DRUŠTVO ORTODONTSKIH TEHNIKOV
DOT
SLOVENIJE

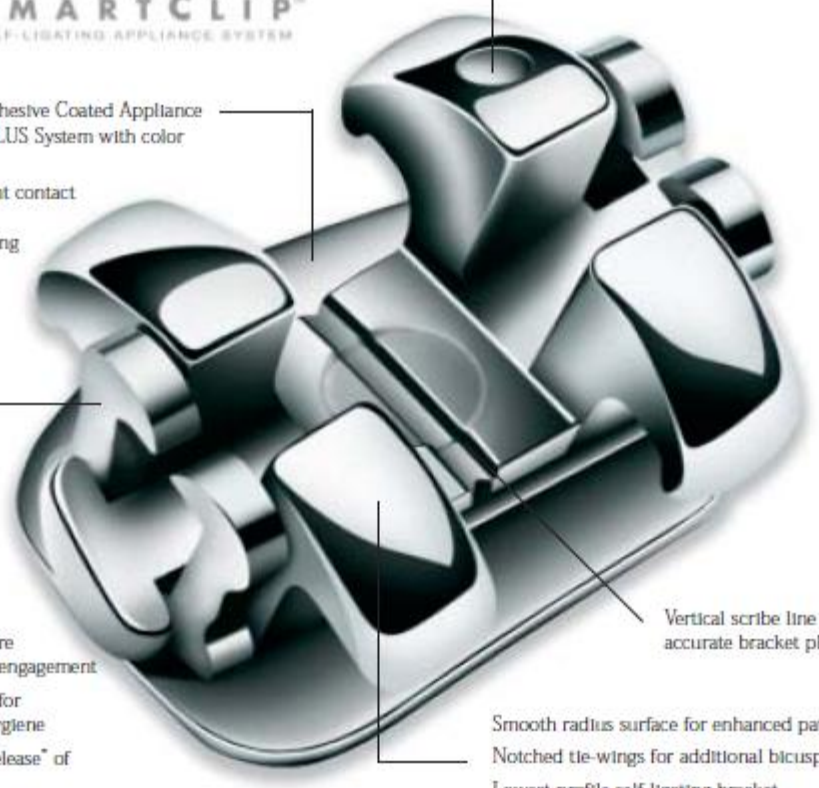
Univerza v *Ljubljani*
Medicinska fakulteta

Katedra za čeljustno in zobno ortopedijo
Katedra za otroško in preventivno zobozdravstvo
Katedra za maksilofacialno in oralno kirurgijo

UROŠ MEZEG DR. DENT. MED.

SmartClip™ self-ligating appliance system

SMARTCLIP™
SELF-LIGATING APPLIANCE SYSTEM



Familiar twin shape with rhomboidal design

Color-coded quadrant ID system

Optional APC™ Adhesive Coated Appliance System or APC™ PLUS System with color change adhesive

Micro-etched 3-point contact base surface for anatomical contouring

THE CLIP

Designed for fast wire engagement and disengagement

Open, clean design for improved patient hygiene

Pre-programmed "release" of the archwire

Precisely finished nickel-titanium

Vertical scribe line for more accurate bracket placement

Smooth radius surface for enhanced patient comfort

Notched tie-wings for additional bicuspid identification

Lowest profile self-ligating bracket

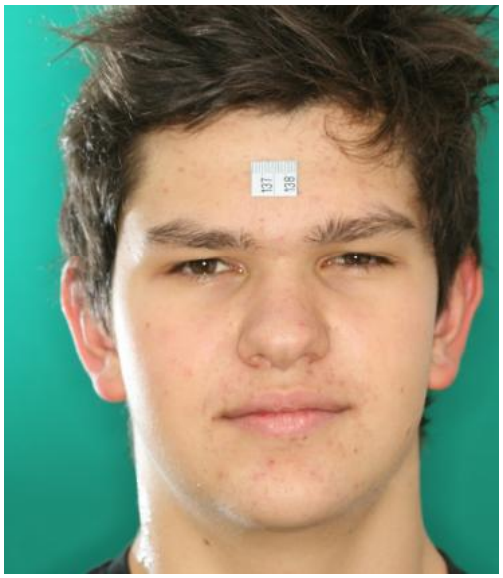
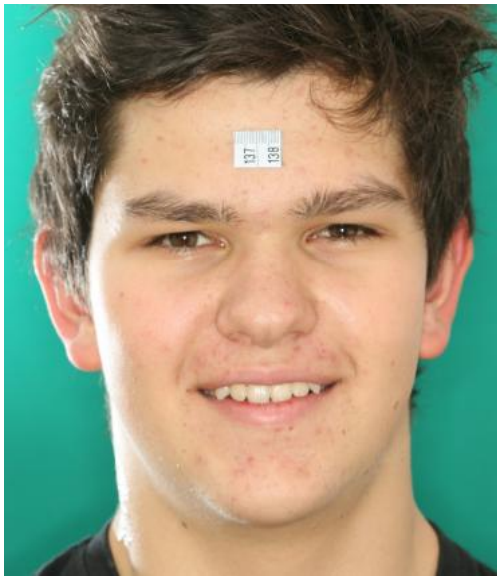
Torque-in-base for level slot line up and improved finishing

1831
P. Scott McMahan D.D.S.
GENERAL DENTISTRY

MBT FILOZOFIJA V ORTODONTSKI TERAPIJI

- DIAGNOSTIKA IN NAČRT OBRAVNAVE
- IZBIRA ORTODONTSKEGA APARATA
- NAMEŠČANJE NOSILCEV
- IZBIRA LOKOV
- PRAKTIČNI DEL

DIAGNOSTIKA IN NAČRT OBRAVNAVE

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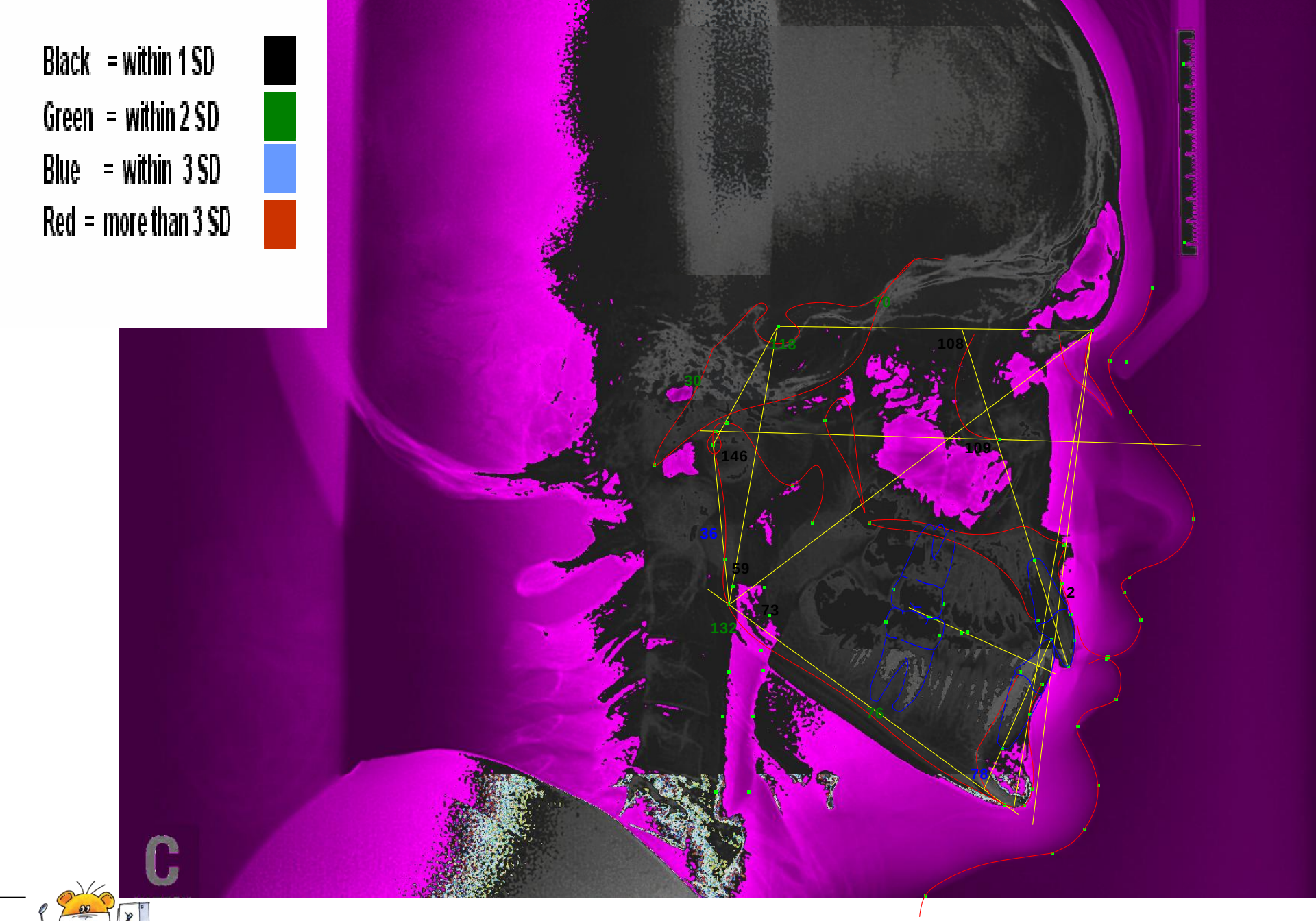
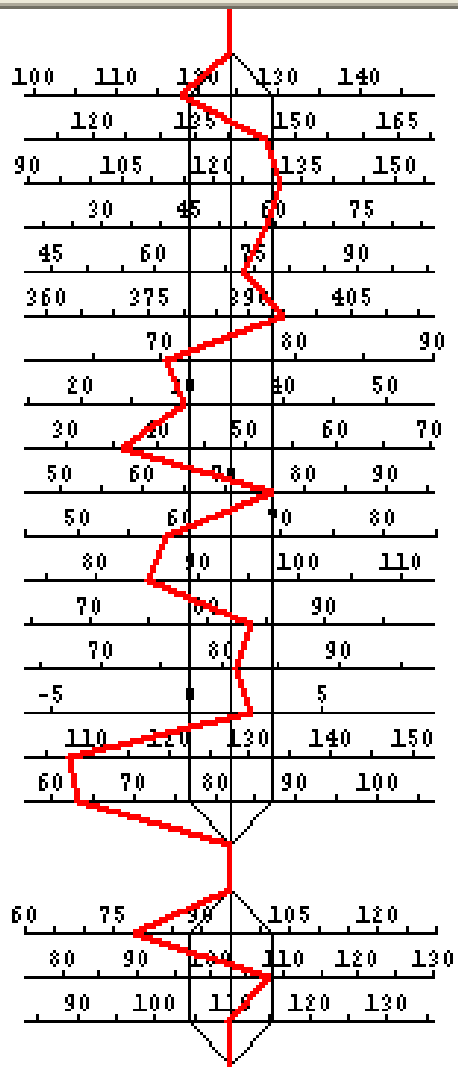
+38645309090

