

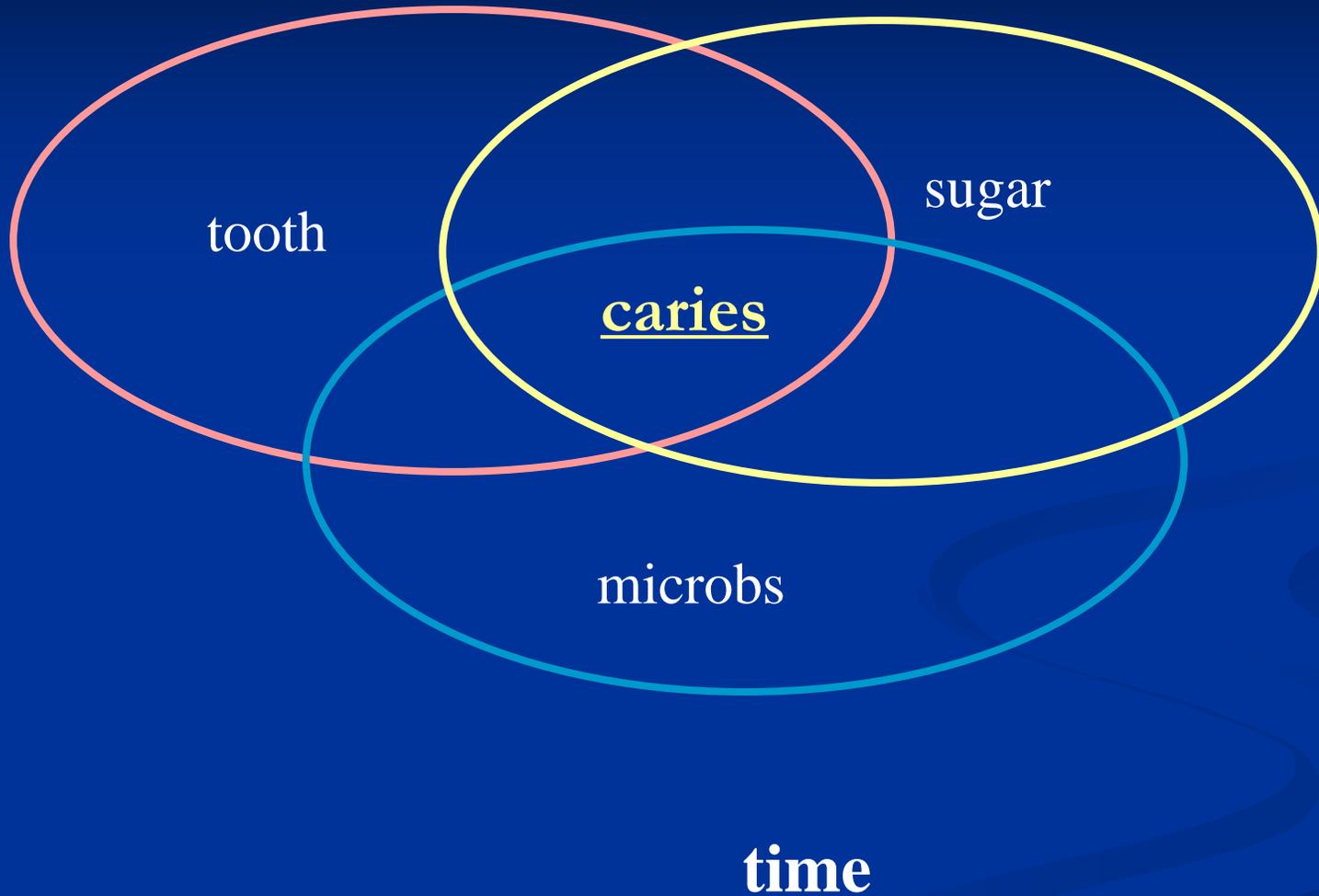
# Preclinical Dentistry

## I.

### Dental Caries

Lenka Roubalíková

# Dental caries



# Dental Caries

Infectious microbiological disease of the teeth that results in localized dissolution and destruction of the calcified tissues

# Dental Biofilm – Dental Plaque

A gelatinous mass of bacteria adhering to the tooth surface.

