

# Preclinical periodontology



# Periodontology

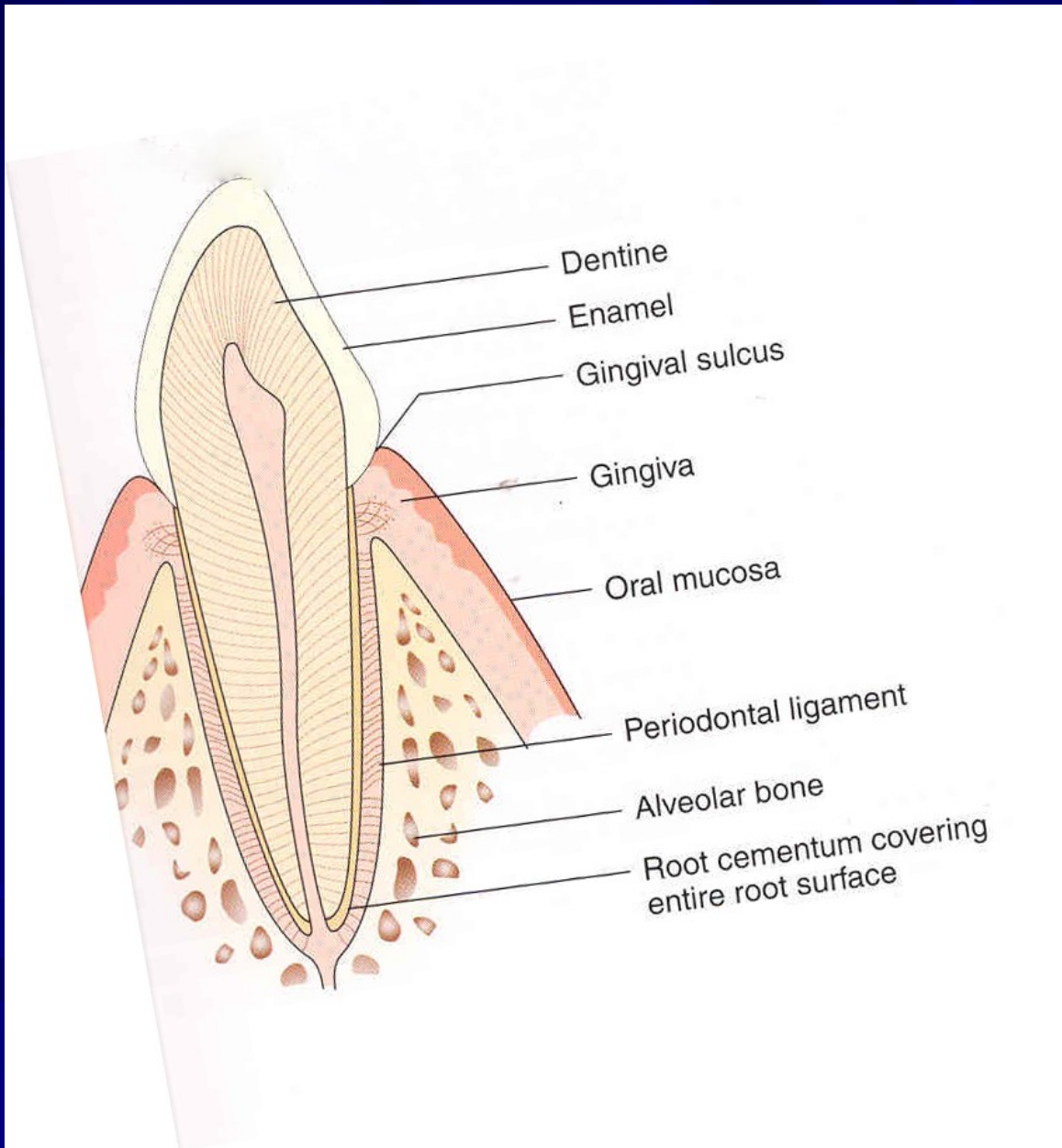
- Is a branch of dentistry that is focused on periodontal tissues