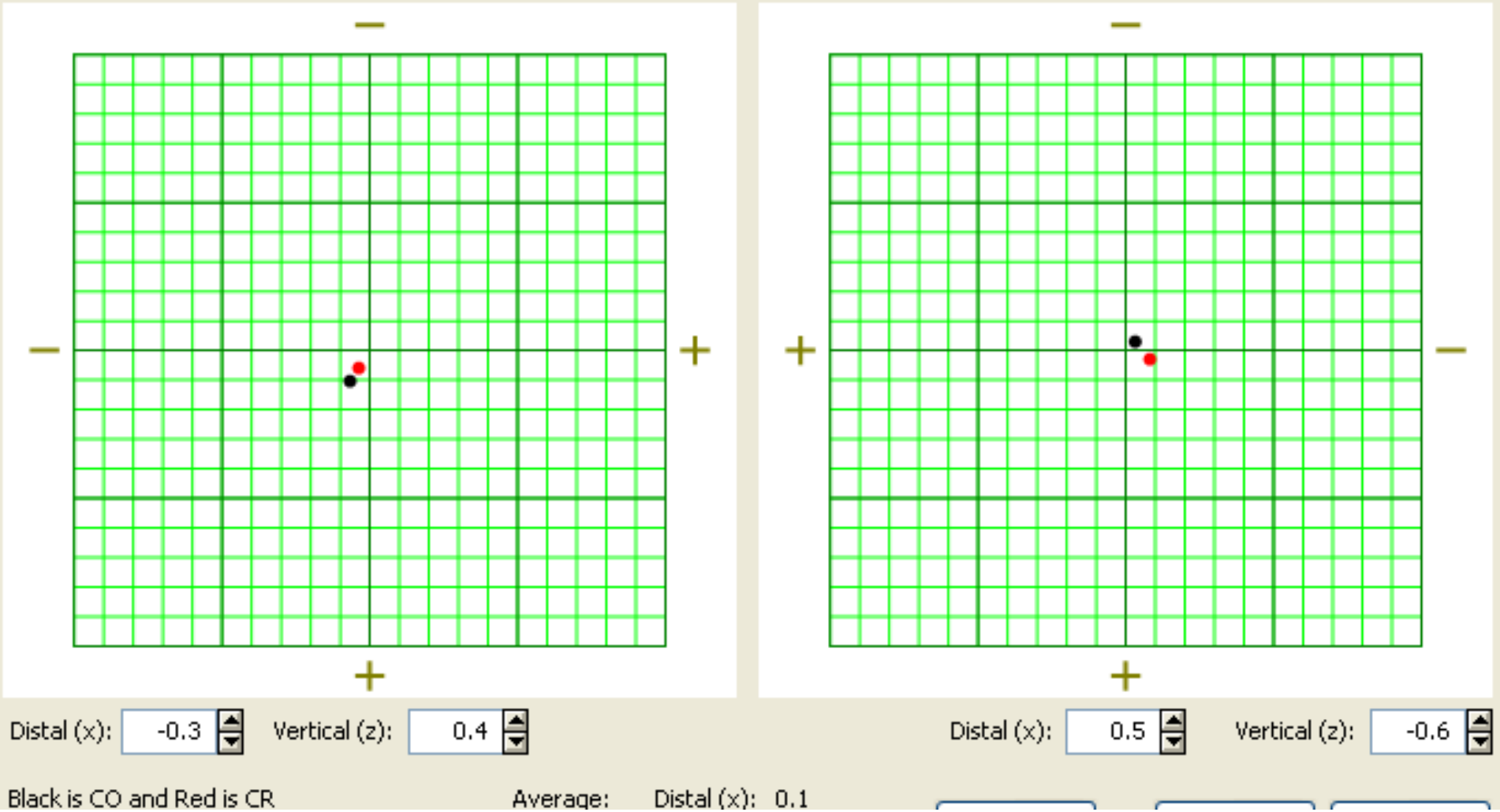
OZBE MEZEG
15.11.2010, Progress, YR. 14 MO. 9
Produced on the Dolphin DIGITAL Imaging System

STAROST: 14 let in 9 mesecev


Black = within 1 SD
Green = within 2 SD
Blue = within 3 SD
Red = more than 3 SD
70
118
108
30
146
109
36
59
2
73
132
78

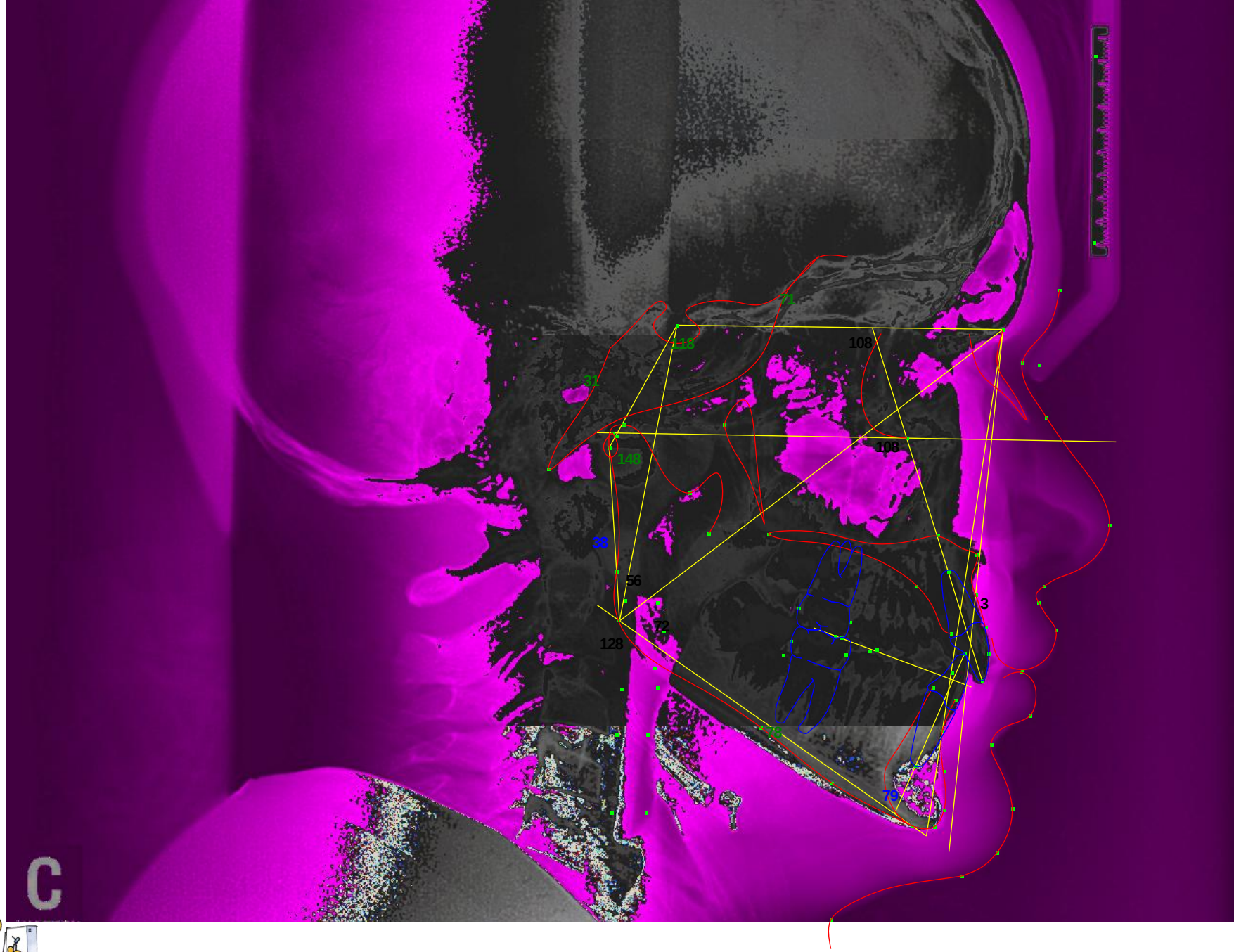
Group/Measurement	Value	Norm	Std Dev	Dev Norm
Skeletal				
Saddle/Sella Angle (SN-Ar) (°)	117.8	124.0	5.0	
Articular Angle (°)	145.7	140.4	6.0	
Gonial/Jaw Angle (Ar-Go-Me) (°)	131.7	123.1	6.7	
Upper Gonial Angle (Ar-Go-Na) (°)	58.6	52.3	7.0	
Lower Gonial Angle (Na-Go-Me) (°)	73.1	71.2	6.0	
Sum of Angles (Jarabak) (°)	395.2	387.2	6.0	
Anterior Cranial Base (SN) (mm)	70.3	75.2	3.0	
Posterior Cranial Base (S-Ar) (mm)	30.2	34.8	4.0	
Ramus Height (Ar-Go) (mm)	36.0	48.1	4.5	
Corpus Length (Go-Me) (mm)	76.0	71.0	5.0	
P-A Face Height (S-Go/N-Me) (%)	58.7	65.0	4.0	
Jarabak Anterior Ratio (x100)	85.0	93.3	4.0	
SNA (°)	84.0	82.0	3.5	
SNB (°)	81.5	80.9	3.4	
ANB (°)	2.4	1.6	1.5	
Anterior Face Height (NaMe) (mm)	107.8	127.6	5.0	
Posterior Face Height (SGo) (mm)	63.3	81.9	5.0	
Dental				
IMPA (L1-MP) (°)	78.2	95.0	7.0	
U1 - SN (°)	108.2	102.8	5.5	
U1 - FH (°)	109.1	109.8	5.3	





Črna je CO
Rdeča je CR

Povprečje: Distalno (x): 0.1
Navpično (y):-0,1


71
118
108
31
148
108
38
56
3
72
128
79

Dental			
IMPA (L1-MP) (°)	86.2	95.0	7.0
U1 - SN (°)	114.2	102.8	5.5
U1 - FH (°)	115.1	109.8	5.3

	mm	mm	○
Upper 1:	0.0	1.0	6.0
Lower 1:	0.0	2.0	-8.0
Upper 6:	2.0	0.0	0.0
Lower 6:	2.0	0.0	0.0
A Point:	0.0	0.0	
B Point:	0.0	0.0	
Mx (LeFort):	0.0	0.0	0.0
Ant. Mx:	0.0	0.0	0.0
Post. Mx:	0.0	0.0	0.0
Mx+Md:	0.0	0.0	0.0
Md (BSSO):	0.0	0.0	0.0
Rotate Md @ Hinge Axis:			0.0
Rotate Mx+Md @ Hinge Axis:			0.0
Genioplasty:	0.0	0.0	

