



Tooth discolorations

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Tooth discolorations

- Extrinsic:
 - environmental;
 - removable, reversible;
 - metallic/non-metallic origin.
- Intrinsic:
 - before/during tooth eruption;
 - after tooth eruption;
 - irreversible.

Non-metallic tooth discolorations

- Tee, coffee, red wine, red berries, tobacco, spices: curry, saffron, soya sauce, fruit juices, lollipop, candy, food containing chlorophyll;
- Chlorhexidine - oral hygiene
- Gram-positive bacteria - ***Bacteroides Melaninogenicus***
Black staining - hydrogen sulphide conversion into black ferrous sulphide
.

Non-metallic tooth discolorations

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- ;



Non-metallic tooth discolorations

- Tee, coffee, red wine, red berries, tobacco, **spices**: curry, saffron, soya sauce, fruit juices, lollipop, candy, food containing chlorophyll;

Ethiopian ethnic group- spices



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Non-metallic tooth discolorations

- Chlorhexidine;

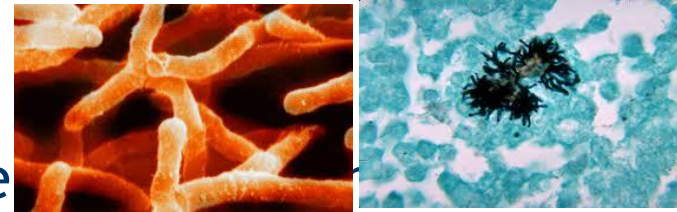


Discolorations due to chromogenic bacteria

„Black staining”:

- Actinomyces strains
- Bacteroides melaninogenicus

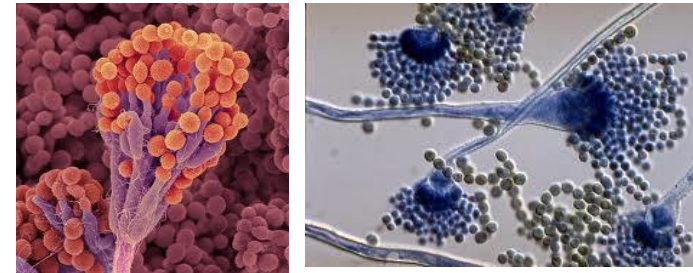
Gram-positive bacteria - hydrogen sulphide
sulphide



Green:

fluorescent bacteria or fungi:

- Penicillium,
- Aspergillus



Orange - rare:

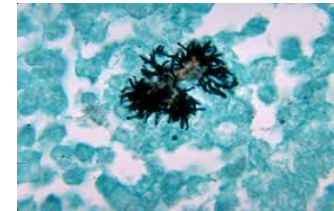
- Serratia marcescens,
- Flavobacterium lutescens



Discolorations due to chromogenic bacteria

„Black staining”: Actinomyces strains

- Bacteroides melaninogenicus



- parallel to gingiva contour, linear black stain
- difficult to remove
- hydrogen sulphide conversion into black ferrous sulphide



Non-metallic tooth discolorations

- ✓ Chromogenic bacteria- **Serratia marcescens**
- ✓ **Greenish colour**

Presence of Serratia m. and the long-term use of Amoxicillin sol. - extrinsic factor

During tooth development the bacteria alone can cause the discolouration - intrinsic factor



Non-metallic tooth discolorations

- ✓ **Greenish colour** - bad mouth hygiene → bacteria + gingivitis, bleeding - haemoglobin
- ✓ **Orange colour:** vestibular surface of the front teeth of unknown origin



Metallic tooth discolorations

- ✓ Environmental factors - water/air pollution
Rare occurrence during childhood
- ✓ Metallic (zinc, stannous fluoride) mouthwash,
- ✓ Medication containing ferrous components.

Metallic tooth discolorations

- Fe, Mg, Ag - silver
- Mercury - grey/green
- Lead - grey
- Copper - brown /green
- Brome - brown
- Nickel - green
- Cadmium - yellow
- Potassium - purple

Discolorations of extrinsic origin

Therapy:

- ✓ Polishing
- ✓ Cleaning
- ✓ Dental hygiene improvement



Discolorations of intrinsic origin

Before/during tooth eruption

- ✓ Turner-tooth
- ✓ Tetracycline - Xanthodontia
- ✓ Fluorosis
- ✓ MIH
- ✓ Perinatal hyperbilirubinemia
- ✓ Erythroblastosis fetalis
- ✓ Porphyria
- ✓ Amelogenesis imperfecta
- ✓ Dentinogenesis imperfecta
- ✓ Thalassaemia

