

به نام ایزدوانا



Natural Tooth Bleaching

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- external staining is In Southeast Asia with betel nut juice

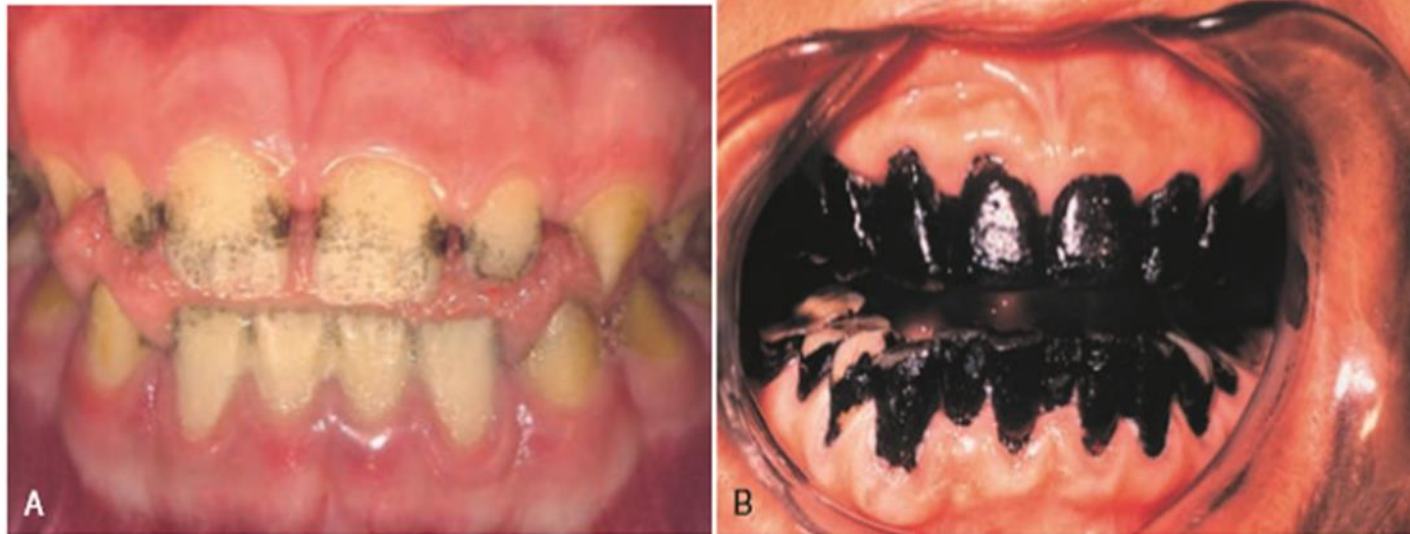
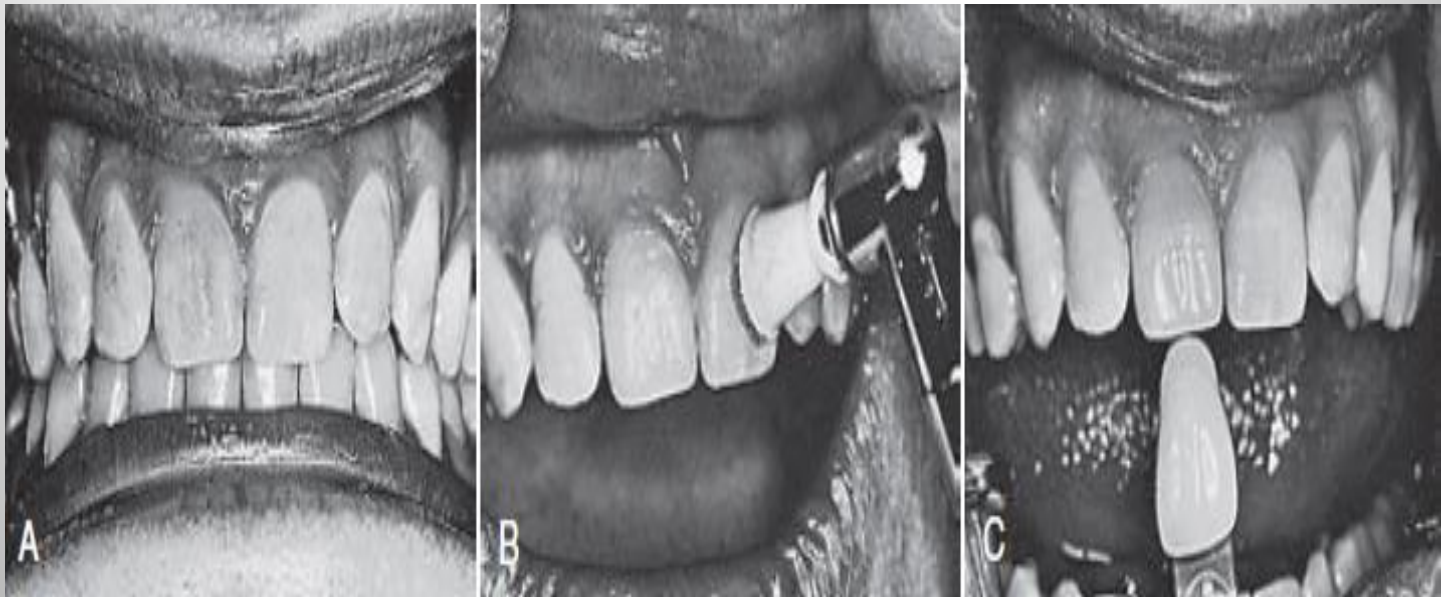
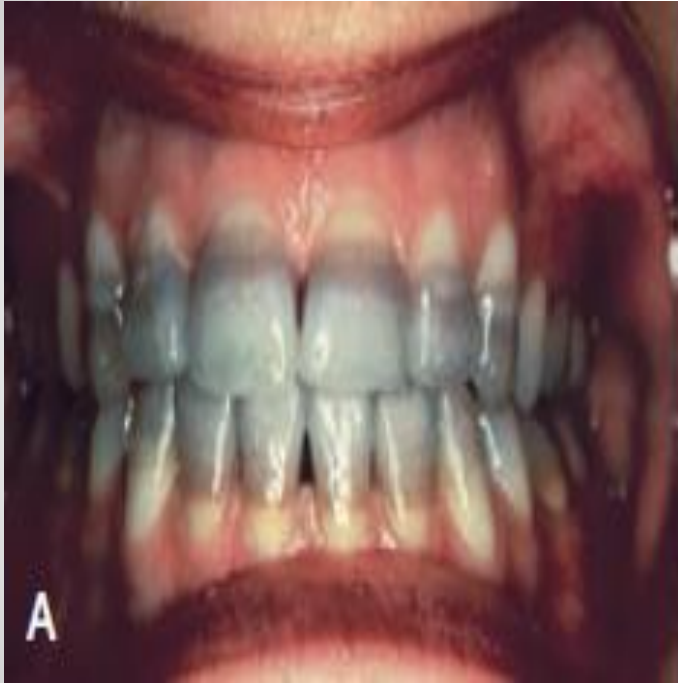