Others: (S) Post Md Rotate@Hinge

Autorotate mandible

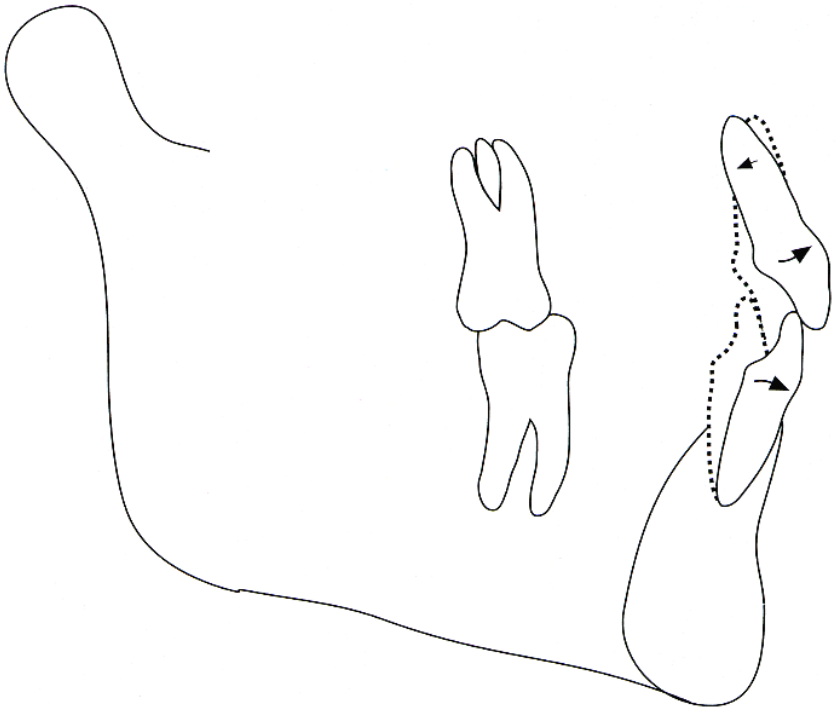
Arch Length Discrepancy

Mx: 0.8 mm Crowding

Md: 0.3 mm Spacing

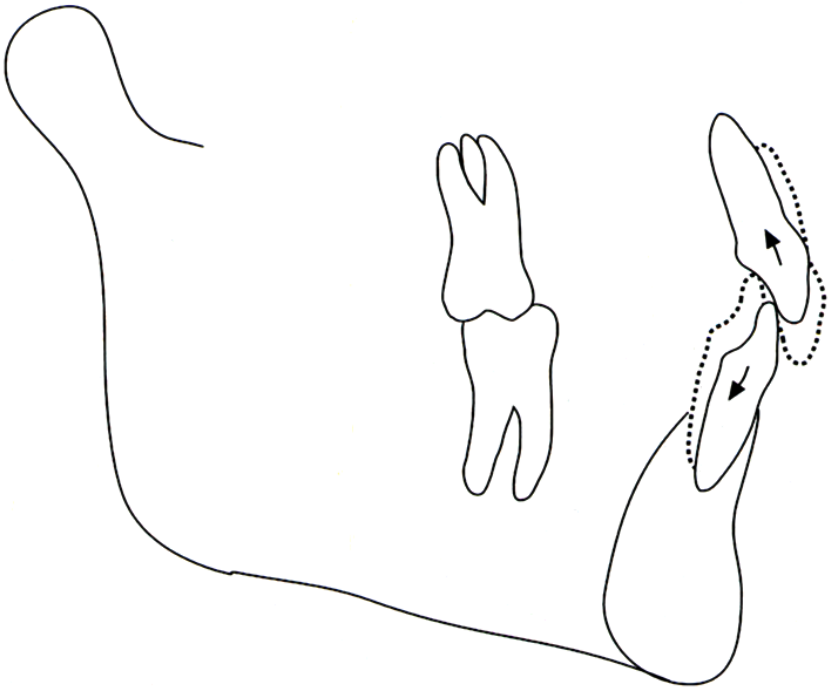
Edit...

Extract... Expand... Strip...



Intrusion of anterior teeth

Proclination of incisors



Nekontroliran tipping

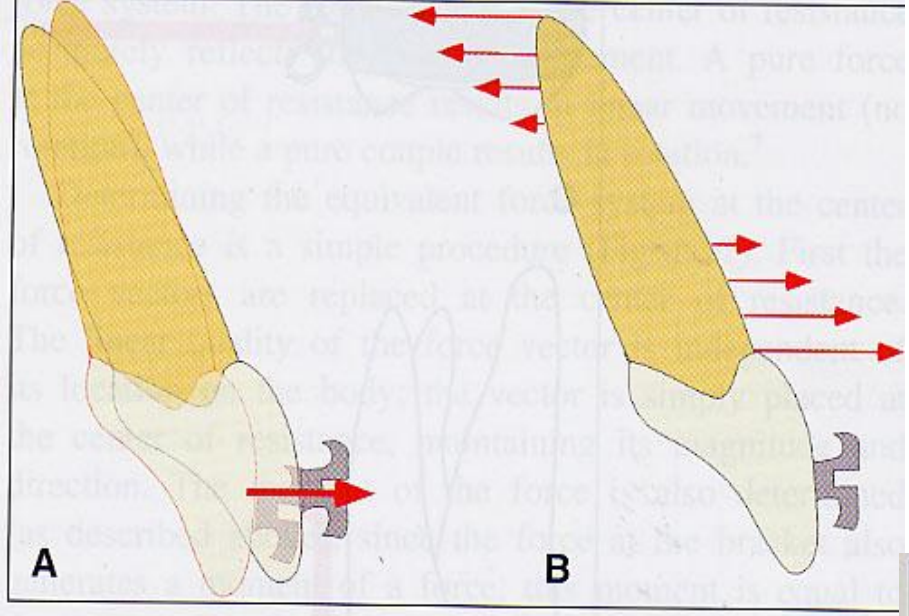


Fig. 1-12 Uncontrolled tipping. **A** Uncontrolled tipping produced by a single force (no applied moment). **B** Stress pattern in the periodontal ligament. Notice the root apex moves in the opposite direction from the movement of the crown.

Kontroliran tipping

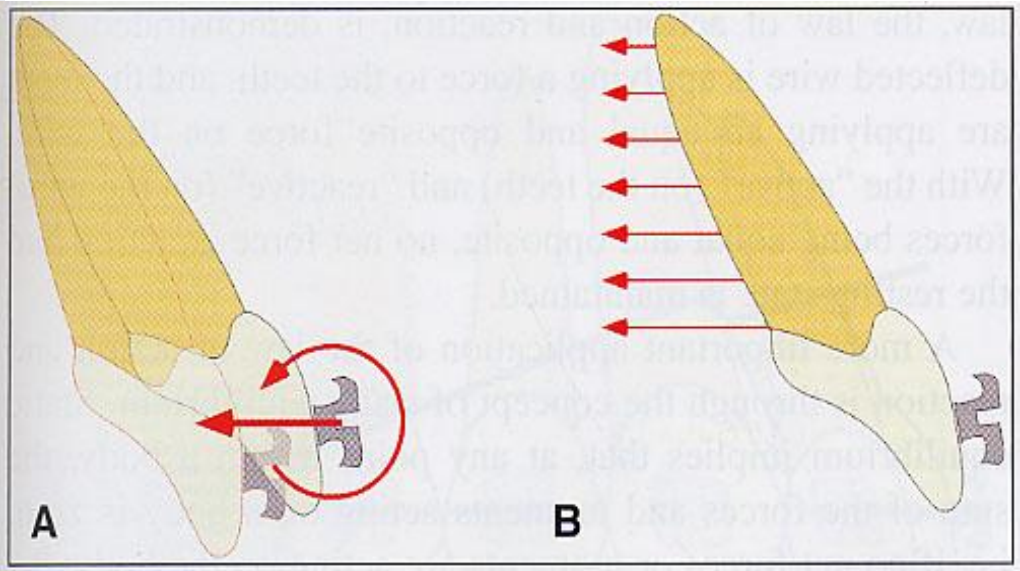
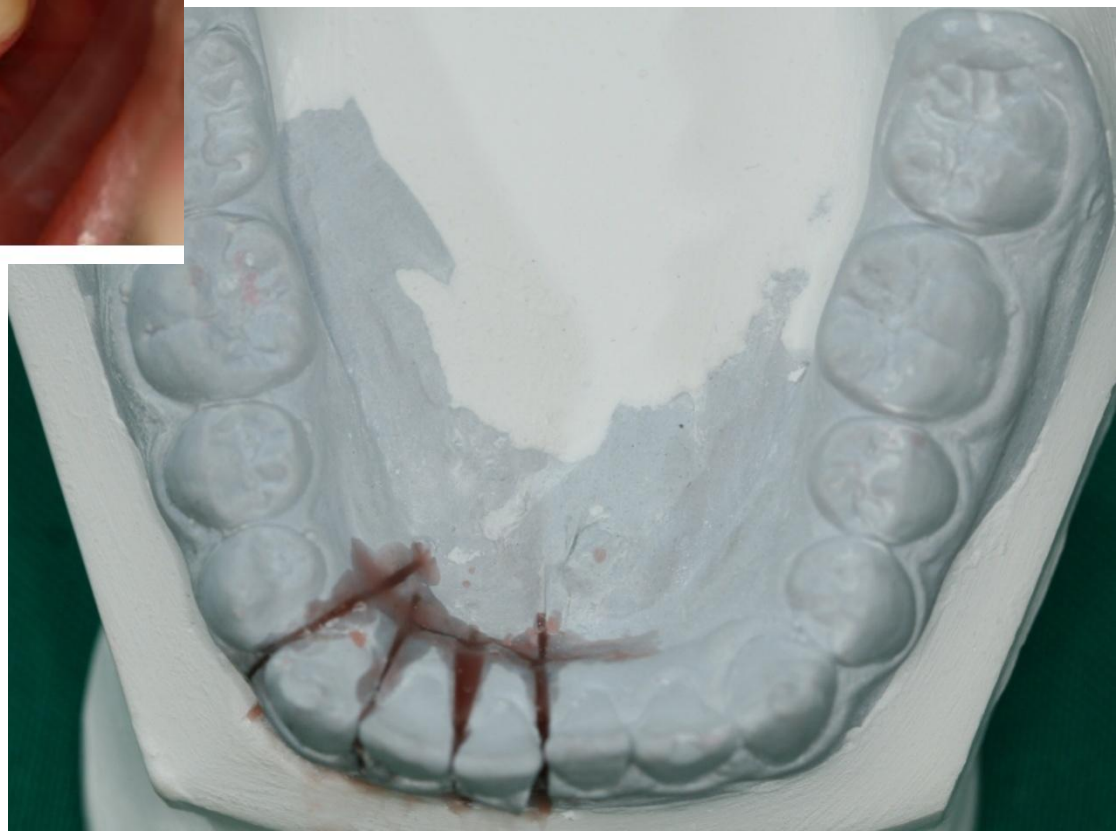
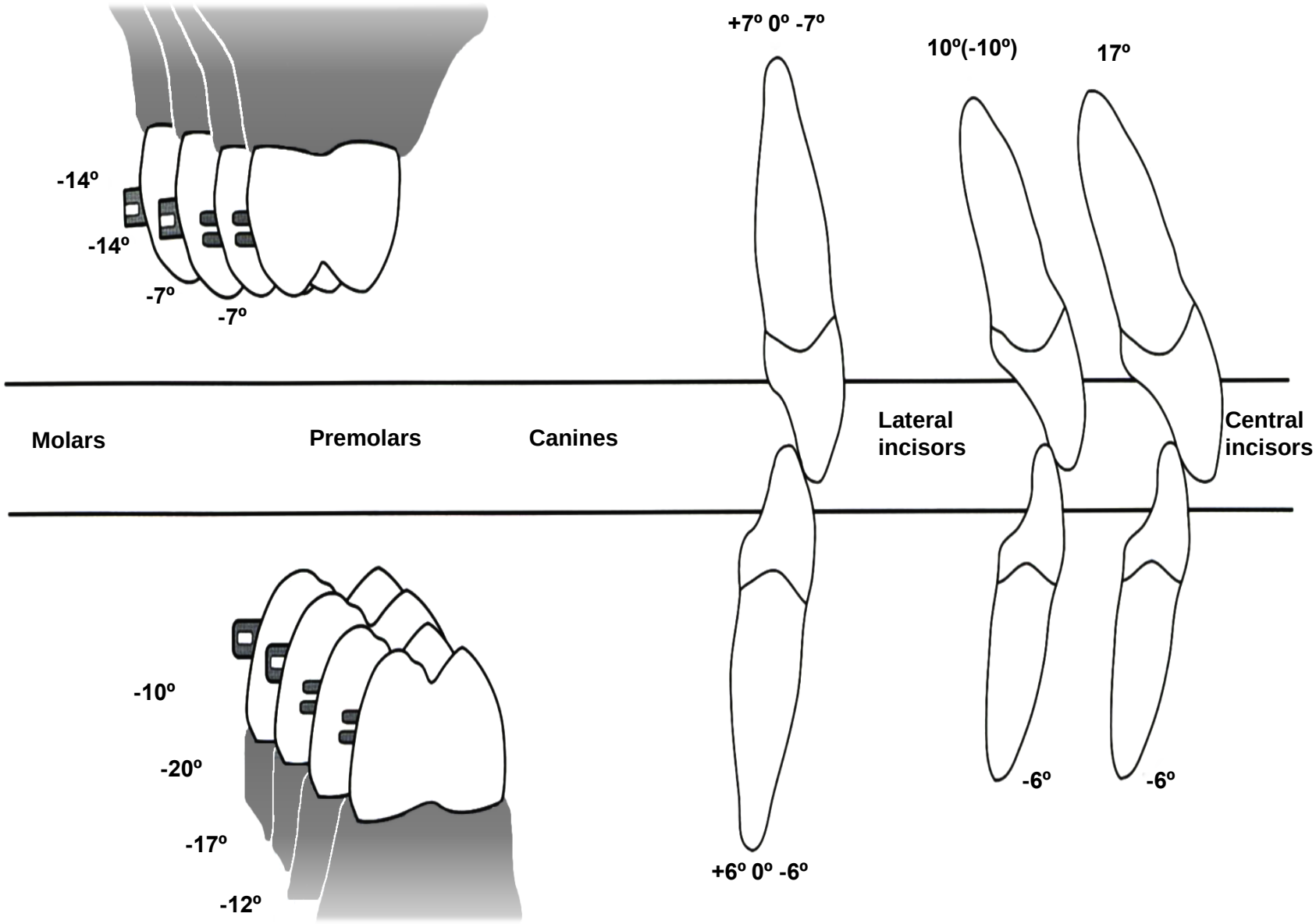
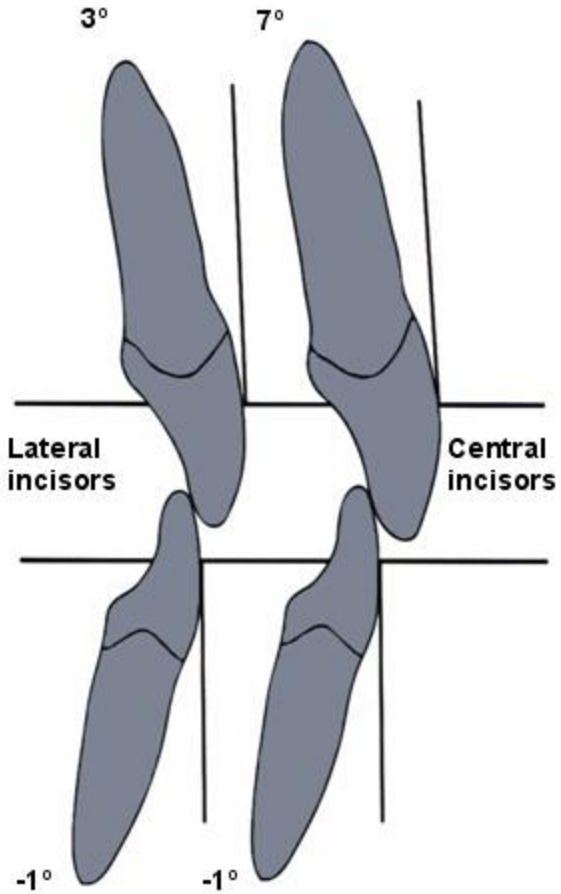


