bedtime blood sugar is above 130 mg/dl (7.3 mmol/L)
- Use of drinks such as Gatorade® during hard exercise.
- Doing extra blood sugar tests can be very helpful.
- Drinking extra water during exercise prevents dehydration.
-  Regular exercise may also be important for people with diabetes in helping to keep normal foot circulation in later years.



Learn to balance  
food, insulin  
(or oral medicines),  
stress, and exercise  
for good sugar  
control.