No shedding

# Sugar

Fermentable (mono-, di- tri- sacharides)



Sucrose, glucose, lactose



Acids

Demineralization

# Saliva

- Plaque formation
- Microbial source
- Microbial clearance
- Buffer capacity

# Predictable dirty places

- Pits and fissures
- Proximal surfaces
- Cervical area

No self cleaning



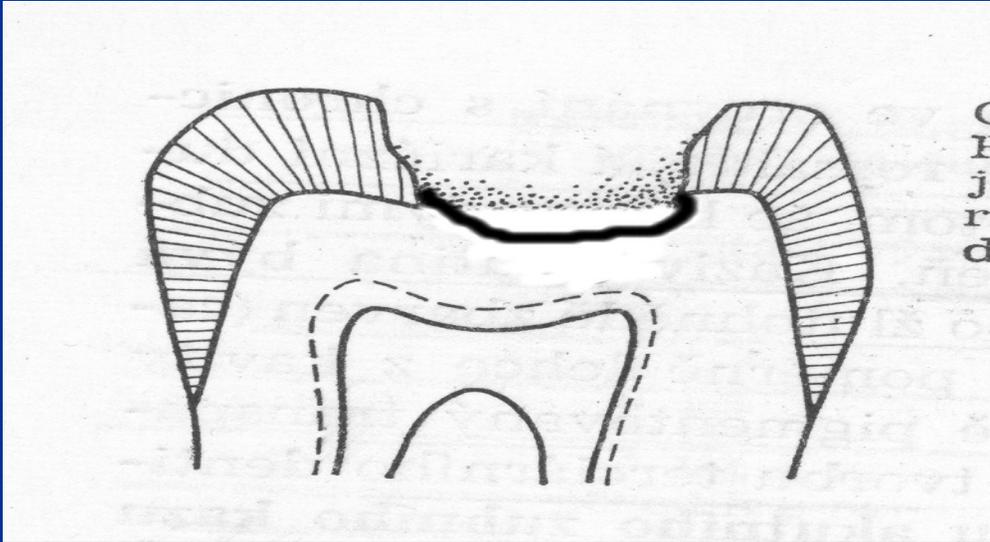
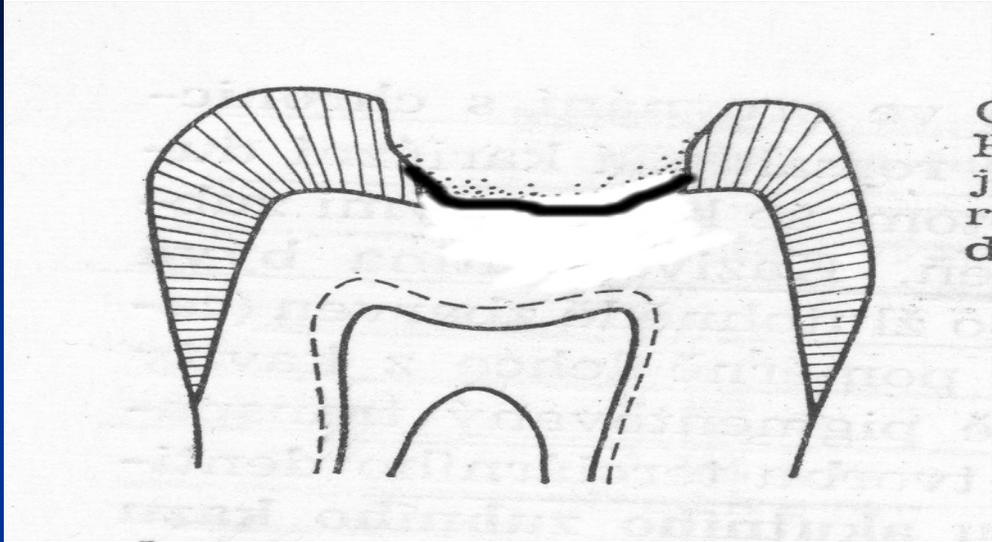
# Predictable clean places