Fig. 1-13 Controlled tipping. **A** Controlled tipping with the center of rotation at the root apex. **B** Stress pattern in the periodontal ligament with controlled tipping. The stresses are greatest at the cervical margin.

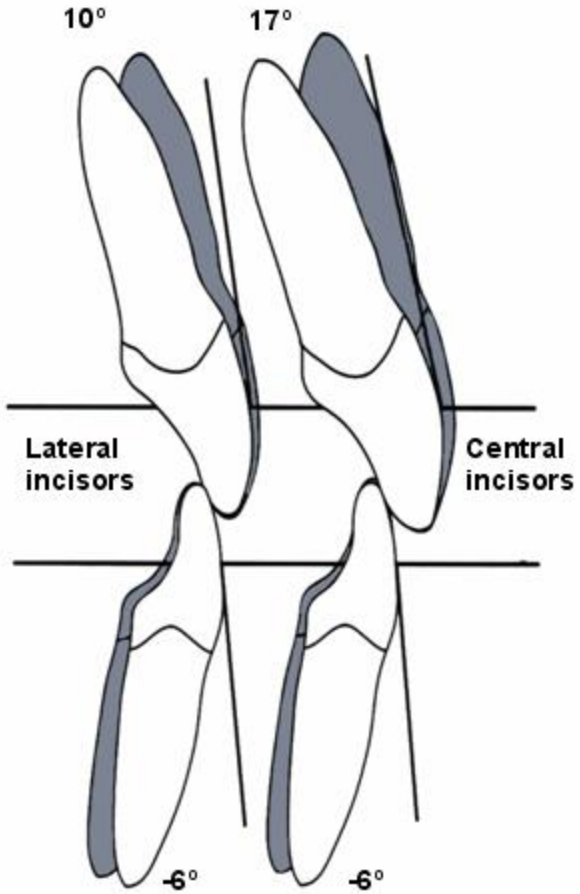


IZBIRA ORTODONTSKEGA APARATA

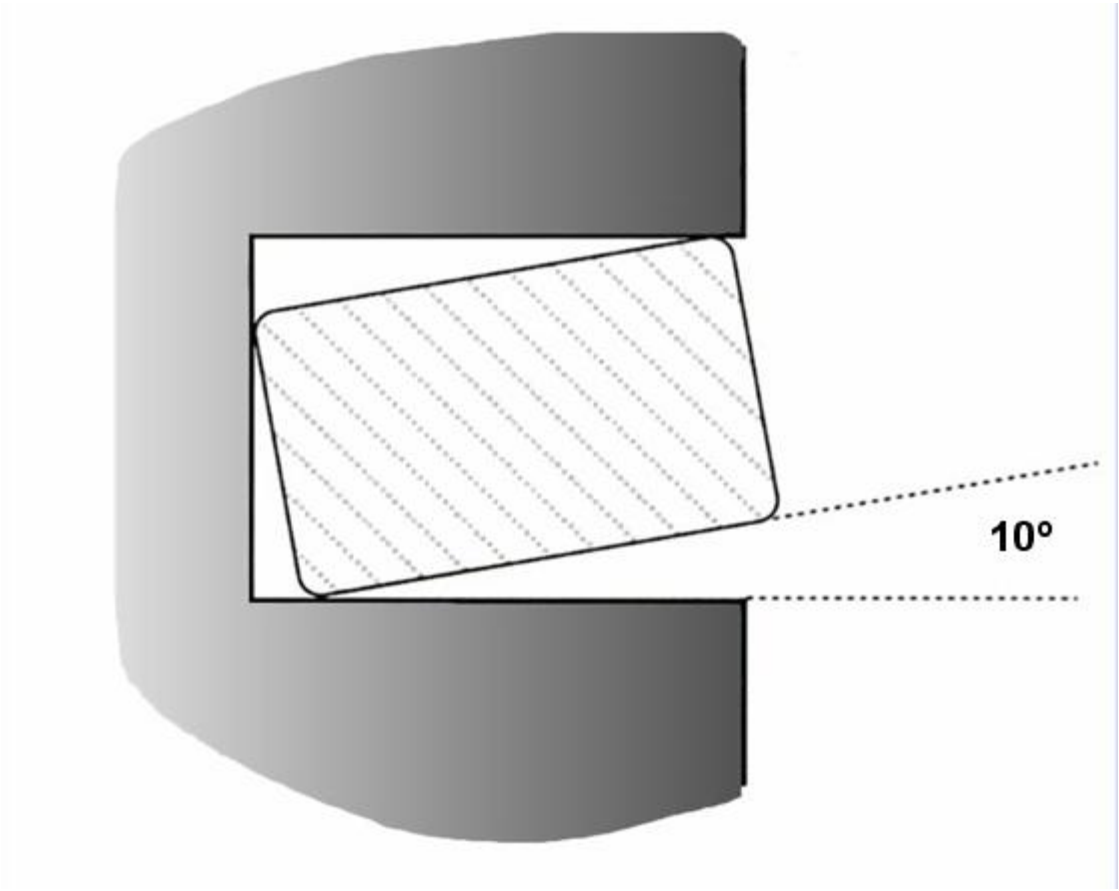

-14º
-14º
-7º
-7º
+7º 0º -7º
10º(-10º)
17º
Molars
Premolars
Canines
Lateral incisors
Central incisors
-10º
-20º
-17º
-12º
+6º 0º -6º
-6º
-6º