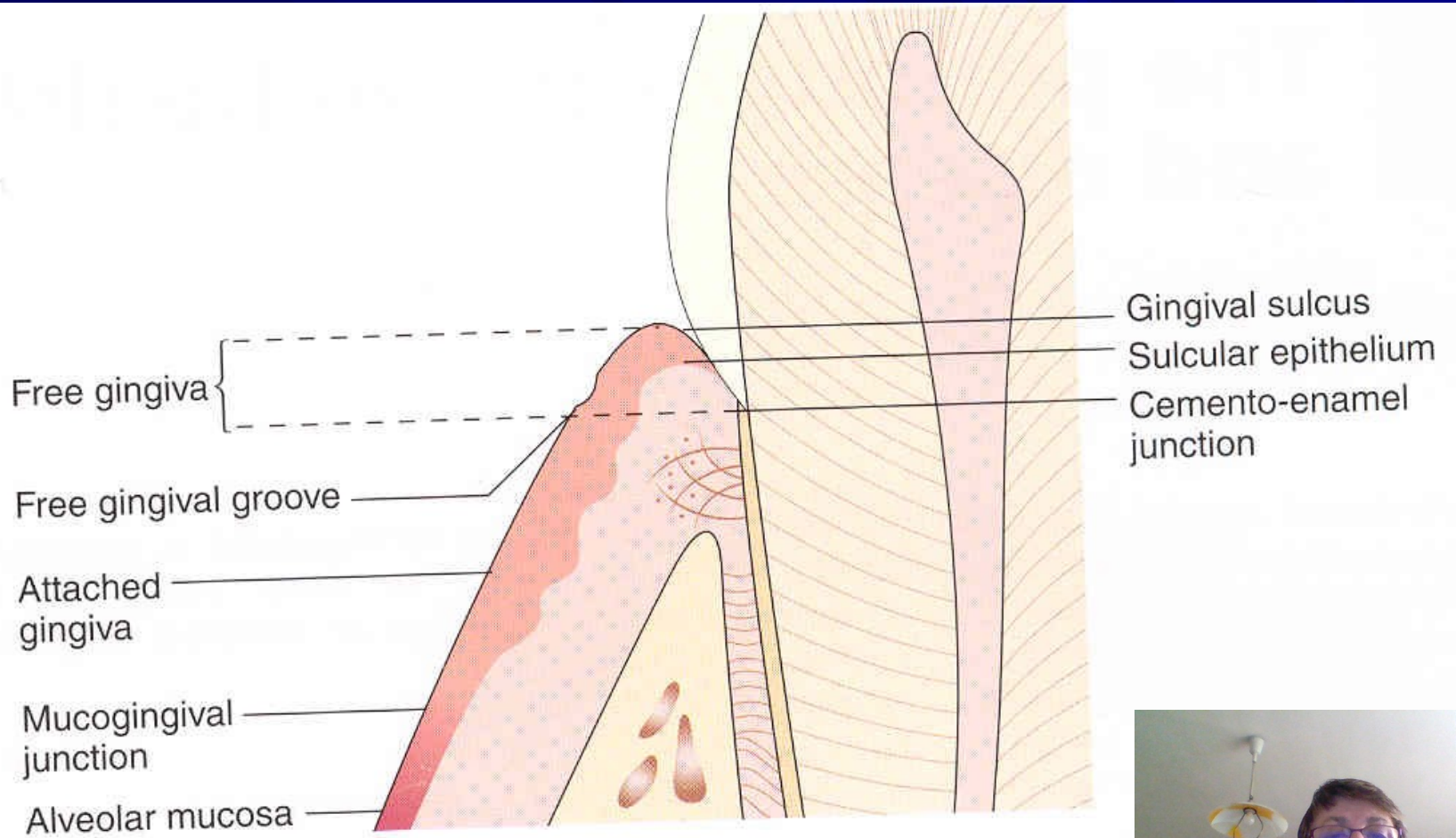


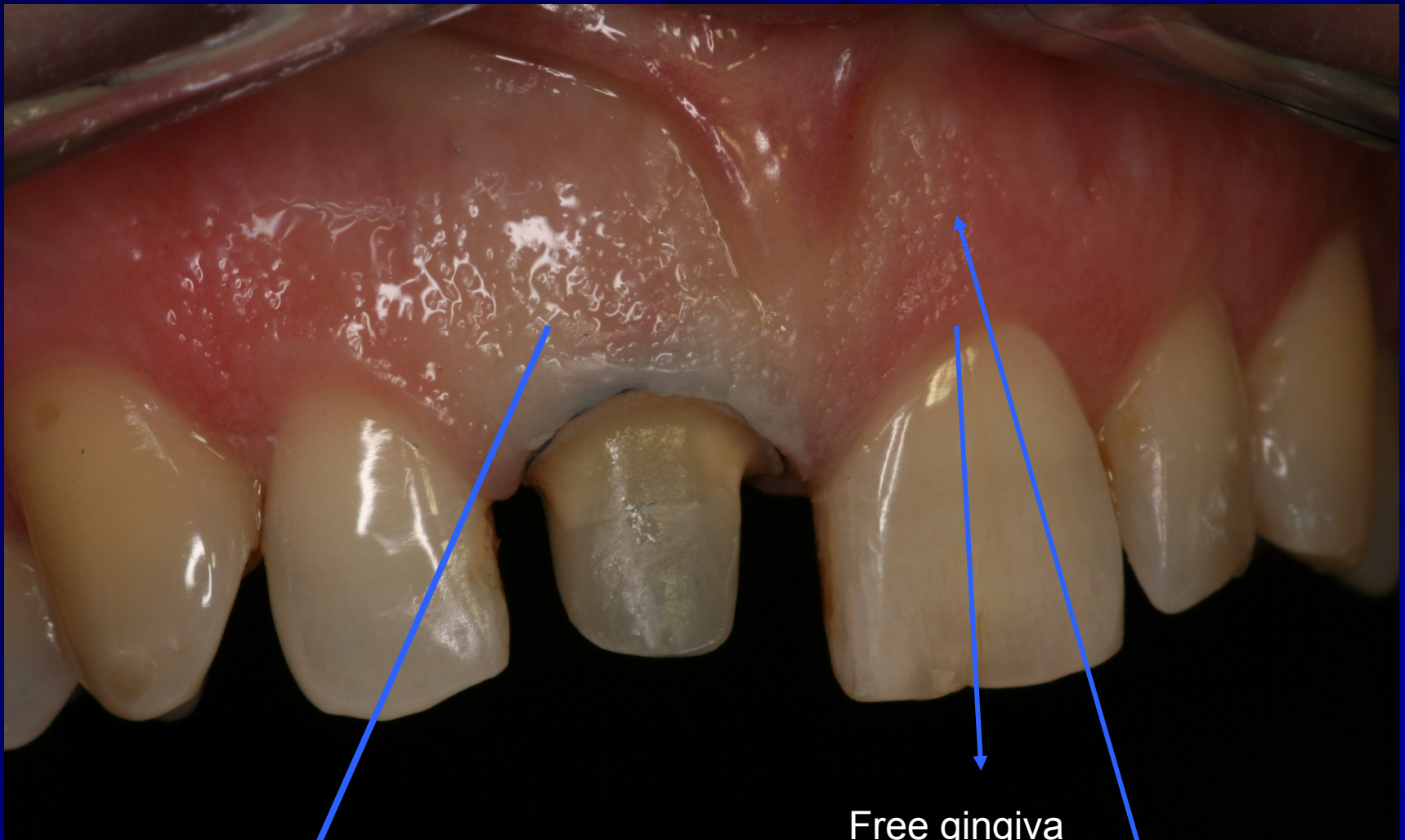
# Parodont – periodontium (supportive tissues)

- ❑ Alveolar bone
- ❑ Cementum – insertion of the periodontal ligaments
- ❑ Periodontal fibres
- ❑ Gingiva
- ❑ Attachement (epithelium junction)









Stippling

Free gingiva

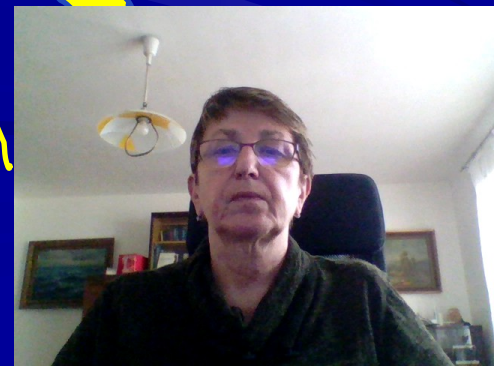
Attached gingiva



# Gingivodental junction

## ■ Attachement

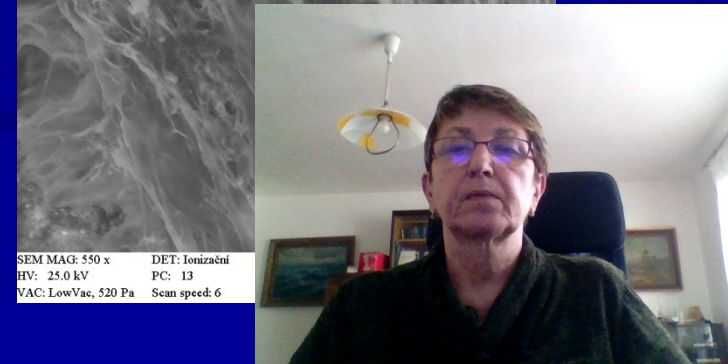
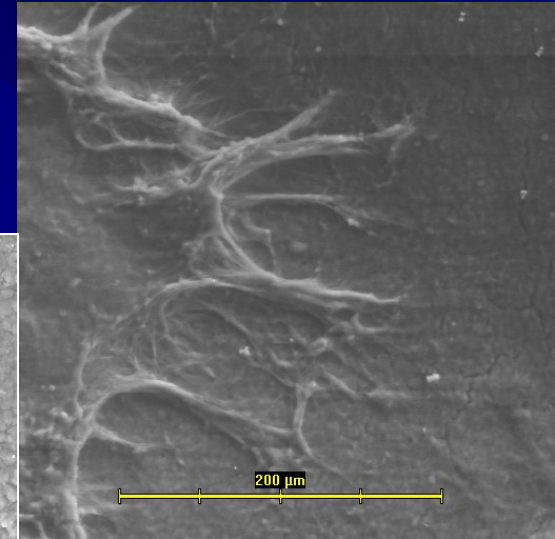
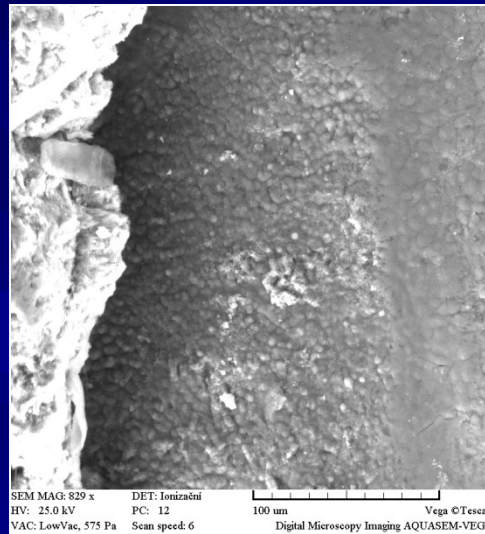
- Stratum basale
- Stratum suprabasale



# Cementum

Covers the root surface  
50% inorganic material

Insertion of collagen fibres  
Sharpey's fibres





# Alveolar bone

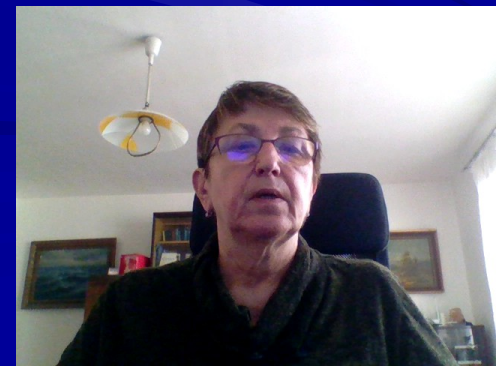
Compact bone thin layer – lamina dura

Spongis



# Periodontal membrane

- Tissues in periodontal space (width 0,4 – 1,5 mm) - 20 – 35 %. Fibres, interfibrillar substance, nerves, blood vessels.



