



Remember to measure capillary +/- urine ketone levels if patient is seen in hypoglycaemia

Search for obvious causes

Drugs
...including potentially toxic causes (sulfonylurea hypoglycaemic agents, oral antidiabetics, etc.)

Severe liver failure

Severe malnutrition

Search for warning signs

= Telltale signs of hypoglycaemia:

Fasting time too short for the child's age²

Severe (< 0.4 g/L= 2.2 mmol/L)

Highly symptomatic (convulsions, impaired consciousness)

Past medical history of hypoglycaemia

Ketone levels too low (<2.5 mmol/L)

Or = Associated signs:

Nighttime feeding behaviour

Hepatomegaly

Organ failure

Abnormal height/weight gain

Midline syndrome (micro penis, bilateral cryptorchidism)

Strong aversion to fruit or high-fructose foods

Hypoglycaemia: which procedure and which workups?

No warning signs

Hypoglycaemia following unusually long fasting time

Probable functional hypoglycaemia, no specialist workup required

At least 1 warning sign

Patient seen in Hypoglycaemia

YES

Emergency workup^{1,3} and hospitalisation

The blood samples that must absolutely be taken in hypoglycaemia before administering sugar are underlined

The others can still be analysed if they are taken within 30 minutes of administering sugar

Blood:
Venous blood glucose, Lactate, blood gases, electrolytes with bicarbonates, ammonia levels, PT, factor V, Liver function tests, CPK

Hormones (insulin, peptide C, cortisol, ACTH, GH, + measure GH again 15 minutes later)

Plasma acylcarnitine profile + Ketone levels (capillary or venous) and if possible free fatty acids, +/- toxicology screen

Urines⁵:
Urine dipstick for ketone levels, urine organic acid chromatography (uOAC)

NO

Hypoglycaemia on short fasting time⁴

Seek specialist opinion quickly

Hypoglycaemia on long fasting time⁴

"Minimal" workup before breakfast (no fasting):
Venous blood glucose, ketone levels (capillary or venous), IGF1, cortisol, acylcarnitine profile, BH, PT, V, CPK
Seek specialist opinion quickly with the results

Specialist workup

¹ Excluding neonates and diabetic patients. Refer to the emergency protocol for hypoglycaemia <https://www.filiere-g2m.fr/urgences>. for treatment and sampling instructions

² Fasting time too short for age = fasting < 6 hrs under 12 months, < 12 hrs from 1-5 years and < 24 hrs over 5 years.

³ To be done immediately where there is no obvious cause. The urgent priority is to administer sugar in the event of haemodynamic shock, coma or convulsions.