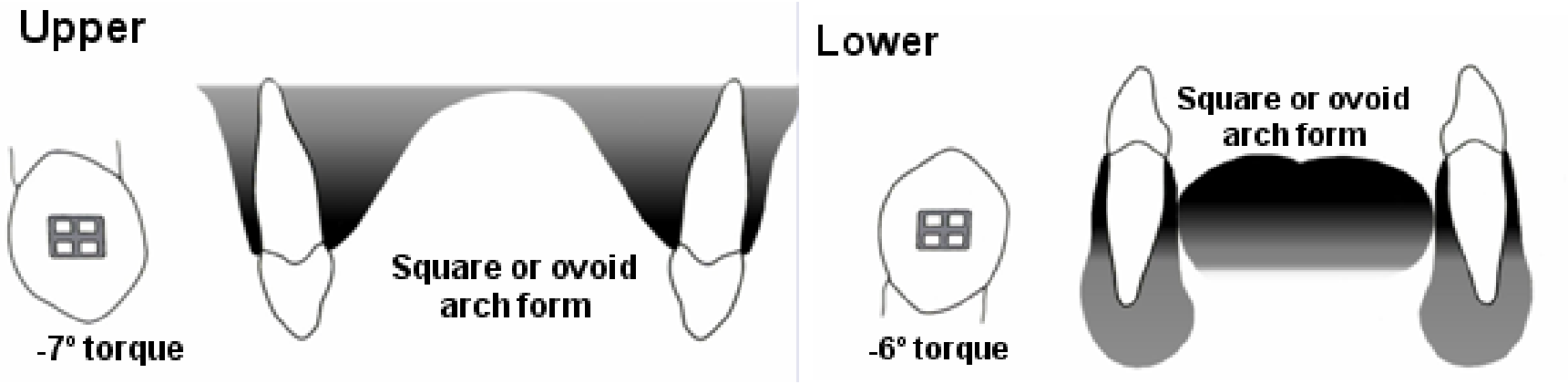
Original SWA



Recommended

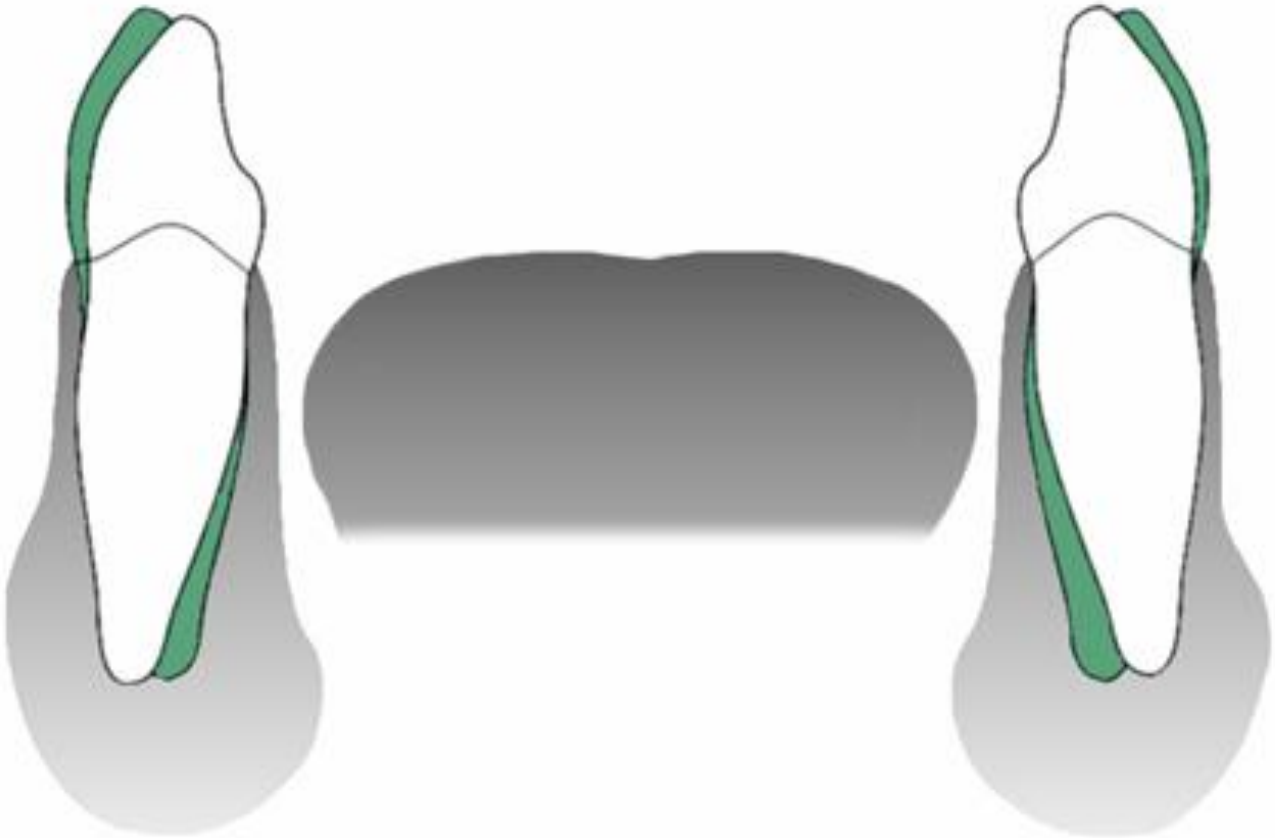


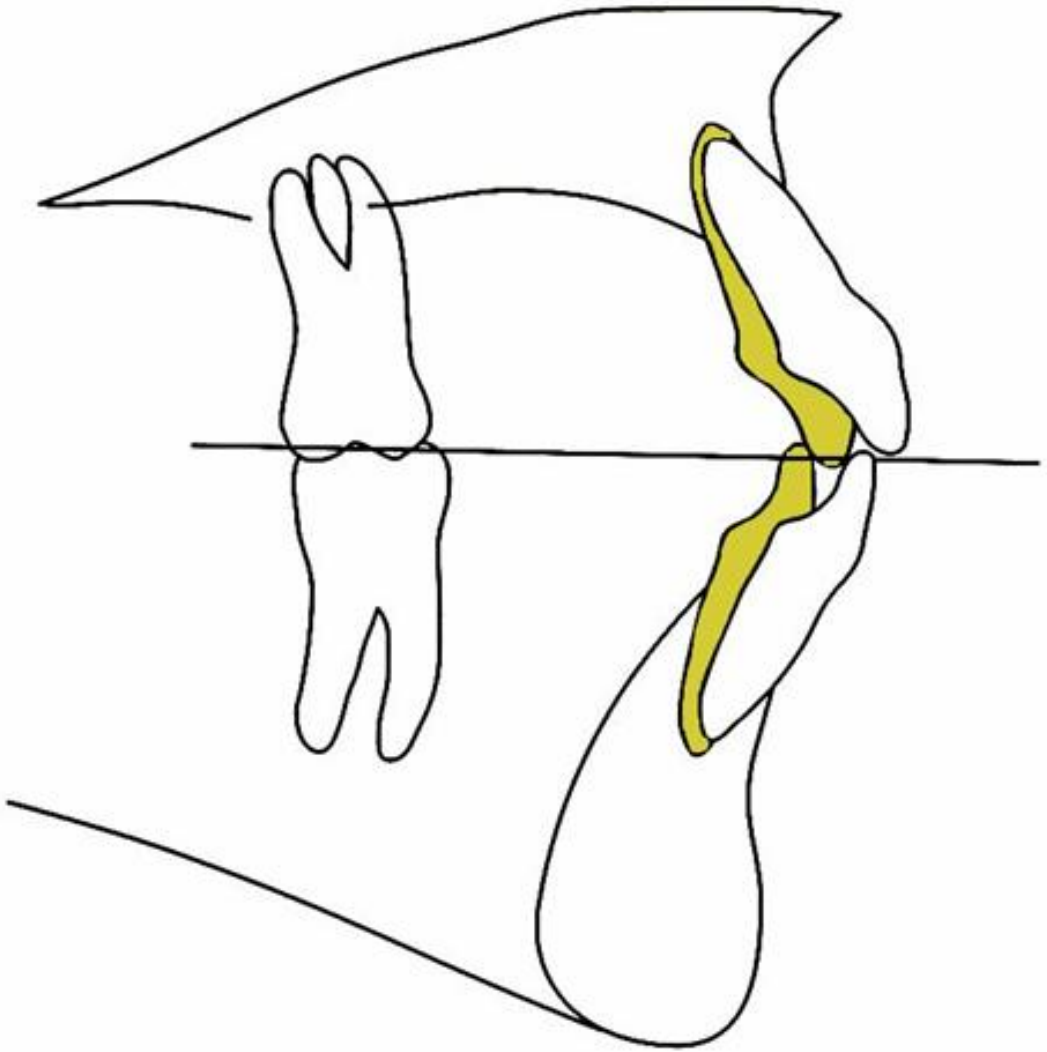
A rectangular .019/.025 steel wire in .022 slot will have approximately 10º of ‘slop’. The exact amount depends on the precision of manufacture of the wire and bracket slot and the amount of wire edge ‘rounding’ or ‘radiusing



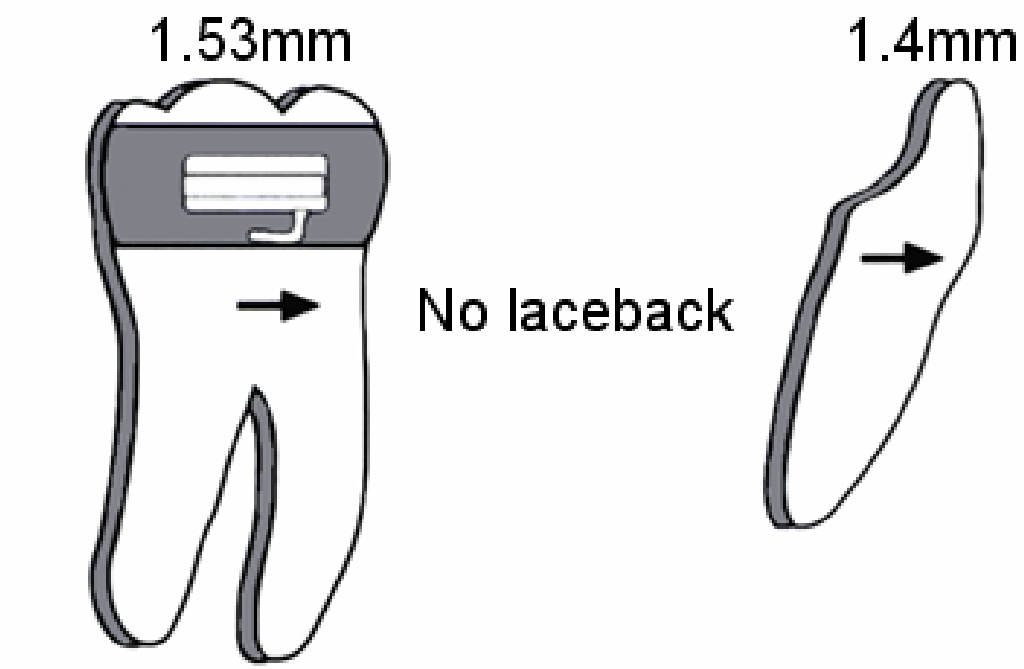
Arch form is an important factor in selection of canine brackets in upper and lower arches.

0º torque or
+6º torque

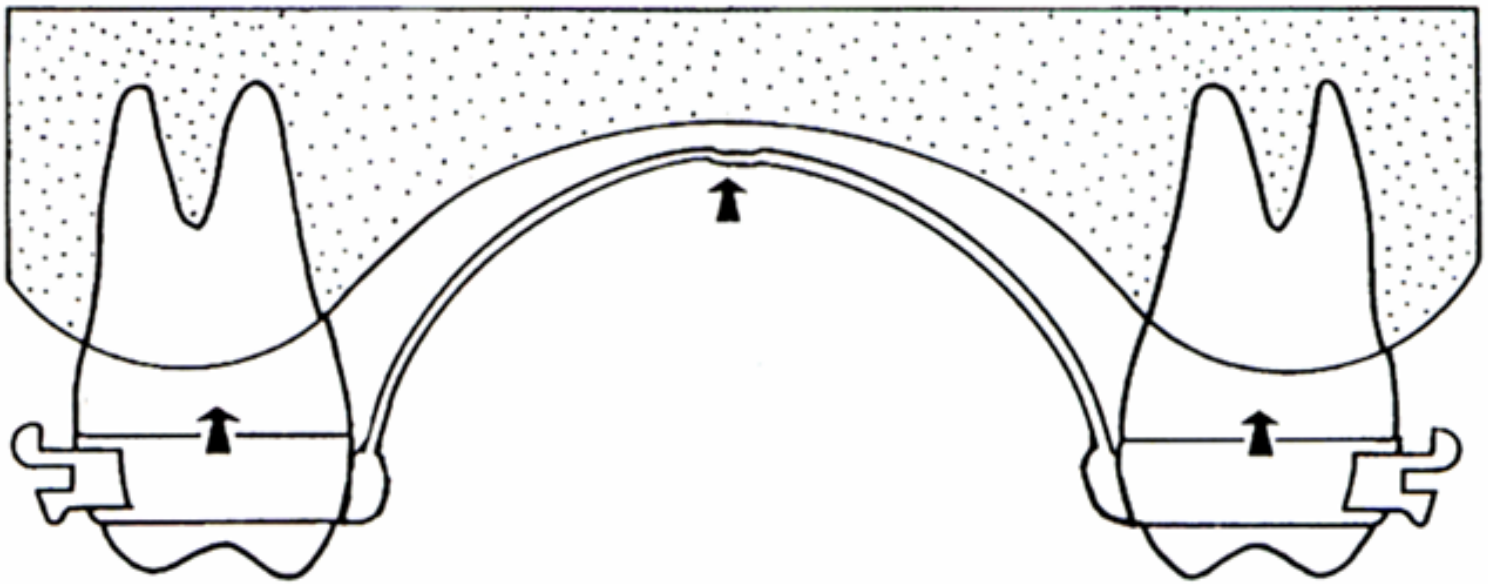




Bimaxillary protrusion



Without lacebacks, on average the lower incisor moved forwards 1.4 mm.