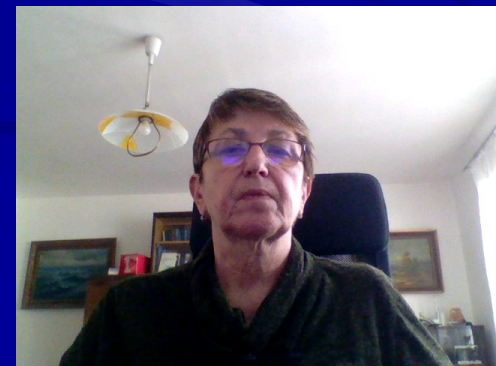
# Periodontal fibres

## ■ Supraalveolar

Lig. circulare

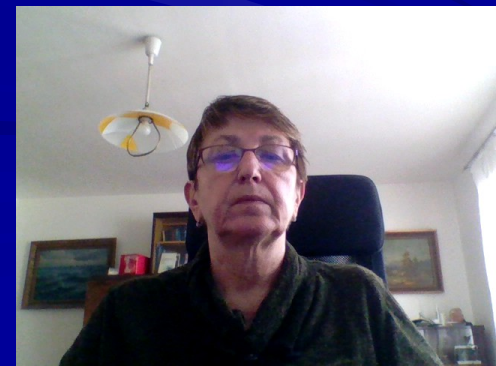
## ■ Intraalveol (Sharpey's fibres)

- Horizontal
- Oblique
- Apical
- Crestal
- Interradicular



# Periodontal diseases

- Gingivitis (inflammation limited on gingiva only)
- Periodontitis (inflammation of deeper parts of periodontal tissues)
- Non inflammatory diseases



# Aethiology

## ■ External factors (local)

Dental biofilm

Dental calculus

Iatrogenic factors (badly made fillings  
overhangs, missing contact point, badly  
made prosthetic treatment)

Mucogingival disorders (high inserti  
frenum)

Trauma, traumatization



# Aethiology

- Internal factors (systemic)
- Genetics
- Systemic diseases (diabetes mellitus, leukaemia, HIV infektion...)
- Systemic medication (cyclosporin A, immunisupresive medicaments, calcium blockers and others)
- Hormonal dysbalance (e.g.pregnance)



# Diagnosis

- Patients history
- Clinical examination
- Radiographic examination (OPG)



Diagnosis and treatment plan



# History

- Chief complaint
- Dental history
- Oral hygiene attitudes
- Professional and social status
- Smoking
- Periodontitis in family
- Systemic diseases





# Clinical examination

- Inspection
- Probing of the depth of periodontal sulcus
  - if deeper than 3 mm –periodontal pocket
- Observation of bleeding or pus



# Periodontal probes

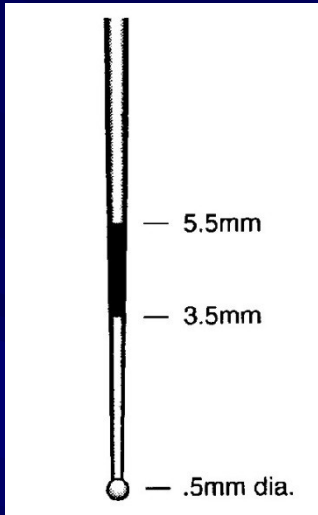
■ WHO probe

■ Williams probe

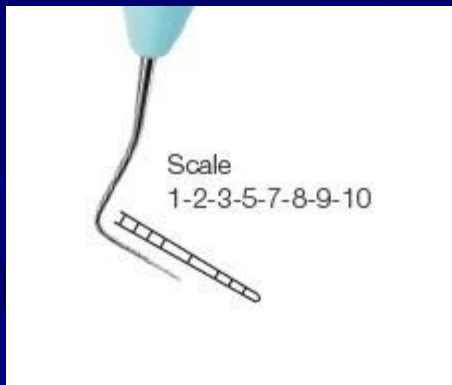
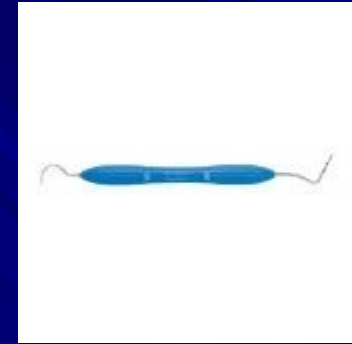
■ Nabers probe (furcation)



# Probes



WHO



Williams



Nabers

# Probing

Depth of periodontal pocket

Indexes



# Visualization of the biofilm (plaque)

■ Probes

■ Dyes

■ Tablets



# Plaque



# Visualisation of the biofilm

- Tablets, special liquids, gels



# Indexes – special figures

- Level of oral hygiene
- Stage of inflammation
- Treatment needs ...





# Plaque induced inflammation bleeding

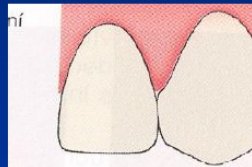


Bleeding of gingiva is a sign of inflammation – inflammation of gingiva is a sign of insufficient oral hygiene



