

# Preventive dentistry

Soft tissue - mucous membranes, gingiva

Indices - PBI, API, CPITN, BOP

Oral hygiene

Periodontological instruments

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Stomatologická klinika

FN u svaté Anny a LF MU v Brně

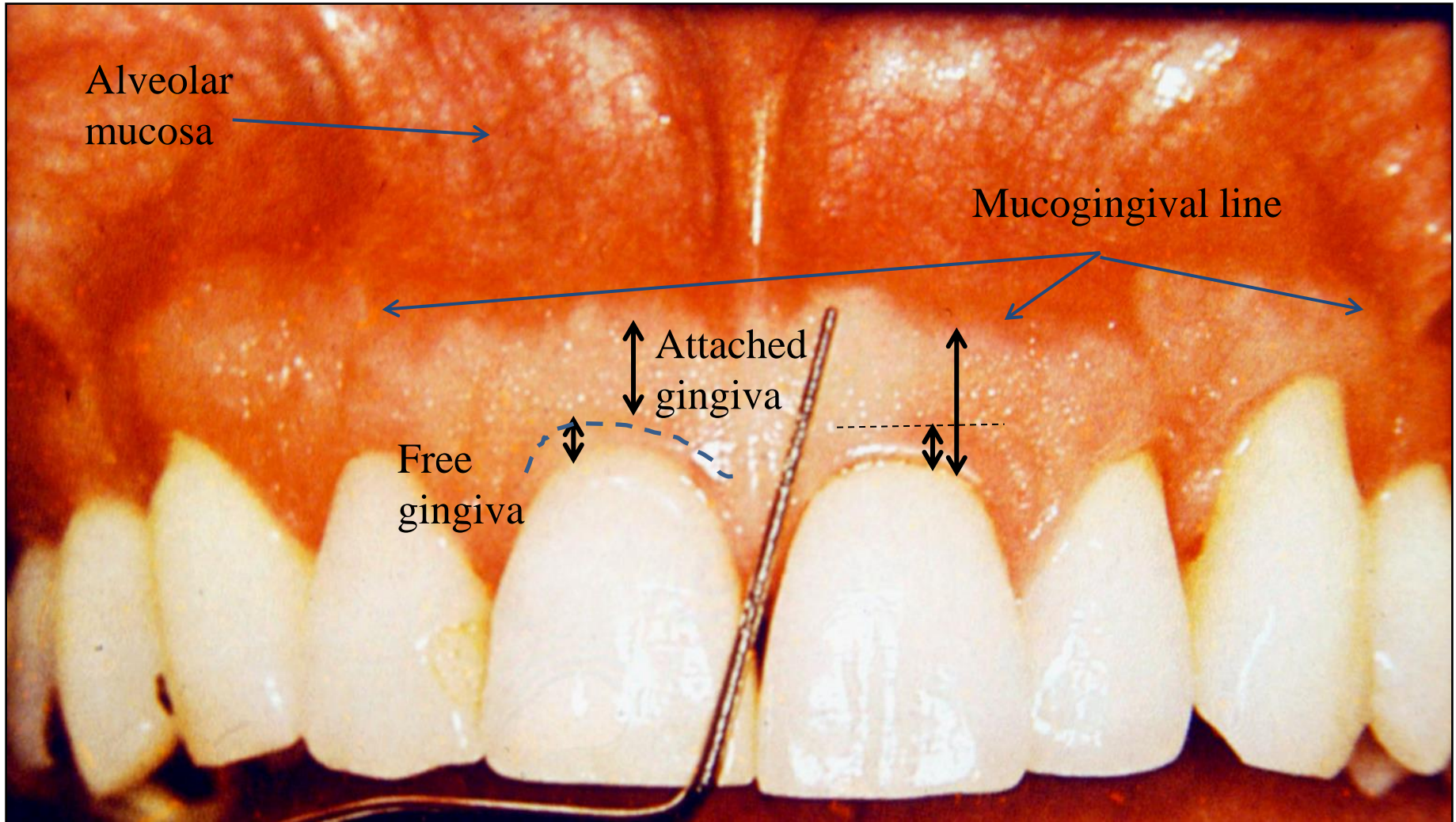
FAKULTNÍ  
NEMOCNICE  
U SV. ANNY  
V BRNĚ



MUNI

# Systematic examination of mucosal mucosa

- lip - lip red, mouth corners
- gingiva
- lip, vestibular, bucal and alveolar mucosa
- soft and hard palate, palatal arches, uvula
- tongue (dorsum, lateral sides, base)
- bottom of the oral cavity



It is needed to protect the neck of the tooth

1 - sufficient width of the connected gingiva (minimum 1-2 mm)

2 - strong (thick) or moderate gingival thickness



- Gingival thickness – strong, moderate, thin





Shallow lower vestibulum  
(insufficient width of  
attached gingiva)



Thin gingival phenotype,  
gingival recession in tooth 41  
- consequence of piercing

a



b



Tooth  
position in  
the alveolus:

b - thin  
vestibular  
lamella

b - bone  
dehiscence  
vestibularly

Physiological



Gingival



Papillary

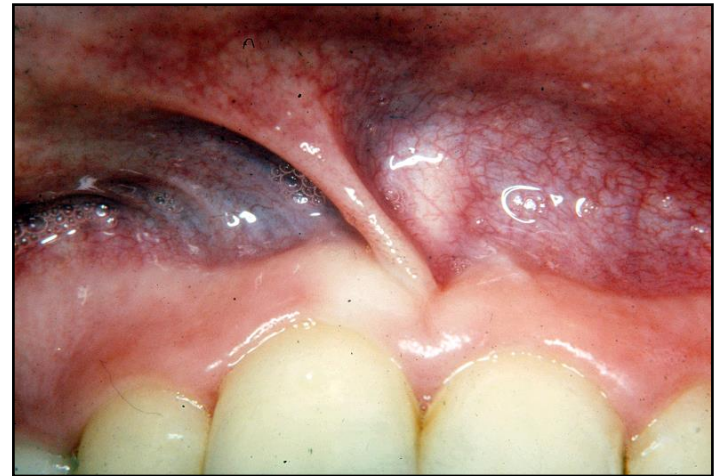


Passing through the papilla



"High frenulum attachment"

- pulling
- papillary **anemization** under pressure on the frenulum



- **movement** of the papilla and marginal gingiva under pressure on the frenulum



# Papilla Bleeding Index

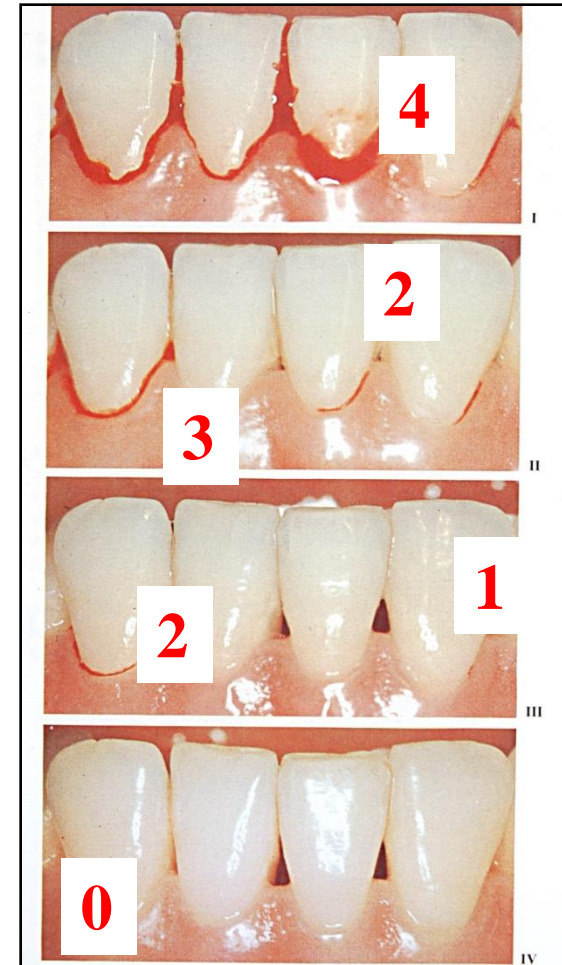
- **distal papillae** / half-papillae are evaluated
- for seven teeth in each quadrant



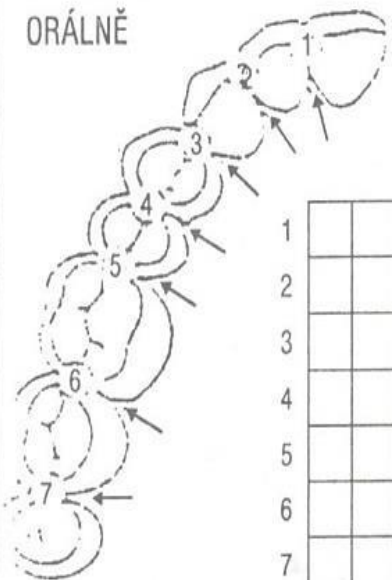


# PBI

- 0 gingiva without bleeding
- 1 **point** bleeding (spot)
- 2 stripe bleeding (**line**)  
multipoint bleeding
- 3 blood fills interdental space (**triangle**)
- 4 spontaneous bleeding, blood flows to adjacent areas (**drop**)



ORÁLNĚ



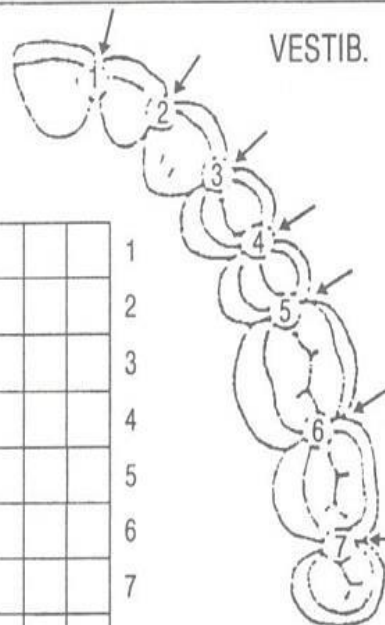
TEST KRVÁČIVOSTI PAPIL  
HČ  
PAPILA

1			
2			
3			
4			
5			
6			
7			

3	1	3	2
3	1	3	2
3	1	3	2
3	1	3	2
3	1	3	2
/	1	3	2
/	/	3	2
15	6	21	14

2	3	1	3
2	3	1	3
2	3	1	3
2	3	1	3
2	3	1	3
2	3	1	/
2	3	/	/
14	21	6	15


VESTIB.