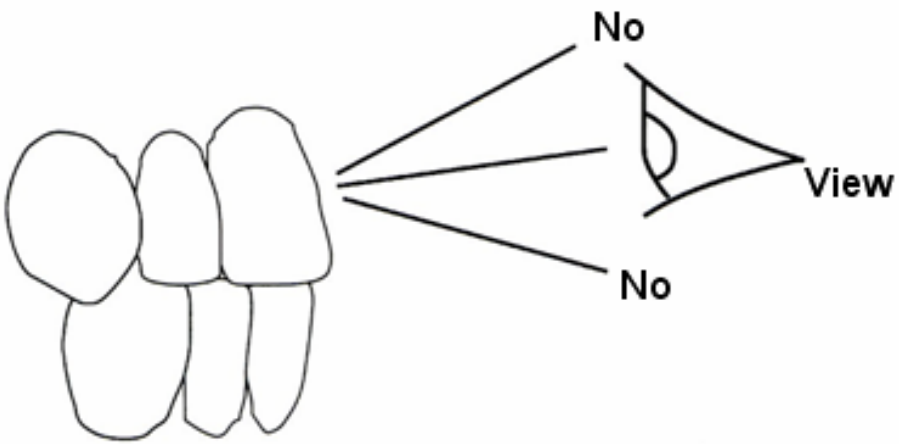
If the upper palatal bar is placed 2 mm away from the palate, tongue forces can assist in vertical control of the molars.

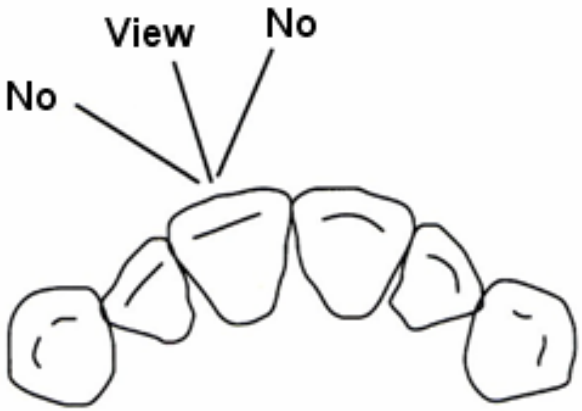
NAMEŠČANJE NOSILCEV

- NAJPOGOSTEJŠE NAPAKE PRI NAMEŠČANJU NOSILCEV

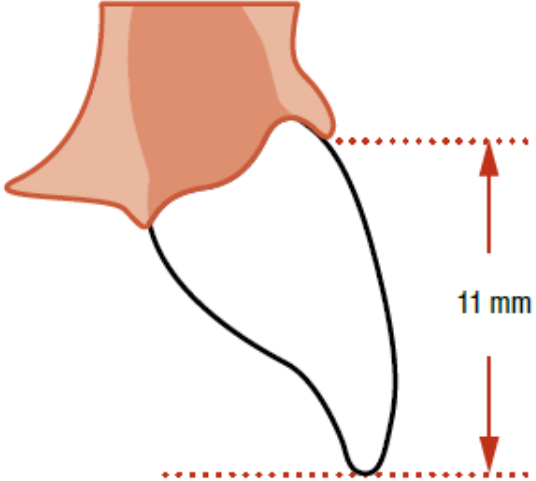
- REŠITVE,KI JIH PONUJA SISTEM MBT PRI NANEŠČANJU NOSILCEV

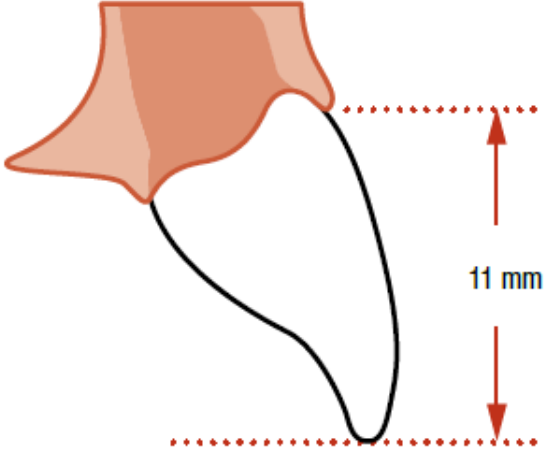
NAJPOGOSTEJŠE NAPAKE PRI NAMEŠČANJU NOSILCEV

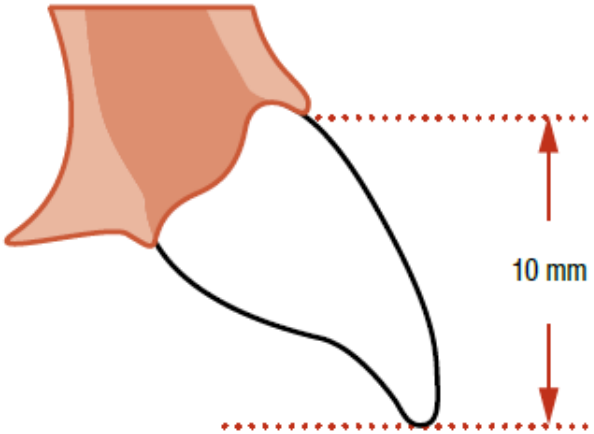


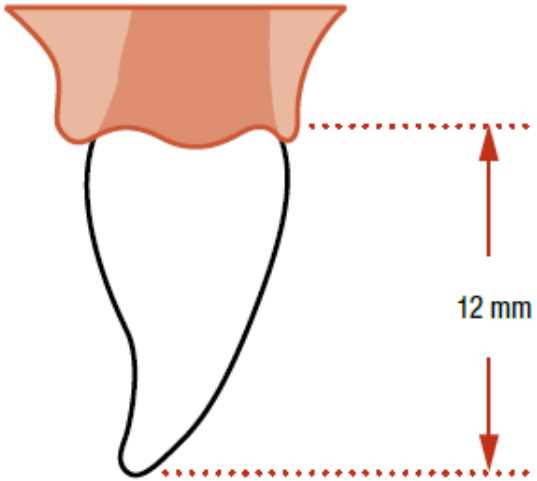


When placing brackets, it is important to view the teeth from the correct perspective.



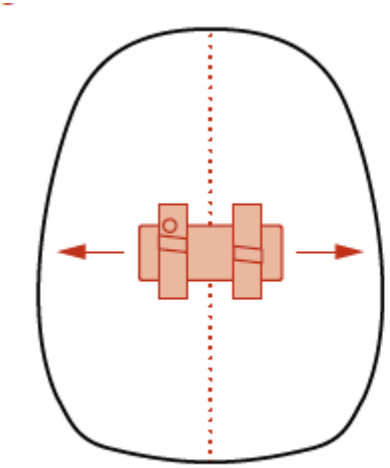




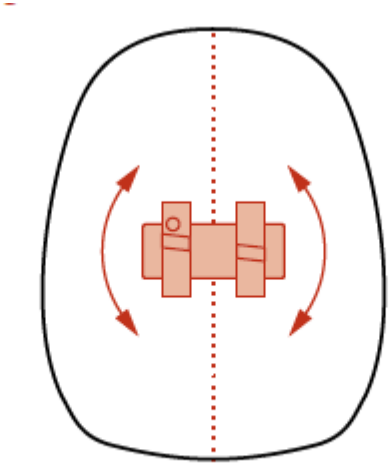


Teeth with roots that are lingually displaced can reveal shorter clinical crowns.

Teeth with roots that are facially displaced can reveal longer clinical crowns

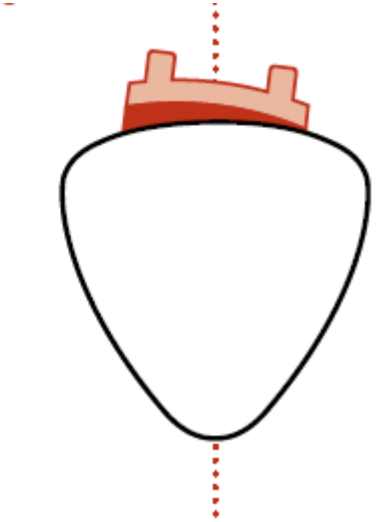


Horizontal bracket placement
errors can result in unwanted rotation, but are avoided with attention to technique



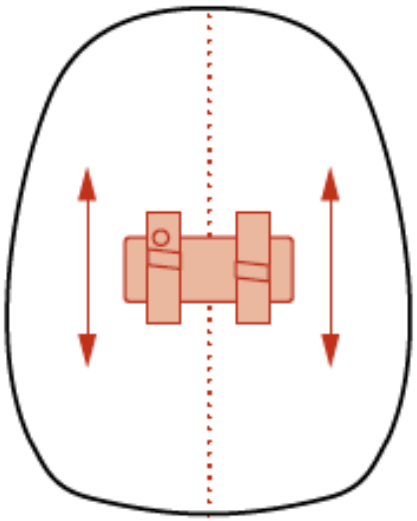
Axial bracket placement errors
can result in unwanted tip, but are

