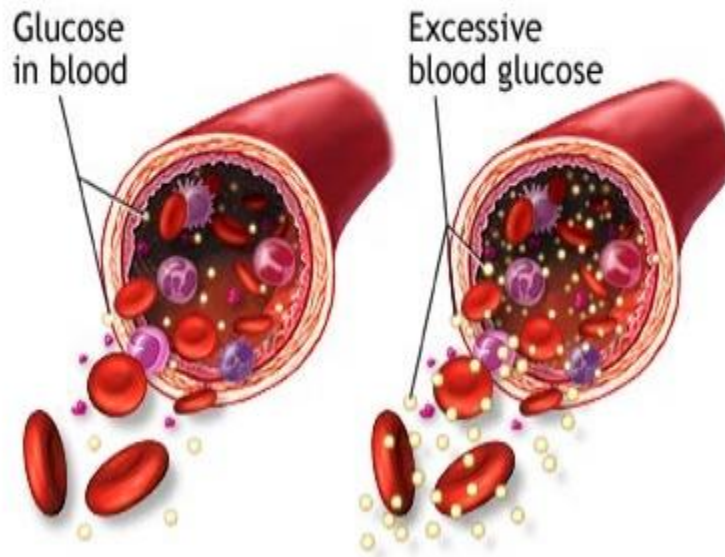


Reverse diabetes- the blood sugar

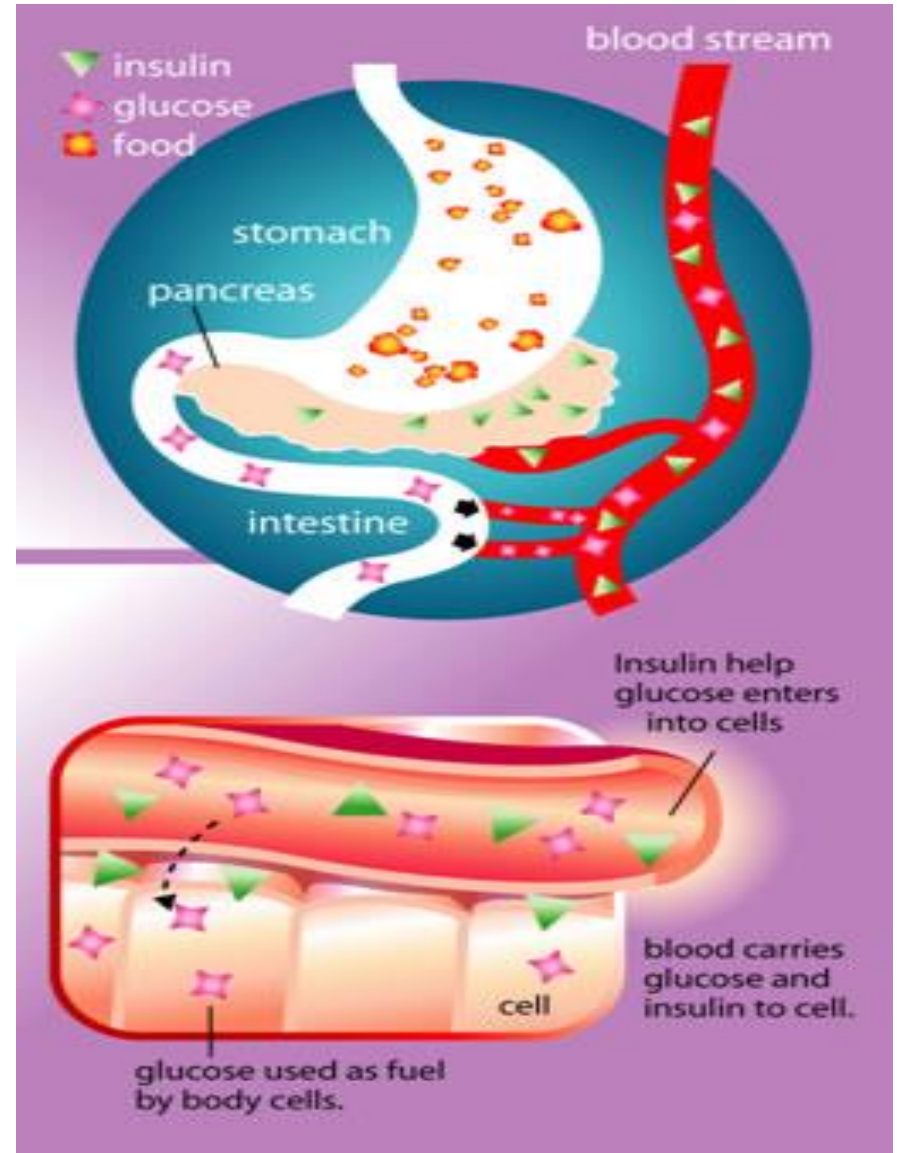
Your goal is to maintain normal blood glucose levels



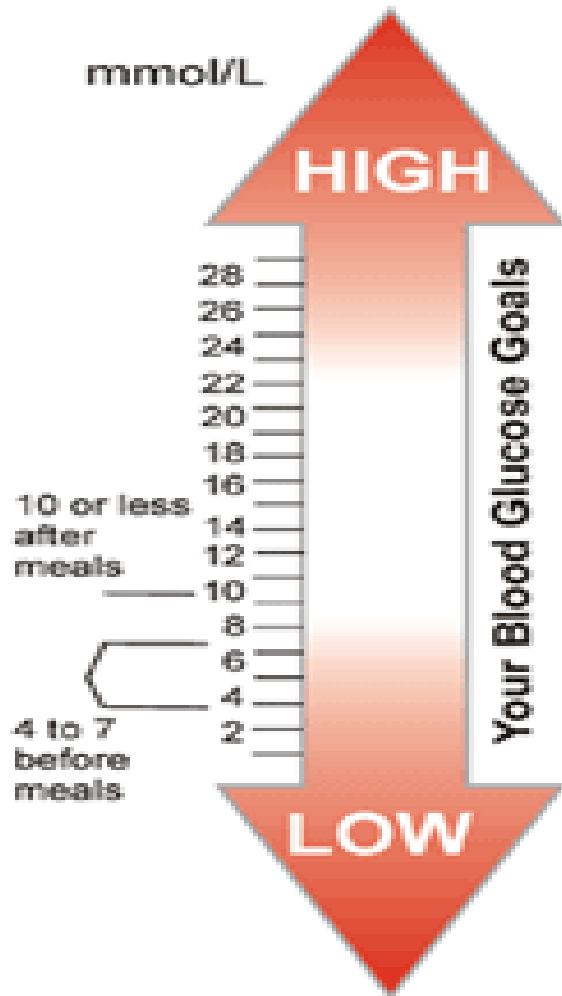
Blood sugar is the body's fuel that feeds the brain, nervous system, and tissues.