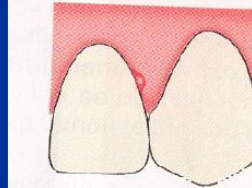
# PBI (papilla bleeding) index

■ 0 →



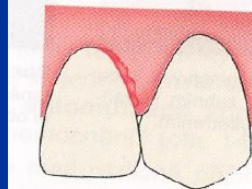
**No bleeding**

■ 1 →



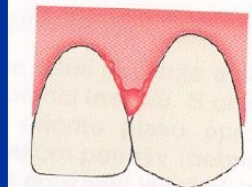
**Point**

■ 2 →



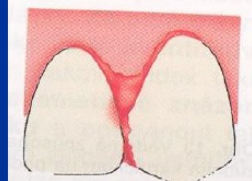
**Line**

■ 3 →



**Triangle**

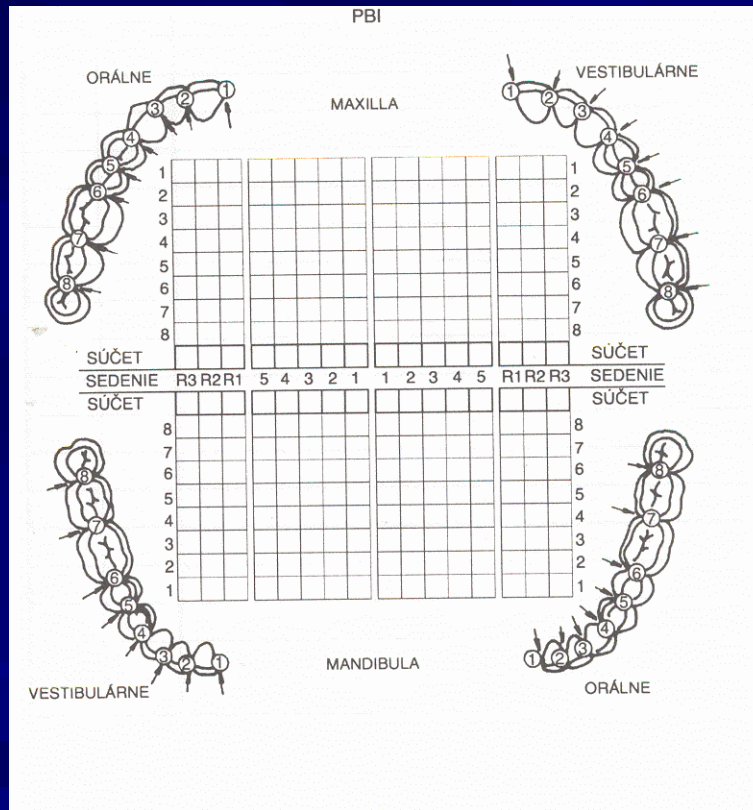
■ 4 →



**Drop**



# Measurement, expression and importance of PBI

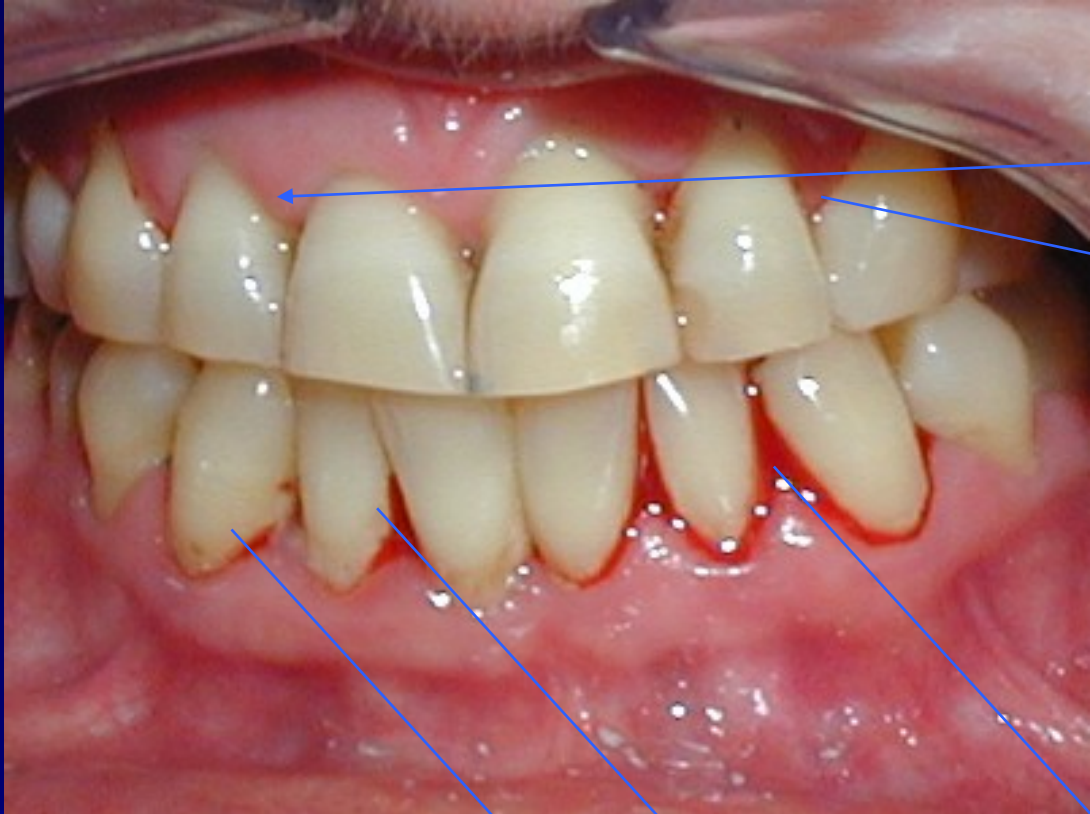


1	2
3	2
3	1
2	2
1	0
0	2
2	3
<u>12</u>	<u>14</u>
1	1
2	2
0	4
0	3
3	4
2	3
1	0
<u>9</u>	<u>17</u>

$$52:28 = 1,8$$

$$52/28$$





PBI 0

PBI 1

PBI 2

PBI 3

PBI 4



# CPITN

(Community periodontal index of treatment needs)

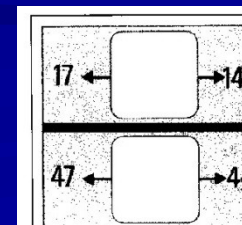
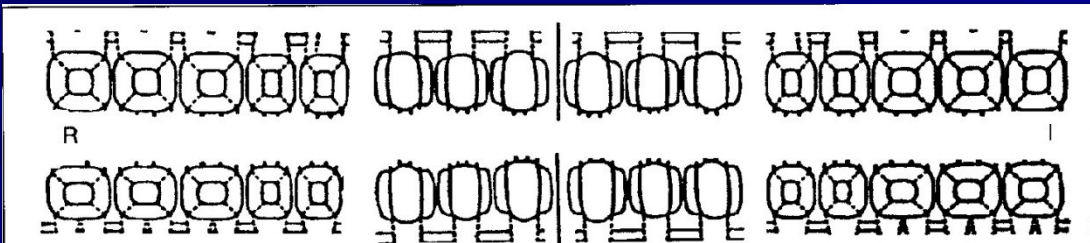
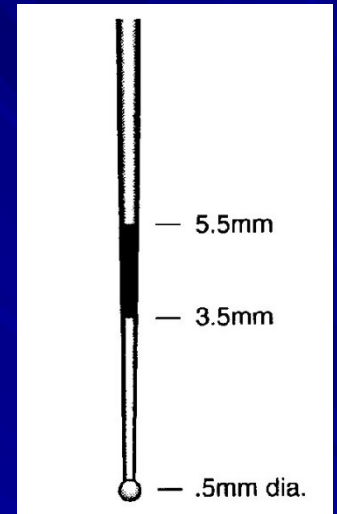
0 – normal finding

1 – bleeding

2 – dental calculus (sub or supragingival)