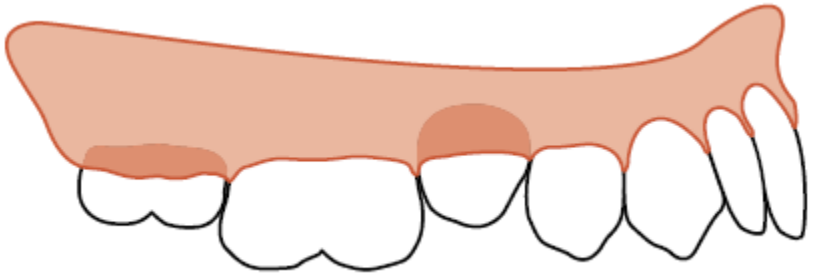
avoided with attention to technique



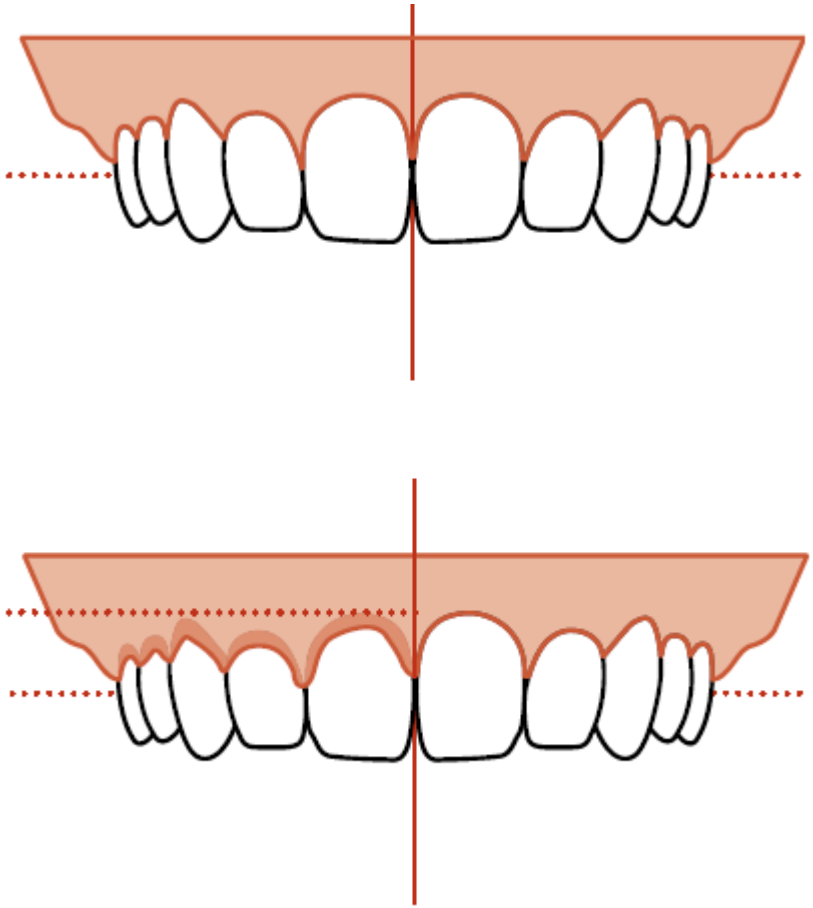
Excessive adhesive under the bracket base can result in
rotation errors, but are avoided with
attention to technique.
Figure 1 Figure 2 Figure 3
3 Bracket Placement

vertical errors

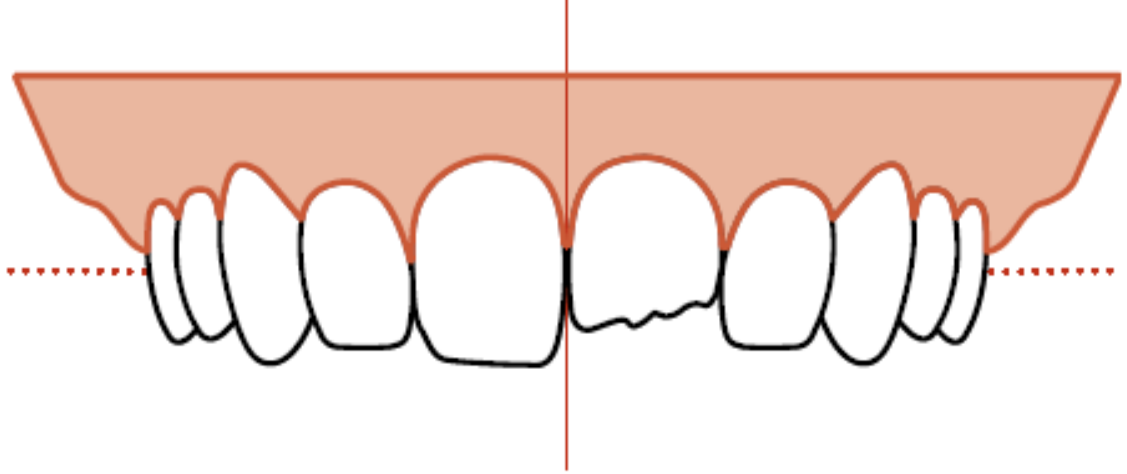


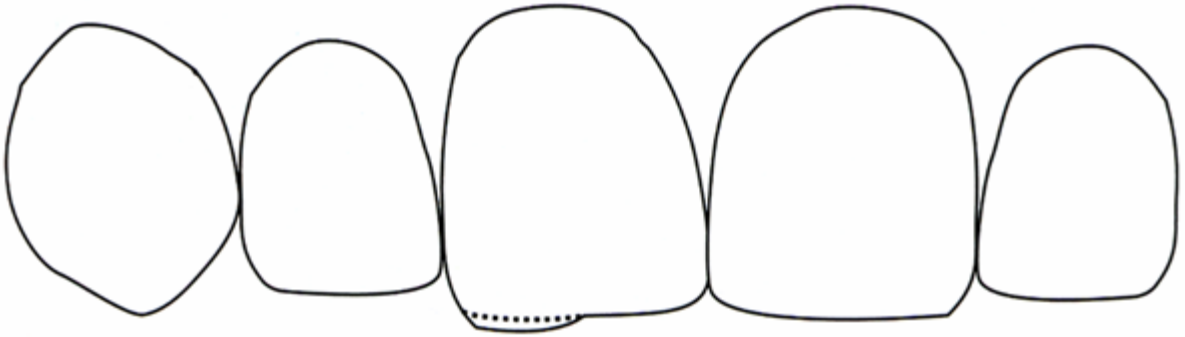


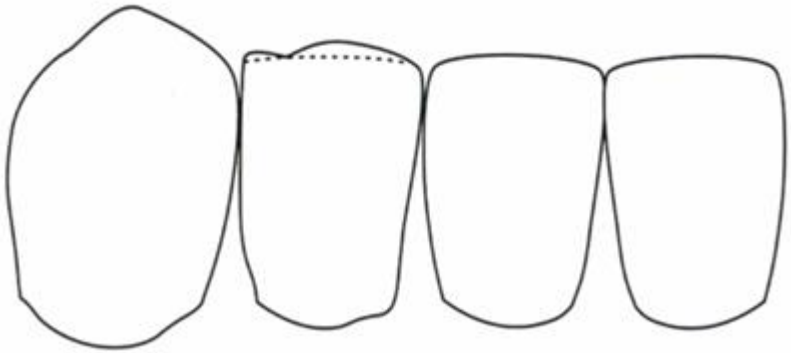
The center of the clinical crown is more difficult to visualize in partially erupted teeth in young patients

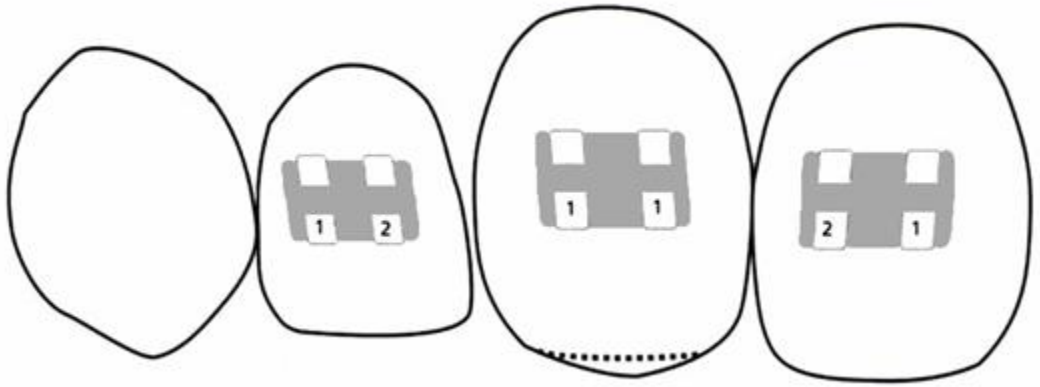


Inflamed gingival causes foreshortening, which can effectively reduce the length of the clinical crowns, making the center difficult to ascertain. The bottom image is the same case as the top image, but with gingival inflammation in the upper right quadrant