Source of blood sugar

- The main source of blood glucose comes from the foods we eat;
- When blood sugar decreases, glucagon causes liver and muscle to release stored glucose into the blood.
- Glucagon can also releases glucose from fuel stores like fat and protein.



Foods are the main source of blood glucose



Your Blood Glucose Level Changes When You Eat

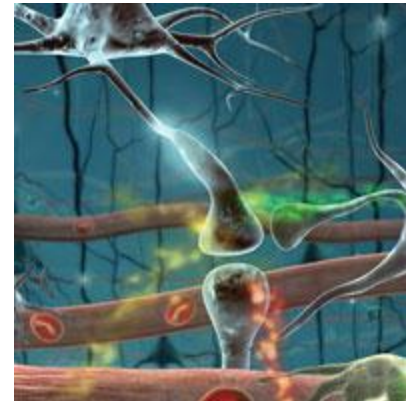


Blood Glucose Levels to Aim for:

- Before any meal 4.0 - 7.0 mmol/L
- 2 hours after any meal 5.0 - 10.0 mmol/L

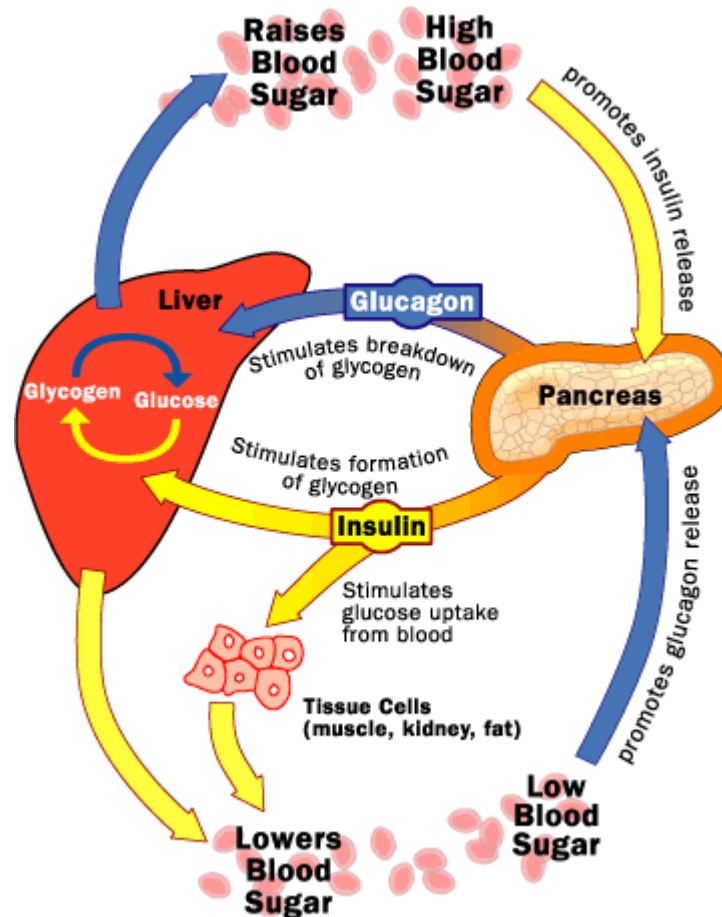
Brain and nerve cells rely on blood glucose as the main energy

- brain and nervous system cells not only rely on glucose for energy, they can only function when glucose levels in the blood remain above a certain level.