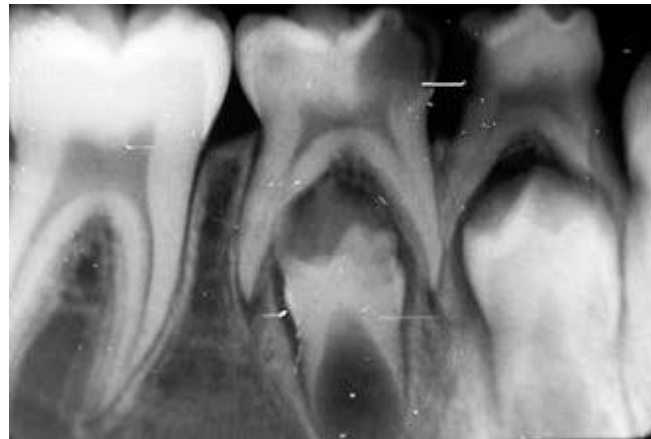


Turner-teeth

- Permanent incisors and premolars, rarely canines,
- mineralisation and form anomaly

Due to:

- ✓ Inflammation of adjacent primary teeth – molars – bifurcation area
- ✓ Traumatic injuries of primary incisors (subluxation, intrusion, luxatio lateralis)



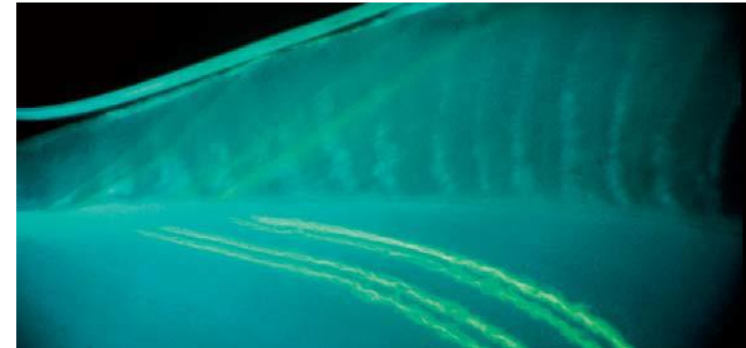
Turner-teeth



Tetracycline discoloration - Xanthodontia

- 2nd trim. of pregnancy- partially the crowns primary and permanent teeth
- Postnatal, during young childhood
- Irreversible, dose dependent - hypoplasia
- Ca-, Mg-, Fe-, Al-ion, chelate
- Discoloration intensity increases to light
- Contraindication of Tetracycline administration during pregnancy and childhood until the age of 8 years!
- Puberty - third molars
- Tetracycline/chlortetracycline - different colours!

Tetracycline discoloration - Xanthodontia



Tetracycline discoloration - Xanthodontia



Severity:

1. Light brown, brown and grey on the main parts of the crown - bleaching
2. Intensive discoloration - bleaching
3. Dark blue or grey bands - limitation of bleaching.

Tetracycline discoloration - Xanthodontia



Tetracycline discoloration - Xanthodontia



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Fluorosis endemica dentium

- Ameloblasts - Developmental defect
- Intensity:
 - ✓ Amount of fluoride
 - ✓ Exposition time
 - ✓ Developmental stage
 - ✓ Individual sensibility, affinity



Fluorosis endemica dentium

Etiology due to:

- Toothpaste use not according to age
- Foods: mushrooms, fish (salt water)
- Mineral water, black tee
- Systemic fluoride - per os
- Amoxicillin can increase the risk up to 2,5x.

Fluorosis endemica dentium





Fluorosis endemica dentium



Fluorosis endemica dentium



Fluorosis endemica dentium

Microabrasion



12 years, ♀ - Fluorosis?



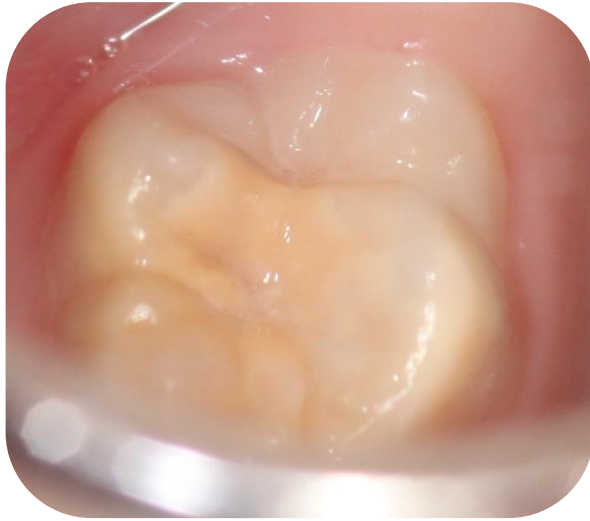
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Molar-incisal hypomineralisation-sindrome (MIH)