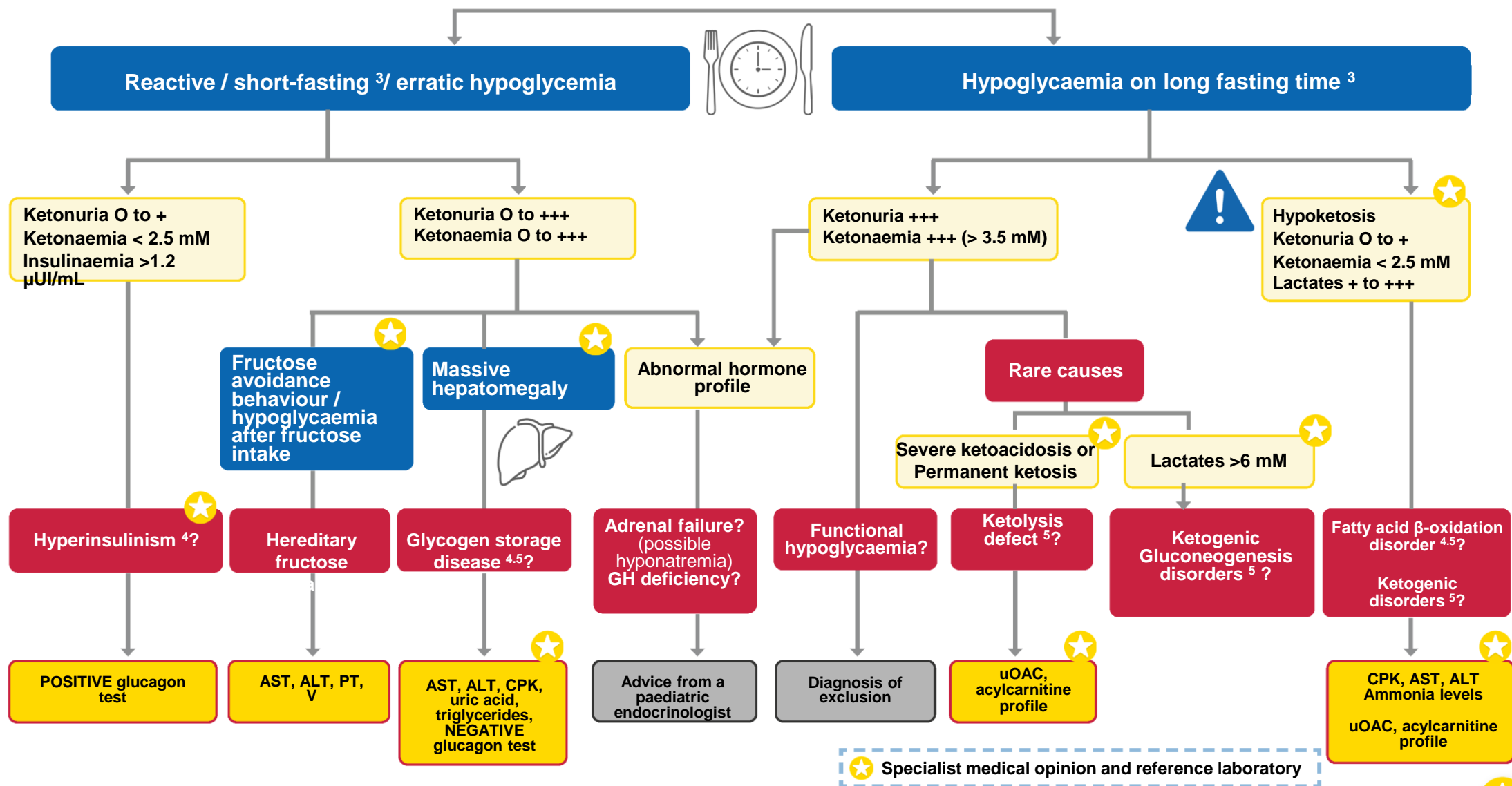
⁴ Definition of fasting time: Short < 4 hrs / Long > 8-10 hrs under 12 months, and > 12 hrs over 12 months.

⁵ Freeze the urine taken closest to the episode of hypoglycaemia if specialist laboratory not accessible.

Seek medical specialist opinion quickly

Details for Inherited Metabolic Diseases Centres of Excellence: <https://www.filiere-g2m.fr/annuaire/>

LENGTH OF FASTING TIME PRIOR TO HYPOGLYCAEMIA



Seek medical specialist opinion quickly:
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¹ Excluding neonates and diabetic patients. Refer to the [emergency protocol for hypoglycaemia](https://www.filiere-g2m.fr/urgences). (<https://www.filiere-g2m.fr/urgences>) for treatment and sampling instructions

² The length of the fasting time prior to hypoglycaemia, together with various clinical aspects (see associated signs Page 1) and with the abnormalities in the workup performed during an episode of hypoglycaemia, point to different causes (red squares). The other main parameters of the laboratory workup that are generally impaired and raise the possibility of these causes are also detailed (orange squares). Confirmatory diagnoses will be made in the Centres of Excellence.

³ Definition of fasting time: Short ≤ 4 hrs / Long $\geq 8-10$ hrs under 12 months, and ≥ 12 hrs over 12 months.

⁴ For more information: PNDs: French National Authority for Health - French National Diagnosis and Treatment Protocols (has-sante.fr).

⁵ For more information: [emergency protocols for each disease: https://www.filiere-g2m.fr/urgences](https://www.filiere-g2m.fr/urgences) and [diagnosis help sheets for each disease: https://filiere-g2m.fr/diagnostic/les-fiches-diagnostiques](https://filiere-g2m.fr/diagnostic/les-fiches-diagnostiques)