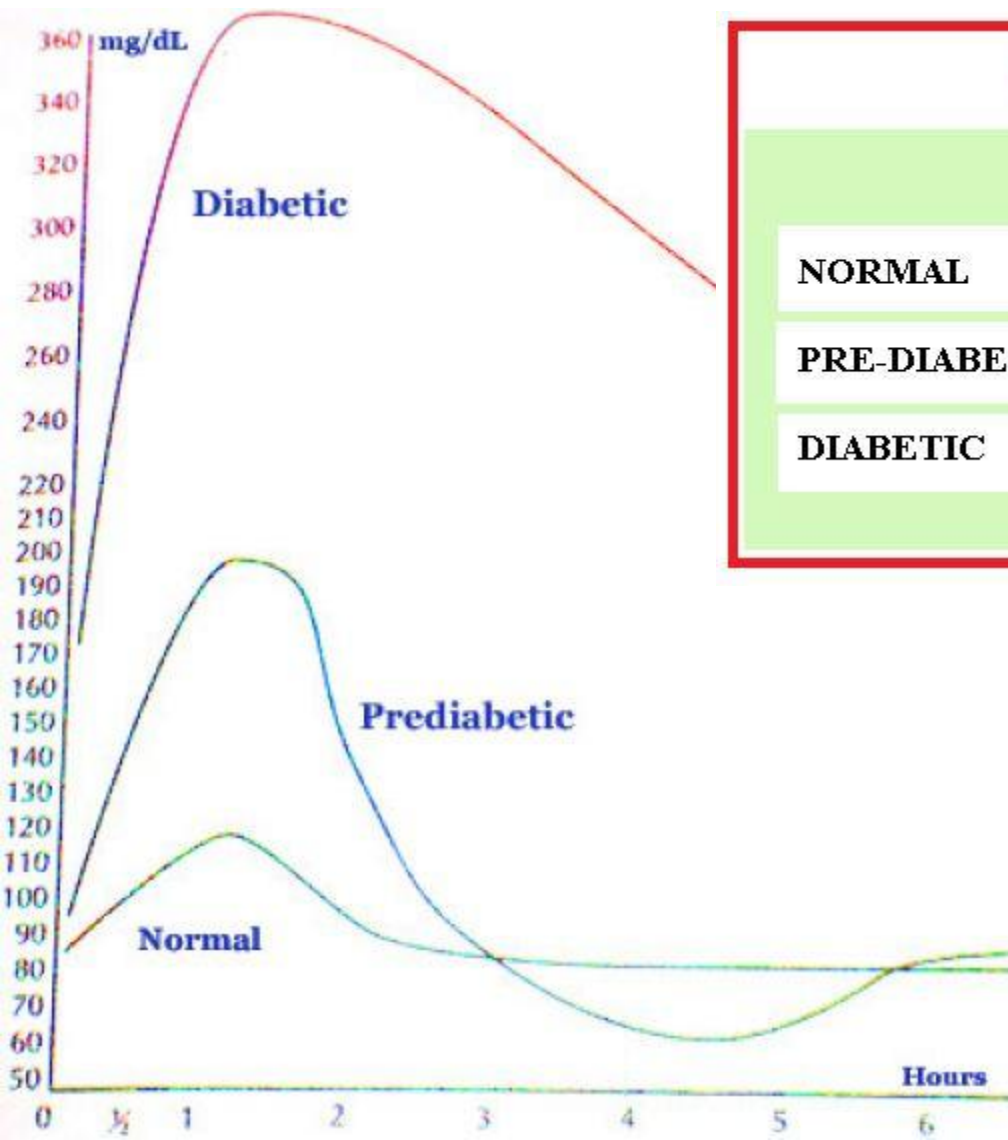


Regulation of blood glucose

- In restful state, both insulin and glucagon are watchdog of blood glucose;



Diabetes is too much glucose in the blood

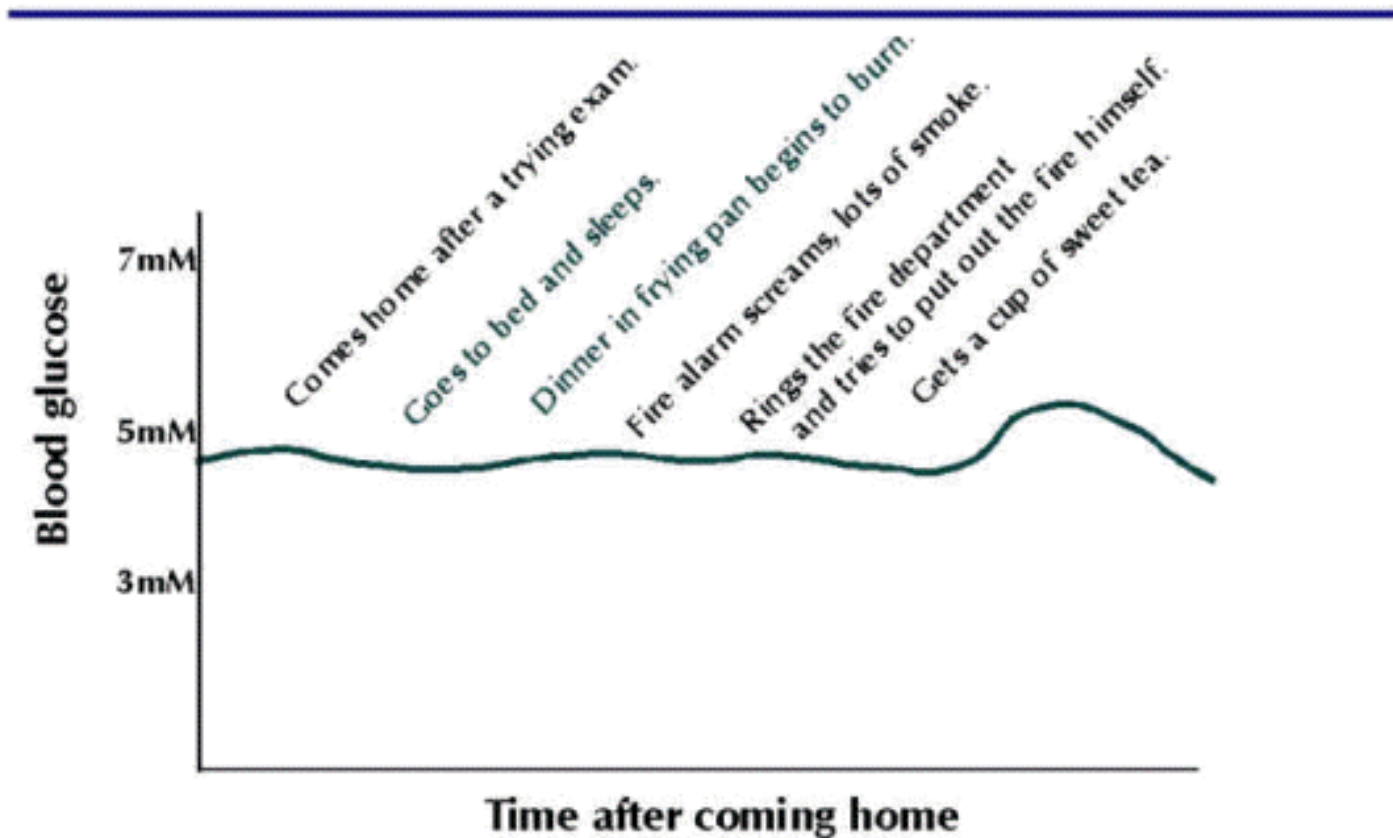


BLOOD SUGAR LEVEL CHART

	FASTING	JUST ATE	3 HOURS AFTER EATING
NORMAL	80-100	170-200	120-140
PRE-DIABETIC	101-125	190-230	140-160
DIABETIC	126+	220-300	200+

Blood sugar levels in healthy persons do not fall more than 10-15%.

