

# **Drugs and Toxins affecting teeth**

**Presented**

**By**

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# Learning objectives

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- ✘ Drugs induced oral side effects
- ✘ Drugs affecting teeth development
- ✘ Drugs affecting teeth and gum
- ✘ Toxins affecting teeth and gum
- ✘ Drugs induced craniofacial anomalies
- ✘ Treatment & Prevention



# ORAL SIDE EFFECTS

- ✘ Dry mouth
- ✘ Abnormal bleeding
- ✘ Altered taste
- ✘ Inflammation and mouth sores
- ✘ Discoloration of the oral soft tissues
- ✘ Enlarged gums
- ✘ Cavities
- ✘ Teeth and gum color changes
- ✘ Bone loss
- ✘ Thrush, or an oral yeast infection



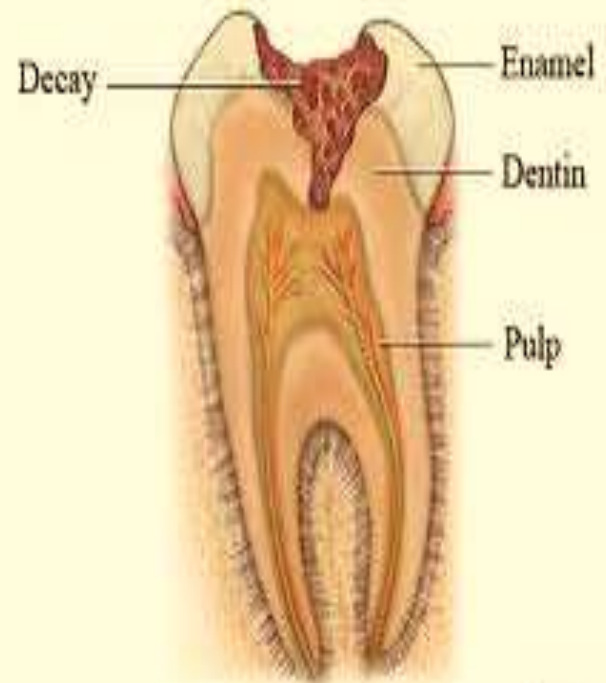
# SALIVA PROTECTS TEETH, HOW ?

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- ✘ Many drugs reduce the saliva flow and cause a dry mouth
- ✘ Dry mouth increases the risk of tooth decay because saliva:-
  - A. reduces the population of bacteria in the mouth
  - B. reduces decay-causing mouth acids
  - C. contains substances for re-mineralization.
- Re-Mineralization = repair of tooth enamel which is damaged by acids.
- Tooth enamel is hard surface layer, protects tooth

# DRUGS INDUCED DRY MOUTH

- ✗ Antihistamines
- ✗ Decongestants
- ✗ High blood pressure medications  
(diuretics, calcium channel blockers, and angiotensin-converting enzyme inhibitors)
- ✗ Antidepressants
- ✗ Sedatives
- ✗ Pain medications
- ✗ Parkinson's disease medications
- ✗ Antacids



# Drugs induced abnormal bleeding

- ✗ Aspirin
- ✗ Anticoagulants

it causes gum bleeding

## Taste Alteration

(metallic or bitter taste)

- ✗ Cardiovascular drugs  
(some beta blockers and calcium channel blockers)
- ✗ Central nervous system stimulants
- ✗ Flagyl (metronidazole)
- ✗ Nicotine skin patches for smoking cessation
- ✗ Some respiratory inhalants

# DRUGS AFFECTING TEETH DEVELOPMENT

## Tetracycline

- ✘ It crosses the placenta and is bound by chelation to calcium in developing bone and tooth .
- ✘ It causes yellowish or brownish teeth , enamel hypoplasia and bone growth inhibition.
- ✘ The staining of the teeth takes place in the second or third trimesters of pregnancy.



# FLUORIDE

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- ✘ It strengthens teeth
- ✘ It is added to water supplies and toothpaste.
- ✘ **Fluorosis**
  - An excessive amount of fluoride leads to white or discolored spots on developing permanent teeth in the first eight years of the life.
- ✘ Fluoridated toothpaste swallowing is a risk for the child.

# DRUGS AFFECTING GUM

## Gingival hyperplasia

- ✘ Some medications cause the gum tissue thickness to grow over the teeth.