Fig. 12-19 Extrinsic stains. **A**, Surface stains on facial surfaces in a young patient. **B**, Exotic decoration of anterior teeth by etching with citrus fruit juice and applying black pigment (betel nut stain). (**A**, Courtesy of Dr. Tim Wright. **B**, From Daniel SJ, Harfst SA, Wilder RS: Mosby's dental hygiene: Concepts, cases, and competencies, ed 2, St. Louis, Mosby, 2008, Courtesy of Dr. George Taybos, Jackson, MS.)

Treatment

- prophylactic procedures
- mild microabrasion
- macroabrasion





fluoride

- greater than **1 to 2 ppm** → metabolic alteration in the **ameloblasts** → defective matrix and improper calcification of teeth.
- generalized
- An affected tooth shows a **hypomineralized**, porous subsurface enamel and a well-mineralized surface layer.



Dental caries

- opaque white “halo,” a grayish tinge, or a brown to black stain → from the bacterial degradation of food debris
- Metallic restorations :
 - amalgam, may cause a distinct staining of the tooth in addition to the shadow they may cast through adjacent enamel walls.



trauma

- Another cause of discoloration to the tooth is trauma
- The tooth may remain vital but can discolor
 - **iron-containing hemoglobin in blood seeping into the dentinal tubules**
 - **calcific metamorphosis**
- Calcific metamorphosis → deposits **darker yellow secondary dentin** in the pulp chamber → partially or completely obliterate the pulp chamber.





Indications for Bleaching

- patient dissatisfaction
- source of the discoloration affects the degree of success and the rapidity
- **even the most persistent discolorations can be lightened if the treatment is sufficiently extended.**
- 10 years to 80 years or older
- Patients tend to look most natural when the color of the teeth matches the white of the sclera in their eyes.
- **Therefore, a desired endpoint for bleaching is not the number of shade guide changes but a natural, beautiful appearance where the white of the teeth matches the white of the eyes.**



Nonvital tooth bleaching

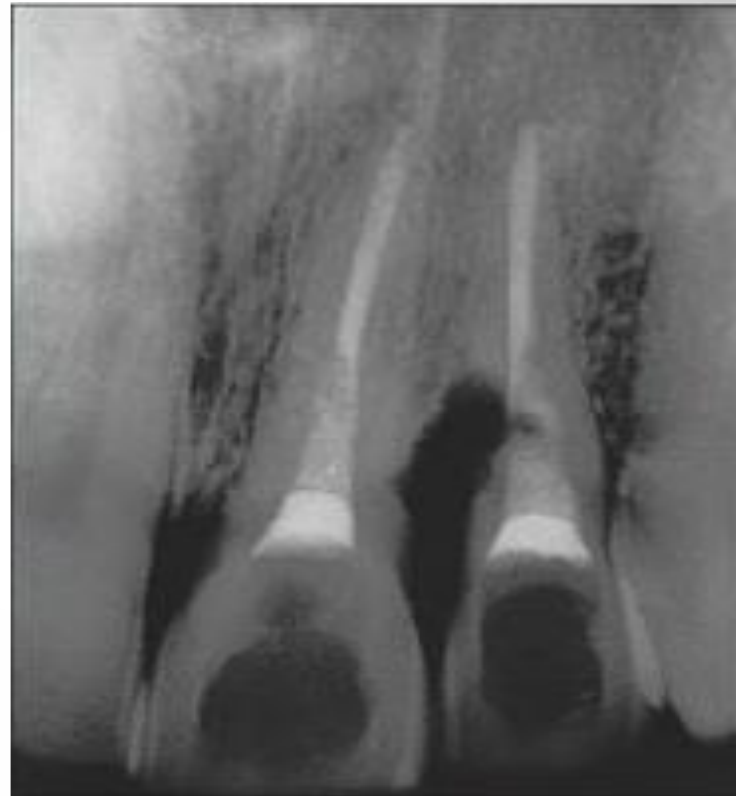
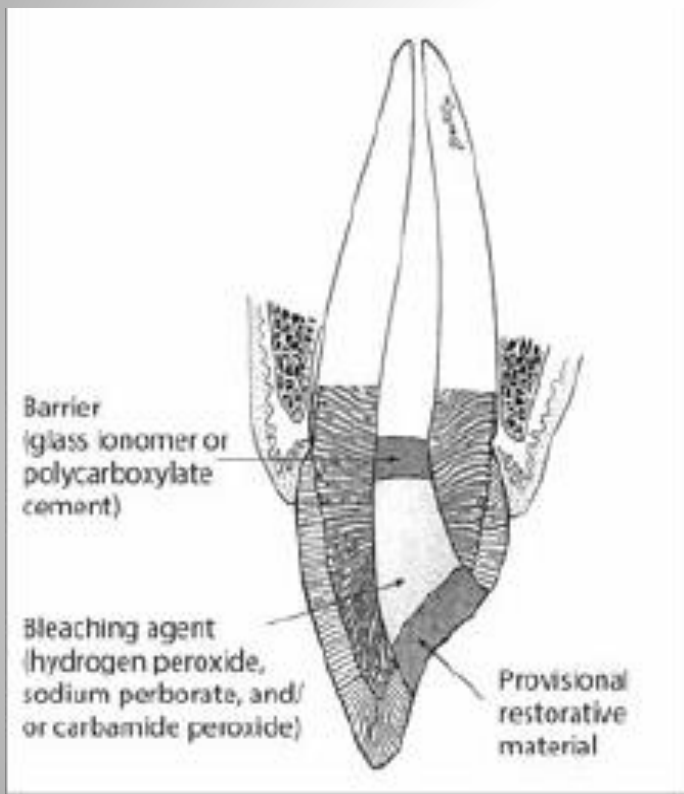
products caused :