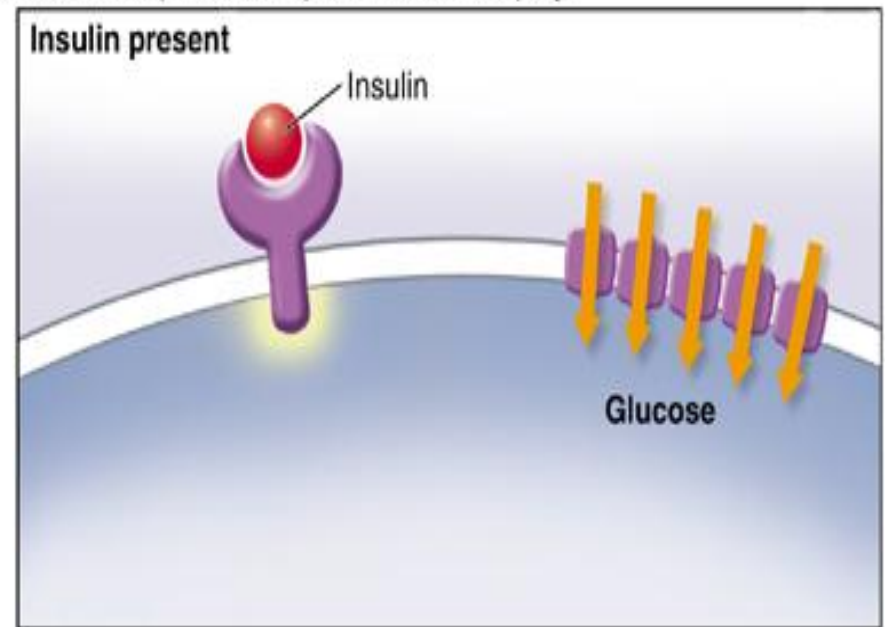
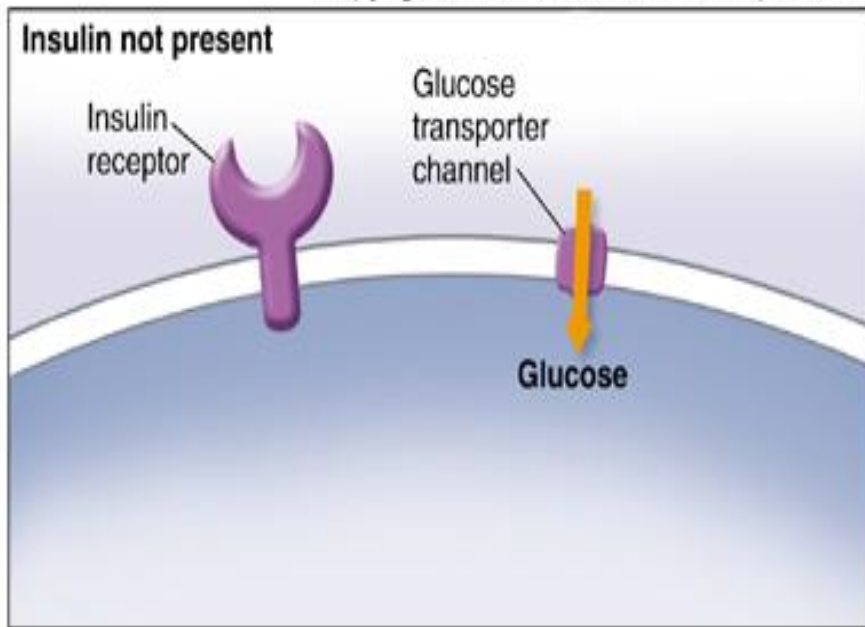
Student Ola's blood sugar



Insulin is the only hormone signaling uptake of glucose from blood

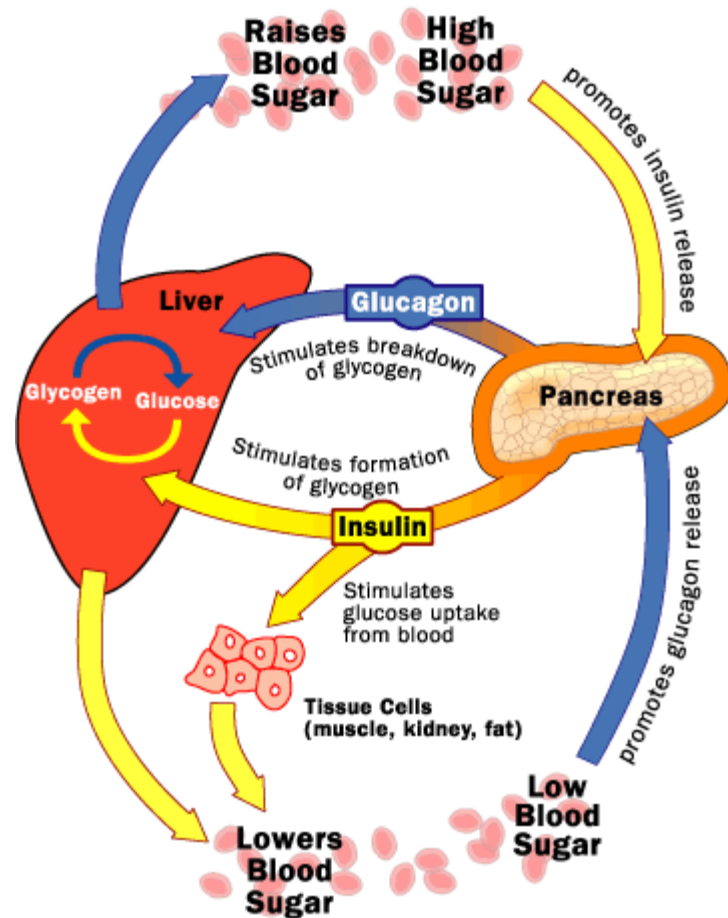
While in restful state insulin is the only hormone signaling uptake of glucose by the cell. Contracting muscle has insulin-like effects.

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Hormones that increase blood sugar

- Glucagon
- Adrenaline
- Cortisol
- Growth hormone



Total reserve of glucose in the body: 20g

- of which 5g is in the blood
- 20grams of glucose provides fuel for:
- starvation: 40min*
- walking: 15min*
- marathon: 4min;*