- Developmental defect of the enamel matrix
- First permanent molars, permanent incisors
- Indicator: second primary molars



MIH – „Molar-incisor hypomineralisation”



- LIGHT
- MEDIUM
- SEVER



FROM:

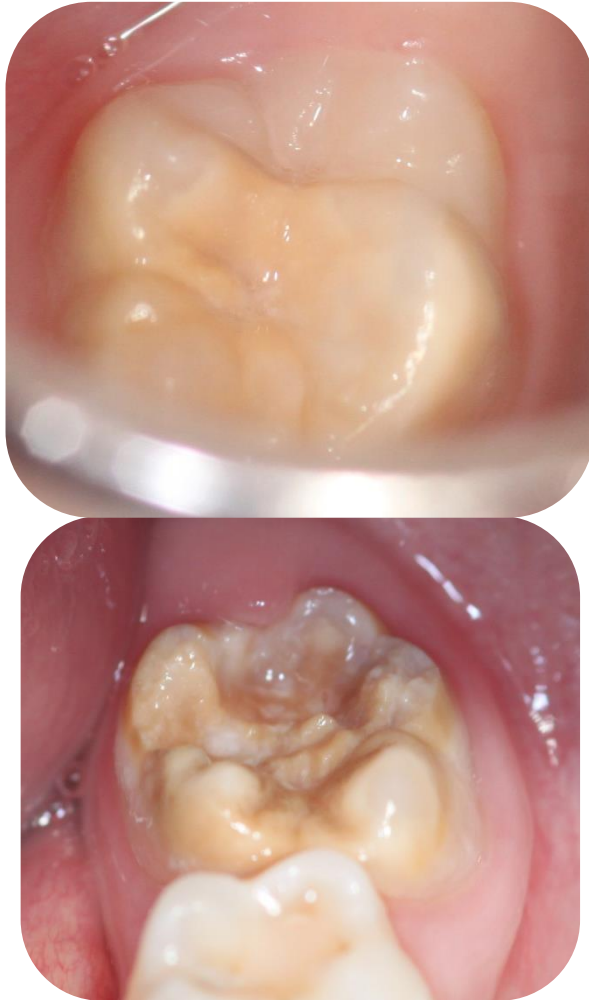
- Weerheijm et al. **Molar-Incisor Hypomineralisation**. *Caries Research* 2001; 35:390-391.
- SE-FOK Gyermekfogászati és Fogszabályozási Klinika képanyaga , dr. Rózsa N.

MIH – Molaris-incisivus hypomineralisatio



FROMs: SE-FOK Gyermekfogászati és Fogszabályozási Klinika, dr. Mlinkó É.

MIH – Molaris-incisivus hypomineralisatio



Etiology:

- Perinatal complications,
- low birth weight;
- premature birth;
- airways;
- mineralisation problems;
- diseases during childhood: measles, rubella etc.;
- Antibiotics (Amoxicycllin).

Forrás: Weerheijm et al. Molar-Incisor Hypomineralisation. Caries Research 2001; 35:390-391.

MIH – Molar-incisive hypomineralisatio?



Perinatal hyperbilirubinaemia

- Conversion of bilirubin to biliverdin,
- Primary dentition
- Grey - intensity decreasing with age.



Erythroblastosis fetalis (Chlorodontia)

- ↪ Rhesus factor incompatibility - haemolysis
- ↪ Hemosiderin - dentine, brown-blue
- ↪ Morbus haemoliticus neonatorum – syndrome:

Icterus gravis, anaemia neonatorum and hydrops universalis;



Porphyria (Haematoporphiria, porphyrodontia)

- ↪ Haemoglobin - genetic
- ↪ Primary and permanent dentition
- ↪ Brown – UV light - purple.