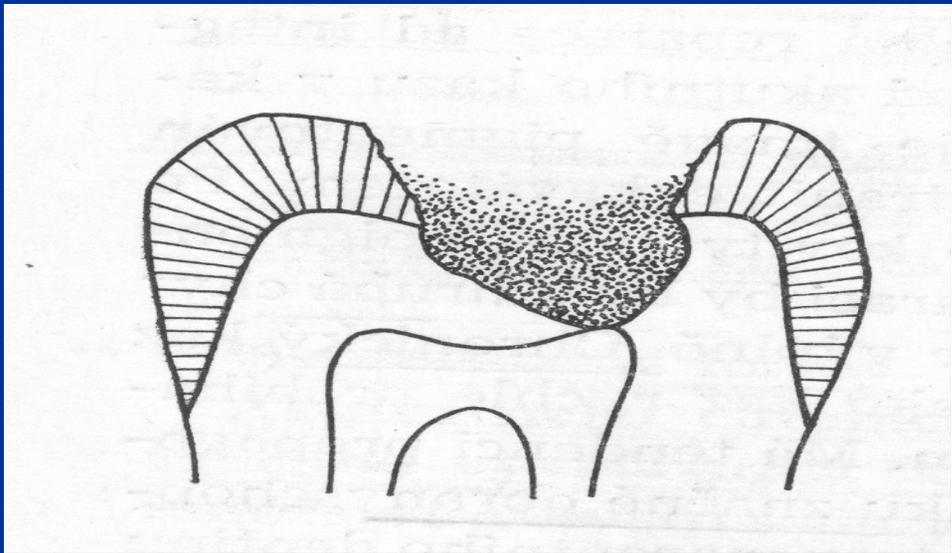
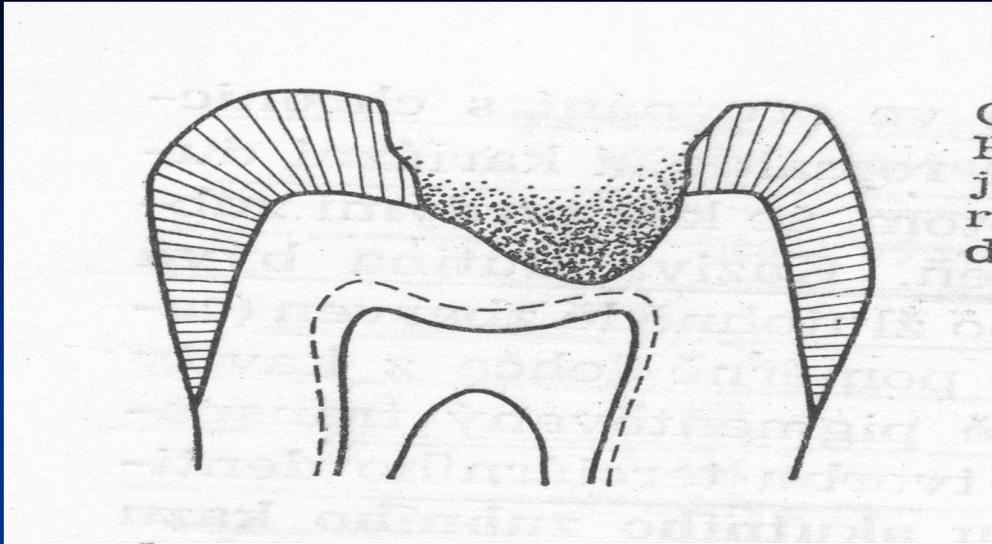
- Cusps
- Proximal ridge, crista transversa, crista obliqua
- Buccal or oral surface upon the maximal convexity

Self cleaning

# Caries - depth

- Surface caries (*caries superficialis*)
- Middle caries (*caries media*)
- Caries close to pulp (*caries pulpae proxima*)
- Caries penetrating into the pulp (*caries ad pulpam penetrans*)