SOUČET

8 7 6

5 4 3 2 1

1 2 3 4 5

6 7 8

VYŠETŘENÍ

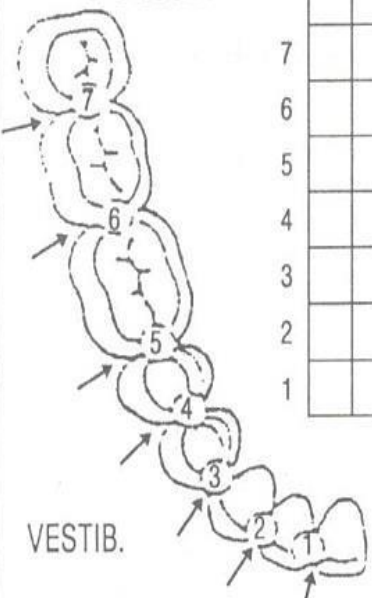
SOUČET

7			
6			
5			
4			
3			
2			
1			

10	6	15	10
/	/	3	2
/	1	3	2
2	1	3	2
2	1	3	2
2	1	3	2
2	1	/	/
2	1	/	/
2	1	/	/

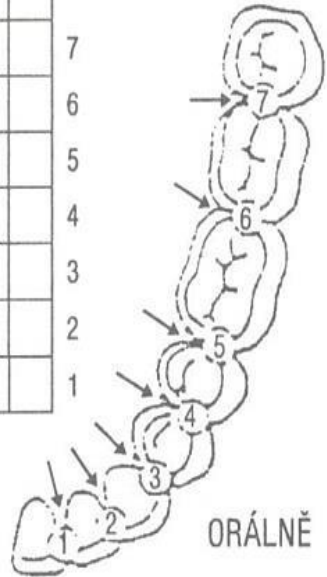
10	15	6	10
2	3	/	/
2	3	1	/
2	3	1	2
2	3	1	2
2	3	1	2
/	/	1	2
/	/	1	2


VESTIB.



DČ

ORÁLNĚ

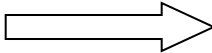


DATUM	SOUČET	INDEX
1	48/24	2
2	72/24	3
3	24/24	1
4	50/20	2,5

5			
6			
7			
8			

STUPEŇ	DEFINICE
0	PAPILA NEKRVÁČÍ
1	KREV - BOD
2	- LINKA
3	- TROJÚHELNÍK
4	- KAPKA

# Papilla Bleeding Index

- **Total value**  $4 \times 7 \times (0 - 4)$  0 - 112
- $4 \times 7 \times 0 \cong 0$   Very good OH
- $4 \times 7 \times 4 \cong 112$  Bad OH
- **Index - total value of bleeding papillae / number of examined papilla**
- Index 0 – 4
- Influence of smoking on PBI !!!

## Determine the PBI value

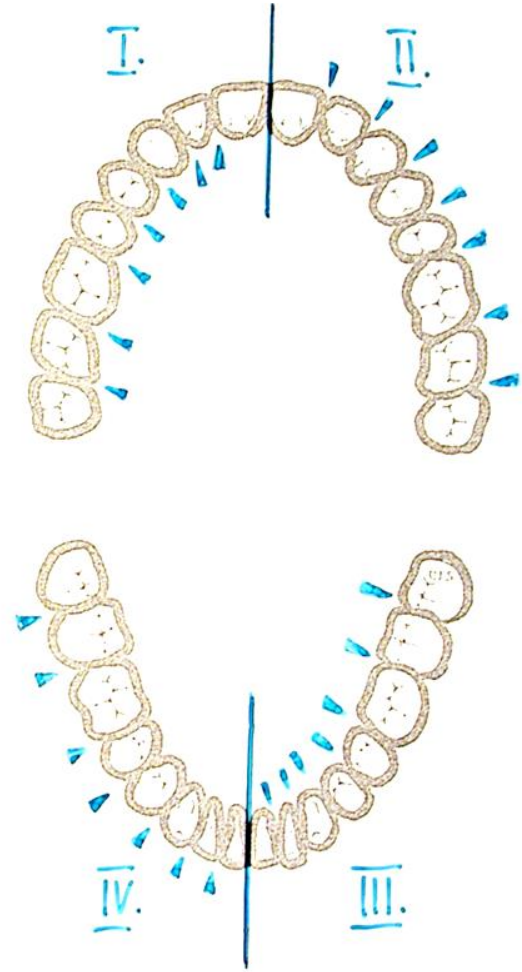
Example: all distal papillas have PBI 4, all teeth are present: PBI 112/28 index 4

1/ all distal papillas have PBI 2	3rd molares and all lower incisors are missing	48/24	PBI 2
2/ all distal papillas have PBI 3	all lower incisors are missing	72/24	PBI 3
3/ all distal papillas have PBI 1	3rd and 2nd molares are missing	24/24	PBI 1
4/ all upper distal papillas have PBI 3; all lower distal papillas have PBI 2	all molares are missing	50/20	PBI 2,5



# API

- 4 quadrants
- I. and III. quadrant from oral aspect
- II. and IV. quadrant from facial aspect
- 28 measurement sites in complete dentition



# Aproximal Plaque Index API

- number of locations **with plaque** / number of evaluated areas  $\times 100$  (%)
- $28/28 \times 100 \cong 100\%$  Bad OH
- $0/28 \times 100 \cong 0\%$  Very good OH
- Good motivation ability

17	16	15	14	13	12	11	21	22	23	24	25	26	27
----	----	----	----	----	----	----	----	----	----	----	----	----	----

+	+	+	+	-	-	-	-	-	-	+	+	+	+
+	+	+	+	-	-	-	-	-	-	+	+	+	+

47	46	45	44	43	42	41	31	32	33	34	35	36	37
----	----	----	----	----	----	----	----	----	----	----	----	----	----

## Index API

number of locations **with plaque** / number of  
evaluated areas  $\times 100$  (%)

$$\text{API} \cong 16 / 28 \times 100 \cong 57 \%$$

# Interdental Hygiene Index HYG

- reverse
- number of locations **without plaque** / number of evaluated areas  $\times 100$  (%)
- $28/28 \times 100 \cong 100\%$  Very good OH
- $0/28 \times 100 \cong 0\%$  Bad OH



17	16	15	14	13	12	11	21	22	23	24	25	26	27
----	----	----	----	----	----	----	----	----	----	----	----	----	----

-	-	-	-	+	+	+	+	+	+	-	-	-	-
-	-	-	-	+	+	+	+	+	+	-	-	-	-

47	46	45	44	43	42	41	31	32	33	34	35	36	37
----	----	----	----	----	----	----	----	----	----	----	----	----	----

## Index HYG

number of locations **without plaque** / number  
of evaluated areas  $\times 100$  (%)

$$\text{API} \cong 12 / 28 \times 100 \cong 43 \%$$

## Determine the API value when all teeth are present

API = number of areas with plaque / number of evaluated areas × 100 (%)

1/ all distal aproximal areas at molars have a plaque, the others not

8/28

API 28,5 %

2/ all distal aproximal areas at incisors and canines have a plaque, the others not

12/28

API 42,8 %

3/ all distal aproximal areas at molars and premolars have a plaque, the others not

16/28

API 57,1 %

4/ all distal aproximal areas at molars and premolars have a plaque, the others not. 3rd and 2nd molares and 1st premolars are missing

8/20

API 40 %

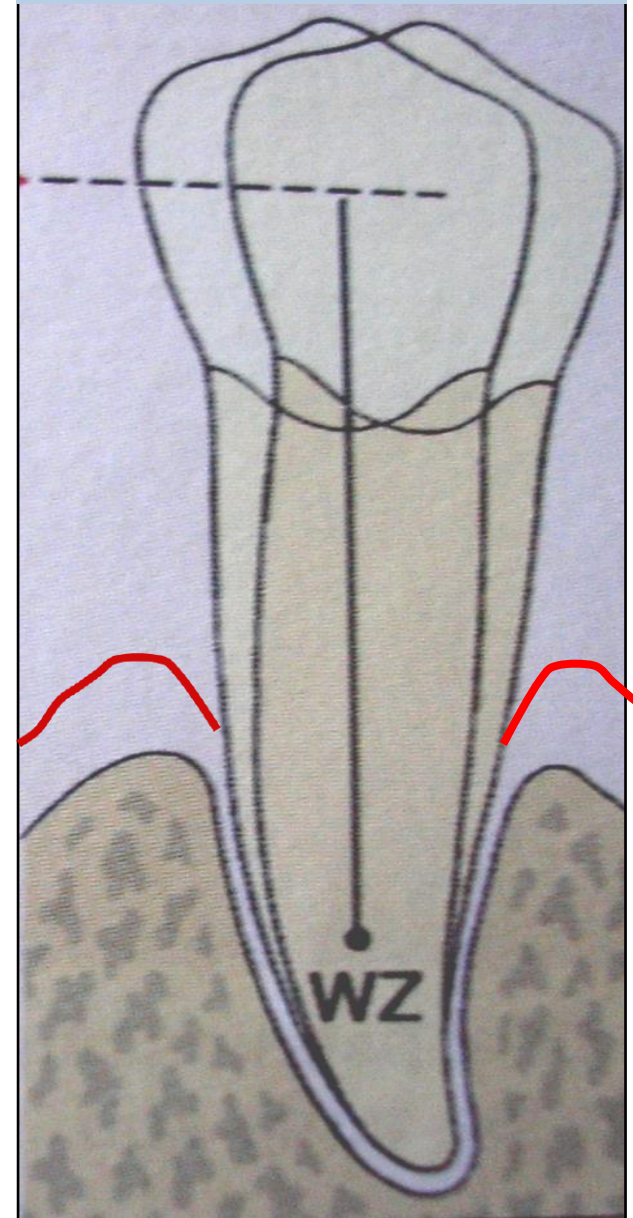
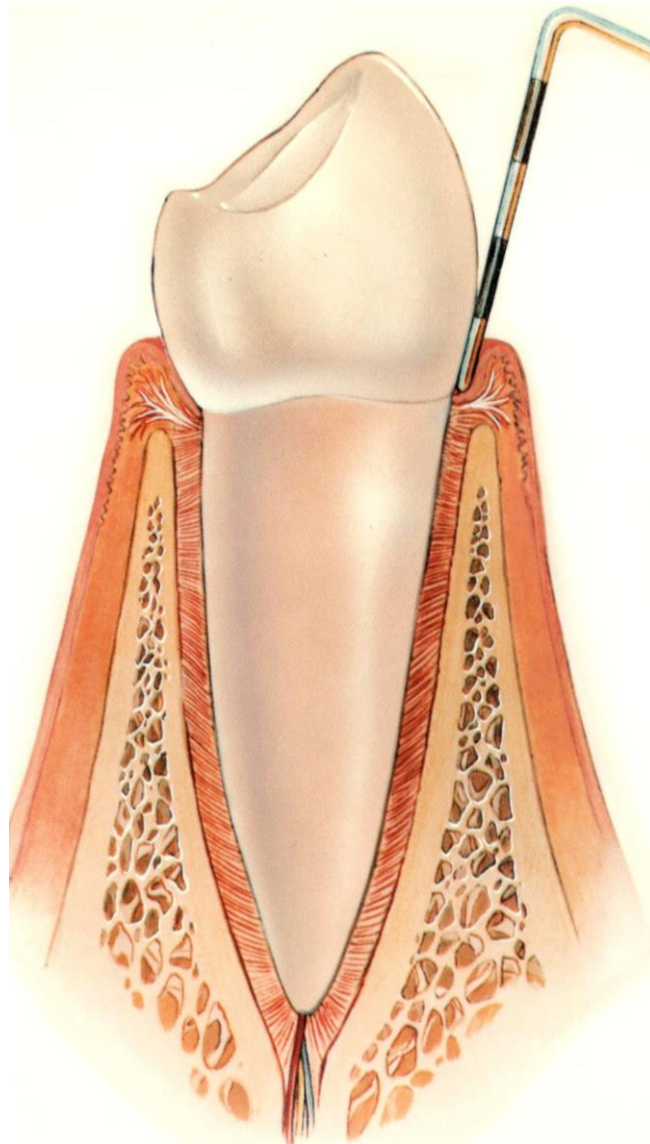