D-vitamine deficiency, rachitis



Amelogenesis imperfecta hereditaria

- Genetic
- Enamel developmental defect
- Dentin of normal structure
- 3 types:
 - ✓ hypoplastic
 - ✓ hypocalcification
 - ✓ hypomaturational

Amelogenesis imperfecta

Hypoplastic:

- Organic matrix
- thin enamel, abrasion
- No approximal contact



Amelogenesis imperfecta

Hypoplastic



Quelle: Scully. *A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents*

Amelogenesis imperfecta

Hypocalcification

- Thin or normal enamel
- Smooth, fractures
- white opaque to brown
- mineralisation defect of the organic matrix



Amelogenesis imperfecta

Hypocalcification



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Amelogenesis imperfecta

Hypomaturation



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

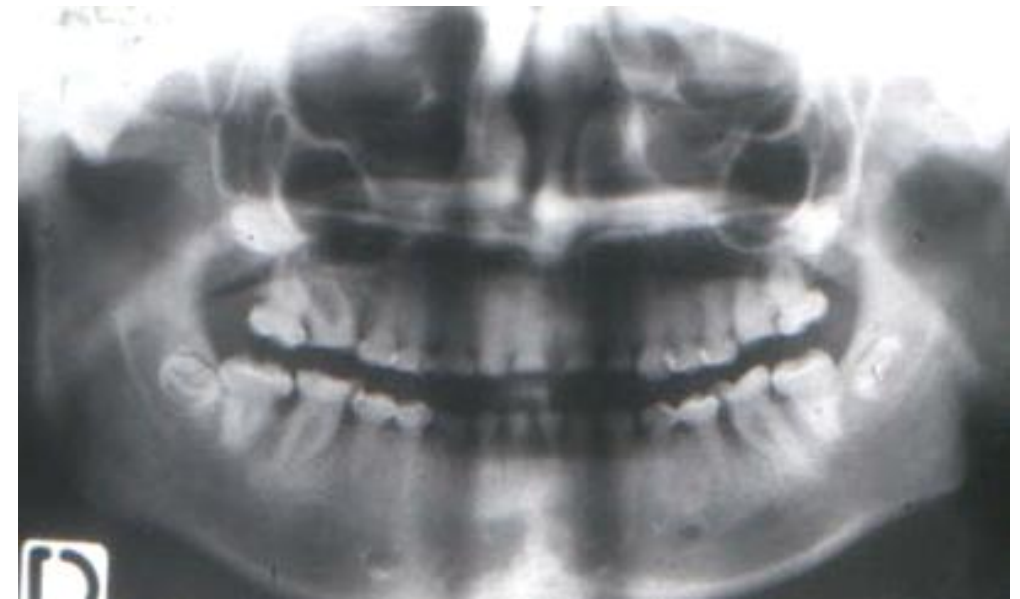
- **AMELOGENESIS IMPERFECTA HEREDITARIA;**



AMELOGENESIS IMPERFECTA HEREDITARIA



:♀, 14 years



AMELOGENESIS IMPERFECTA HEREDITARIA



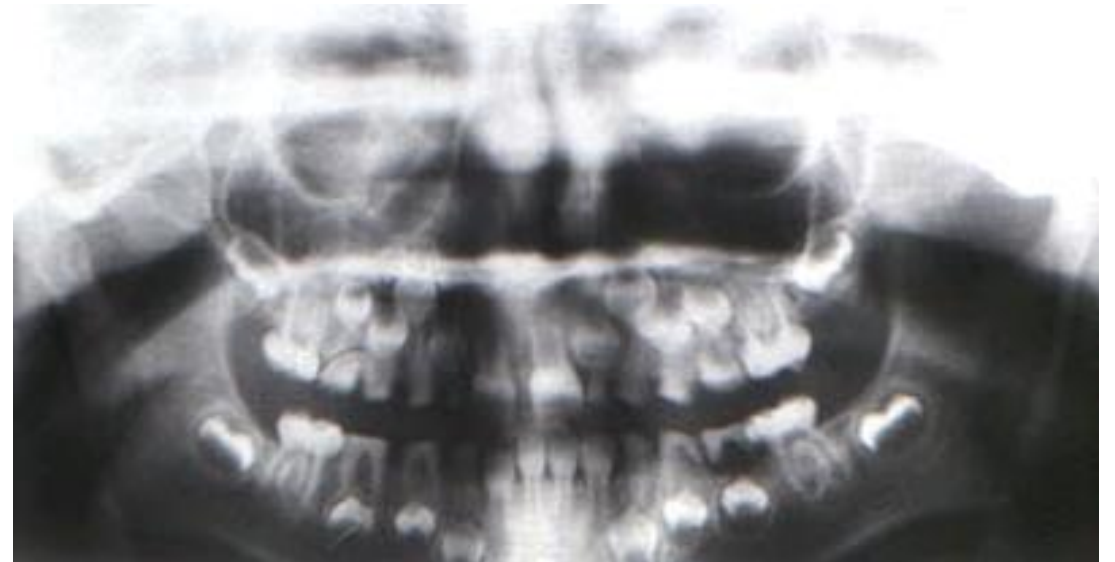
♀, 12 years



AMELOGENESIS IMPERFECTA HEREDITARIA



♂, 7 years



Dentinogenesis imperfecta

- Dominant inherited, genetic disease
- Poor quality of the dentin causes teeth to discolour and enamel to peel off easily
- Exposed dentin wears and decays easily
- More common in deciduous teeth
- Teeth reddish, brownish or bluish in colour
- 3 types



Dentinogenesis imperfecta

- father



Forrás? B Neeti. Dentinogenesis Imperfecta – “A Hereditary Developmental Disturbance of Dentin”.
The Internet Journal of Pediatrics and Neonatology. 2010 Volume 13 Number 1.