# Caries - Topography

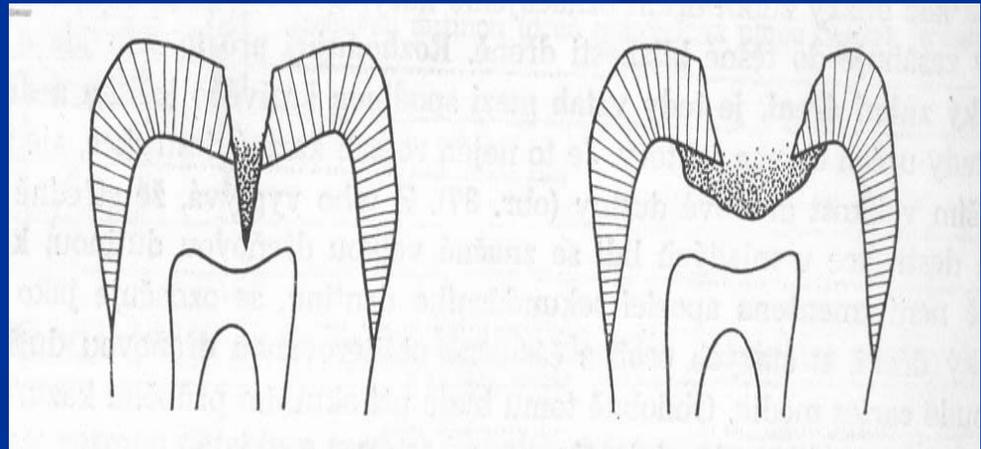
- Coronal caries
- Root surface caries
  
- Enamel caries
- Dentin caries
- Cementum caries

# Caries

- Acute
- Chronic
- Stopped



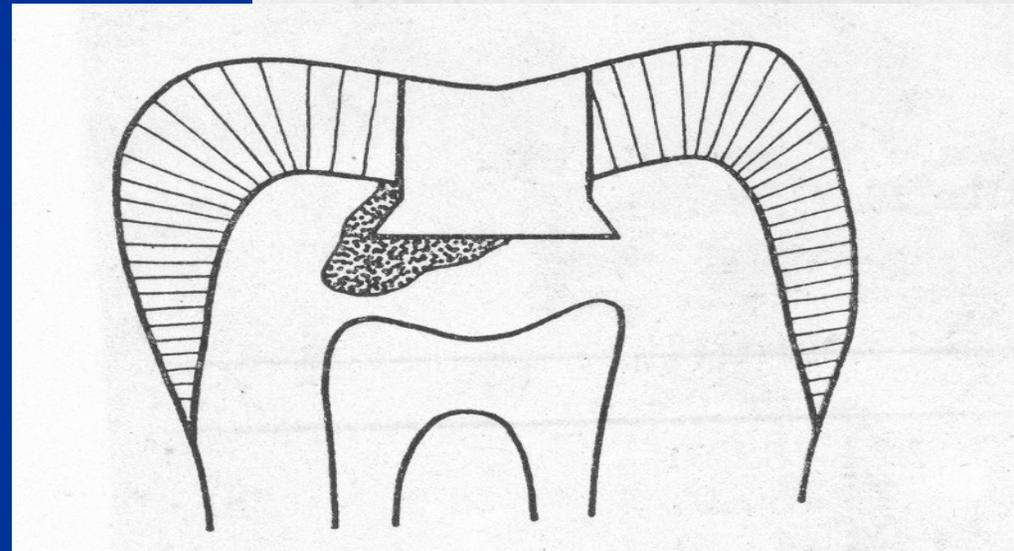
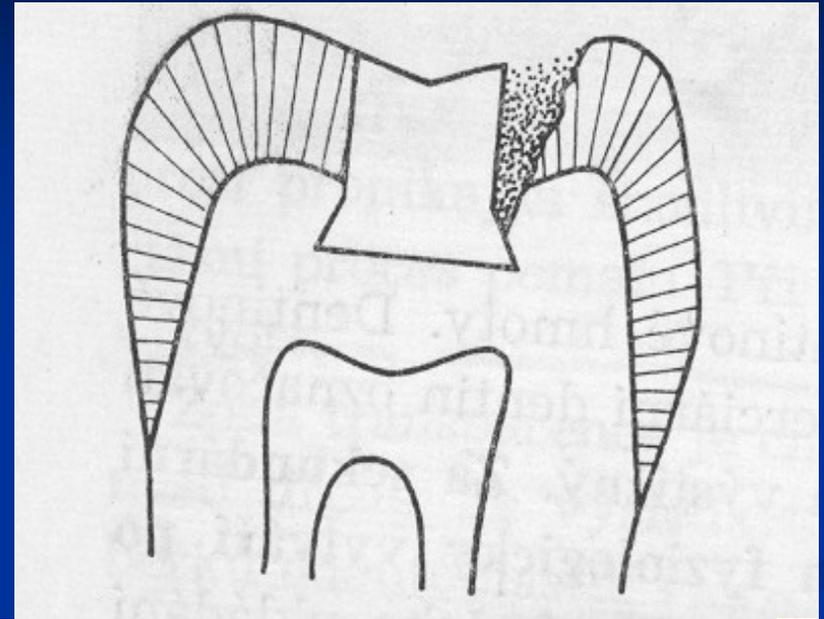
- Penetrating
- Undermining