# CPITN O

# CPITN O

# CPITN O

- no **bleeding**
- no **calculus**
- **probing** up to 3,5 mm (without) so probing can be 0.5 mm / 1 mm 2 mm / 3 mm





# CPITN

## CPITN 0,1,2

- probing depth can be 0.5/1/2/3 mm

- no pocket

## CPITN 3

- probing depth can be 4/5 mm

- shallow pocket

## CPITN 4

- probing depth can be 6/7/8.....mm

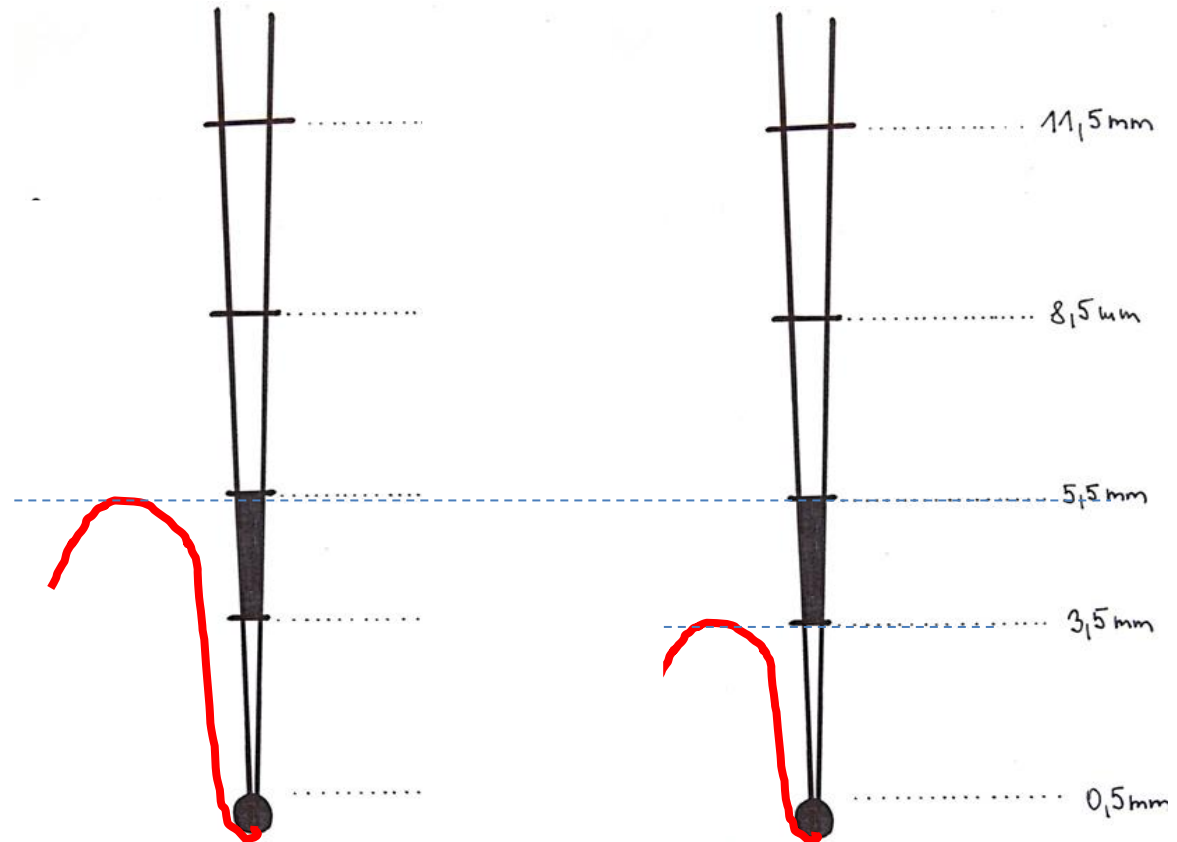
- deep pocket

Probing depth 5,5 mm

CPITN 4

Probing depth 3,5 mm

CPITN 3

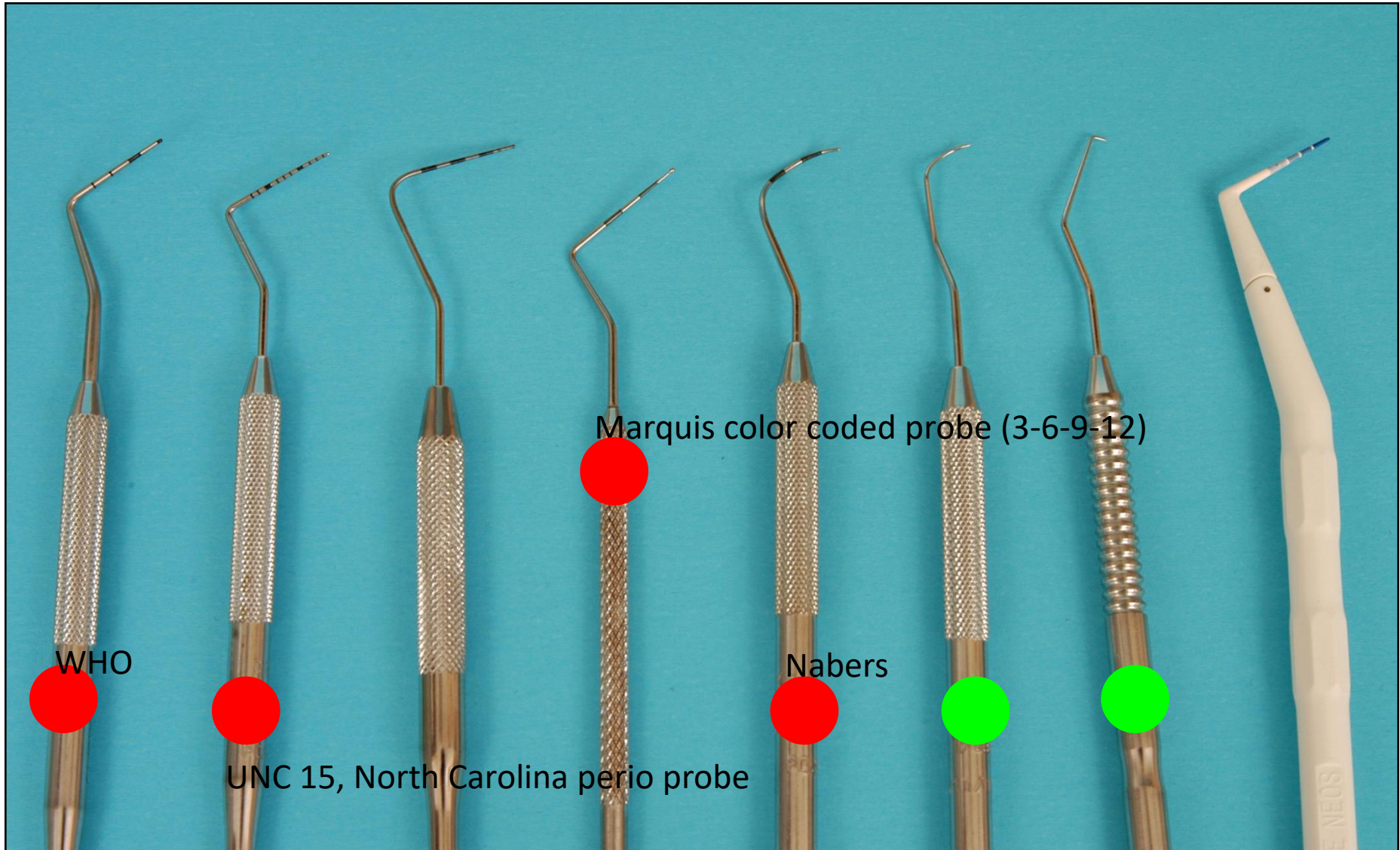


	Bleeding	Calculus	Pocket probing depth (in mm)	CPITN
1	-	-	3	0
2	-	-	3,5	3
3	-	+	3	2
4	-	+	3,5	3
5	+	+	3	2
6	+	+	3,5	3
7	-	-	4	3
8	+	+	4	3
9	+	-	5,5	4
10	-	+	5,5	4
11	-	-	8	4
12	+	+	8	4

# Periodontological instruments

- Periodontological probes
- Explorers
- Instruments and apparatus for supragingival and subgingival treatment
- Polishing equipment

# Periodontal probes and explorers





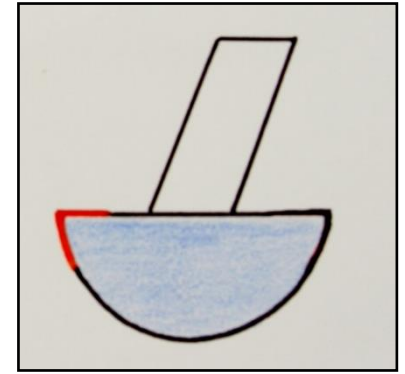
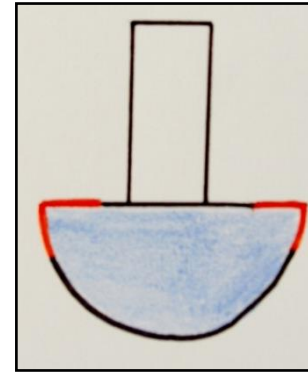
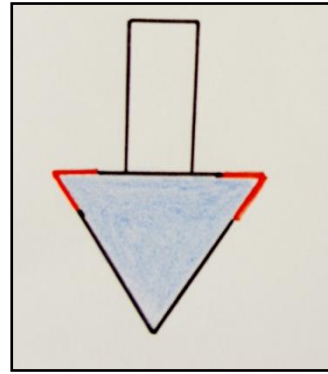
- **Hand instruments**