3- periodontal pocket 3,5 – 5,5 mm

4 – periodontal pocket deeper than 5,5 mm



■ CPI – periodontal status

■ TN – treatment needs

TN – treatment needs

0 – healthy tissues: no treatment

1 – bleeding on probing: improvement of oral hygiene

2 – dental calculus: professional hygiene needed

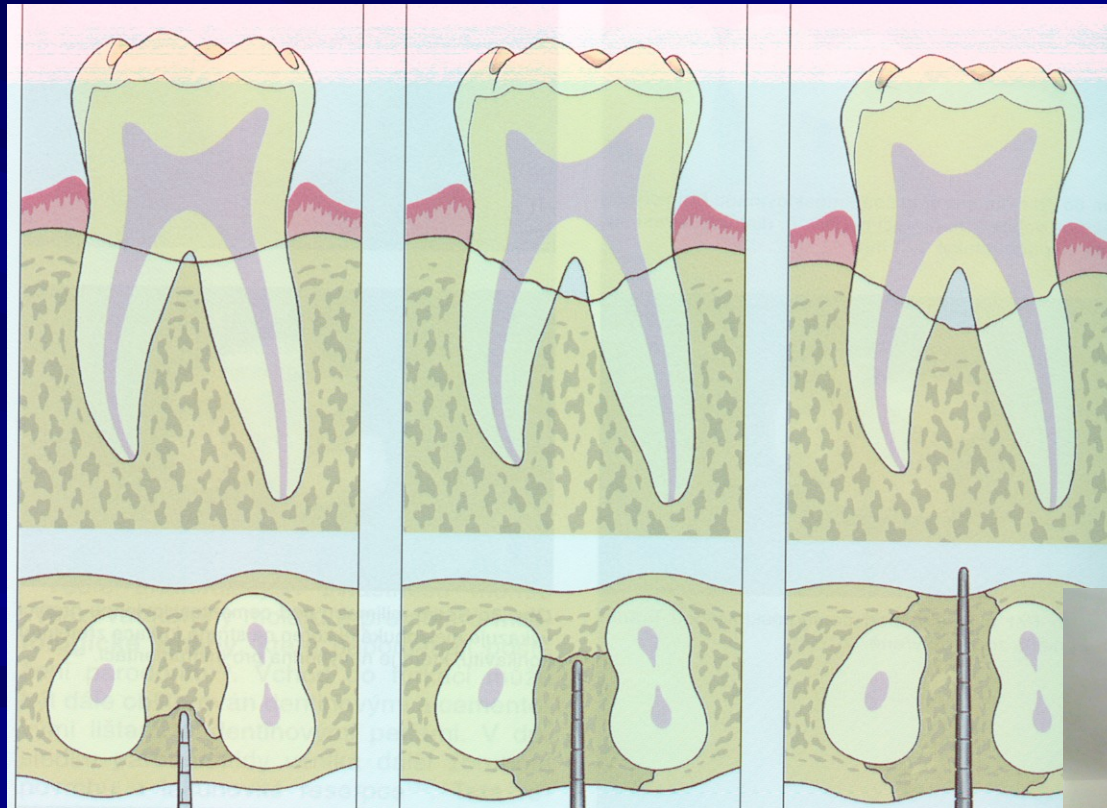
3 – complex periodontal therapy – can be conservative

4- complex periodontal therapy – surgical therapy can be needed



# Furcations

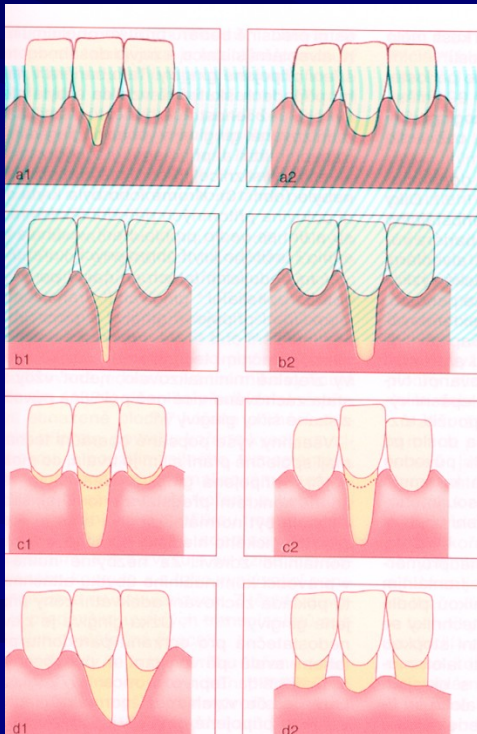
## ■ Classification





# Gingival recesions

## ■ Classification



1

2

3

4





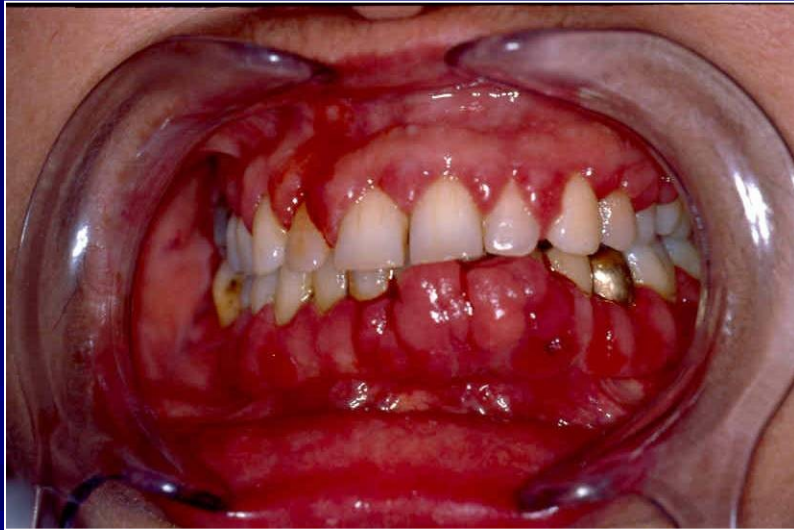
Rtg vyšetření v parodontologii



# Treatment plan

- Initial phase. Oral hygiene (motivation of the patient, individual plan of oral hygiene removal of biofilm and supragingival calculus).
- Conservative treatment - subgingival treatment: scaling and root planing



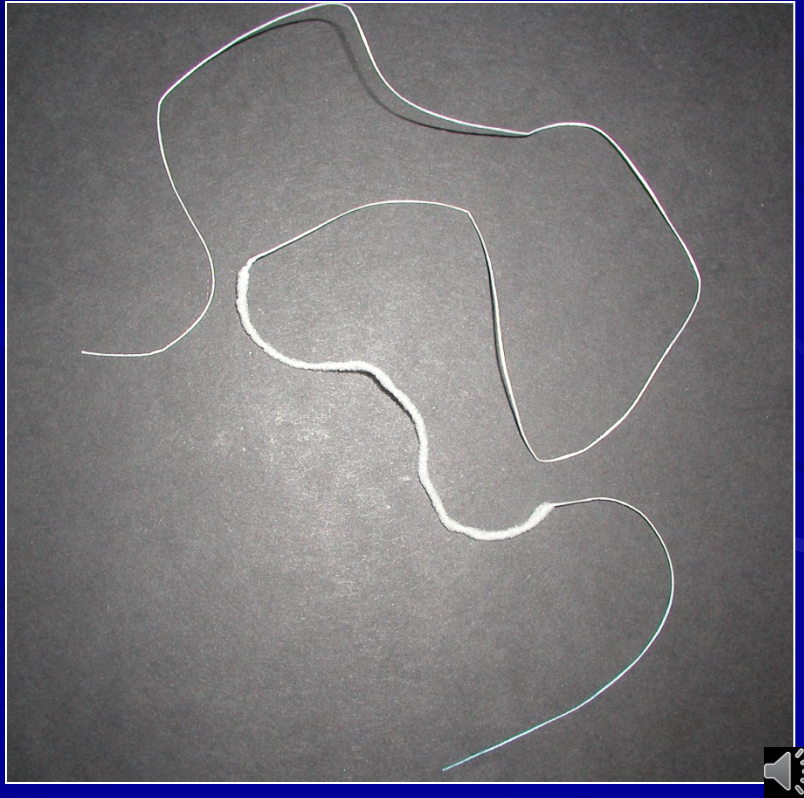
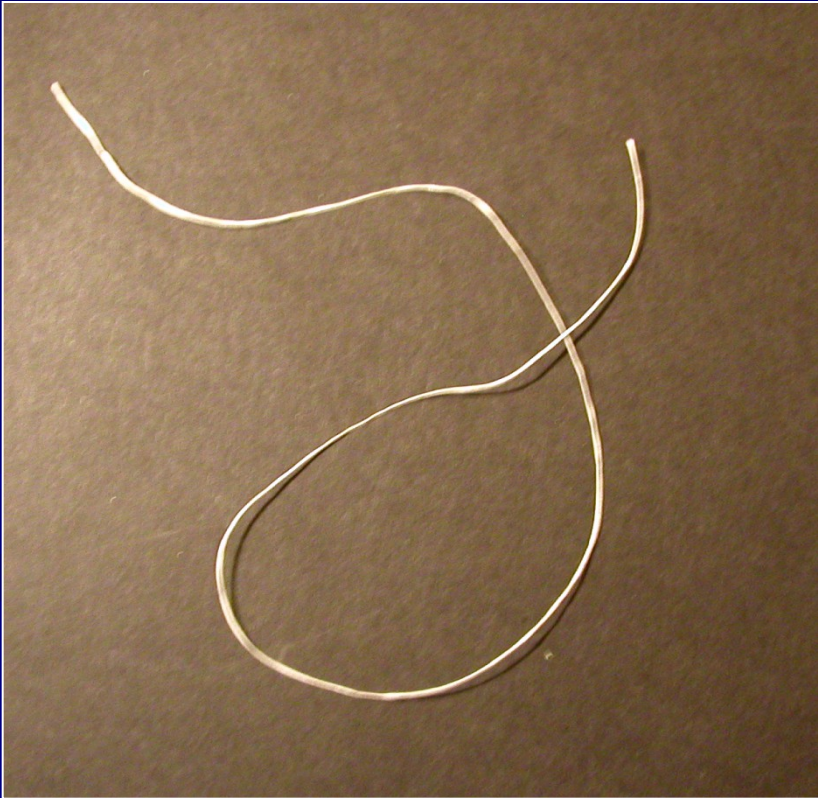