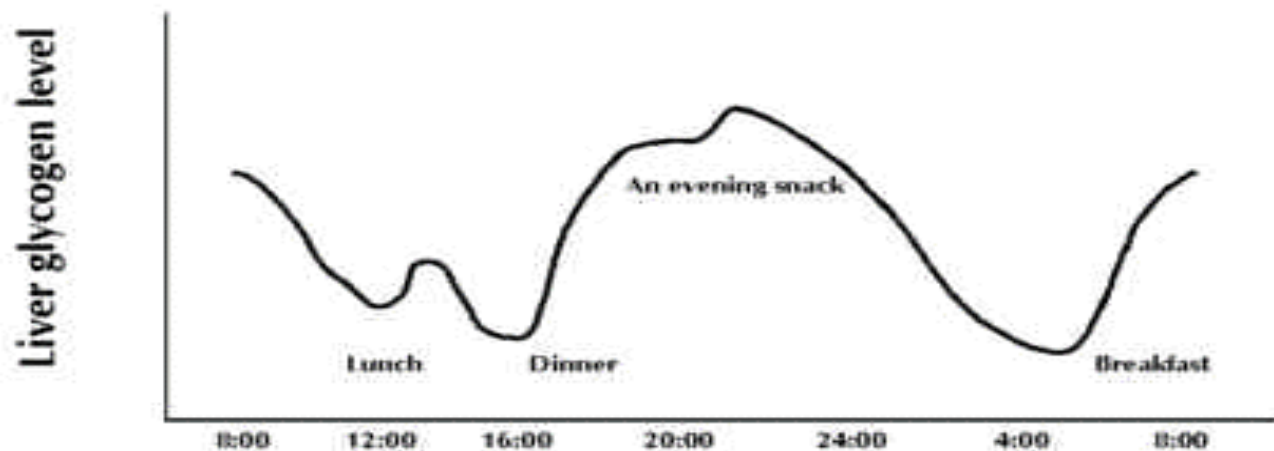
*Twenty grams of glucose give enough energy for
about 40 minutes with little or no activity!*

Total glycogen in the liver: 80g

- Provide fuel for:
- Starvation: 3.5hr
- Walking: 70min
- Marathon: 18min



Liver Glycogen through the Day



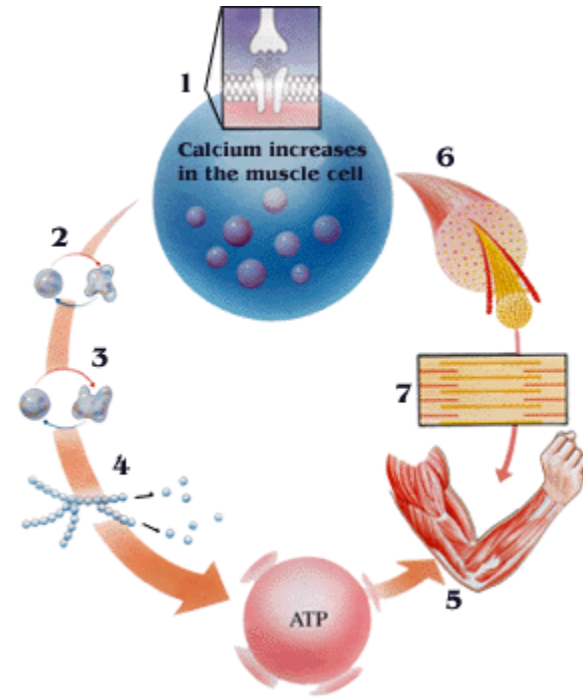
Total glycogen in the muscles: 350g

- 350g glucose provide fuel for:

Starvation: 14hr

Walking: 5hr

Marathon: 80min



Normal and abnormal blood sugar

Diabetes Control Chart

Excellent

Good

Poor

HbA_{1c}
test Score

4.0

5.0

6.0

7.0

8.0

9.0

10.0

11.0

12.0

13.0

14.0

MEAN BLOOD
mg/dL

50

80

115

150

180

215

250

280

315

350

380

GLUCOSE
mmol/L

2.6

4.7

6.3

8.2

10.0

11.9

13.7

15.6

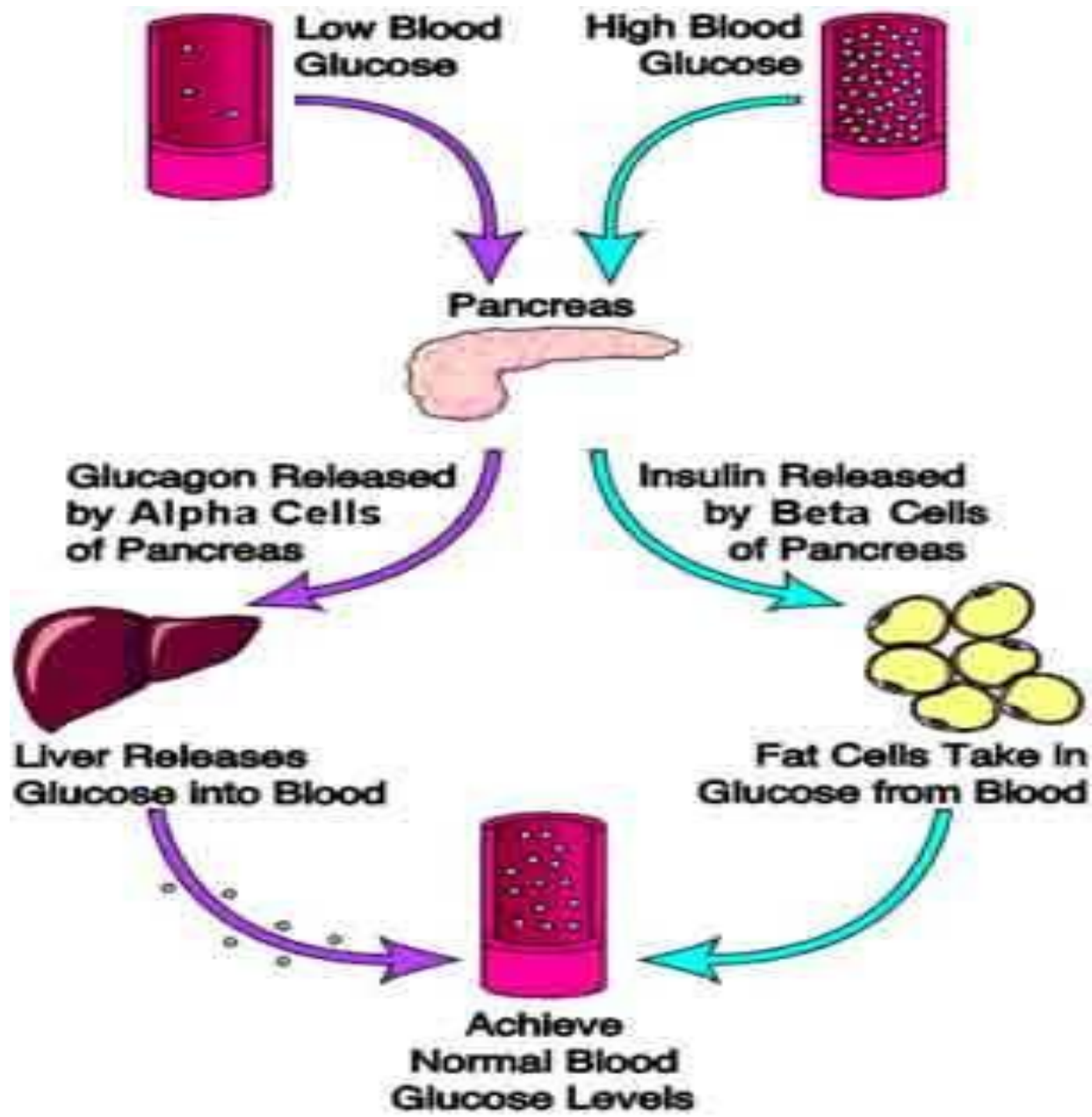
17.4

19.3

21.1



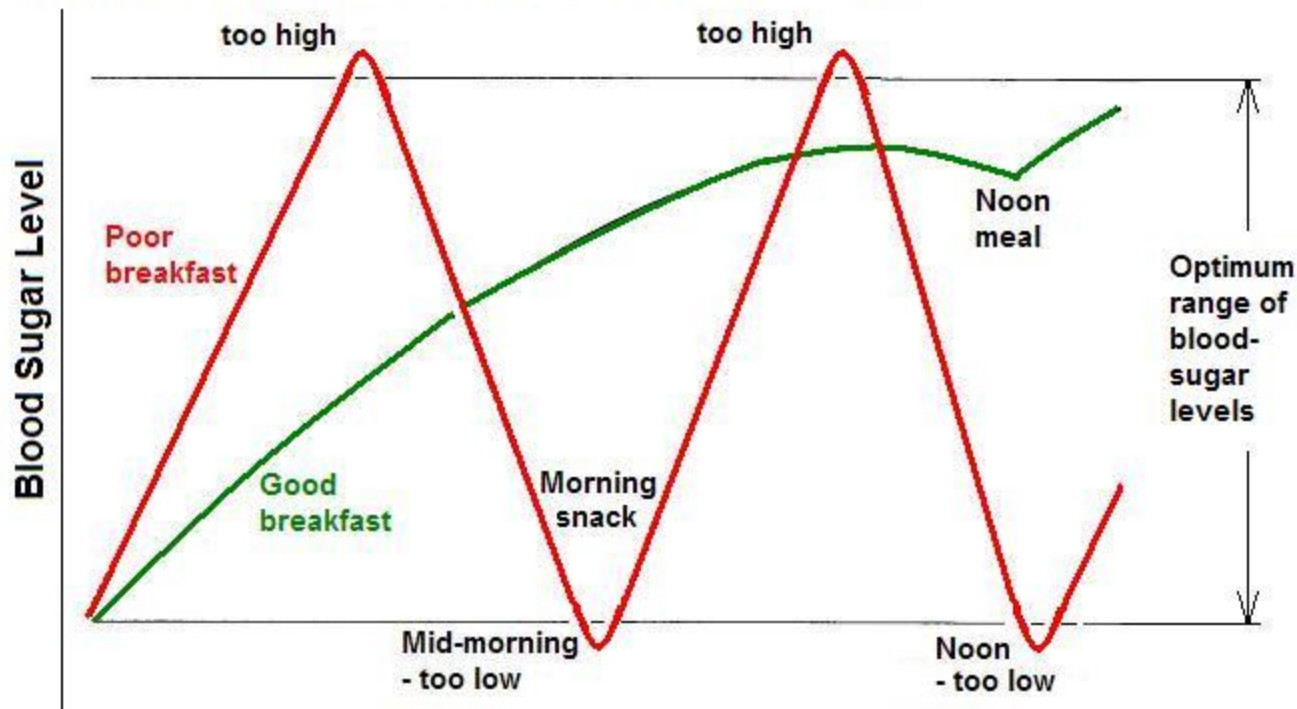
Regulation of blood sugar



Good Breakfast is important

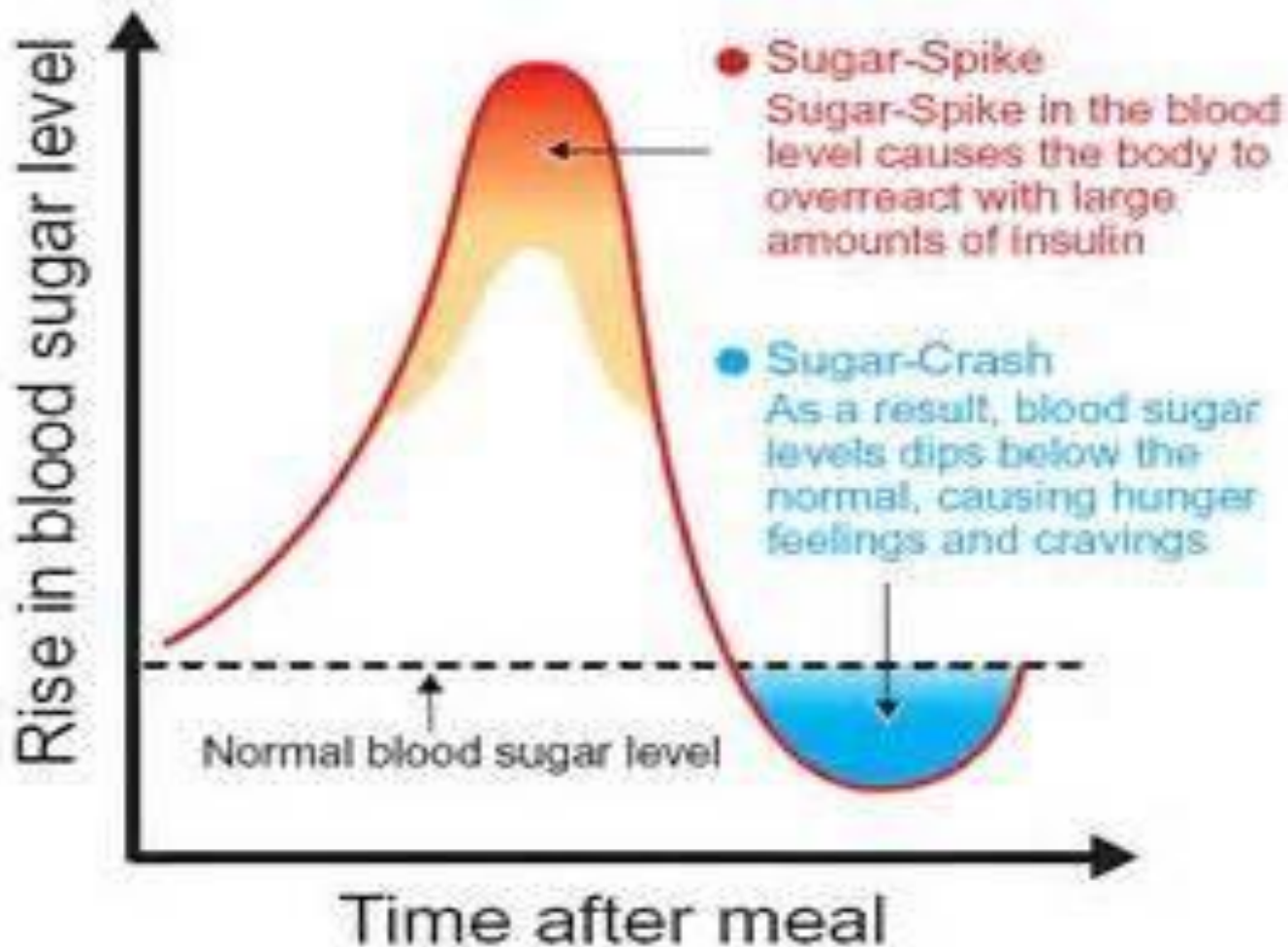
Science has shown that, indeed, breakfast is the most important meal of the day, eat and eat well

