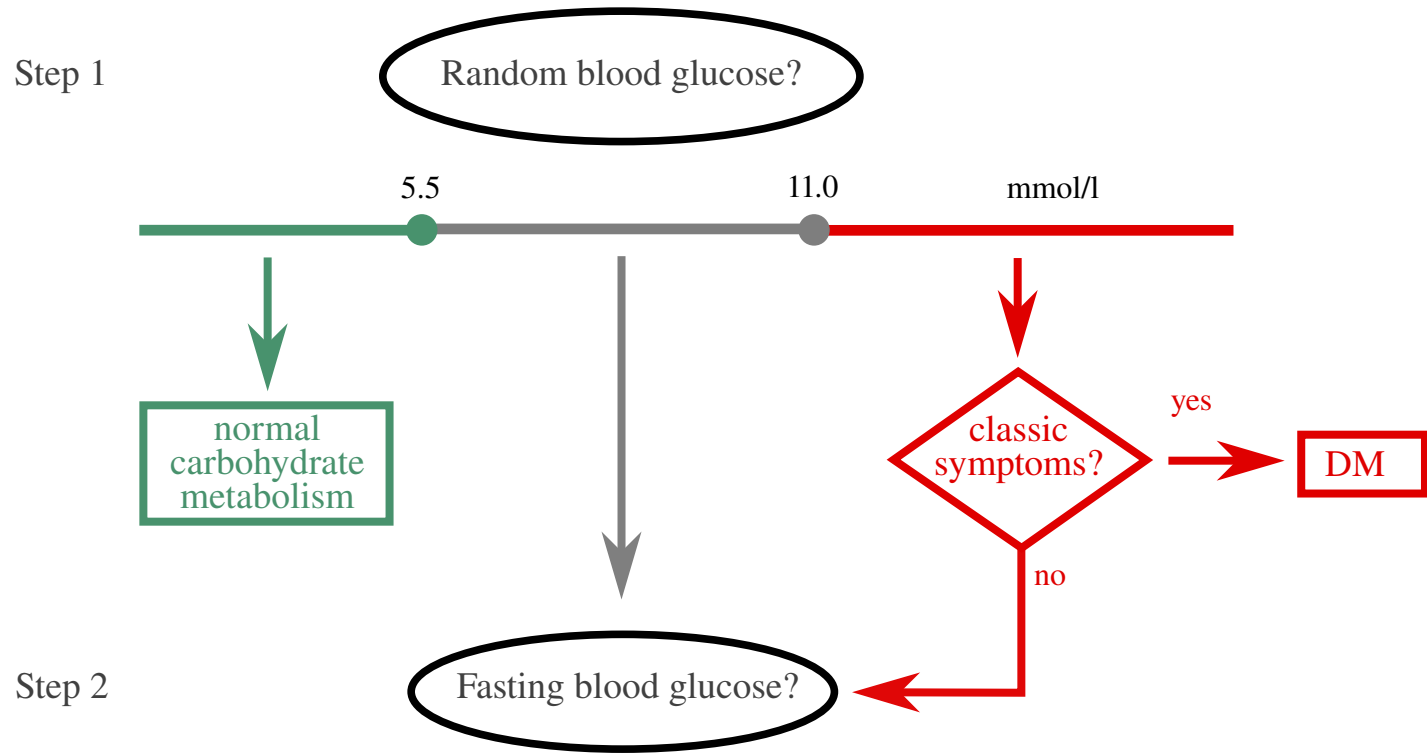# Laboratory evaluation of carbohydrate metabolism

Diagnostic pathway for patients suspected having diabetes mellitus:

