



# Diabetes

*Definition: deficiency of insulin or a decreased responsiveness to insulin*

Insulin:

- Hormone which is necessary for the use and storage of body fuels (sugar)
- Causes muscle cells, fat tissue and the liver to take up and use glucose (creation of energy)
- Suppresses ketone formation in the liver
- Produced in the pancreas
- Released from Beta ( $\beta$ ) cells in the Islets of Langerhans as a result of excessive blood sugar levels

Hypoglycemia	Hyperglycemia
<div style="text-align: center;">  </div> <p style="text-align: center;">Too much insulin      Low blood sugar</p> <p><b>Causes</b> – the patient may have:</p> <ul style="list-style-type: none"> <li>• Missed a meal</li> <li>• Eaten but increased physical activity</li> <li>• An imbalance caused by illness</li> </ul>	<div style="text-align: center;">  </div> <p style="text-align: center;">Not enough insulin      High blood sugar</p> <p><b>Causes</b> – the patient may have:</p> <ul style="list-style-type: none"> <li>• Eaten too much sugar</li> <li>• Not taken their insulin</li> <li>• An illness that changes the requirements of a diabetic routine</li> <li>• Taken bad (expired) insulin</li> </ul>
<p><b>Signs &amp; Symptoms:</b></p> <ul style="list-style-type: none"> <li>• Increased heart rate</li> <li>• Signs of shock</li> <li>• Lethargy</li> <li>• Slurred speech</li> <li>• Unusual behaviour</li> <li>• Agitation</li> <li>• Confusion</li> <li>• Appearance of drunkenness</li> <li>• Fast onset</li> </ul>	<p><b>Signs &amp; Symptoms:</b></p> <ul style="list-style-type: none"> <li>• Frequent urination</li> <li>• Excessive thirst</li> <li>• Excessive hunger</li> <li>• Vomiting</li> <li>• Sweet odour on breath</li> <li>• Altered level of consciousness</li> <li>• Warm, flushed skin</li> <li>• Weak, rapid heart rate</li> <li>• Decreased blood pressure</li> </ul>

**Type 1 Diabetes:**

- Insulin is completely or almost completely absent from blood plasma
- Insulin therapy is essential (usually via injection on a regular basis)

**Type 2 Diabetes:**

- Insulin present in blood plasma at normal or near normal levels
- Target cells suffer a hyporesponsiveness to insulin
- Generally related to obesity and is considered a “lifestyle disease”
- May also develop a defect in Beta cells, which limits production of insulin

**Treatment**

- Assess ABCs and level of consciousness
- Establish and maintain airway, give oxygen if trained to do so
- Give oral glucose or substitute *if patient is alert enough to protect their airway*
- If possible, have patient check their sugar level
- Get medical help and arrange for transport

**Important questions to ask:**

- What type of diabetes do you have?
- Have you taken your normal insulin (if required)?
- Have you followed your normal diet?
- Has there been any excess physical activity compared to your normal routine?
- When was the last time you saw your physician about your diabetes?