Dentinogenesis imperfecta

- child



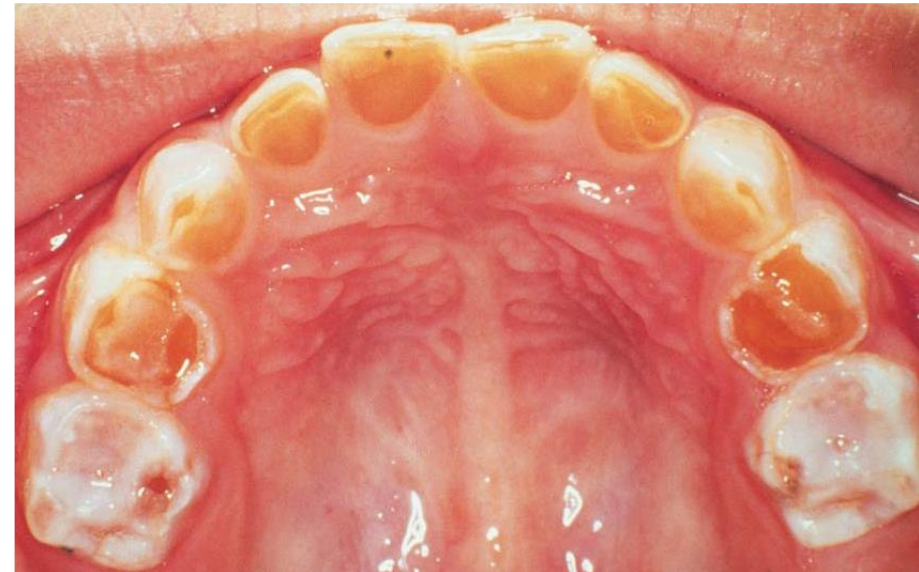
B Neeti. *Dentinogenesis Imperfecta – “A Hereditary Developmental Disturbance of Dentin”*. The Internet Journal of Pediatrics and Neonatology. 2010 Volume 13 Number 1.



Dentinogenesis imperfecta



4 years



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Dentinogenesis imperfecta

- Eruption of the permanent incisors



↪ Rapid attrition

From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Dentinogenesis imperfecta

OPG - Pulpaobliteration



From: Scully. A Colour Atlas of Orofacial Health and Diseases in Children and Adolescents

Thalassaemia

- Autosomal, recessiv
- haemolytic anaemia
- Blue/brown/green

Intrinsic tooth discolorations

After tooth eruption

- ✓Gangraena
- ✓Traumatic injuries
- ✓Internal pulp reoptions
- ✓Internal granuloma
- ✓Chemicals

Pulp necrosis - gangraena

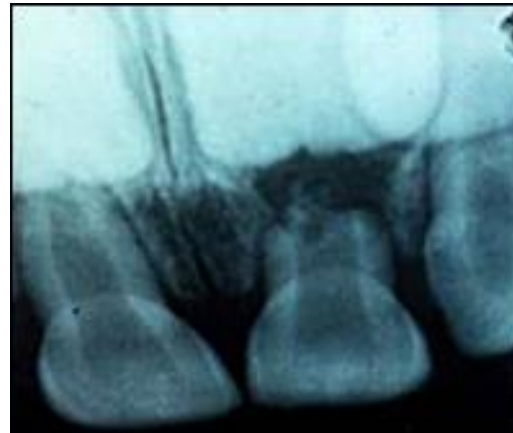
- Grey



Traumatic injuries

- Due to traumatic injuries and intrapulpal bleeding – reversible pink colour
- Pulpal necrosis – grey/brown
- Primary teeth: „pink spot disease” – granuloma internum

Pulpitis chronica granulomatosa



Traumatic injuries

- Therapy:

Root canal treatment, bleaching (only permanent teeth!)



Chemicals - dental materials

- Amalgam, N2, Endomethason, AH, Iodoform, Ledermix



Plaqueindicators