# Initial phase

- 1. Oral hygiene – home and professional







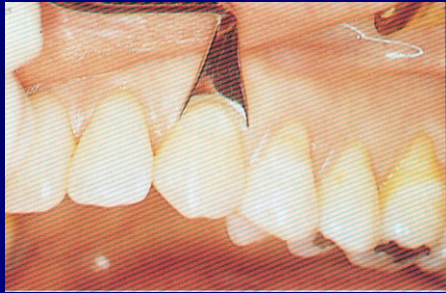
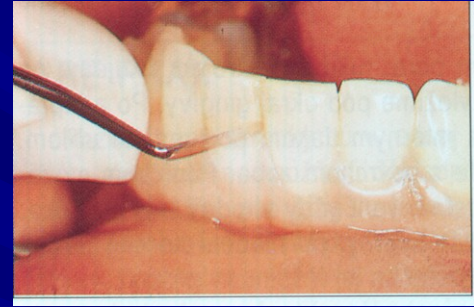
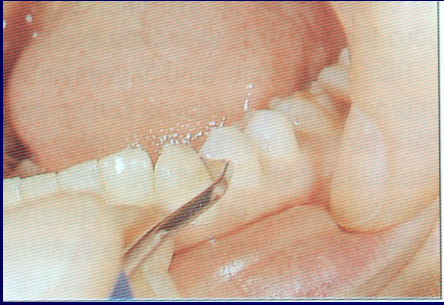
# Supragingival treatment

-Hand scalers : sharp pointed instruments of various design

-Ultrasound scalers







# Subgingival treatment

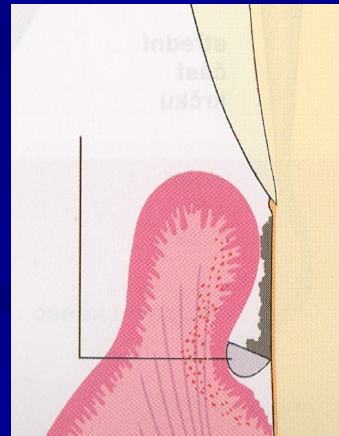
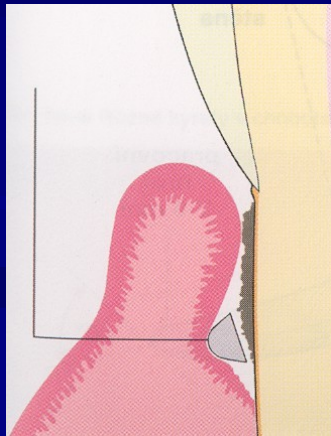
- **The treatment inside the periodontal pocket**
  - **Dental biofilm and calculus removal (subgingivally)**
  - **Ingrowth epithelium removal**
  - **Necrotic cementum removal**
  - **Smoothing of the root surface**

**Scaling and root planing**



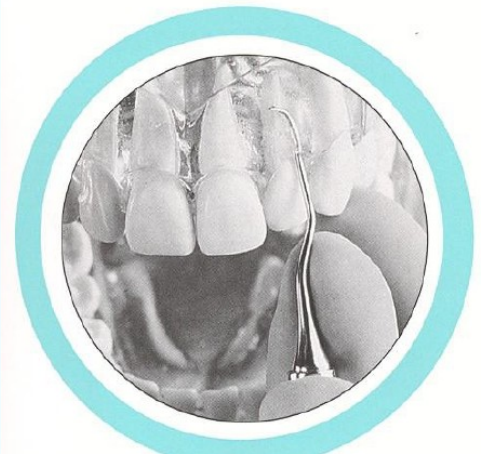
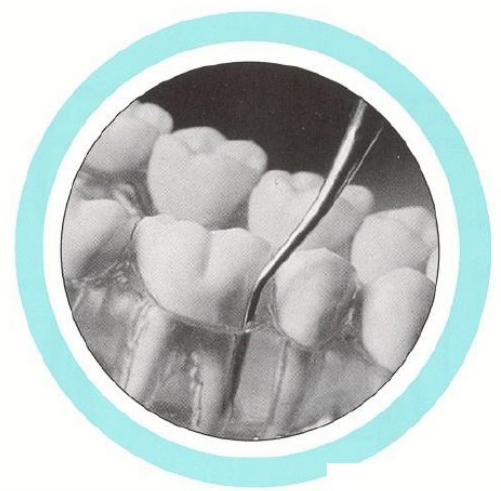
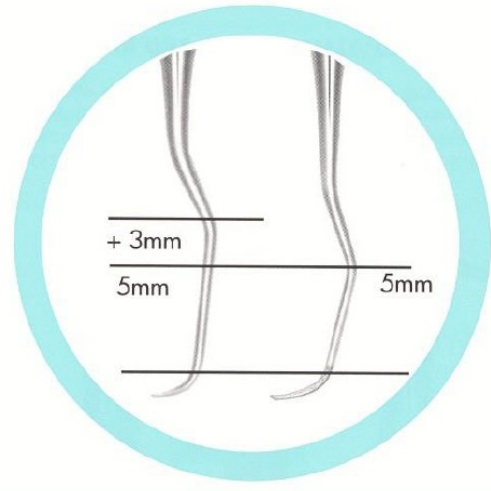
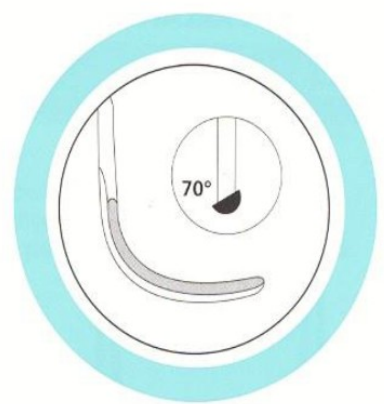
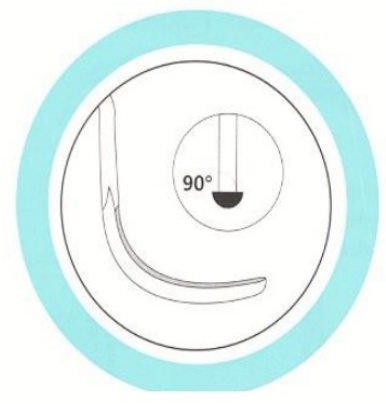
# Principles of subgingival treatment