Scalers

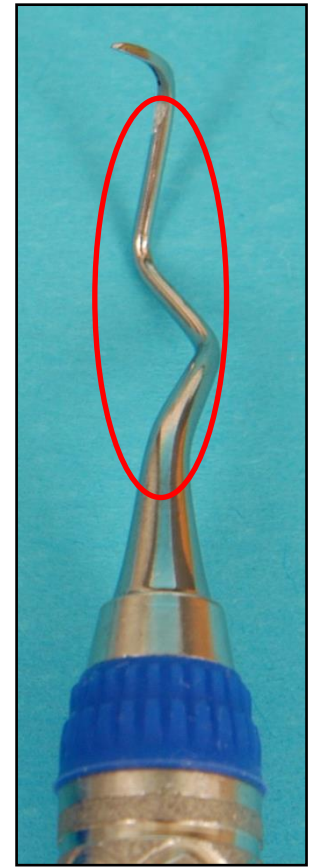
Curettes

universal

special



- Handle
- Shank
- Working part



# Instruments for the frontal area - incisors, canines





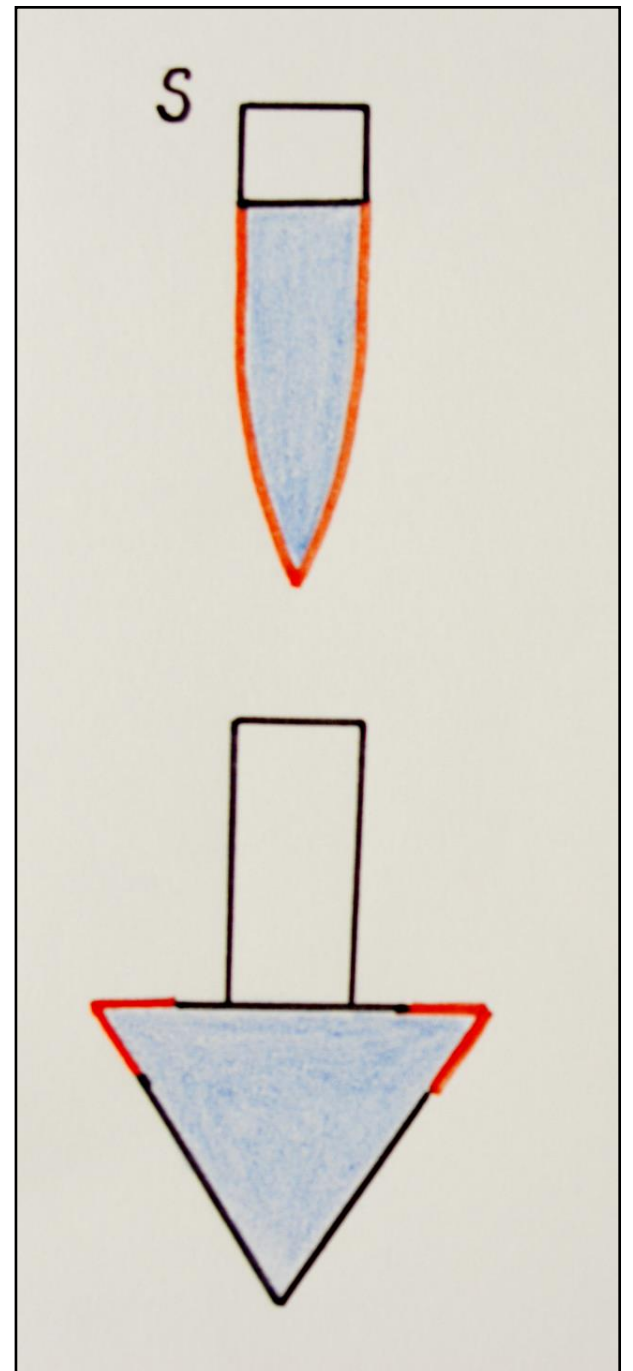
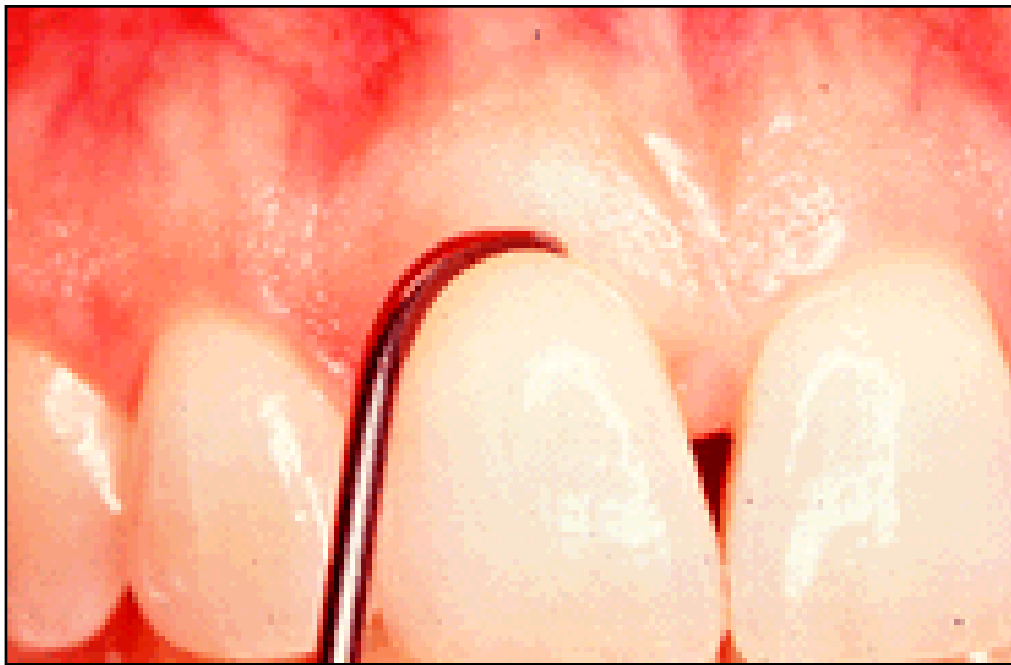
# Instruments for the distal area - premolares, molares





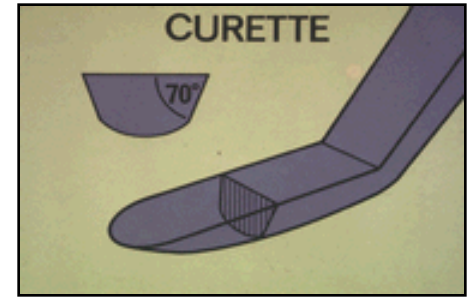
# Scalers

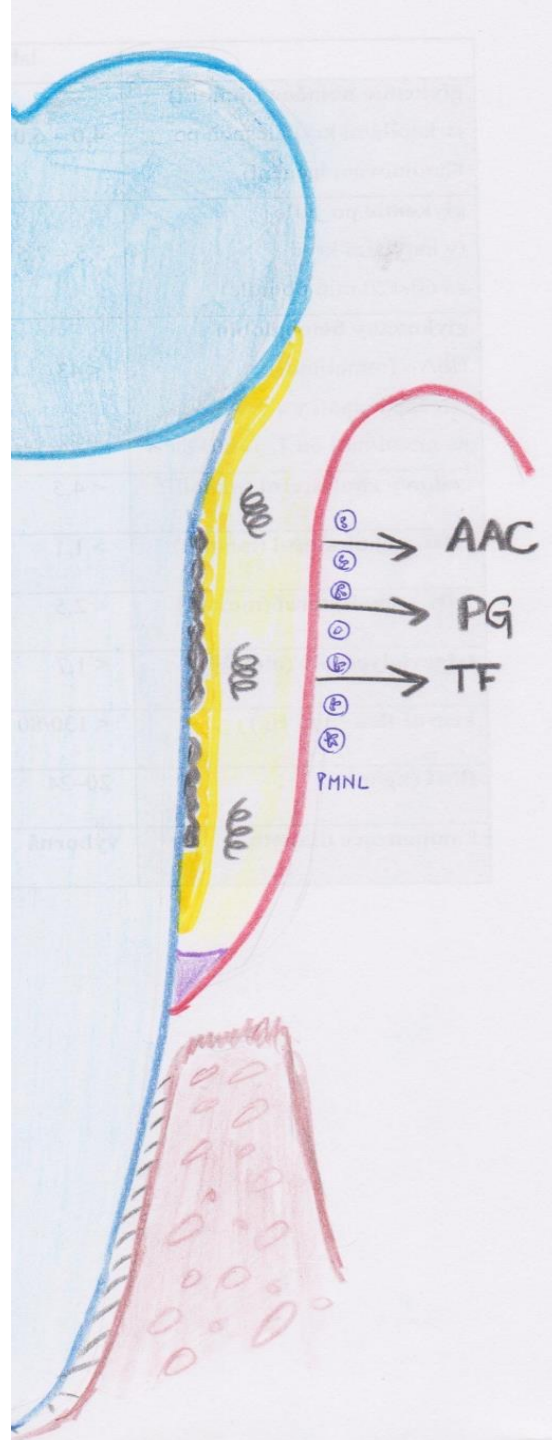
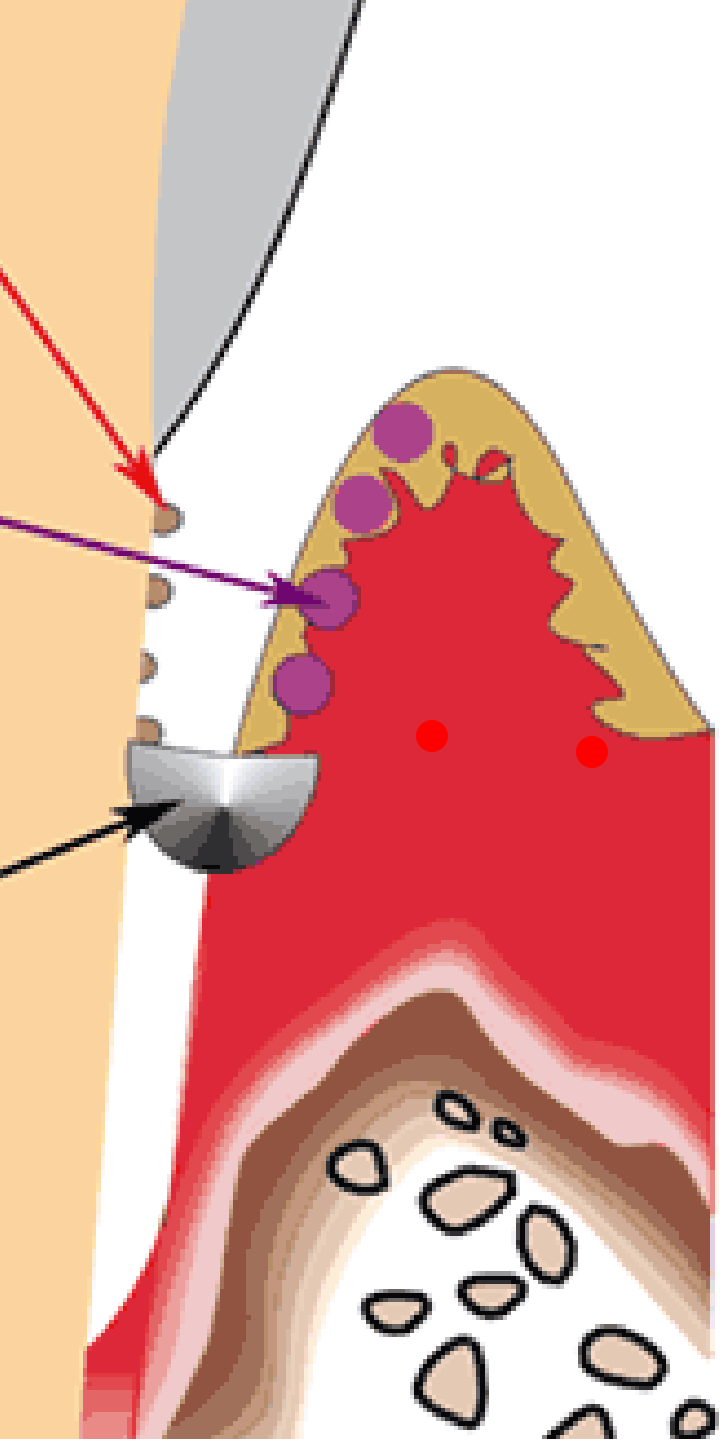






