

# Diabetes patient

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- Diabetes mellitus is a clinical syndrome characterised by hyperglycemia caused by absolute or relative deficiency of insulin.
- characterized by abnormally elevated blood glucose level and dysregulation of carbohydrate , protein & lipid metabolism.

## ❖ Type 1 diabetes mellitus

- Beta cell destruction usually leading to absolute insulin deficiency
- Immune mediated
- Idiopathic

## ❖ Type 2 diabetes mellitus

- Insulin resistance and relative deficiency

**Etiologic classification of Diabetes Mellitus**

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To minimize the risk of an intraoperative emergency, clinicians need to consider some issues before initiating dental treatment.

- **Medical history:** Take history and assess glycemic control at initial appointment.
  - Glucose levels
  - Frequency of hypoglycemic episodes
  - Medication, dosage and times.
  - Consultation

### ❖ Scheduling of visits

- Morning appointment
- Do not coincide with peak activity.

### ❖ Diet

- Ensure that the patient has eaten normally and taken medications as usual.

### ❖ Prophylactic antibiotics

- Established infection
- Pre-operation contamination wound
- Major surgery

## ❖ Blood glucose monitoring

- Measured before beginning. ( $>70$  mg/dL)

## ❖ During treatment

- The most complication of DM occur is hypoglycemia episode.
- Hyperglycemia

## ❖ After treatment


- Infection control
- Dietary intake
- Medications : salicylates increase insulin secretion and sensitivity → avoid aspirin.

- Inquire about the medication, the type, severity and control of diabetes, the physician treating the patient and the date of last visit
- The dentist should be aware of the patient's recent glycated hemoglobin values.
- HbA<sub>1c</sub> values of less than 8% indicate relatively good glycemic control; greater than 10% indicate poor control
- When the level of control of diabetes is not known, consult patients physician and the treatment should be just limited to palliation

- In patients with good glycemic control before starting any procedure, verify that the patient has taken medication and diet as usual
- Patients, receiving good medical management without serious complications such as renal disease, hypertension, or coronary atherosclerotic heart disease, can receive any indicated dental treatment
- Local anesthesia is preferred, but such patients can even be safely treated in general anesthesia
- Morning appointments should be preferred because this is the time of high glucose and low insulin activity
- This reduces the risk of hypoglycemic episodes during the dental procedures



- Appointments should be of short duration
- a source of glucose such as an orange juice must be available in the dental office to avoid hypoglycemic attacks
- Prophylactic antibiotics for patients taking high doses of insulin to prevent post-operative infection are recommended
- It's best to do surgery when blood sugar levels are within normal range

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- ❖ To avoid hyperglycemia use anxiety reduction protocol
  
  - ❖ Emotional stresses and painful conditions increase the amount of cortisol and epinephrine secretion which induce hyperglycemia so
    - pre-treatment anxiety should be reduced by sedation
    - pain during procedures can be avoided by a potent anesthesia


- If the dental needs are urgent and blood sugar is poorly controlled, treatment should be provided in a hospital or other setting where more medical professionals can monitor patient
- The **most common diabetic emergency** which a dentist encounters is **hypoglycemia**
- it can lead to life-threatening consequences
- it occurs when the concentration of blood glucose drops below **60 mg/dL**

- Insulin shock is a hypoglycemic reaction to over dosage of insulin, a skipped meal, a strenuous exercise by an insulin dependent diabetic( type I).

### ❖ Features

- confusion, sweating, tremors, agitation,
  - anxiety, dizziness, tingling or numbness, tachycardia.
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- Severe hypoglycemia may result in seizures or loss of consciousness , convulsions and coma.

- As soon as such signs or symptoms are present the dentist should check the blood glucose with a glucometer.
- Establish adequate airway, breathing & circulation by loosening dress near the neck, switching on the fan/air conditioners
- place the patient in the head-low-feet-up position

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- ❖ If patient is conscious and able to take food by mouth, give 15g of oral carbohydrate in one of the following forms;
- 4-6 ounce fruit juice or soda,
  - 3-4 teaspoon sugar,
  - a hard candy.
  - Small amount of honey/sweet syrup can also be placed in the buccal fold

- In unconscious patients, give **50ml of dextrose** in 50% concentration or **1mg glucagon** intravenously, or give 1ml glucagon intramuscularly at almost any body site.
- Following treatment, the signs and symptoms of hypoglycemia should resolve in 10 to 15 minutes
- The patient should be observed for 30 to 60 minutes after recovery.
- Normal blood glucose level is confirmed by a **glucometer** before the patient is allowed to leave



- ❖ As soon as such signs or symptoms are present the dentist should check the blood glucose with a glucometer,, the “**Golden Rule**” is that manage the patients as if they are hypoglycemic until proven otherwise



## DENTAL MANAGEMENT OF THE DIABETIC DENTAL PATIENT.

POTENTIAL COMPLICATION	PREVENTIVE MEASURES
<b>Hypoglycemia</b>	<ul style="list-style-type: none"><li>■ Thorough medical history and consultation with physician to assess glycemic control, disease severity and medications with hypoglycemic potential</li><li>■ Monitoring of blood glucose level and dietary intake before treatment</li><li>■ Avoidance of peak activity periods of insulin or oral antidiabetic medications</li><li>■ Recognition of signs and symptoms of low blood glucose level, and timely administration of carbohydrate source (oral, intramuscular, intravenous)</li></ul>
<b>Infection and Delayed Wound Healing</b>	<ul style="list-style-type: none"><li>■ Frequent dental visits to assess plaque control and to identify risk factors for periodontal disease, caries and oral candidiasis</li><li>■ Postoperative antibiotic therapy if warranted</li><li>■ Avoidance of smoking</li></ul>
<b>Salivary Gland Dysfunction and Oral Burning</b>	<ul style="list-style-type: none"><li>■ Maintenance of adequate oral hydration (water, ice chips, saliva substitutes, sugarless gum)</li><li>■ Restriction of caffeine and alcohol intake</li></ul>

## Conclusion