Variations in blood-sugar levels resulting from a poor breakfast compared to a good breakfast.

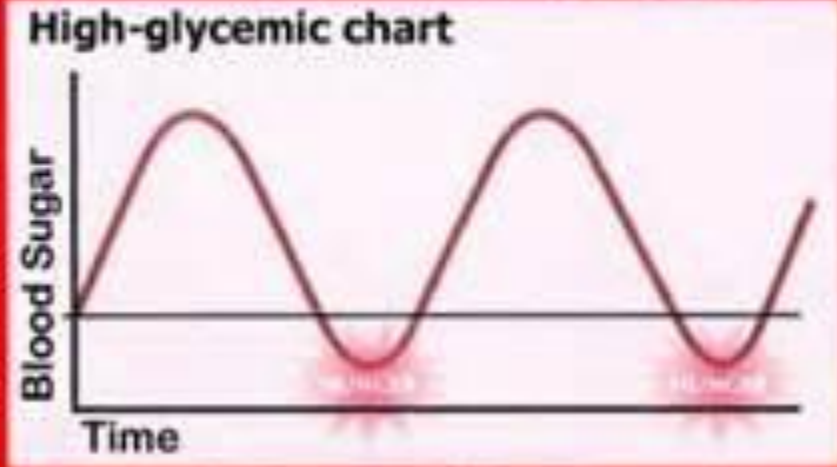


Sugar-spike and Sugar-crash are devastating

Avoid devastating sugar-spike and sugar-crashing



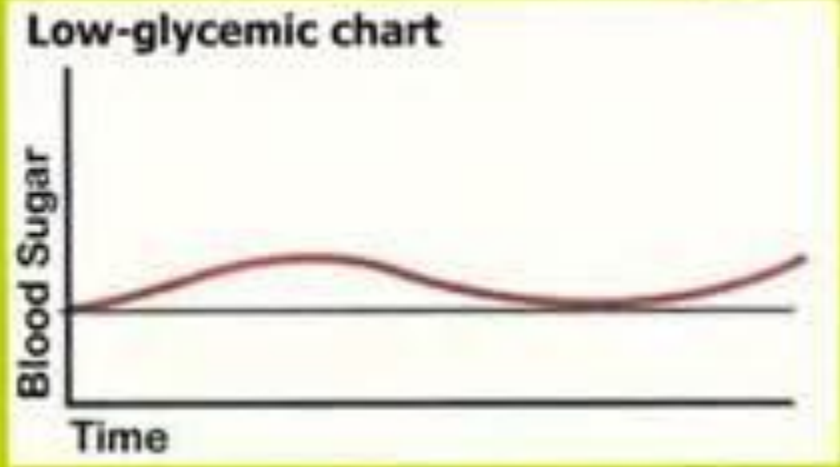
Craving for foods is due to swinging blood glucose