- ✓ trauma
- ✓ endodontic therapy
- ✓ necrotic tissue inadvertently left in the pulp chamber.

Endodontically treated teeth :

- ✓ Internally
- ✓ Externally
- ✓ both





In-office technique

- 35% hydrogen peroxide solution
- light and/or heat
- limited need for patient compliance
- More rapid results
- for patients who may have difficulty following the regimen for the at-home technique
- The fee is usually higher
- Possibility of tissue injury
- A portion of the whitening effect is temporary, resulting from dehydration
- The teeth should not be anesthetized
- suggest from
- one to six in-office treatments, with the average being about three visits



➤ Orabase B, Colgate Oral Pharmaceutical



Fig 16-21 The gingival tissue around the canine has been chemically burned by contact with 35% hydrogen peroxide.



Fig 16-22(a) A soft tissue burn from a mild peroxide solution, resulting in a painful experience for the patient and white discoloration of the tissue. (b) Application of a zinc oxide–eugenol provisional material (TempBond) for 2 to 3 minutes until pain subsides. (Technique courtesy of T. Bob Davis, Dallas, Texas.) (c) Once the zinc oxide–eugenol provisional material is removed, both the whitish area and the pain are gone.

| Table 16-1 | Questions regarding in-office bleaching |
|--|--|
| Question | Answers |
| Does one in-office bleaching treatment yield the same outcome as tray bleaching? | Typically, no: The average is three in-office sessions to reach maximum tooth whiteness, while the range is one to six treatments. |
| Do the lights make a difference in the outcome of in-office bleaching? | No: Dehydration may give initial lighter appearance; tooth color changes at a certain rate regardless of “enhancement” of peroxide by the light. |
| When is the best time to evaluate the color change from in-office bleaching? | Two weeks or longer after treatment due to dehydration from isolation and heat (if used). |
| Is a combination of in-office and tray bleaching the best option? | Only if the patient wants to pay extra for the initial boost: The final outcome is the same whether one or the other or a combination is used. |
| What are the sensitivity issues for in-office bleaching? | Sensitivity with in-office treatment is greater than with tray bleaching, so sensitivity must be minimized by using shorter appointments on multiple visits rather than a single long appointment; patients may need to premedicate with nonsteroidal anti-inflammatory drugs. |

Laser- or light-assisted in-office bleaching



- promoting a more rapid release of the bleaching agent
- Effects on hard tissues:
 - the type of laser
 - exposure time
- The argon laser  very little temperature rise in the pulp
- the diode laser  generate high temperatures
- Another technique uses a carbon dioxide (CO₂) laser after the procedure with the argon laser:
 - moderate to severe post-procedure pain and sensitivity
 - Pulpal irritation or even necrosis

Table 16-2

Differences between carbamide peroxide (CP) and hydrogen peroxide (HP)

| | Carbamide peroxide | Hydrogen peroxide |
|----------------------|---|---|
| Active time | 2 to 10 hours due to carbopol amount | 30 to 60 minutes |
| pH level | Neutral; elevates pH due to urea production | Low; pH stays constant during treatment |
| Lowest concentration | 10% CP = 3.5% HP | 6% HP = 17% CP |
| Effect of pH level | Caries process may not advance during bleaching due to elevation of pH to a basic level | pH does not change during treatment |





- To avoid tissue injury, the tray should be “peeled” from the second molar area rather than being “dug out with fingernails” in the canine region
- discontinuing tray wear for 1 or 2 days
- soft tissue irritation during at-home bleaching :
 - ill-fitting tray rather than the agent itself



از توجه شما متکرم

