

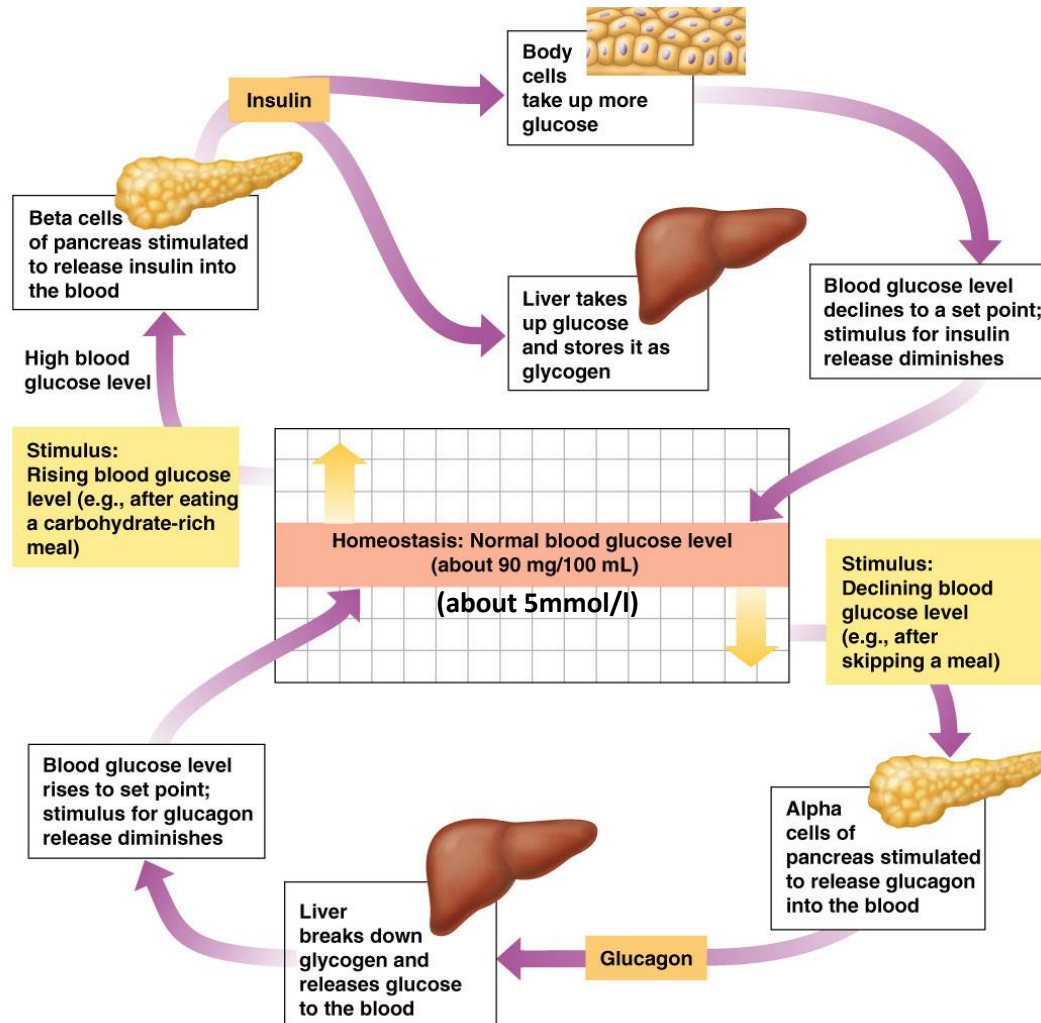
Trouble shooting in a young diabetic

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Agenda

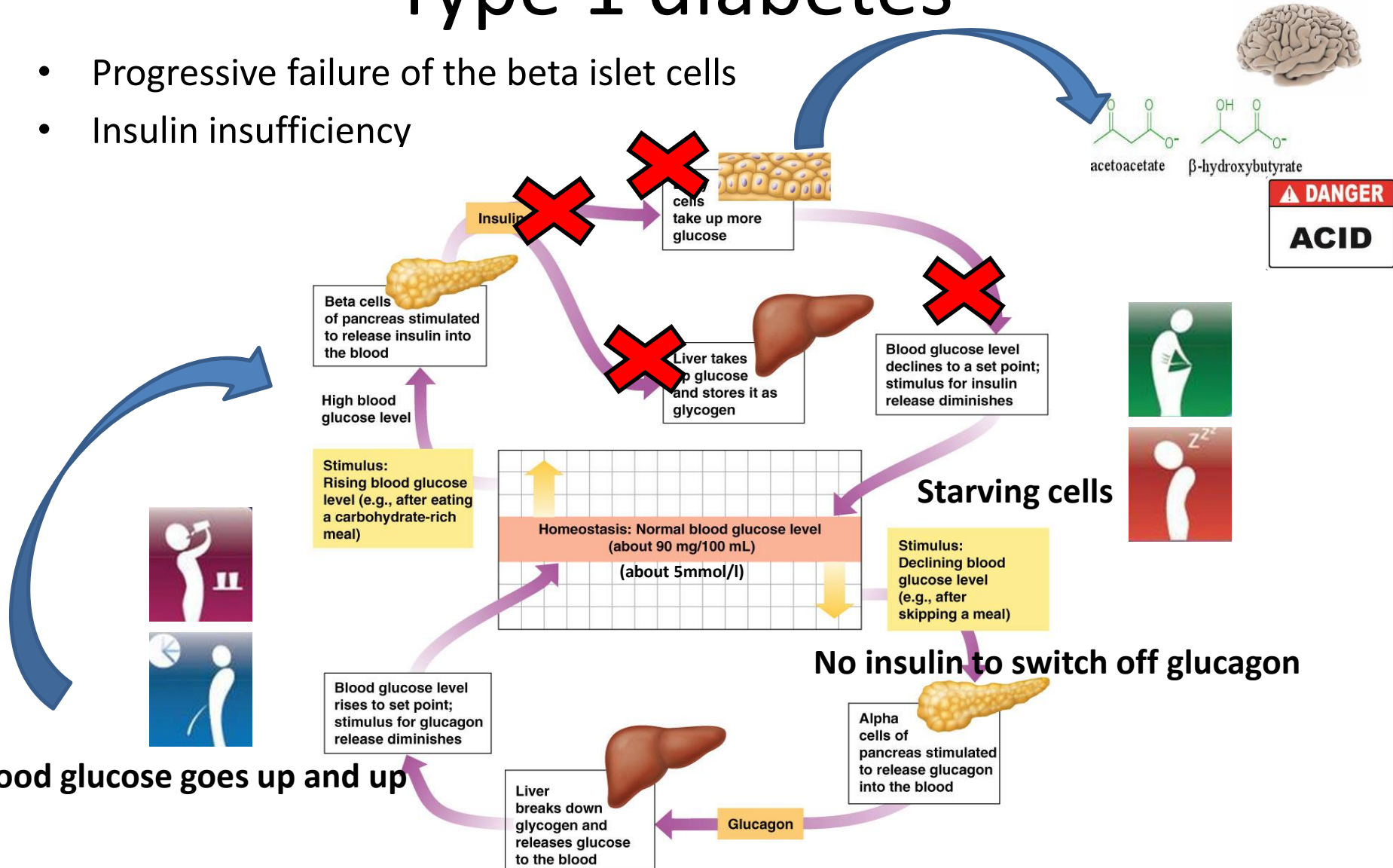
- Introduction
- Pathophysiology
- Case based discussions
 - Diagnosing diabetes
 - Looking after children with diabetes
- Take-home points

