

# An Update on Oral Health Considerations of Diabetes Mellitus – Special tips to a General Dental Practitioner.

*Presented By*



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# Definition

Diabetes mellitus is a metabolic disorder characterized by dysregulation of carbohydrate, protein, and lipid metabolism leading to elevation of blood glucose levels, resulting from either a defect in insulin secretion from the pancreas, a change in insulin action, or both.

**Diabetes** – to siphon / pass through

**Mellitus** – sweet

# Classification

- Type 1-Insulin dependent DM (IDDM)
- Type 2-Non-Insulin dependent DM (NIDDM)
- Type 3-Gestational Diabetes
- Others-
  - Genetic defects
  - Pancreatic disease
  - Infections
  - Drug induced
  - other genetic syndromes

# Risk Factors

- Family History

- Age

- Inactivity

- Overweight



# Clinical Features

## Early Features

Polyuria  
Polydipsia  
Polyphagia  
Confusion  
Weakness

## Late Features

Abdominal Pain  
Dehydration  
Nausea  
Paresthesia  
Shock  
Coma & Death

# Diagnosis

*Based on History, Clinical Signs & Symptoms*



*Diagnosis*

## Blood Examination

- Nonfasting plasma glucose  $\geq 200\text{mg/dl}$
- Fasting plasma glucose  $\geq 126\text{mg/dl}$
- Two hr postprandial glucose  $\geq 200\text{mg/dl}$ .

- Oral Glucose Tolerance Test

- Glycated Haemoglobin

- Plasma fructosamine

- Blood Lipids

Urine Testing

- For presence of glucose, ketone bodies, and proteins.

# Management

- DIET

- EXERCISE

- WEIGHT CONTROL

- Oral Agents

- Intradermal injection - Insulin





# Oral Manifestations in DM

- Periodontal disease
- Dental caries
- Salivary gland dysfunction
- Altered wound healing
- Fungal infections
- Oral burning and taste disturbances
- Lichen planus & Lichenoid reactions
- Geographic tongue & Fissured tongue
- Halitosis

## Periodontal disease

- Diabetes is a risk factor for the prevalence & severity of gingivitis and periodontitis.
- 3 times greater in diabetic patients
- Multiple Periodontal abscess – Most common finding.



## Dental caries

- Controversy
- Due to Xerostomia & ↑ glucose in GCF

## Salivary gland dysfunction

- Xerostomia  
40-80% of poorly controlled diabetes.  
Drugs

## Delayed wound healing

As a result of production of collagenase



dissolution of recently synthesized collagen



Alteration of wound healing → Recurrent infections

## Fungal infections

Oral candidiasis

Mucormycosis (rarely)