Primary caries

Secondary caries

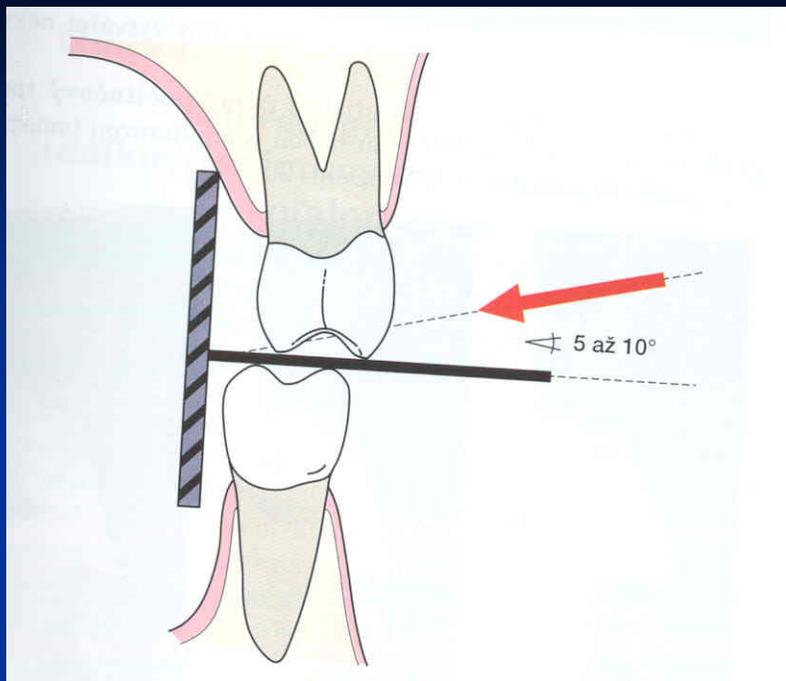
Recurrent caries