Normal glucose homeostasis



Type 1 diabetes

- Progressive failure of the beta islet cells
- Insulin insufficiency



Thinking about the diagnosis

- Toilet?
 - Going more often/'accidents'/gastro's shouldn't pee so much
- Thirsty?
 - Often drinking too much is given as the reason for the 'accident' rather than thinking the other way around
- Tired?
- Thinner?

Case 1

- 13 month old boy presents with vomiting and dehydration
 - Differential diagnosis?

Case 2

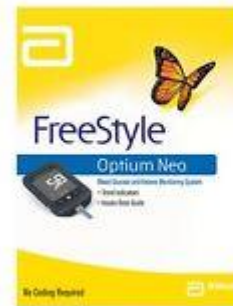
- 13 year old girl feels tired all the time, weight loss from 63 to 54kg
 - Differential diagnosis?

Case 3

- 9 year old girl, stressful social circumstances, starts wetting the bed 3-4 nights per week over the last month
 - Differential diagnosis?

Quick tests

- Urine dipstick – glucose and ketones
- Fingerprick glucose
- Fingerprick ketones



ALWAYS speak to a paed/paed endo

- Diagnosis is 'almost always' type 1, even if type 2 looks more likely
- Remember
 - Children with diabetes often don't look as sick as they are
 - Children are more at risk of DKA
 - Children are more at risk of cerebral oedema
 - DKA can kill
 - Cerebral oedema does kill
 - Don't wait – call as soon as suspect diabetes (no matter the type)!
 - No OGTTs

Case 4

- 7 year old known diabetic, on Protophane basal insulin twice a day, with Humulin R before breakfast, and Novorapid with lunch and supper
- Tonsillitis and refusing to eat
- Blood glucose in your rooms 5.1mmol/l

What advice do you give about the insulins?

Diabetic not eating

- Never omit insulin – ketosis will result

Case 5

- 10 year old boy with flu, woke up with blood glucose of 17.5mmol/l

What advice do you give?

Diabetic with infection

- Sick day rules

Case 6

- 12 year old girl, known diabetic on Humalog pre-meals and Basaglar at night
- Now waking with sugars of 8 to 10mmol/l
- Had her first period last month, and now started this month's
- Blood glucose levels yesterday and today up in the teens

What do you do with her insulins?

Diabetic girl in puberty

- GH and sex steroids cause early morning rise in glucose levels
- Often the first day or two with pain can cause elevated levels
- Correction dosing needed
- Basal adjustment needed

Case 7

- 14 year boy, on insulin pump, rowing for school and league, wants to compete in regatta this weekend, but sugars ranging from 18 to 22mmol/l this week

What advice do you give?

Diabetic exercising with high sugars

- Potential liver damage
- Ketosis

Case 8

- 8 year girl known diabetic and asthmatic, with acute sinusitis symptoms and tight chest

How do you treat her?

Diabetic with allergies/asthma

- Avoid systemic glucocorticoids if possible
- If unavoidable – admit for close monitoring and insulin adjustment

Diabetic with CGMS

- What to do with all that information?!

Diabetic with hypoglycaemia

- Awake/safe to take orally
 - 15g CHO test in 15min
- Glucagon IMI
 - 1mg >20kg 0.5mg <20kg



Some 'new' things

- Insulin prices
- 4mm needles
- Nicer lancets
- Libre flash sensor
- Dexcom G5
- Guardian
- Pump with SmartGuard

Preventing/treating childhood obesity

- BOTH type 1 diabetes and type 2 diabetes in childhood increase with obesity

Friendly paediatric endocrinologists

- Private:

Dr Danelle van der Merwe

Panorama Hospital

- State:

Red Cross War Memorial Children's Hospital

– 021 6585111 “endocrinologist on call please”

Groote Schuur Hospital Ward G5

– 021 4044470 “the diabetes-side's doctor please”