

Diabetes Facts And Figures

Diabetes Mellitus Is A Chronic Disease, Characterized By High Blood Glucose Levels

- The human body uses glucose as its main source of energy and metabolises this from foods containing carbohydrates
- Glucose is transported in the blood and called **Glycaemia**
- The glucose must transfer from the blood into the body cells to allow the body to function
- This process of energy conversion within the cells is called **Glucose Metabolism**

Insulin

- **Insulin** is a hormone produced in the pancreas
- Insulin is responsible for opening the glucose channels that allow the glucose to transfer from the blood to the cells where glucose metabolism takes place
- In diabetes, the pancreas either cannot produce insulin, or the insulin that is produced cannot work properly
- Without insulin performing its role, the glucose channels remain closed, causing glucose to build up in the blood, which then leads to high blood glucose levels - **Hyperglycemia**
- High glucose levels cause significant health problems linked to diabetes

Diabetes Complications

- Blindness
- Kidney Failure
- Neuropathic Complications
- Coronary Heart Disease
- Hypertension
- Cardiac Abnormalities
- Strokes
- Peripheral Vascular Disease

Diabetes Facts

- 90% of people with Type 2 diabetes are overweight or obese¹
- Diabetes patients are 2-3 times more likely to have cardiovascular disease²
- 80% of all diabetes sufferers die of cardiovascular disease¹
- 20.8 million people or 7% of the US population have diabetes³
- Total direct/indirect costs- \$132 billion⁴

Diabetes Treatment

- Goal: maintain the blood glucose levels as close to non-diabetic range as possible
- Measurement – **Hemoglobin A1c (HbA1c)**
 - 3.5-5.5% is non-diabetic
 - 4-6% is acceptable in diabetes
 - >7% =poor control of blood sugar
- Treatment also includes lifestyle management
 - Continuous monitoring of diet
 - Regular exercise regime
- Nearly 50% of diabetes patients are also being treated for hypertension⁵

Disease Progression



For both Type 1 and Type 2 Diabetes, the aim of any diabetes treatment program is to maintain the blood sugar level as close to normal range as possible and reduce cardiac risk.

Types Of Diabetes

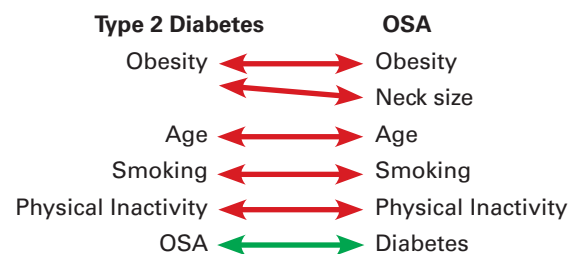
Type 1 Diabetes

- The pancreas cannot produce insulin because the insulin producing cells have been destroyed by the body's own immune system
- Least common form of diabetes – affecting 5-10% of all diabetes patients
- Type 1 diabetes can not be prevented or cured

Type 2 Diabetes

- This is a lifestyle disease where poor nutritional behaviour leads to elevated blood glucose levels
- Continuously high glycaemia increases the insulin demand from the insulin-producing β -cells in the pancreas
- The pancreas is able to produce insulin but when the β -cells become overloaded, the insulin production reduces to a point where it is insufficient to meet the body's requirements
- This leads to a low sensitivity, within the body, to insulin
- Type 2 diabetics are "**Insulin Resistant**"
- Type 2 diabetes is often associated with high cholesterol, high blood pressure and obesity
- Most common form of diabetes – affecting 85-90% of all diabetes patients
- Type 2 diabetes is preventable but not curable

Diabetes & OSA Risk Factors



1. FEND 2. Diabetes Australia 3. CDC NHIS Report 2005 4. ADA 2002
5. Fuller et al