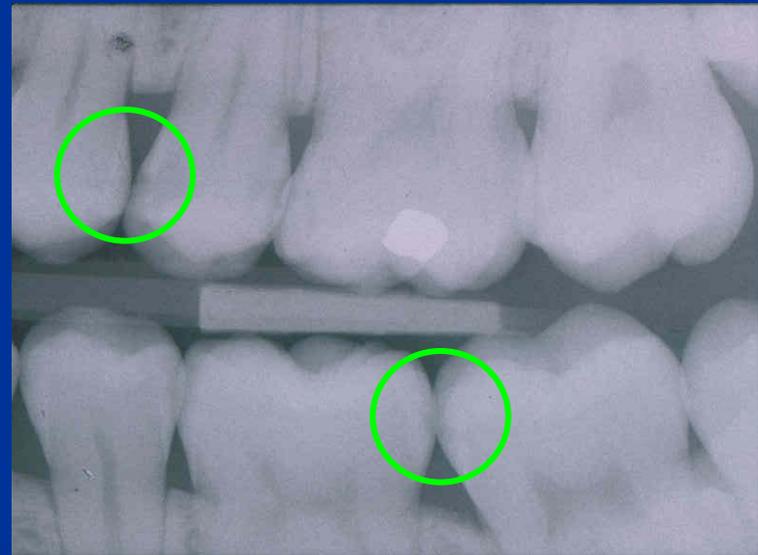
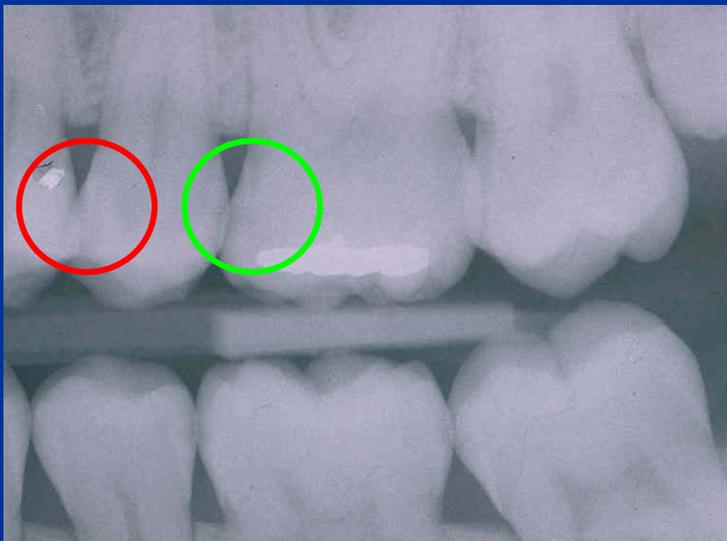
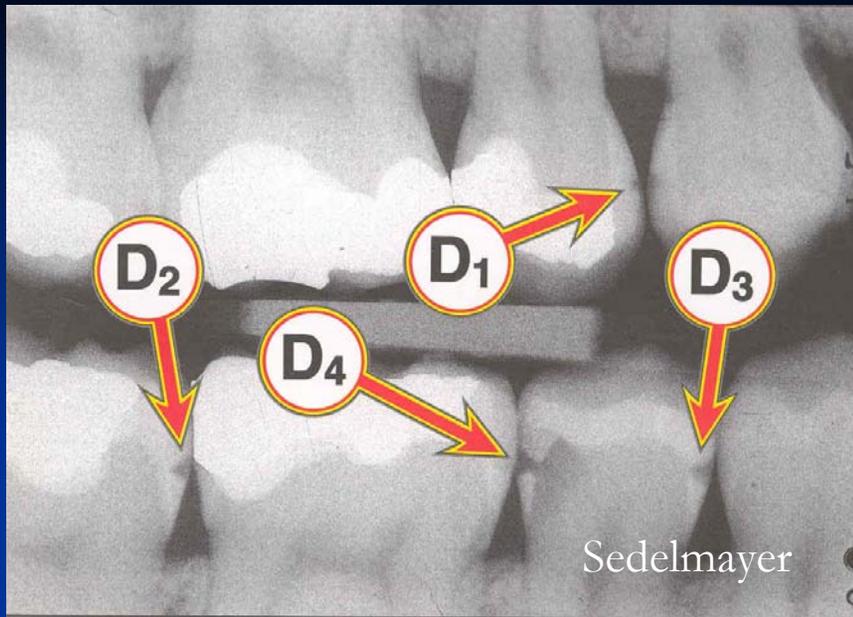