# Universal cures

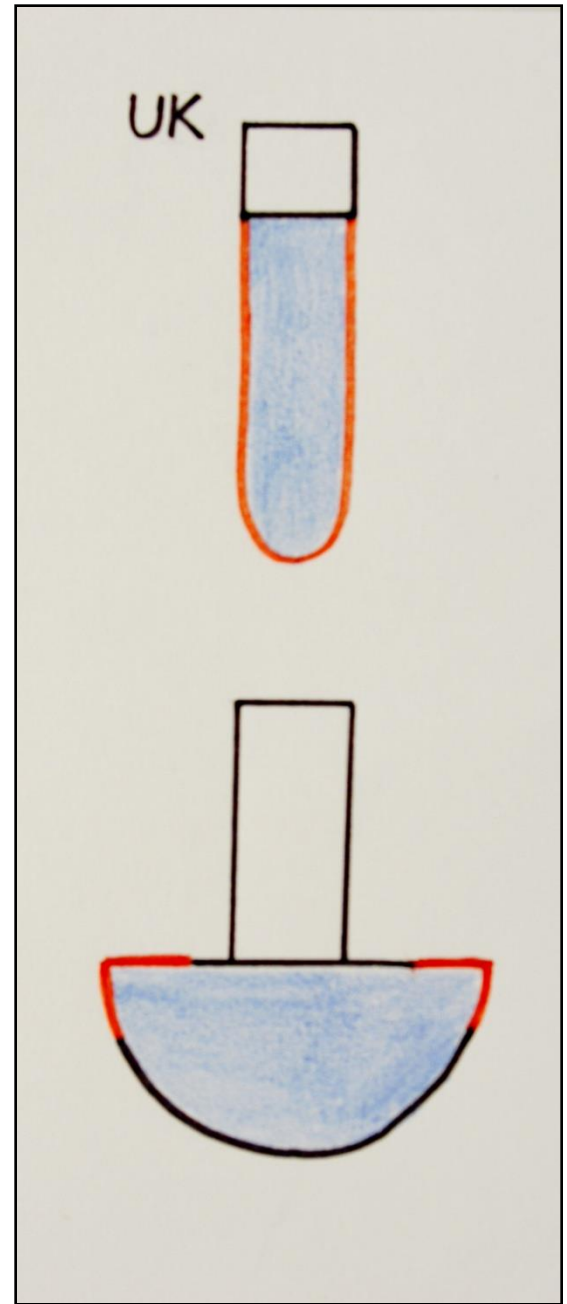
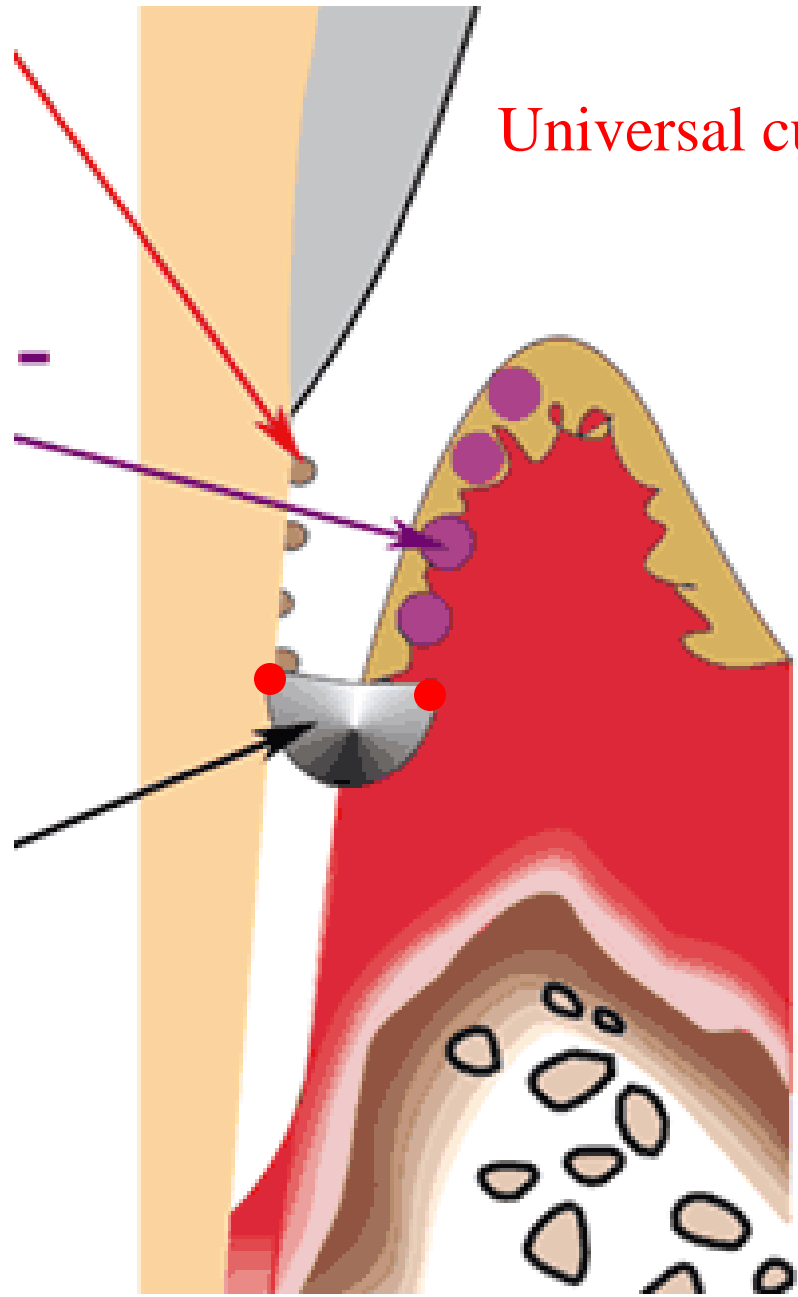




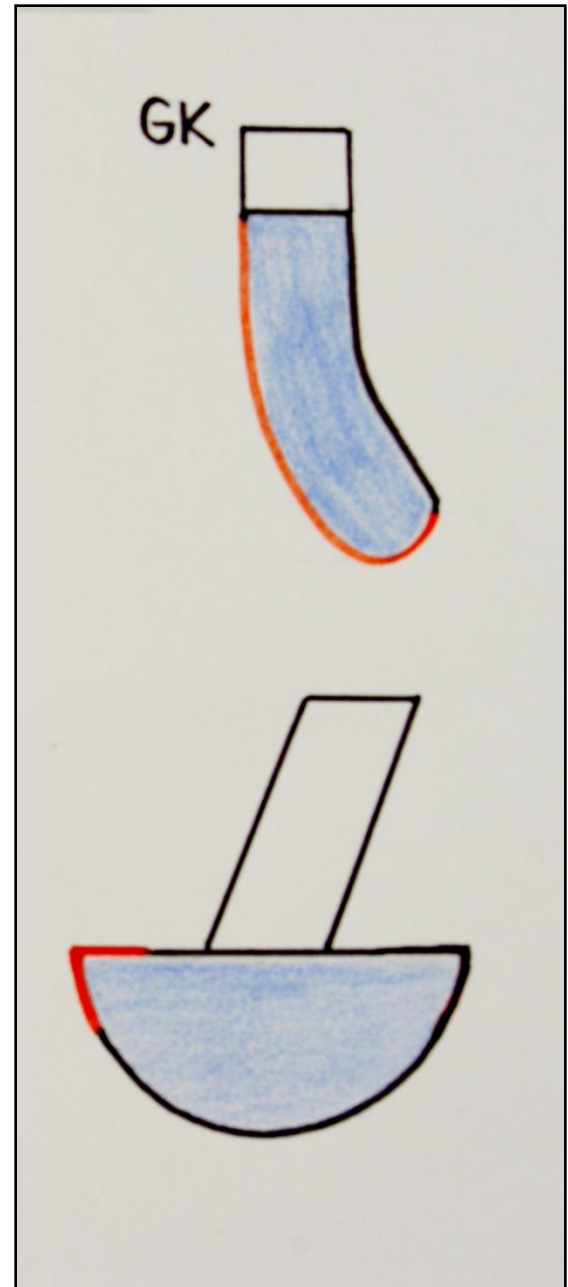
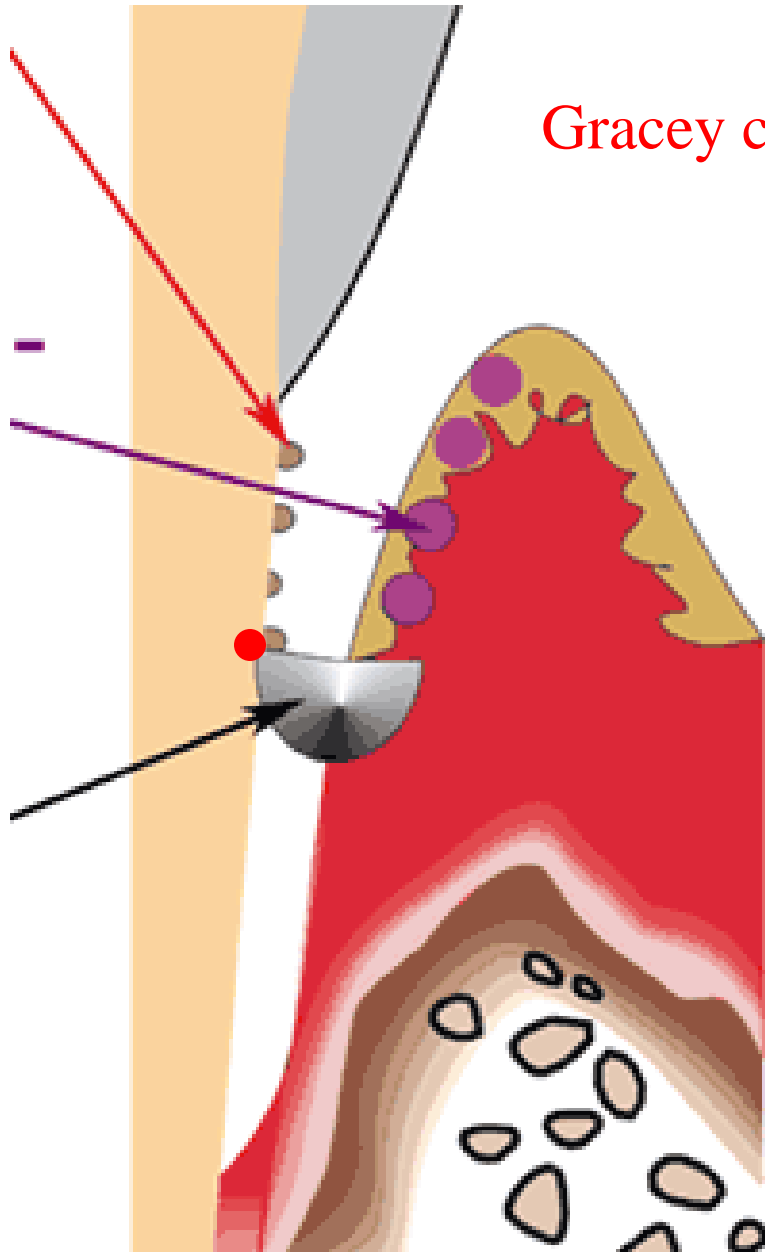
Periodontal pocket:

- swimming plaque
- adherent plaque
- subging. calculus
- infected layer of cementum
- infected inner layer of the gingival wall

# Universal curette



# Gracey curette





1/2

3/4

5/6

7/8

9/10



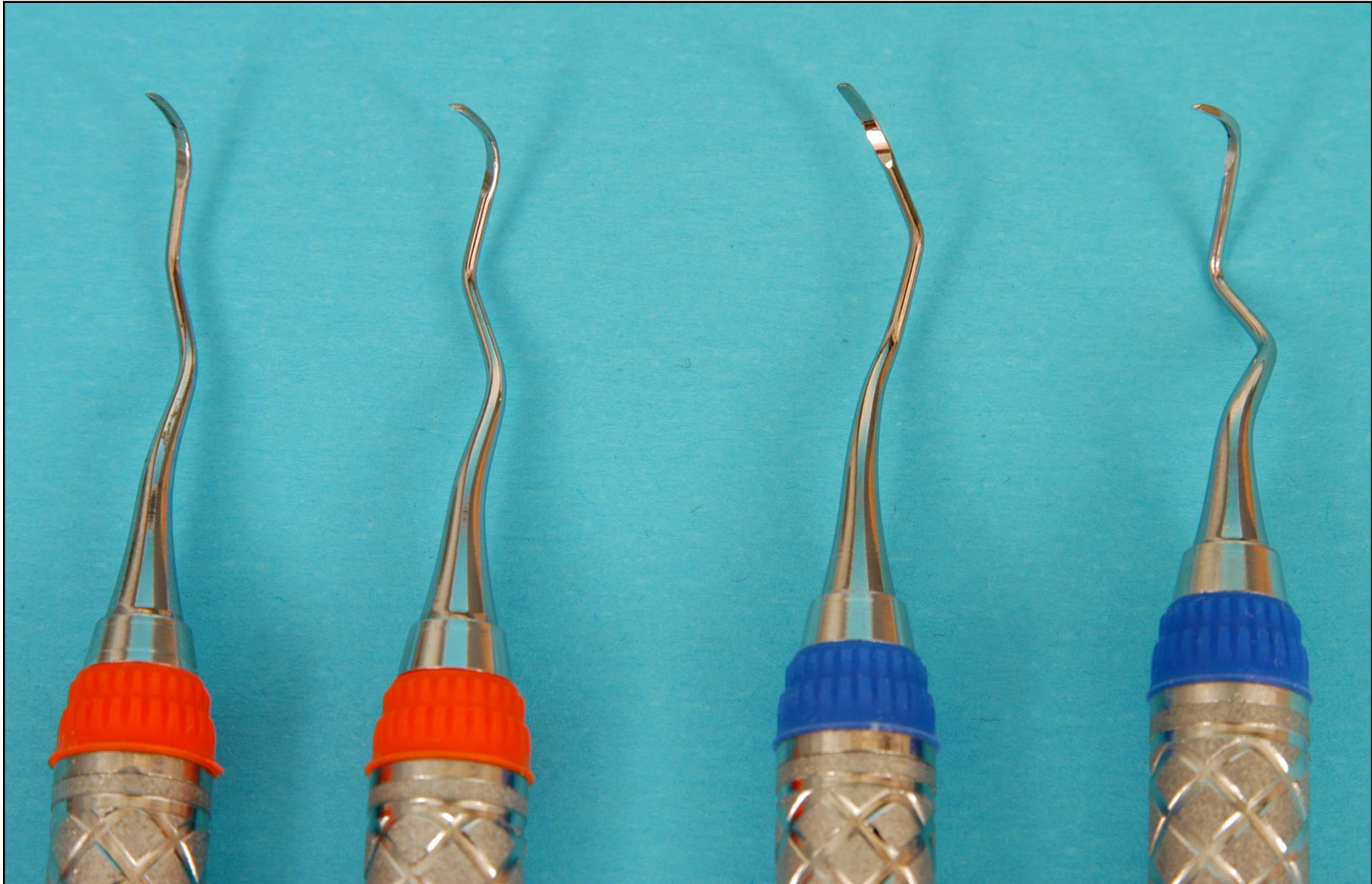


11/12

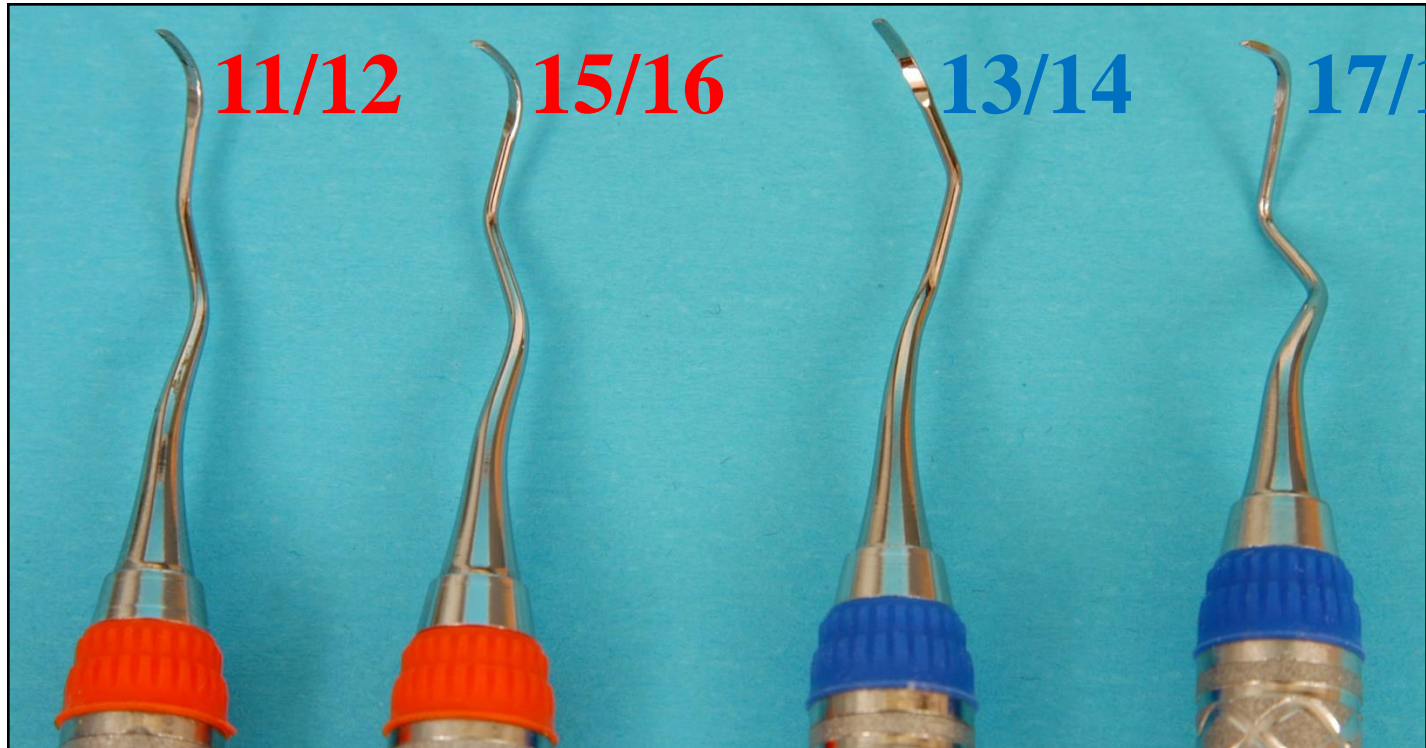
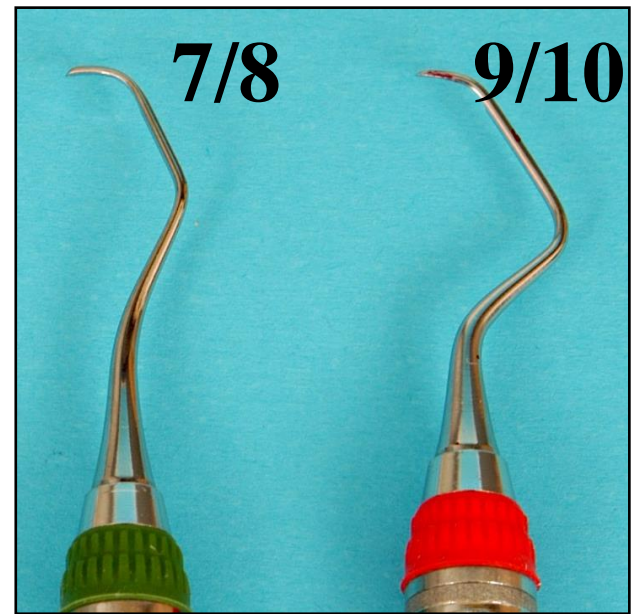
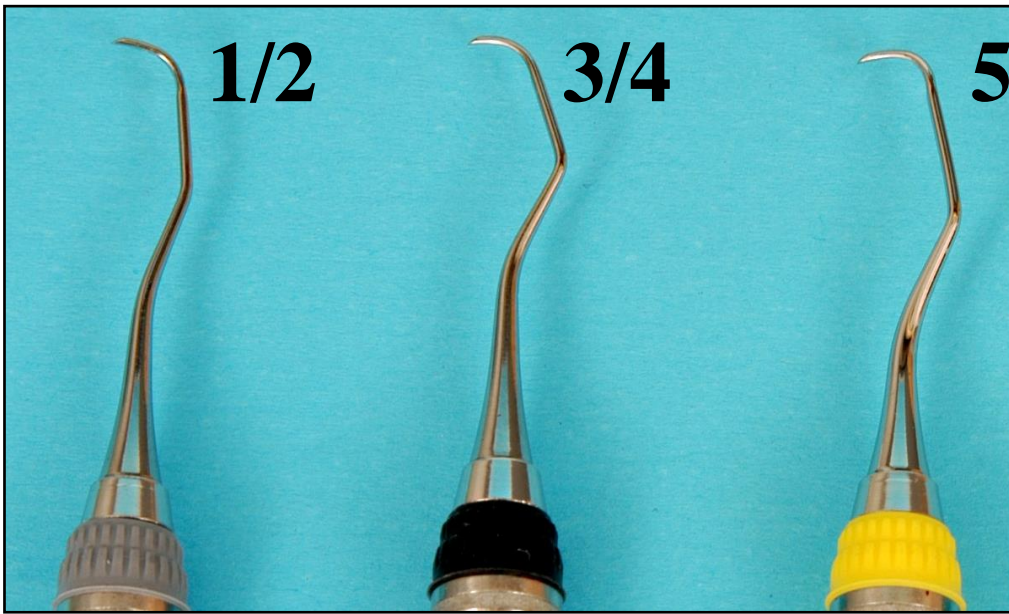
15/16

13/14

17/18







# Bacterial complexes as described by Socransky et al :

• 5 complexes:

• Primary colonizers:

Streptococcus  
species

Actinomyces  
odontolyticus

• Secondary colonizers:

- Eikenella corrodens
- A.a comitans serotype a
- Capnocytophaga species

- Fusobacterium
- Prevotella intermedia
- Campylobacter sp.

