Healthy diet, weight control and physical activity

**Healthy diet, weight control and physical activity**

- High
- Low
- Neutral / Loss
- Nausea and diarrhoea
- Low

If metformin not tolerated, consider metformin modified release (MR)

---

**Type 2 Diabetes Mellitus (T2DM) Adult Treatment Pathway**

**Target Blood Pressure**
140/80mmHg (130/80 if complication present)

**Target HbA₁c**
(48-53mmol/mol) 6.5-7.0% or agreed target

**Target Total Cholesterol**
<5mmol/L and LDL<3mmol/L

---

**HbA₁c ≥6.5% after 3-6months, initiate drug therapy:**

**Monotherapy**
- Efficacy
- Hypoglycaemia risk
- Weight
- Side effects
- Costs (£)

**Metformin**

- High
- Low
- Neutral / Loss
- Nausea and diarrhoea
- Low

If metformin not tolerated, consider metformin modified release (MR)

---

**HbA₁c ≥7.5% after ~3months, proceed to:**

**Choose any ONE of the oral treatment options below to ADD to metformin**

**Dual therapy**
- Dipeptidyl peptidase-4 inhibitors (DPP-4-I)
  - "ending gliptin"
- Sodium-glucose-cotransporter-2 inhibitors (SGLT-2-I)
  - "ending flozin"

**Sulfonylurea (SU)**

- High
- Moderate
- Low
- Gain: ~1.5-2kg
- Hypoglycaemia
- Low

**Thiazolidinediones (TZD)**

- High
- Low
- Gain: ~4-5kg
- Oedema, Heart failure, Fractures
- Low

**Injectable treatment to add to metformin**

**Glucagon-like-peptide-1 receptor agonist (GLP-1)**

- High
- Low
- Gain: ~4-5kg
- Nausea (initially)
- High

**Insulin (basal)**

- Highest
- High
- Gain: ~4-5kg
- Hypoglycaemia
- Variable

---

**Suggested oral triple combination based on safety**

- Metformin
- SGLT2-I "ending flozin"
- DPP4-I "ending gliptin"

- Safest: low risk of hypo + weight neutral/loss

---

**HbA₁c ≥7.5% after ~3months, proceed to:**

**Triple therapy**

---

**Efficacy is an estimated improvement in HbA₁c:**

- Highest Efficacy = >2% drop
- High Efficacy = 1-2% drop
- Intermediate efficacy = up to 1% drop

---

**Contact Community Diabetes Nursing Service if HbA₁c not achieved after ~3 months of triple therapy.**
## Antidiabetics

<table>
<thead>
<tr>
<th>Therapeutic class</th>
<th>Drug‡</th>
<th>Physiological action</th>
<th>Costs*</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biguanides</strong></td>
<td>Metformin Metformin MR</td>
<td>↓ gluconeogenesis ↑ peripheral glucose utilisation</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td><strong>Sulfonylurea (SU)</strong></td>
<td>Gliclazide Glipizide</td>
<td>Augments insulin secretion Effective but needs some residual pancreatic β-cell activity</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td><strong>Thiazolidinediones (TZD)</strong></td>
<td>Pioglitazone</td>
<td>↓ peripheral insulin resistance ↓ blood glucose concentration</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td><strong>Dipeptidyl peptidase-4 inhibitors (DPP4-i)</strong></td>
<td>Saxagliptin Vildagliptin Linagliptin Sitagliptin Alogliptin</td>
<td>↑ insulin secretion (glucose-dependent)</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td><strong>Sodium-glucose-cotransporter-2 inhibitors (SGLT2-i)</strong></td>
<td>Dapagliflozin Canagliflozin Empagliflozin</td>
<td>Blocks renal glucose reabsorption ↑ glucosuria</td>
<td>Medium</td>
<td></td>
</tr>
<tr>
<td><strong>Glucagon-like-peptide-1 receptor agonist (GLP-1)</strong></td>
<td>Exenatide Exenatide MR Liraglutide Lixisenatide Dulaglutide</td>
<td>↑ insulin secretion (glucose-dependant)</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

Most of these drugs should not be used if patient has significant renal and/or liver disease, for more details consult British National Formulary (BNF) or Summary of Product Characteristics (SPC).

## Prevention of Cardiovascular disease

### Antihypertensives‡

<table>
<thead>
<tr>
<th>Target Blood Pressure 140/80mmHg (130/80 if complication present)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients aged &lt;55years</td>
</tr>
<tr>
<td>Step 1 Angiotensin-converting enzyme inhibitor (ACEI), if not tolerated angiotensin II receptor blocker (ARB-II)</td>
</tr>
<tr>
<td>Step 2: ACEi / ARB-II + CCB</td>
</tr>
<tr>
<td>Step 3: ACEi / ARB-II + CCB + Thiazide-like diuretic</td>
</tr>
<tr>
<td>Step 4: Resistant hypertension Add Alpha-blocker or Beta-blocker or Spironolactone</td>
</tr>
</tbody>
</table>

### Lipid Management

Primary prevention – Atorvastatin; if 10-year CVD risk ≥10% (QRISK2). Secondary prevention – Atorvastatin

#### References:
5. NICE guidance. Type 2 diabetes: newer agents. May 2009