- Currets are used



# Curretes

## Universal Special (Gracey)

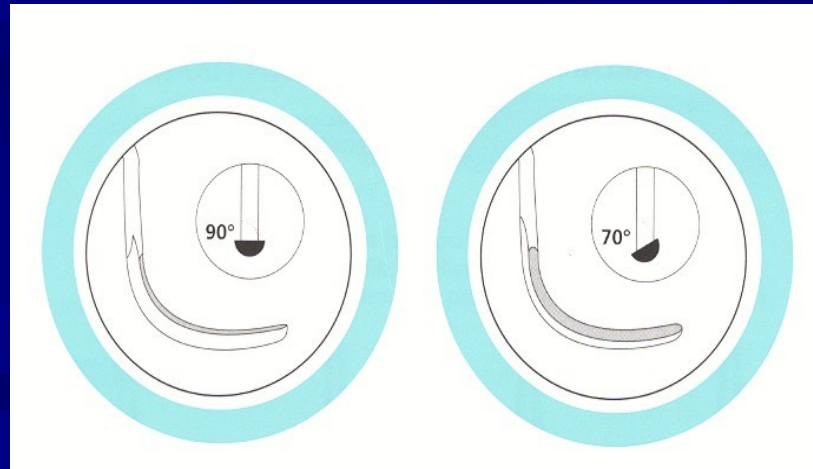


Universal curette – the angle of the working part and the shank is  $90^\circ$ , two blades

Treatment of surface the root and soft tissues

Special (Gracey) curette – the angle between the working part and the shank is  $70^\circ$

Only one blade is sharp  
Treatment of the root surface only  
Topic specificity





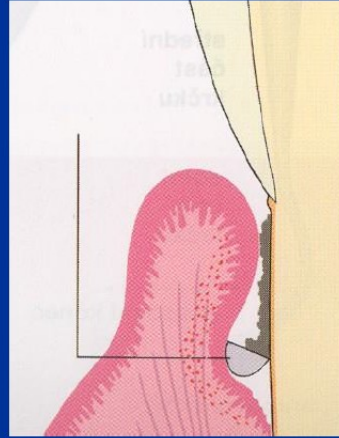
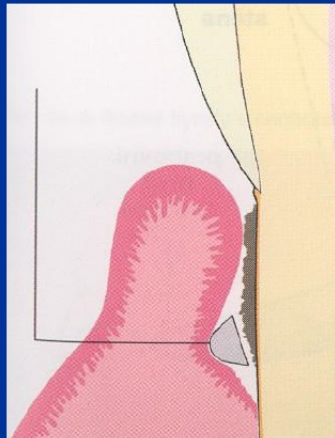
Shank

Edge



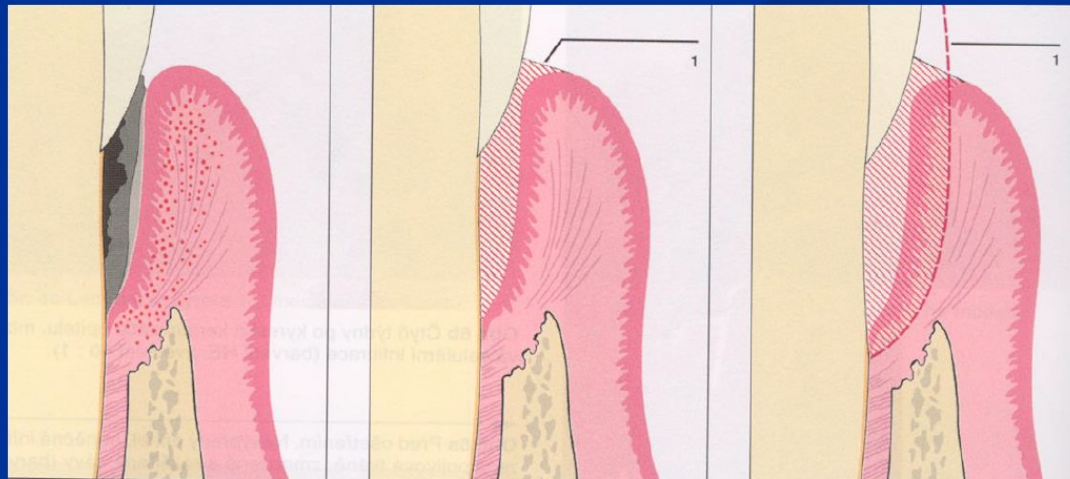
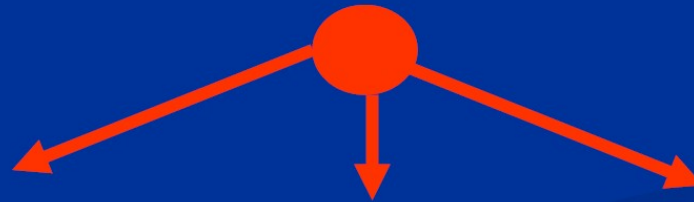
# Scaling, root planing

- Gracey curettes, cleaning of the root surface



# Therapy

- 2. Subgingival treatment – scaling root planing, curettage





# Scalers

- Sharp pointed instruments for supragingival treatment



# Curretes

- Sharp spoons for subgingival treatment



# Periodontal surgery





Phenytoin



Nifedipin



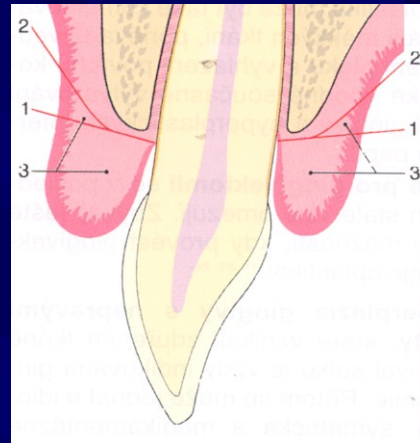
Cyclosporin A



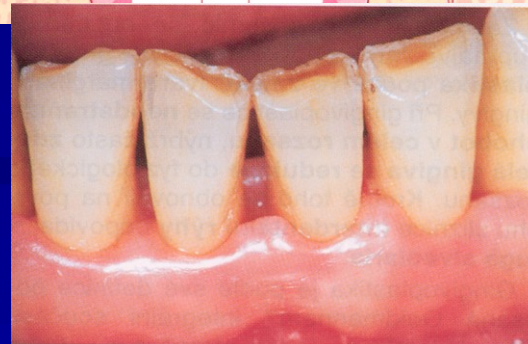
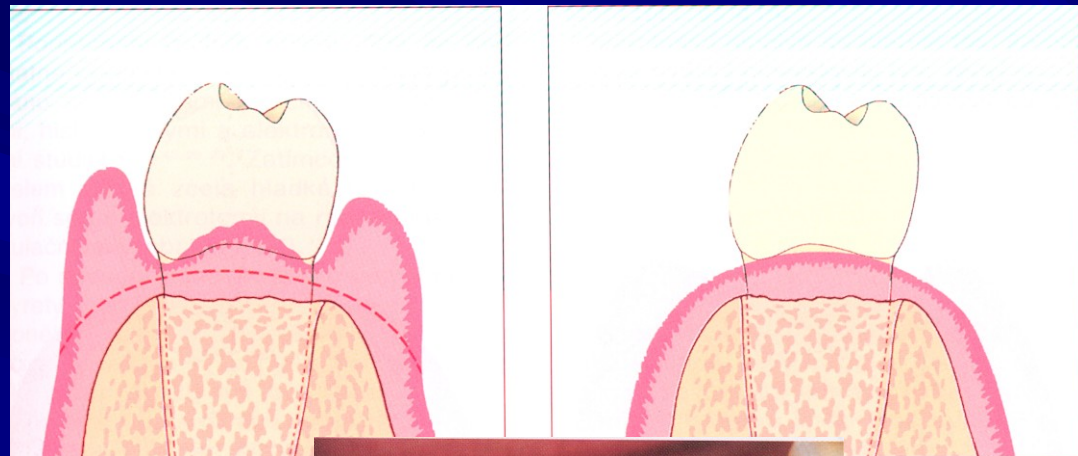
Blokátory kalciových kanálů



