DIABETES CARE GUIDE

Differentiating between HYPOglycaemia and HYPERglycaemia – Signs and Symptoms

**HYPOGLYCAEMIA**
- Weak and trembling knees
- Headache
- Light headed
- Dizzy
- Trembling hands
- Sometimes feel confused, anxious or irritable
- Looks pale and has a sweaty skin
- Thumping heart
- Pins and needles of the lips and tongue

**HYPERGLYCAEMIA**

**Signs & Symptoms of HYPERGLYCAEMIA.** Capillary glucose (CG) >20 mmol/L
- Polydipsia (extreme thirst), polyuria (increased urination), weight loss, blurred vision, fatigue, gradual onset and skin infections.
- As hyperglycaemia progresses → lethargy and loss of alertness → rarely progresses to COMA.

**Hyperosmolar non ketotic coma (HONK):** Neurological symptoms more common. Dehydration more common in elderly.

**Diabetic Ketoacidosis (DKA):** Hyperventilation with ‘fruity’ breath and abdominal pain, nausea less common in elderly.

**Both are medical emergencies.**

**Treatment of HYPERGLYCAEMIA in the conscious patient**

**Capillary glucose (CG) > 15 mmol/L?**
- Recheck CG in 3-4 hours or before next meal.
- NB: wash patient’s finger before test
- Patient unwell?
- Notify GP!
- Increase frequency of CG monitoring and encourage fluids
- Find cause of illness check for possible UTI
- CG returned to acceptable range for patient – continue routine cares

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**Hypoglycaemia** can progress to stupor, seizure or coma and will become a medical emergency if not treated promptly.

**Treatment of HYPOGLYCAEMIA in the conscious patient**

**Capillary glucose (<4 mmol/L**)
- Give either: ½ cup lemonade or 4 Vita Glucose tablets or 3 heaped teaspoons sugar in water
- Re-test 10 minutes

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**Acceptable Level?**

Be wary of hypos in the elderly who are on sulphonylureas (Glipizide, Gliclazide or Glibenclamide). Glibenclamide is not recommended for use in the older adult because of its very long duration of action.

Re-check capillary glucose again in 3-4 hours after treating the hypo as the action of these medications can cause the capillary glucose to fall again.

**NB:** Notify GP if capillary glucose level is not above 4 mmol/L within 30 minutes but continue with hypo treatment.

**NB:** A one off high capillary glucose reading after eating a sweet treat is not of concern provided the capillary glucose has dropped again before the next meal. Continued high readings above 15 mmol/L are of concern and GP should be requested to review.

**Hyperglycaemic emergencies happen gradually – hours to days**

If unconscious.........This is a medical emergency. If no doctor is immediately available dial 111
KEY RECOMMENDATIONS FOR TYPE 2 DIABETES

KEY MESSAGES:

NB: In the elderly most will have a high CV risk and individualised targets need to be realistic and safe.

- Screen for renal, retinal and foot complications.
- Aim for HbA1c between 7.0% and 8.0% assuming no hypoglycaemia. HbA1c over 8% may still be acceptable in patients with no symptoms and life expectancy less than 12 months.
- Aim for blood pressure below 130-140/80 mm Hg but this may need to be raised to avoid postural hypotension.
- Annual cardiovascular risk assessment.
- People with microalbuminuria or overt nephropathy should be on an ACE inhibitor or A2 receptor blocker plus aspirin.
- Use statin to try and keep LDL cholesterol < 2.5 if appropriate.

Glycaemic control:

- Diet focussed on glycaemic control, cardiovascular risk reduction, weight reduction if is appropriate and tolerated.
- Physical activity.
- Monitor blood sugar.
- Aim for HbA1c 7-8%* check every 3-6 months (advised to be higher in those with frequent hypoglycaemic episodes, hypoglycaemic unawareness, frailty or significant morbidities).
- Refer to specialist: when HbA1c targets cannot be reached because of frequent or severe hypoglycaemic episodes, complications of diabetes.

Reduce cardiovascular (CV) risk:

- Assess CV risk annually using the National Heart Foundation cardiovascular risk chart.
  1. Total cholesterol <4mmol/L, LDL <2.5, Triglycerides <1.7, mmol/L BP <130-140/80 mmHg*. Diet as for glycaemic control + physical activity + smoking cessation.
  2. CV risk >15%: as above + aspirin, drug treatment to lower BP (include ACE inhibitor), lipid modification, glycaemic control where appropriate.
  3. CV risk >20% if previous CV disease (myocardial infarction, angina, ischaemic stroke or TIA).

Preventing active foot problems & lower limb amputation:

- No problems: daily visual inspection + supportive well fitting closed shoes + podiatry.
- Diabetes podiatry review.
- High risk feet: (e.g. previous tissue loss, deformity, peripheral vascular disease, neuropathy) daily visual inspection, podiatry, custom built foot wear or orthotic insoles.
- Clinically infected diabetic foot ulcer: Broad spectrum antibiotic.
- Cellulitus or osteomyelitis (suspected or present): refer promptly for intravenous antibiotics.

Prevent vision loss:

- Retinal screening every 2 years to check for retinopathy.
- Aim for HbA1c 7-8%* BP 130-140/80 mmHg* where appropriate.
- Retinopathy: as above + laser treatment and ongoing monitoring by ophthalmologist.
- Retinopathy is the major cause of vision loss.

Reduce renal disease:

- BP130-140/80* mmHg.
- HbA1c 7-8%*.
- Microalbuminuria: ACE inhibitor or A2 receptor blocker (if not contraindicated) if BP allows.
- Overt diabetic nephropathy or proteinuria: as above + refer to specialist.

For the elderly, individualise the target HbA1c

<table>
<thead>
<tr>
<th>% Units</th>
<th>New units (mmol/mol)</th>
<th>Non diabetic range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6%</td>
<td>&lt;42</td>
<td>?too low (if on insulin or sulphonylurea) check for hypos</td>
</tr>
<tr>
<td>6.5-7%</td>
<td>48-53</td>
<td>Excellent but still be mindful of hypos in the older person</td>
</tr>
<tr>
<td>7-8%</td>
<td>53-64</td>
<td>Good</td>
</tr>
<tr>
<td>8-9%</td>
<td>64-75</td>
<td>Bit high?</td>
</tr>
<tr>
<td>9-10%</td>
<td>75-86</td>
<td>Too high – poor control</td>
</tr>
<tr>
<td>10% or &gt;</td>
<td>86 or &gt;</td>
<td>Exceptionally poor control</td>
</tr>
</tbody>
</table>

* Use as a guide only – see ‘Key Messages’ at the top of this page.

Annual Diabetes review:

The Diabetes care improvement package objectives as at March 2012 are:

1. Systematically screen for the risk factors and complications of diabetes to promote early detection and intervention.
2. Agree on an updated treatment plan for each person with diabetes.
3. Update the information in the diabetes register used as a basis for clinical audit and planning improvements to diabetes services in the area.
4. Prescribe treatment and refer for specialist or other care if appropriate.