1. Random blood glucose (step 1)
2. Fasting blood glucose (step 2)
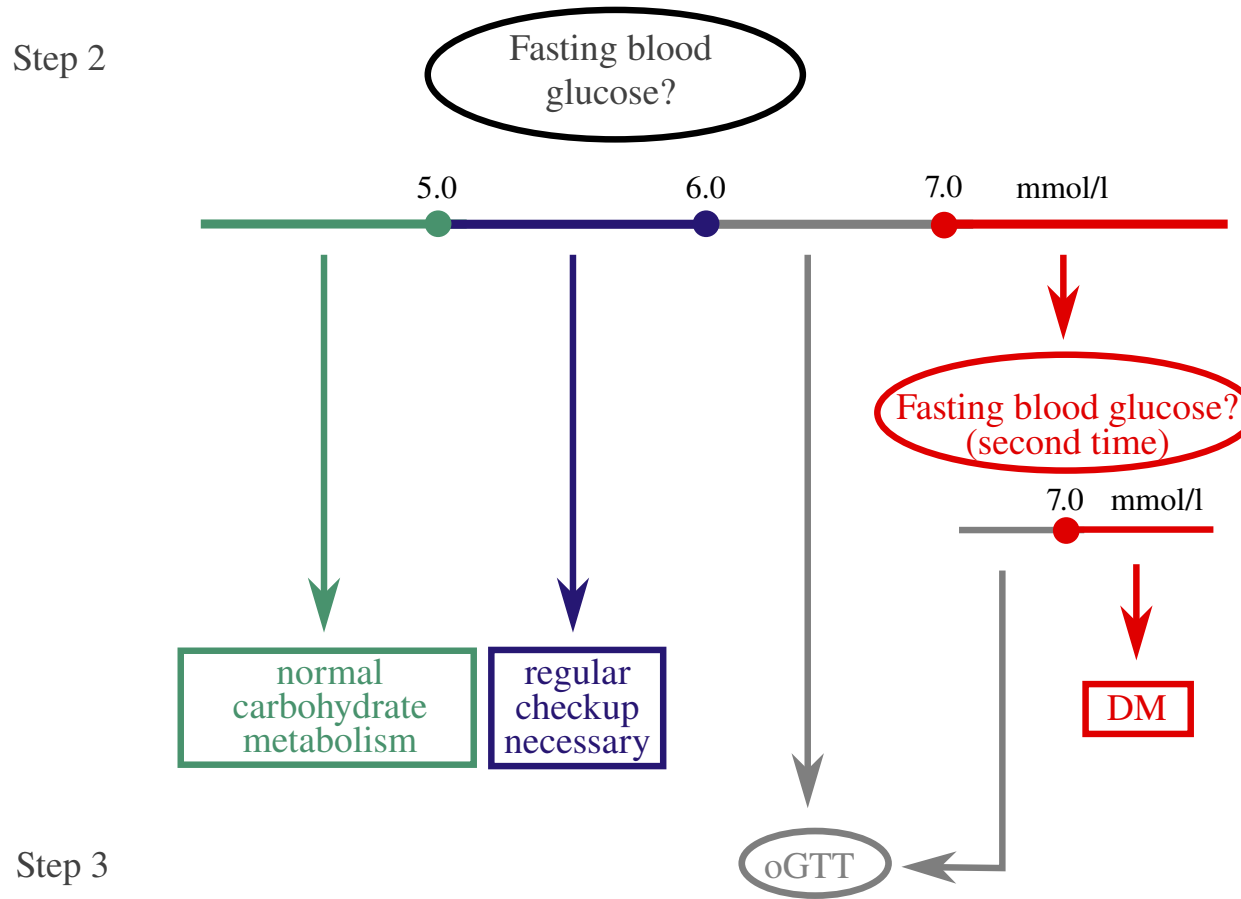3. Oral glucose tolerance test (step 3)

European (WHO) diagnostic algorithm for patients suspected having DM: step 1

Step 1 — Random blood glucose?

5.5   11.0   mmol/l

normal carbohydrate metabolism

classic symptoms? — yes → DM

no

Step 2 — Fasting blood glucose?

Classic symptoms: polyuria, polydipsia, weight loss, with or without ketosis

The first step of the algorithm may be omitted, it is mostly useful for cases with severe hyperglycemia

European[*] (WHO) diagnostic algorithm for patients suspected having DM: step 2

Step 2

Fasting blood glucose?

5.0   6.0   7.0   mmol/l

Fasting blood glucose? (second time)

7.0   mmol/l

normal carbohydrate metabolism

regular checkup necessary

oGTT

DM

Step 3

oGTT

[*] The algorithm used in the USA is somewhat different

European (WHO) diagnostic algorithm for patients suspected having DM: step 3

Step 3

oral glucose tolerance test (oGTT)

[mmol/l]

75 g glucose orally

DM: diabetes mellitus

IGT: impaired glucose tolerance

IFG: impaired fasting glucose

fasting blood glucose measurement

2 hour value

[hours]