Denture stomatitis

Angular cheilitis

As a result of → Xerostomia

↑ Salivary glucose levels  
& Immune dysregulation

Burning mouth



Occurs due to

Peripheral neuropathy

Xerostomia

Candidiasis



taste abnormalities



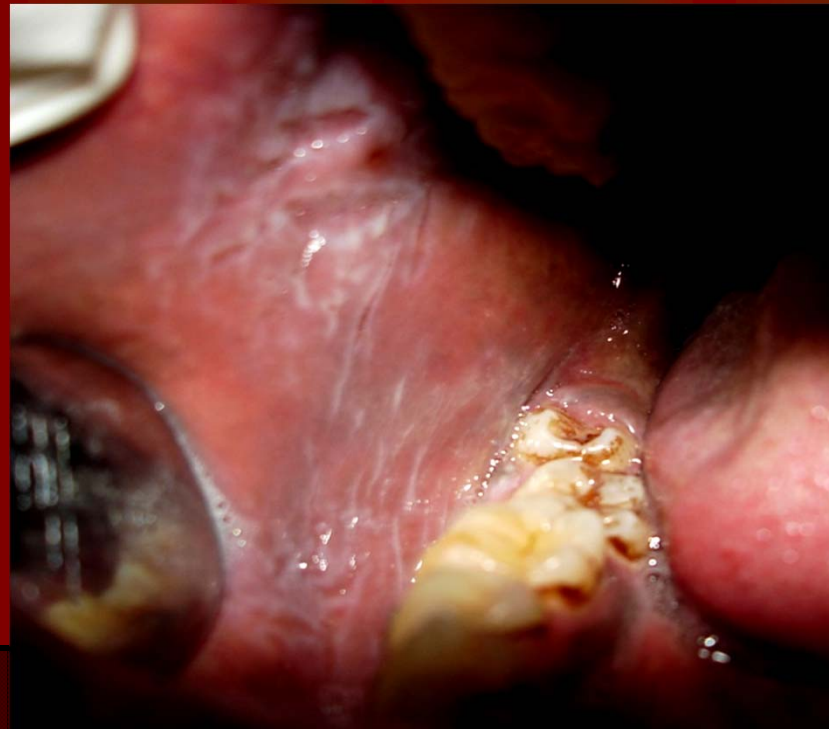
Xerostomia

Disordered -

glucose receptors

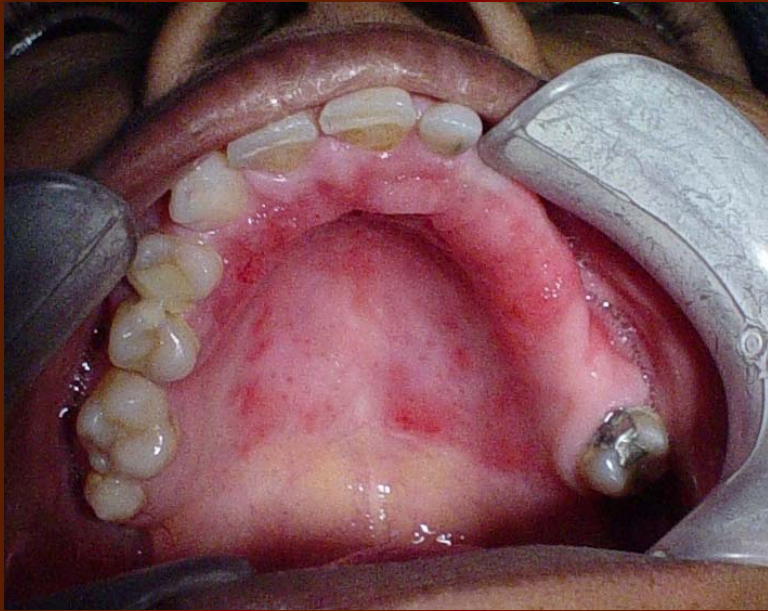
# Lichen planus & Lichenoid reactions

Side effects of Oral hypoglycemic drugs  
(Chlorpropamide)

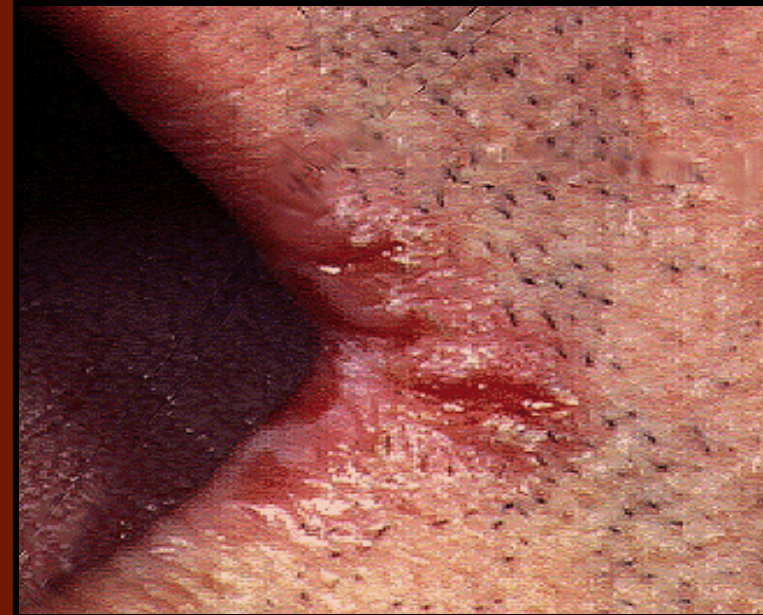




DENTURE STOMATITIS



ANGULAR CHELITIS



ERYTHEMATOUS  
CANDIDIASIS





# Key dental considerations in Diabetic patients

- Appointment timings should be after normal breakfast early to mid morning on normal antidiabetic treatment as it reduces the risk of hypoglycemia...
- Check the blood sugar level
- Give oral glucose
- Prophylactic antibiotic therapy

- Stress reduction

conscious sedation in anxious pts

LA can be used safely

- Drugs

Aspirin and Steroids should be avoided as they enhance the effect of oral hypoglycemics



- Frequent dental visits to assess plaque control
- Symptomatic treatment for burning mouth
- Saliva substitutes for Xerostomia

# Management of Diabetic Emergencies in Dental office

## Hypoglycemic shock

15gm of oral carbohydrate.

or 50ml of 50% dextrose solution.iv.

or 1mg of glucagon.iv.im.or sc.

## Hyperglycemia

- Opening the airway and administering oxygen,
- supporting circulation, monitoring vital sign
- patient should be transported to a hospital as soon as possible

# Conclusion



- DM is a metabolic condition affecting multiple organ systems.
- Dental professionals should have a thorough understanding of the implications of diabetes on dental care and help these patients achieve and maintain the best possible oral health.





# THANK YOU