- Porphyromonas gingivalis
- Tannerella forsythia
- Treponema denticola

# Perio PATOGENS

- **Aggregatibacter (Actinobacillus) actinomycetemcomitans serotyp b**

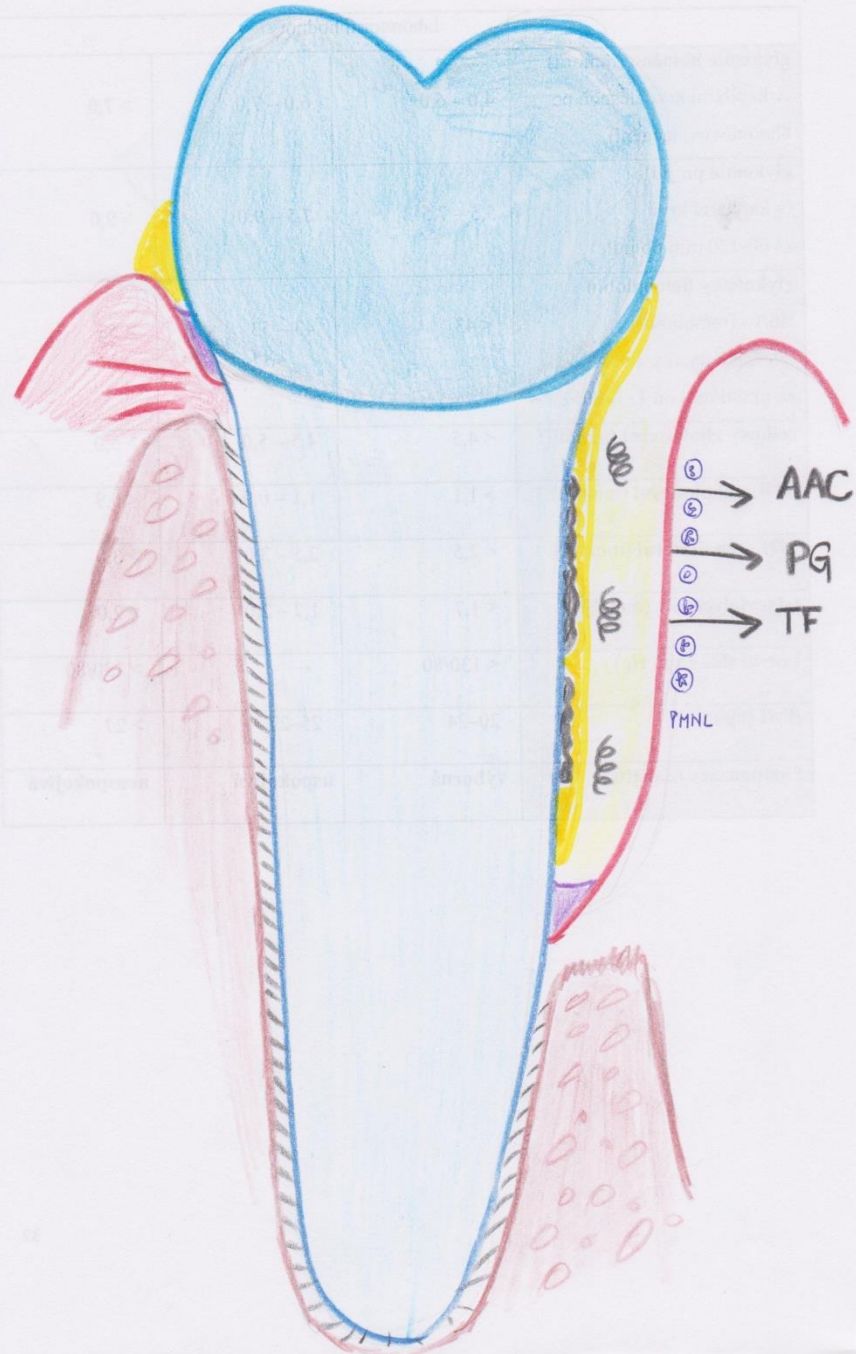
- **Porphyromonas gingivalis**
- **Tannerella forsythia**
- **Treponema denticola**

- **Prevotella intermedia**
- **Fusobacterium nucleatum**
- **Peptostreptococcus micros**

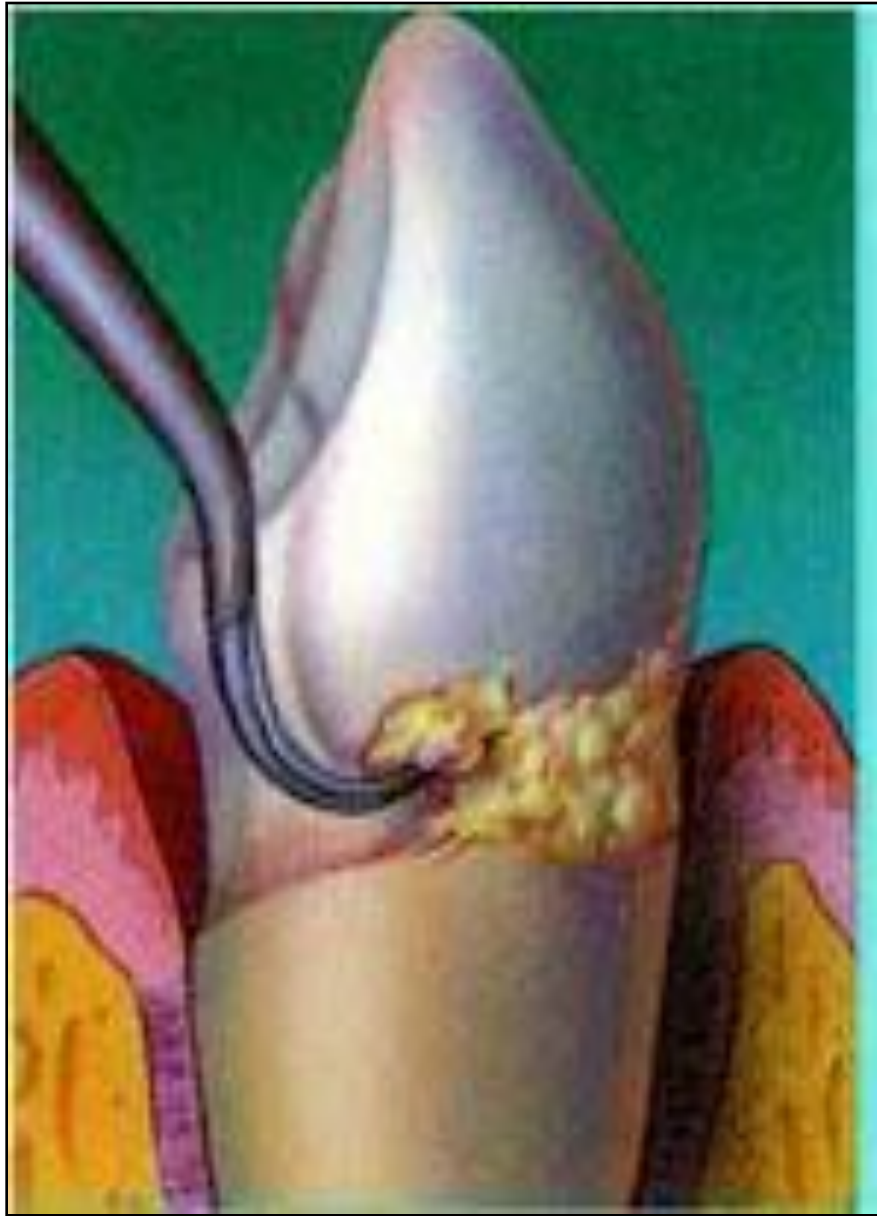
are able to  
invad soft  
tissue of  
perio pocket