## Examples of drugs

- A. Anti epileptic drugs
- B. Cyclosporine
- C. Some antihypertensive drugs
- D. Calcium channel blockers



# DRUGS AFFECTING GUM

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- Drugs cause inflammation, bleeding or ulceration.
- Diseased gums can lead to dental problems including tooth loss.

## Examples

- Antihistamines

It causes dry mouth and an increased risk of gum problems.

# DRUGS AFFECTING TEETH

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## **Aspirin**

- ✘ Chewing aspirin leads to the tooth enamel damage because aspirin is acidic.
- ✘ Aspirin should be swallowed with water, not placed beside a tooth.

## **Asthmatic drugs**

- ✘ Some asthma drugs are acidic and dissolve tooth enamel if it used regularly over a long period.

# DRUGS AFFECTING TEETH

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## ✘ **Chemotherapy drugs**

- ✘ It causes a dry mouth and lead to an increased risk of gum problems.

## ✘ **Immunosuppressive drugs**

- ✘ It leads to an increased risk of gum problems.

## ✘ **Oral contraceptives**

- ✘ It leads to an increased risk of gum problems.

## ✘ **Medicated syrups**

- ✘ It contains sugar leading to increase the risk of tooth decay if teeth are not brushed after taken the syrup.

# TOXINS AFFECTING TEETH AND GUM

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## **Cannabis (marijuana)**

- ✘ It causes dry mouth and leads to an increased risk of gum problems.
- ✘ The smoke can cause oral cancer

## **Heroin**

- ✘ It causes dry mouth and tooth grinding.
- ✘ People who use heroin tend to crave sweet foods, which can increase the risk of tooth decay if dental hygiene is neglected.

# COCAINE

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- ✘ It causes dry mouth, which increases the risk of tooth decay.
- ✘ It causes tooth wear by tooth grinding
- ✘ Users rub cocaine over gums causing ulceration of gums and the underlying bone.
- ✘ It mixes with saliva leading to acidic solution formation that erodes tooth enamel and exposes the underlying dentine to decay by bacteria.

## Alcohol

It increases the tooth decay because of acidic vomiting .

# Methamphetamine

- ✘ It causes severe tooth decay in a very short time.
- ✘ It is highly acidic and attacks tooth enamel.
- ✘ It leads to

- A. Dry mouth
- B. Tooth grinding
- C. Jaw clenching

- ✘ **Meth Mouth**

- It is discoloration, rotting, broken teeth in the mouth of methamphetamine addict.
- Drug dependence increases the risk of dental problems because of a neglect personal hygiene.



# MERCURY

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## Dental amalgam (silver fillings)

- ✘ It is a primitive filling material made of mercury.
- ✘ It is not stable after its implantation into human teeth.
- ✘ It constantly releases mercury vapor into the body leading to the mercury accumulation.
- ✘ Mercury is a neurotoxin
- ✘ It causes the metallic taste of the mouth and salivation, and gingivitis with the gum gray line.

## Lead

- ✘ Metallic taste
- ✘ the tooth lead (blue gum and tooth)

# CRANIOFACIAL ANOMALIES

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- ✘ It is congenital deformities in the growth of the head and facial bones due to genetic, environmental and folic acid deficiency.

## **Examples:**

Cleft lip, Cleft palate, Craniosynostosis

**Carbamazepine**

**Valproic Acid**

**Phenytoin**

**Drugs induced craniofacial anomalies**

**Methotrexate**

**Folic acid  
antagonists  
(trimethoprim)**

**Lamotrigine**

# PREVENTION

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- ✘ Adjust the dose or method of delivery.
- ✘ Switch to another type of medicine that does not risk for the dental health.
- ✘ If change of medication is not possible, treatment should help to protect teeth.
- ✘ Apply topical fluoride preparations to the surface of teeth.

Fluoride strengthens teeth and reduces the risk of decay. Fluoride tablets or mouthwashes may be recommended for use at home.

- ✘ Trim gum tissue that is affected by gingival hyperplasia.

# PREVENTION

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- ✘ Brush baby's teeth gently with plain water.
- ✘ Brush child's teeth with low-fluoride children's toothpaste.
- ✘ Teach the child to spit rather than swallow the toothpaste.
- ✘ Avoid carbonated soft drinks because it is acidic and erodes tooth enamel.
- ✘ Drink fluoridated water instead.
- ✘ Chew sugar-free gum to encourage a steady flow of saliva.
- ✘ Minimize alcohol intake.
- ✘ Consider quitting smoking.

***Thank you***

***Thank you***



***Thank you***

***Thank you***