## Gingivectomy

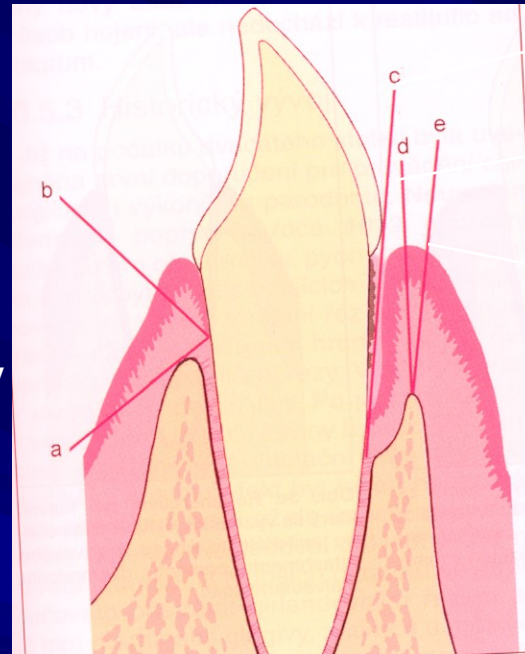


## Gingivoplasty



Internal gingivectomy

External gingivectomy



Intrasulcular

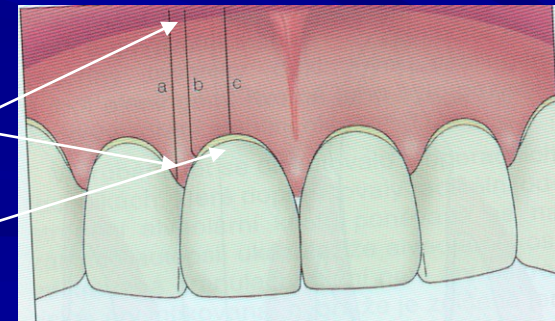
Marginal

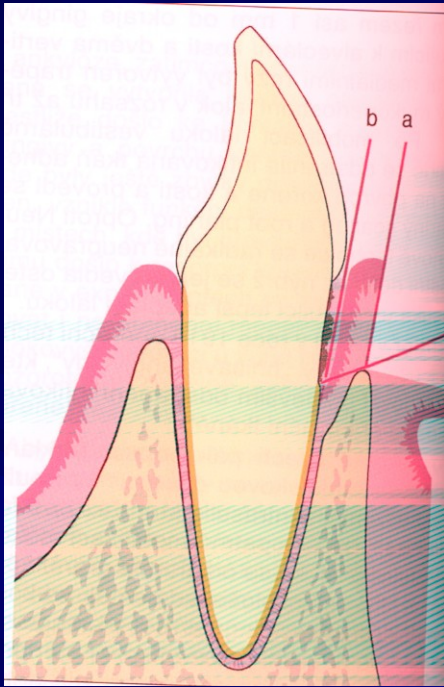
Paramarginal

Papilar

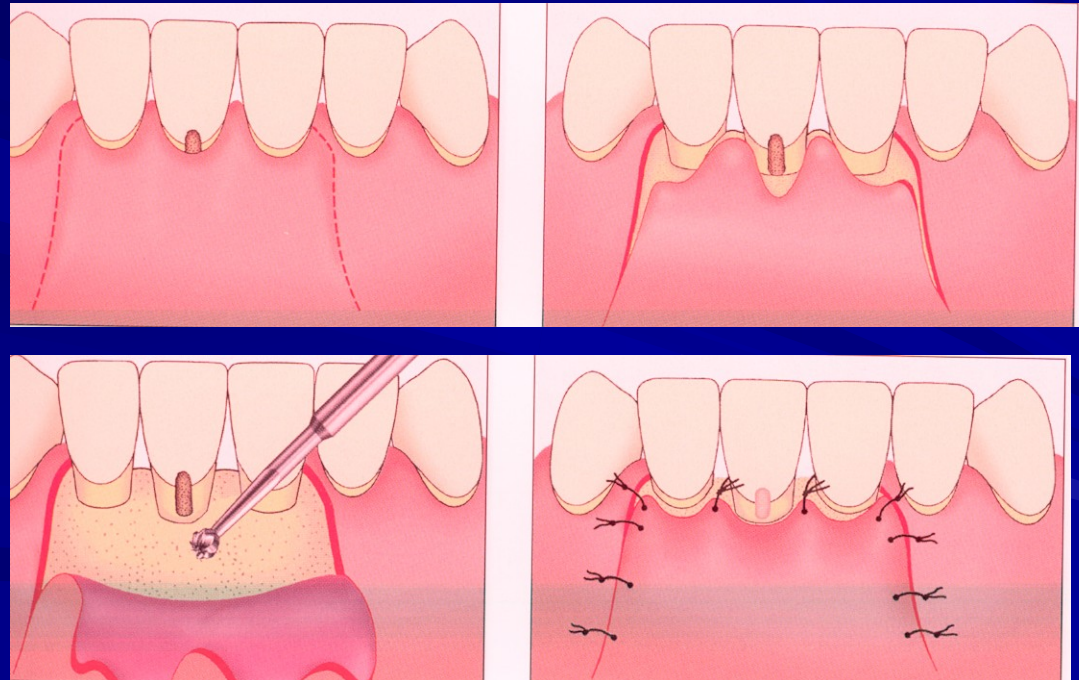
Paramedial

Medial

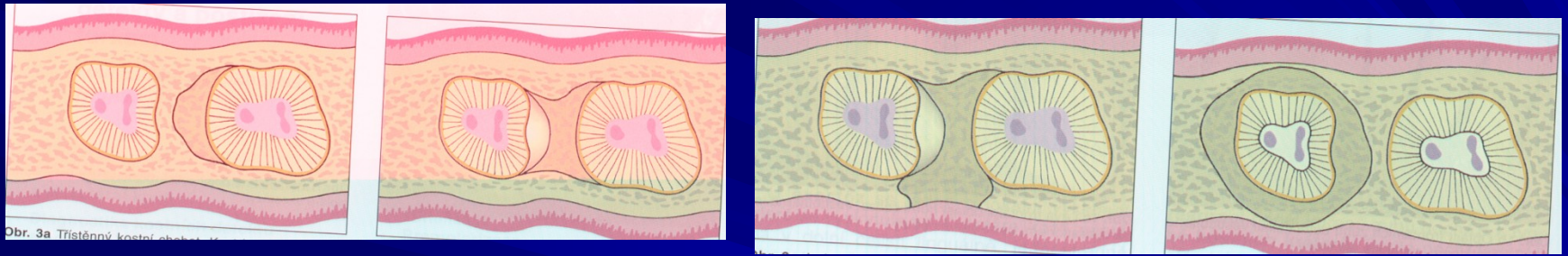




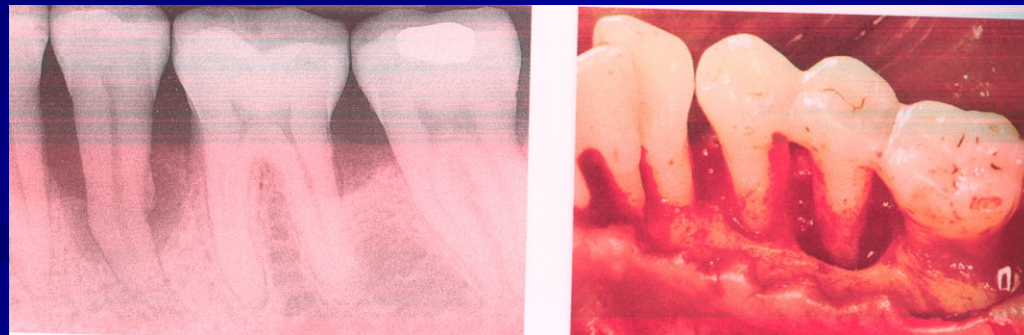
## Flap operations



# Bone defect operations



Obr. 3a Třístěnný kostní oběh





# Frenulectomy

