1. Consider purpose of measuring venous plasma glucose:

   - If **systematic screening** for diabetes use **fasting** glucose
     - Ensure box for fasting is ticked on the biochemistry request form
     - If box not ticked this will be assumed to be a **random** sample
   - For **opportunistic screening** or **diagnosis** in a symptomatic patient a **random** sample can be used

2. Interpretation of Results:

   Any plasma glucose result (random or fasting) ≤ 5.5 mmol/L makes a diagnosis of diabetes unlikely

   - **Fasting** plasma glucose results
     - A level of 5.6 - 6.9 mmol/L consider an OGTT to diagnose impaired fasting glucose, impaired glucose tolerance or diabetes mellitus (see below)
     - A level of ≥ 7 mmol/L should be repeated if asymptomatic otherwise diagnoses diabetes
   - **Random** plasma glucose results:
     - A level of 5.6 - 11.0 mmol/L check **fasting** plasma glucose
       - If fasting level 5.6-6.9 consider an OGTT
       - If fasting level ≥ 7 mmol/L repeat if asymptomatic otherwise diagnoses diabetes
     - A random level of ≥ 11.1 mmol/L diagnoses diabetes provided the patient is symptomatic, otherwise repeat

**THE ORAL GLUCOSE TOLERANCE TEST (OGTT)**

- Perform OGTT after at least 3 days of unrestricted diet (> 150g CHO daily)
- Fast patient overnight (minimum 10 hours, water allowed) and rest with no smoking or eating/drinking for the duration of the test
- Diagnostic interpretation of OGTT is different in pregnancy

**OGTT**

- Initial fasting venous plasma glucose
- 75g anhydrous glucose dissolved in 200ml–300mls of water (or equivalent, see notes below) to be consumed in no more than 5 minutes, followed by a further 100 mls of water,
- Repeat venous plasma glucose at 2 hours. Patient must rest during the test

<table>
<thead>
<tr>
<th>Fasting venous plasma glucose</th>
<th>2 hour venous plasma glucose</th>
<th>Diagnoses and Management</th>
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</table>
| ≤ 5.5                        | AND                         | < 7.8                    | NORMAL
|                              |                             |                          | No follow up required |
| 5.6 – 6.0 inclusive          | AND                         | < 7.8                    | NOT DIABETIC*         |
|                              |                             |                          | Annual fasting plasma glucose |
| 6.1 – 6.9 inclusive          | AND                         | < 7.8                    | IMPAIRED FASTING GLUCOSE* |
|                              |                             |                          | Annual fasting plasma glucose |
| <7.0 | AND | 7.8 – 11.0 inclusive | IMPAIRED GLUCOSE TOLERANCE* Annual fasting plasma glucose |
| ≥7.0 | OR | ≥ 11.1 | DIABETES |

* Have increased risk of future diabetes and cardiovascular morbidity

Notes on Oral Glucose Preparations (OGTT)

- **75g Anhydrous Glucose** (available on stock order from community pharmacies) dissolved in 200-300ml of water is recommended

  **Alternatives**

  - **Standard Lucozade Energy Original** ® 410 ml (ensure freshly opened bottle)
  - Glucose BP 82.5g dissolved in 200-300ml of water
  - Polycal ® (Nutricia Clinical) 113 ml with extra water to administer a total volume of 200 - 300ml, available in different flavours.

**Diagnoses of Gestational Diabetes**

Oral Glucose Tolerance test in Pregnancy

Gestational Diabetes confirmed if:

- Fasting venous plasma glucose \( \geq 5.1 \text{ mmol/L} \) OR
- 1 hour glucose (OGTT) \( \geq 10.0 \text{ mmol/L} \) OR
- 2 hour glucose \( \geq 8.5 \text{ mmol/L} \)