# Diagnosis

X-ray: Bite Wing







Bite Wing

# Diagnosis

➤ **FOTI** Fibre Optic Trans  
Illumination

➤ **IRLF** Infra Red Laser  
Fluorescence

# Dental Caries - Treatment

## ■ Non cavitated lesion:

On molecular basis

- Dental hygiene
- Fluorides, Calcium, Phosphates
- Diet
- Antimicrobial agents

# Dental Caries - Treatment

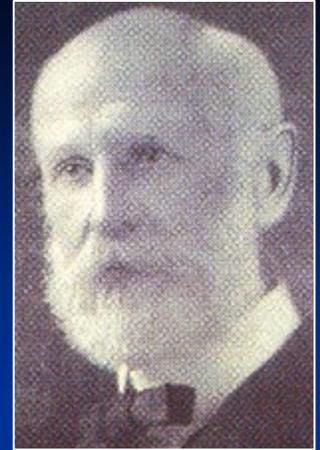
- Cavitated lesion:

Preparation

Filling

**Drill and fill**

# Preparation



Instrumental treatment

Remove caries

Leave the rest of the dental tissues

- to be restored
- to be resistant against the bite forces
- to be prevented against the recurrent caries

(Black 1914)

# **Classification of cavities according to Black**

# Class I.

Fissures and pits

# Class II.

- Proximal surfaces of molars and premolars



# Class III.

Proximal surfaces of incisors and canines without loss of the incisal edge

# Class IV

Proximal surfaces of incisors and canines with the loss of incisal edge

# Class V.

Cervical area

# Turbine



**400.000 rpm**

Electromotors – maximum 40.000/min



Airmotors – maximum 20.000/min

Gearing to fast speed



Gearing to slow speed



Oscillation





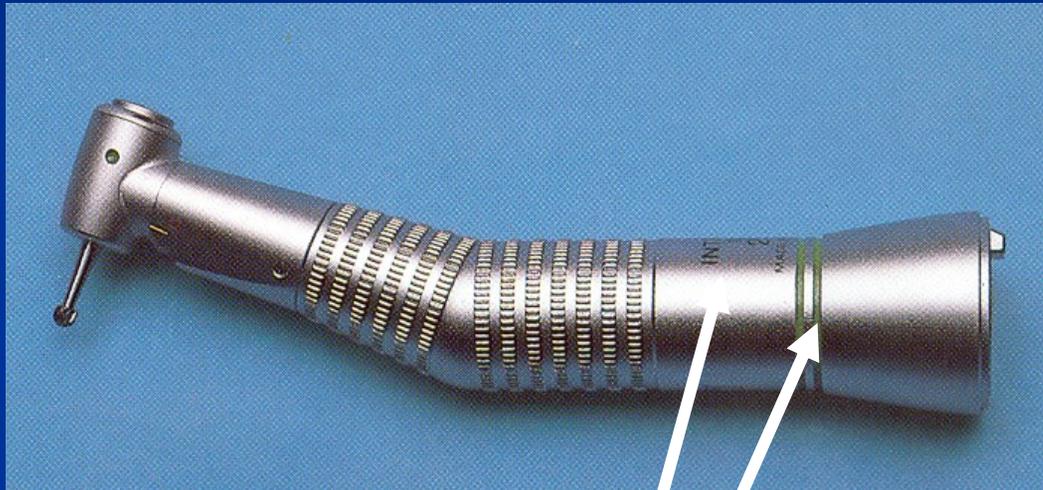
**1 : 1 as far as 40.000 rpm**

# Preparace strojová – pohony



**1:4 až 1:5 as far as 160.000 – 200.000 rpm**

# Preparace strojová - pohony



2,7:1

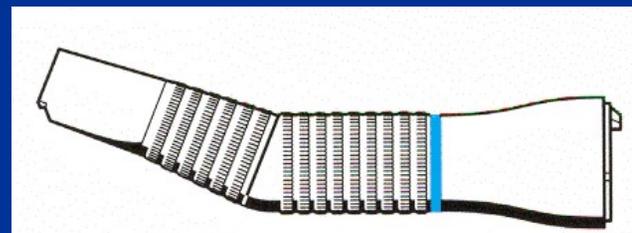
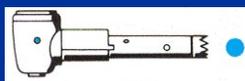
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# Preparace strojová - pohony

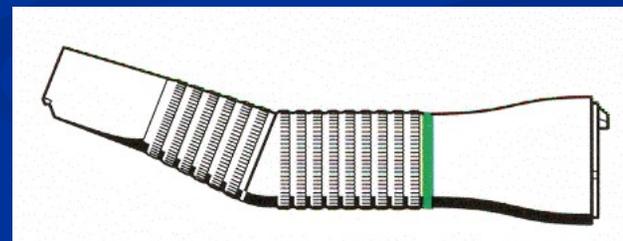
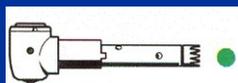