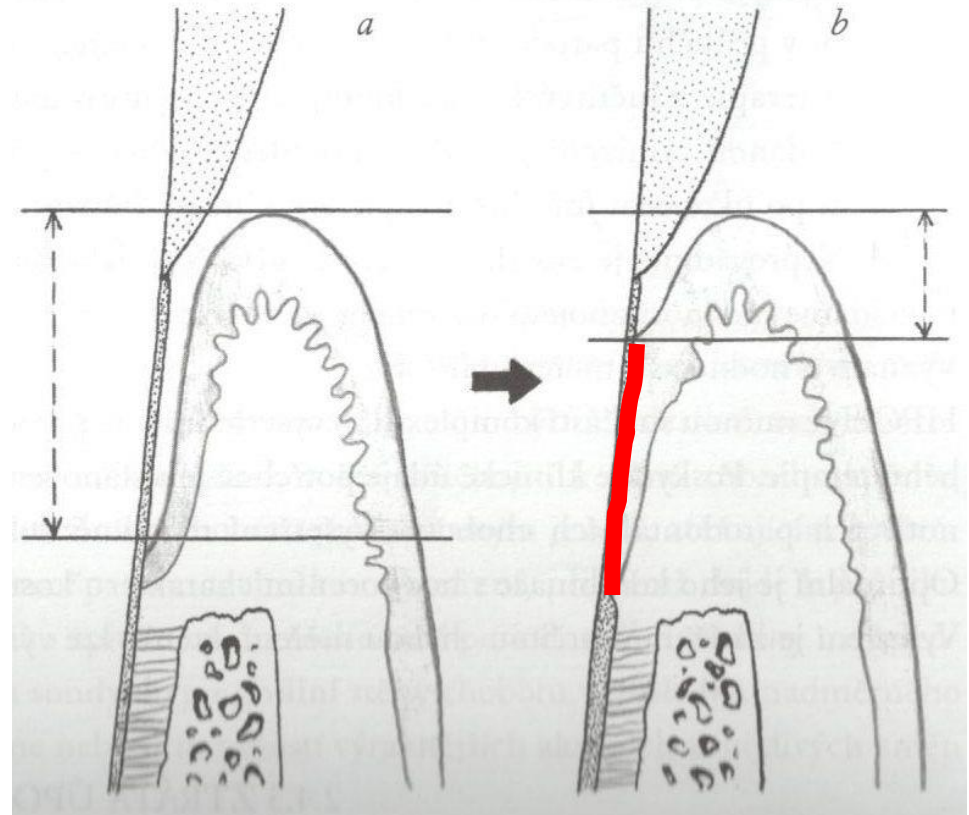
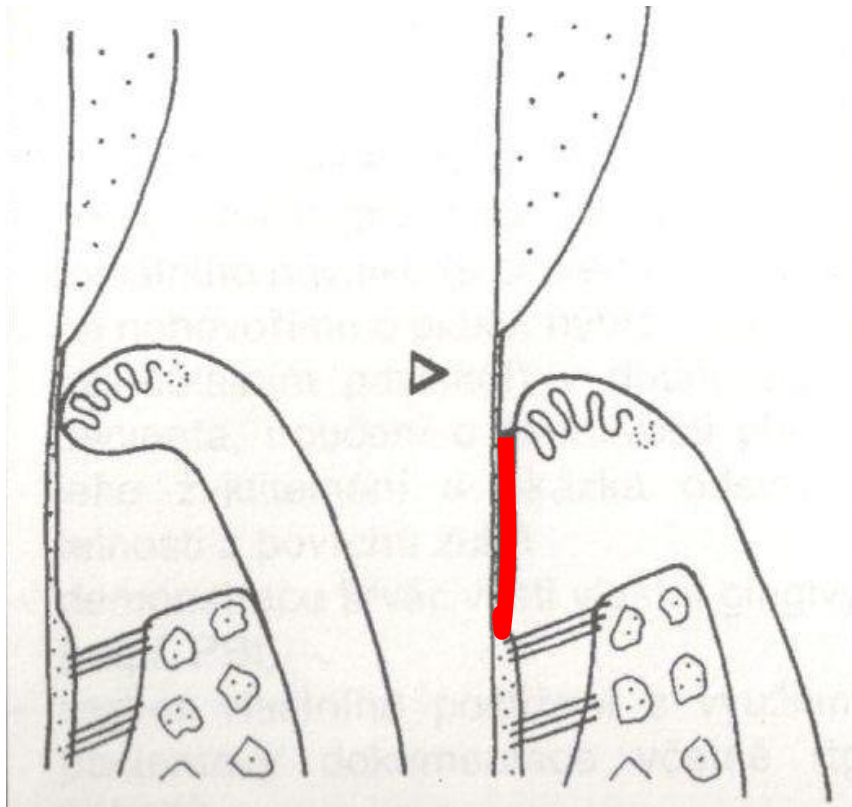








# Healing – reparation – long junctional epithelium



# Electronically powered devices

- Ultrasonic and sonic instruments

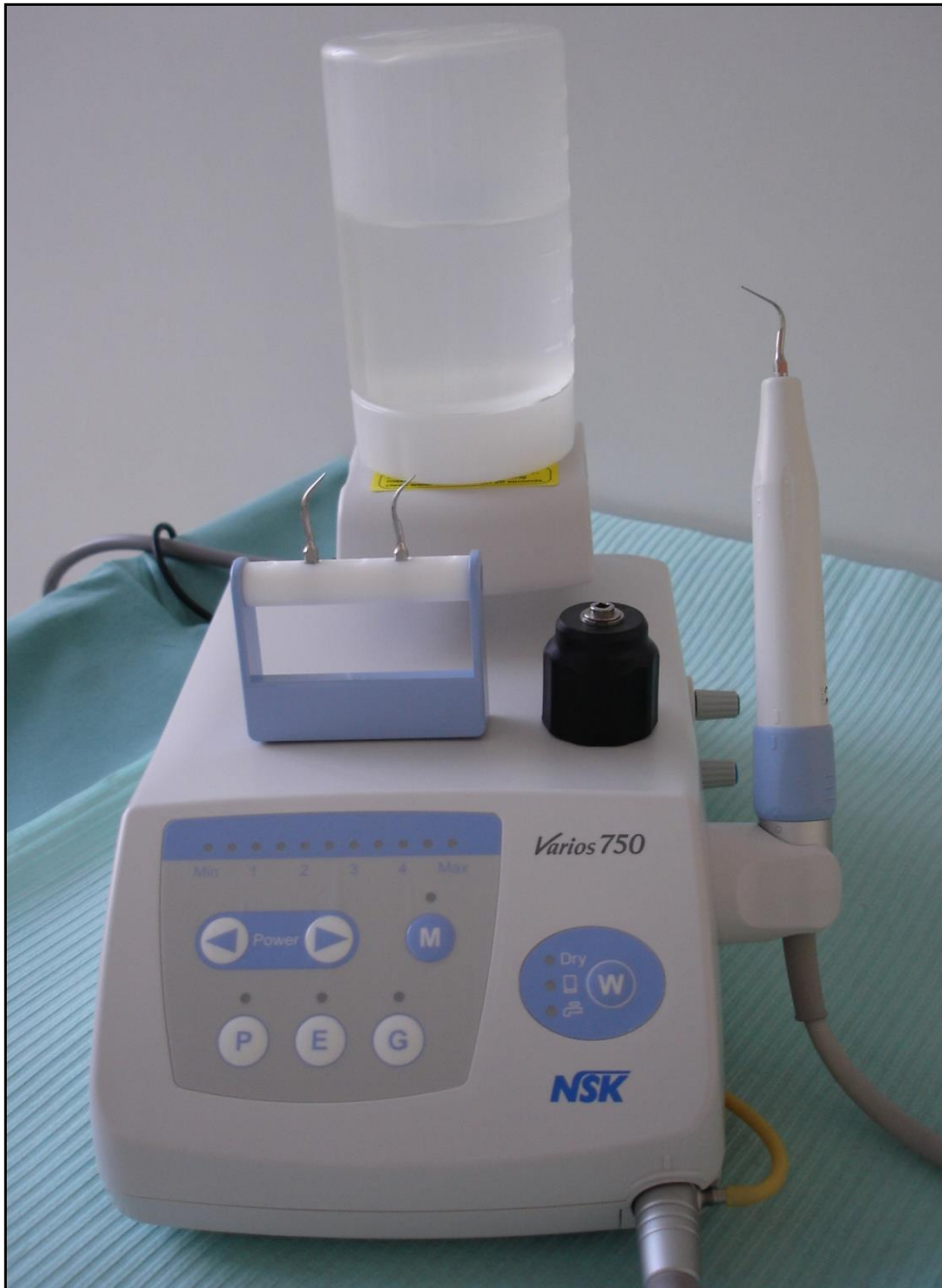
developed with the goal

making calculus removal easier and faster with less patient discomfort

# Ultrasonic and sonic instruments







Parallel position

No pressure

With permanent movement

Active part only 2 – 4 mm

Requires permanent water cooling

Infectious spray





# Comparison of S+U devices × hand instruments

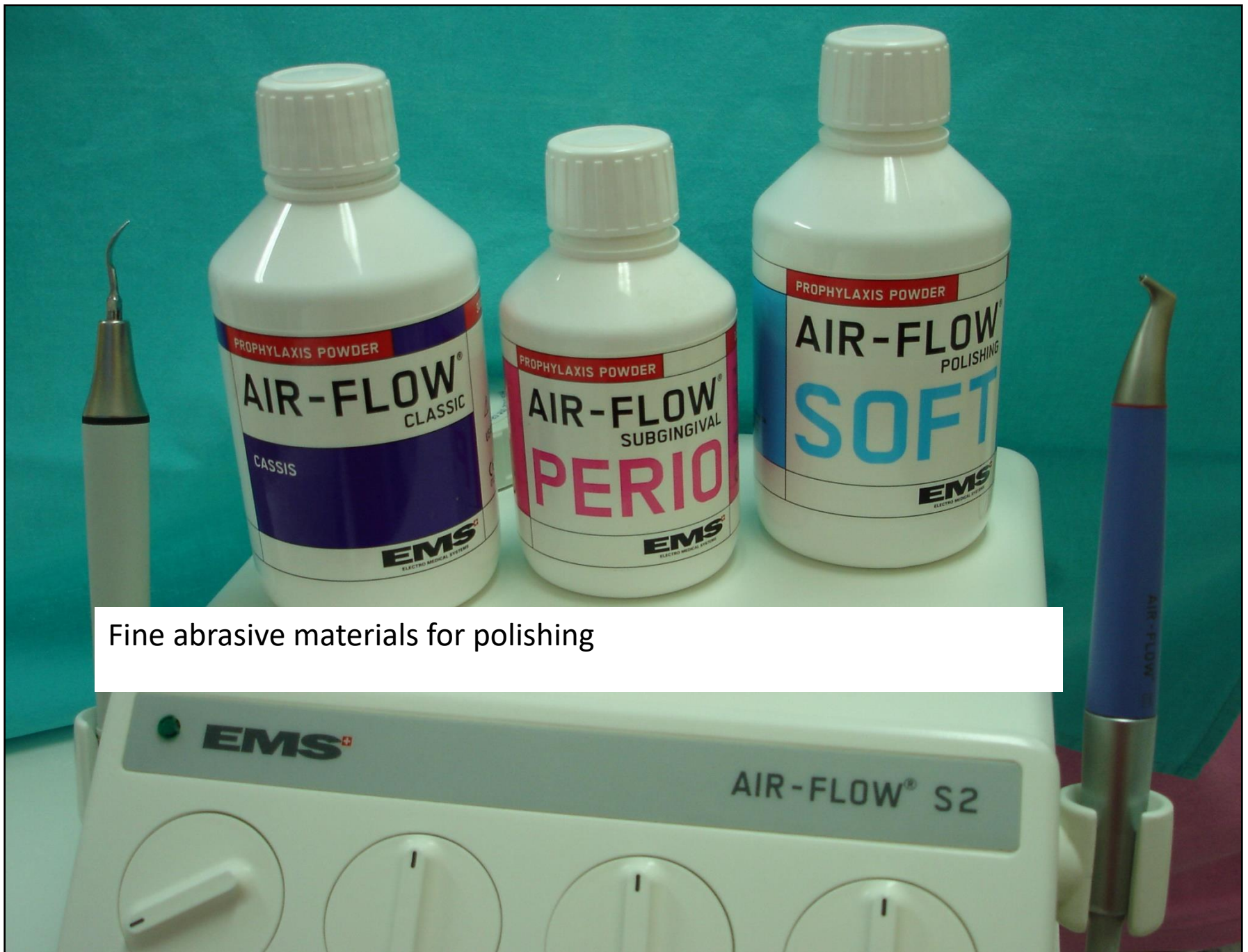
- Several mechanisms of action (cavitation effect)
- One mechanism (can remove only what it touches)
- The pocket is washing out
- Some debris remains in pocket
- Less time – more time ???
- Light lateral pressure with relaxed grasp × vibrations !
- More pressure, hand overload
- No sharpening required × tip loss
- Must be maintained - regularly sharpening/grinding
- Infectious spray (protective equipment)
- No at patients with cardiostimulator



# RDA - the degree of abrasiveness

- 0 - 70 RDA      low abrasive
- 70 -100 RDA    medium abrasive
- 100-150 RDA    highly abrasive





Fine abrasive materials for polishing