RELEASE ENERGY QUICKLY

↓
FEEL HUNGRY SOONER

↓
EAT MORE



RELEASE ENERGY SLOWLY

↓
FEEL FULL LONGER

↓
EAT LESS

LOW BLOOD SUGAR

Hypoglycemia

SIGNS AND SYMPTOMS



Mood changes



Trembling



Paleness



Sweating



Blurred vision



Dizziness



Headaches



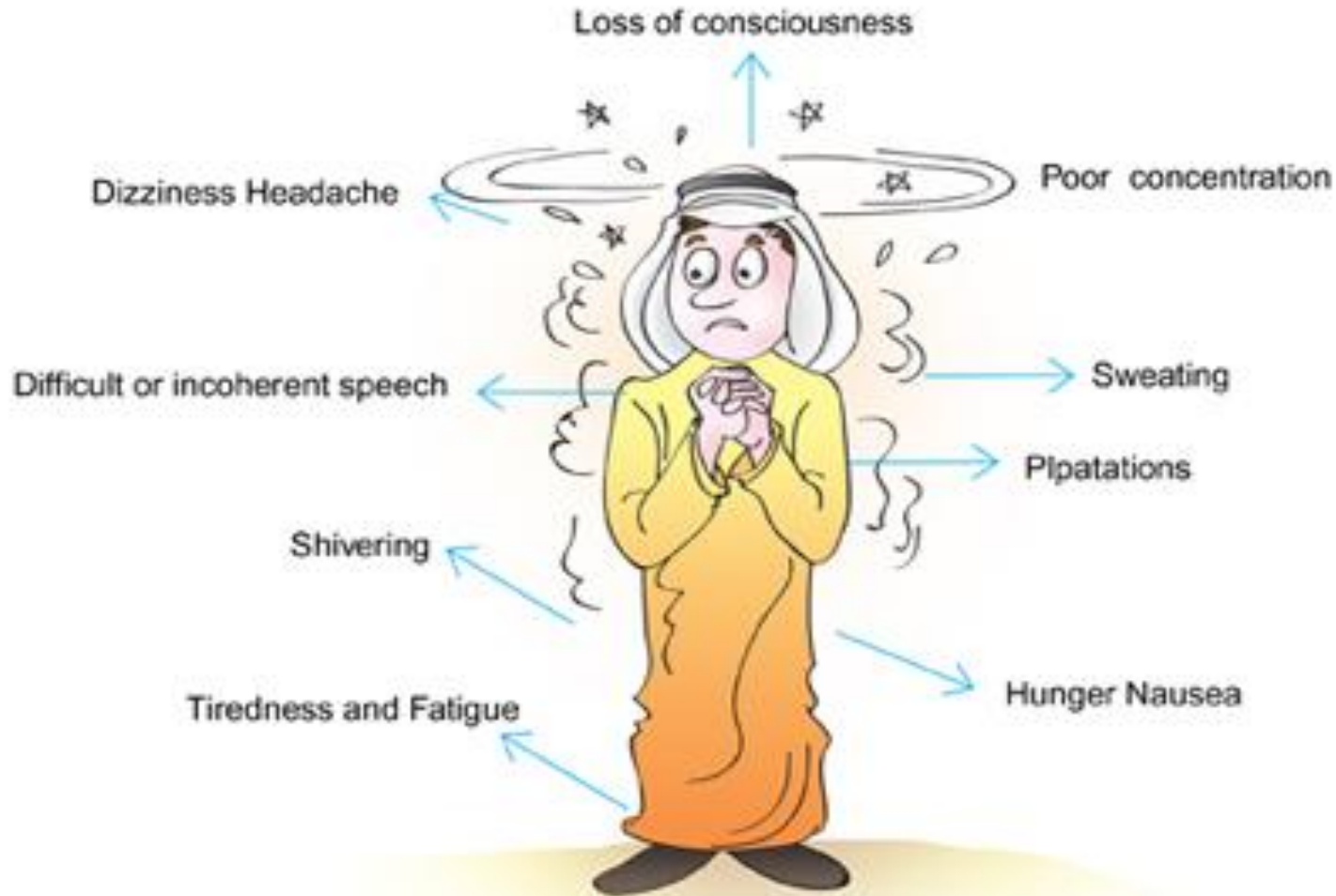
Extreme tiredness



Hunger

Avoid low blood glucose

Symptoms of low blood sugar



Symptoms and signs of low blood sugar

Low Blood Sugar (hypoglycaemia)

Signs that the brain is being affected because blood glucose levels are too low:

- lack of concentration
- loss of consciousness
- altered vision
- peculiar behaviour



Cortisol is a devastating hormone

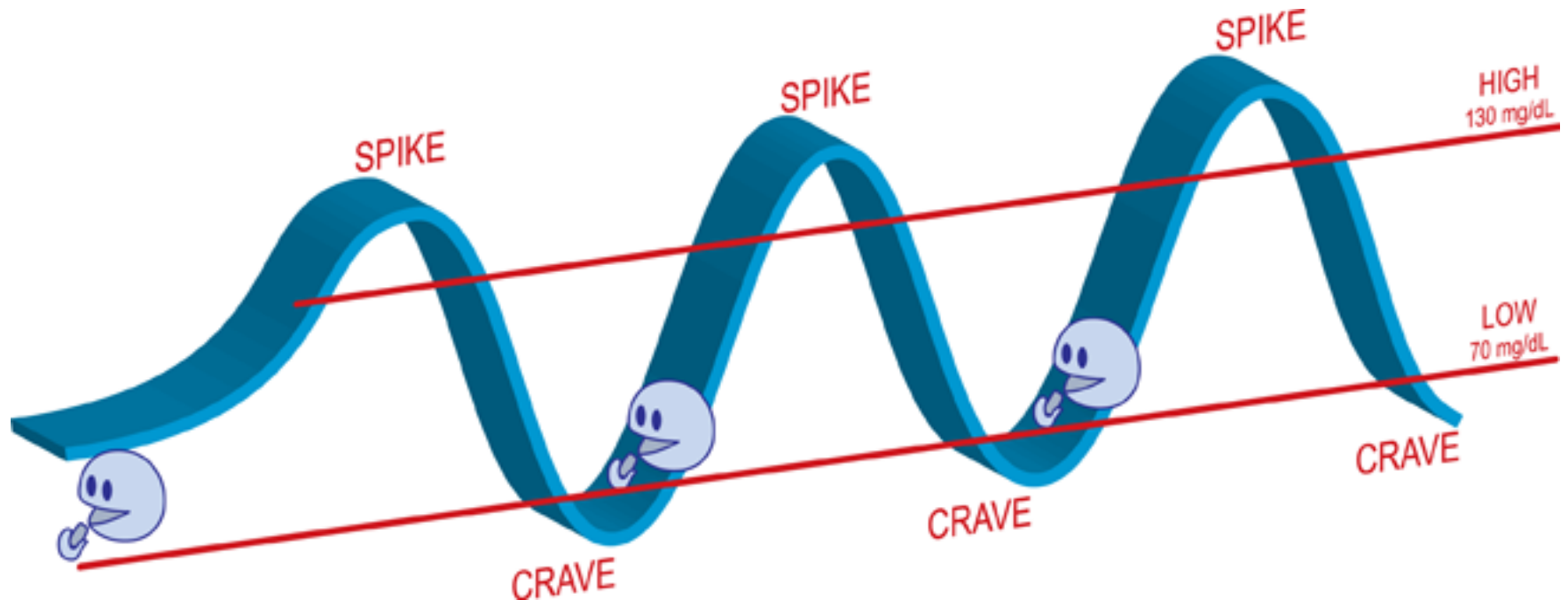
- *While it works on increasing the blood glucose, it promotes protein breakdowns for synthesis of glucose....so avoid high GI foods and consequent craving for high GI foods*

Cortisol worsens swinging blood sugar and break down the body



Ways to avoid swinging blood glucose

Balanced low GI, low glycemic load foods help to keep blood glucose stable and help the body switch to fat burning mode



Our body is gifted with self-healing power,
Good Health to You!



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TCM, Nutrition, Sports Medicine
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