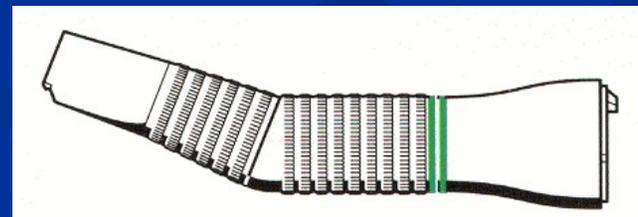
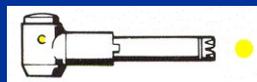
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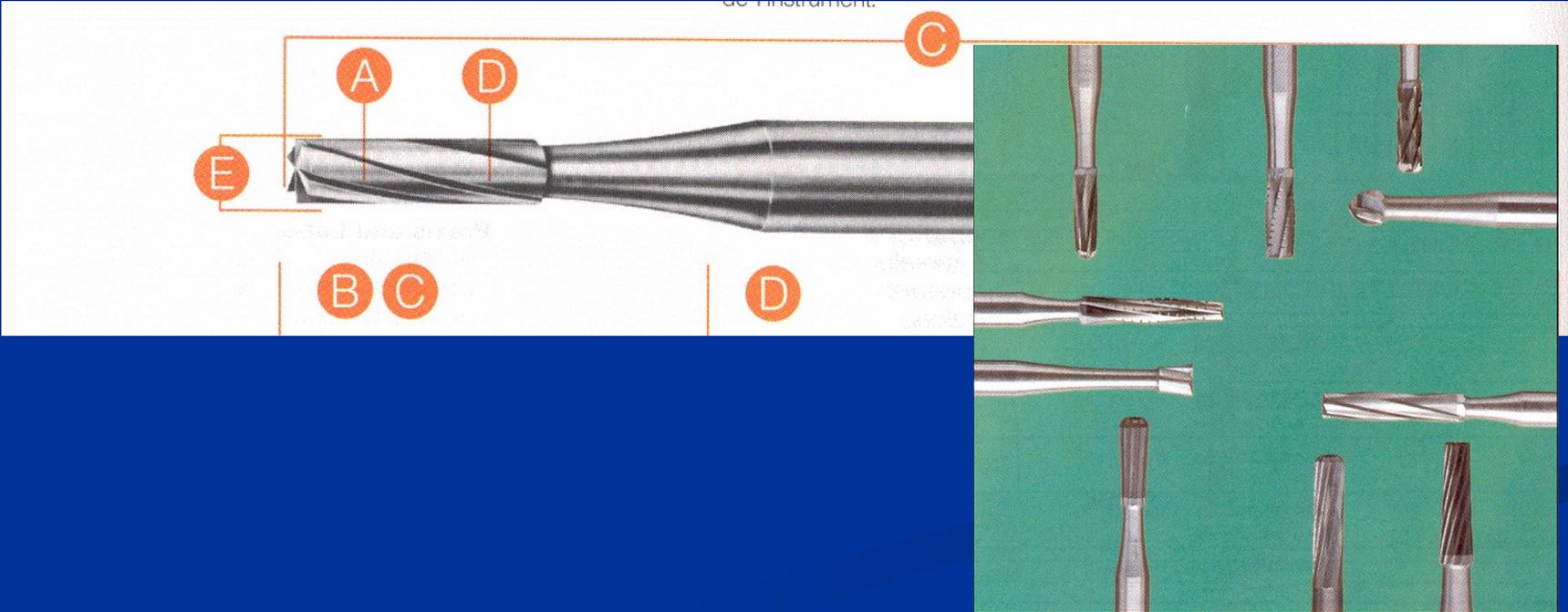
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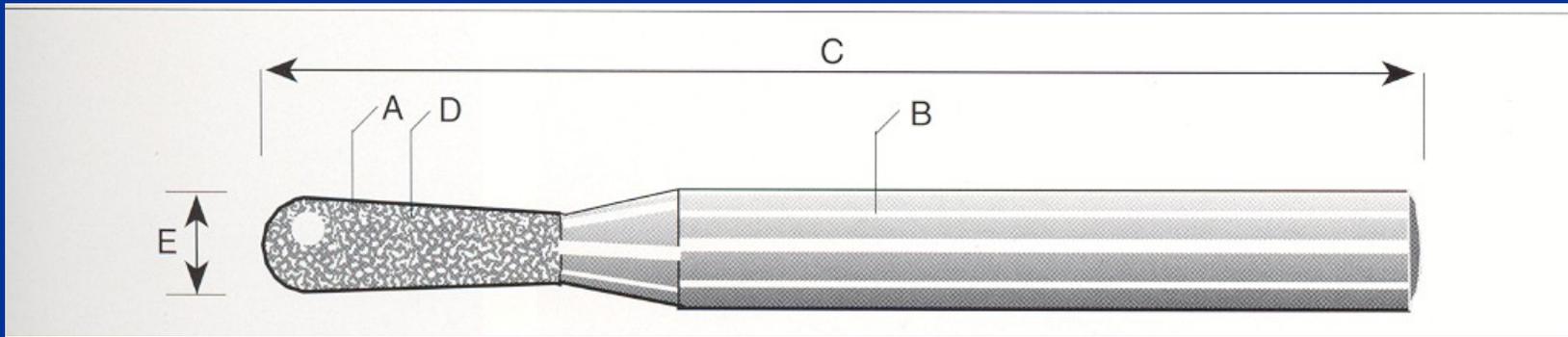


nerotuje



# ISO 6360





# Filling materials

## Temporary

Zinkoxidsulphate cement

One component cements based on gypsum and organic lute

Zinoxidphosphate cement

## Definitive

Amalgam

Composites

# Filling materials

Amalgam:

Mercury

Powder – metal alloy:

Silver

Tin

Copper

Zinc

# Chisel – for enamel



# Chisel for enamel



# Excavator