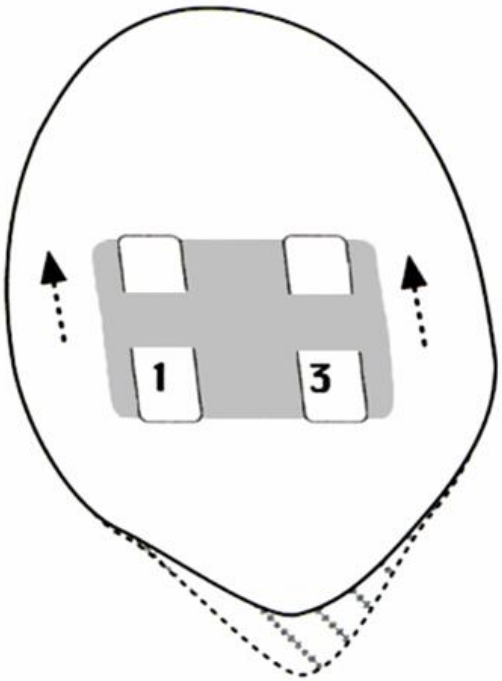




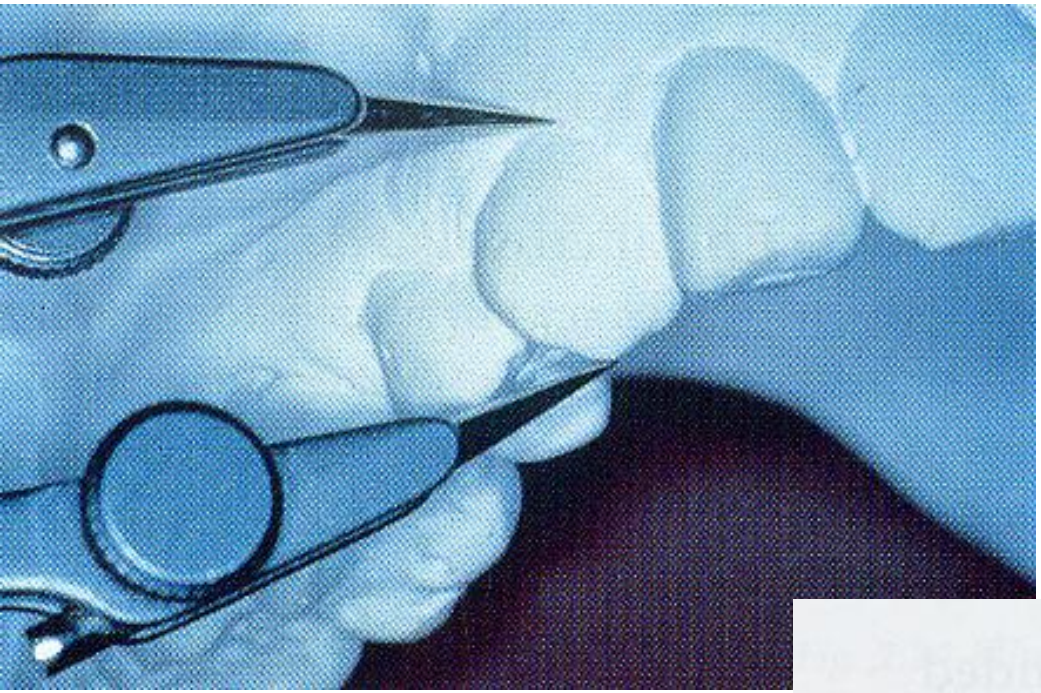


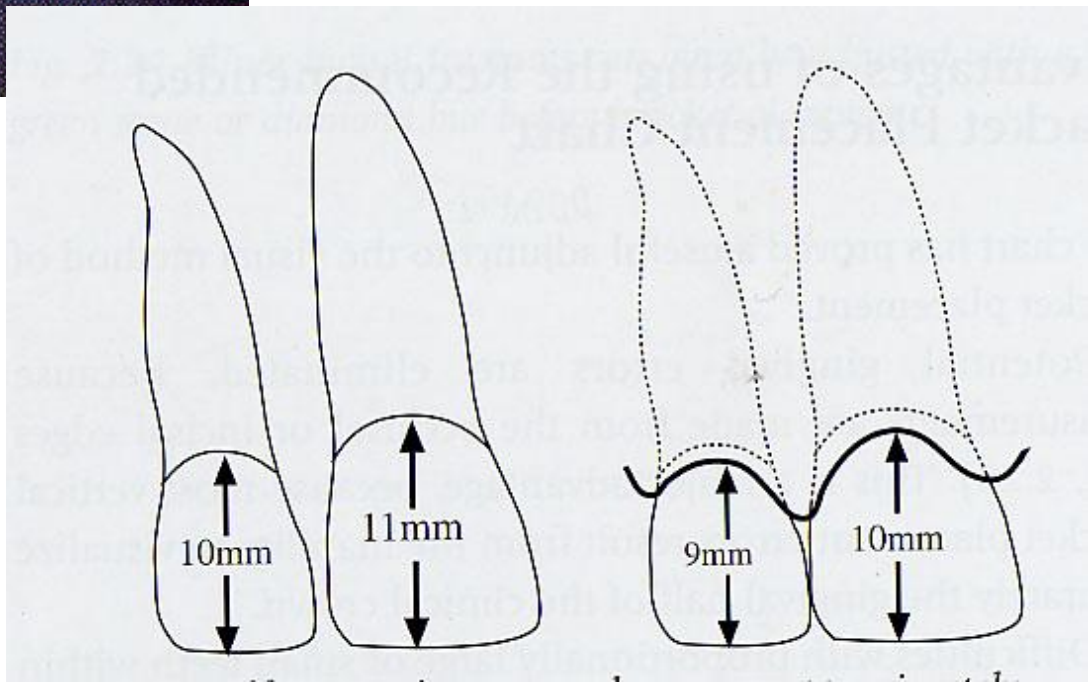


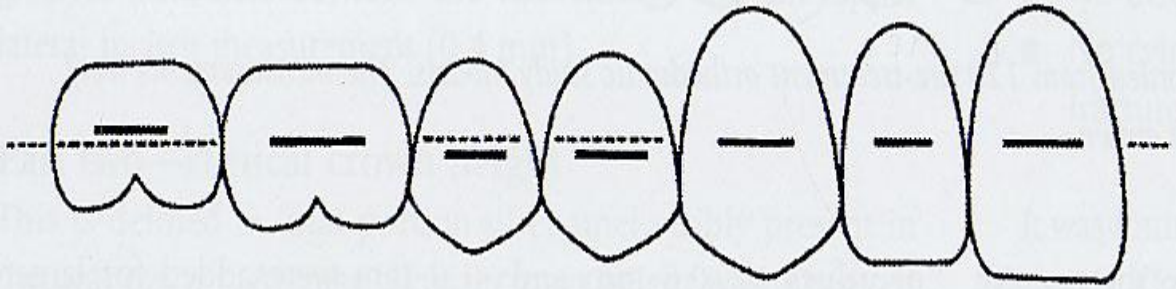
Correct vertical bracket positioning will minimize the need for detailing
bends at the end of treatment.



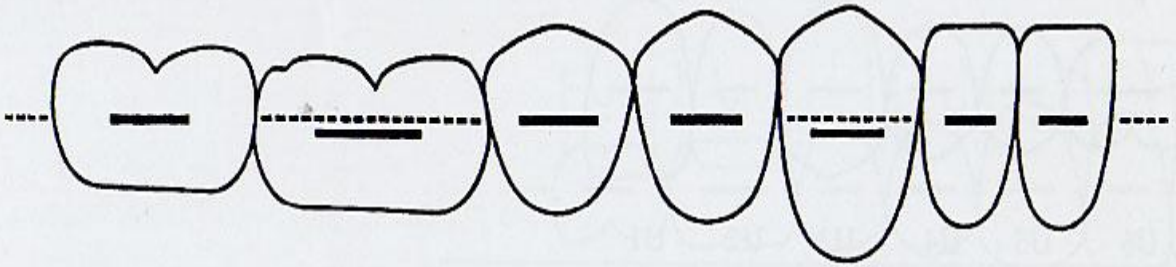
REŠITVE, KI JIH PONUJA SISTEM MBT PRI NAMEŠČANJU NOSILCEV



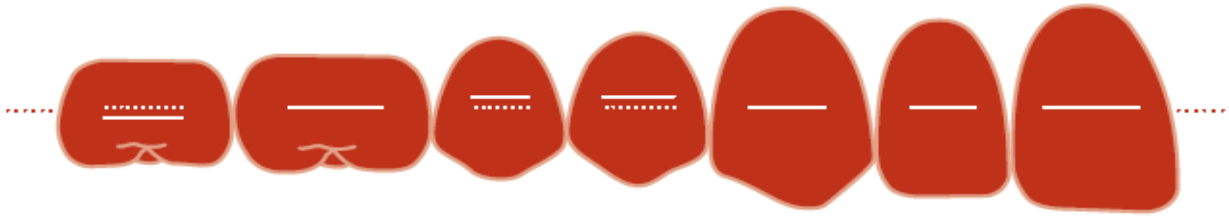

10mm
11mm
9mm
10mm



In the upper arch a straight line did not pass through the measured midpoints on the bicuspids and second molars, in most cases. Bicuspids were usually 0.5 mm more occlusal and second molars 0.5 mm to 1.0 mm more gingival.



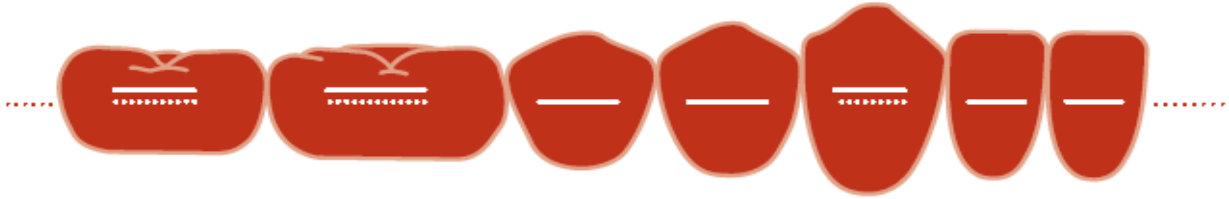
In the lower arch a straight line did not pass through the measured midpoints on lower cuspids and lower first molars. These midpoints were usually 0.5 mm gingival to the line.



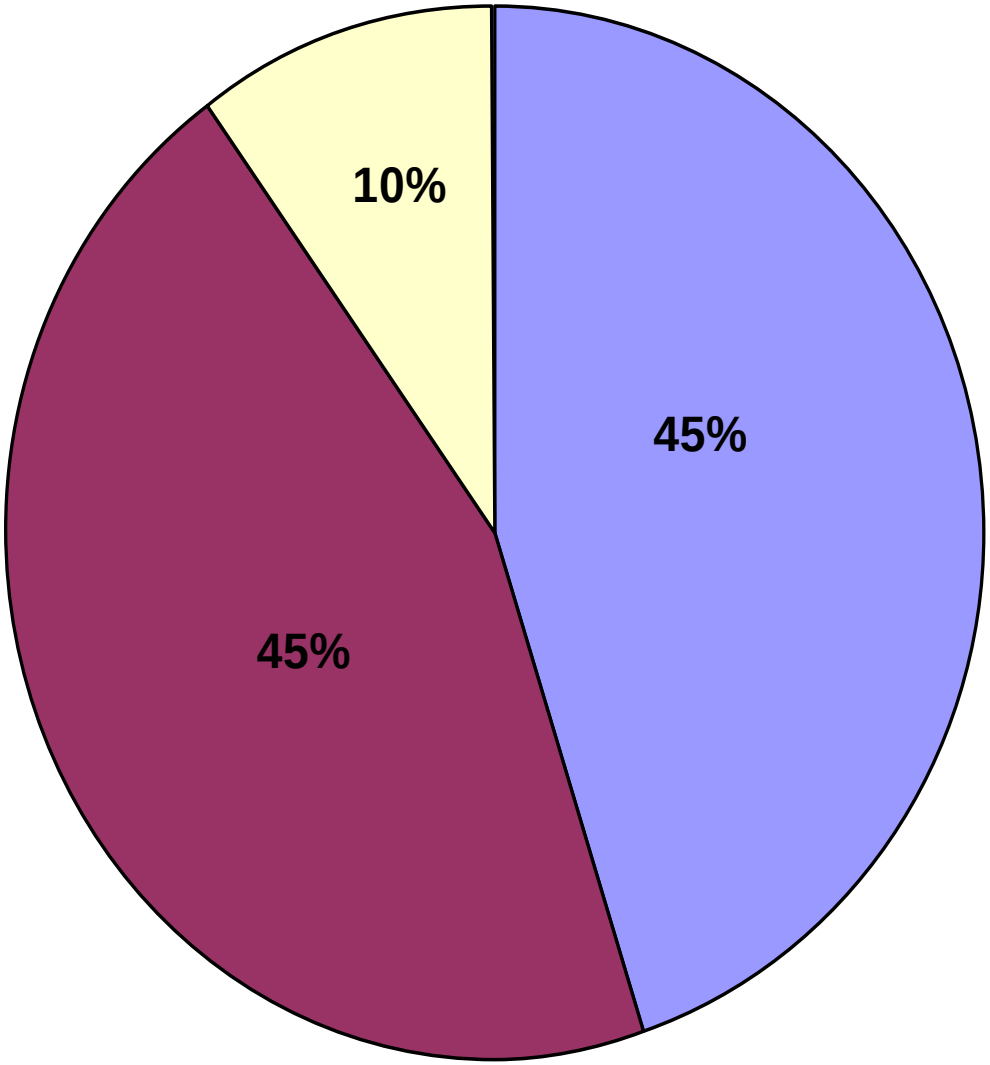
Bracket Placement Chart

U7	U6	U5	U4	U3	U2	U1	
2.0	4.0	5.0	5.5	6.0	5.5	6.0	+1.0 mm
2.0	3.5	4.5	5.0	5.5	5.0	5.5	+0.5 mm
2.0	3.0	4.0	4.5	5.0	4.5	5.0	Average
2.0	2.5	3.5	4.0	4.5	4.0	4.5	-0.5 mm
2.0	2.0	3.0	3.5	4.0	3.5	4.0	-1.0 mm

L7	L6	L5	L4	L3	L2	L1	
3.5	3.5	4.5	5.0	5.5	5.0	5.0	+1.0 mm
3.0	3.0	4.0	4.5	5.0	4.5	4.5	+0.5 mm
2.5	2.5	3.5	3.5	4.5	4.0	4.0	Average
2.0	2.0	3.0	3.0	4.0	3.5	3.5	-0.5 mm
2.0	2.0	2.5	2.5	3.5	3.0	3.0	-1.0 mm

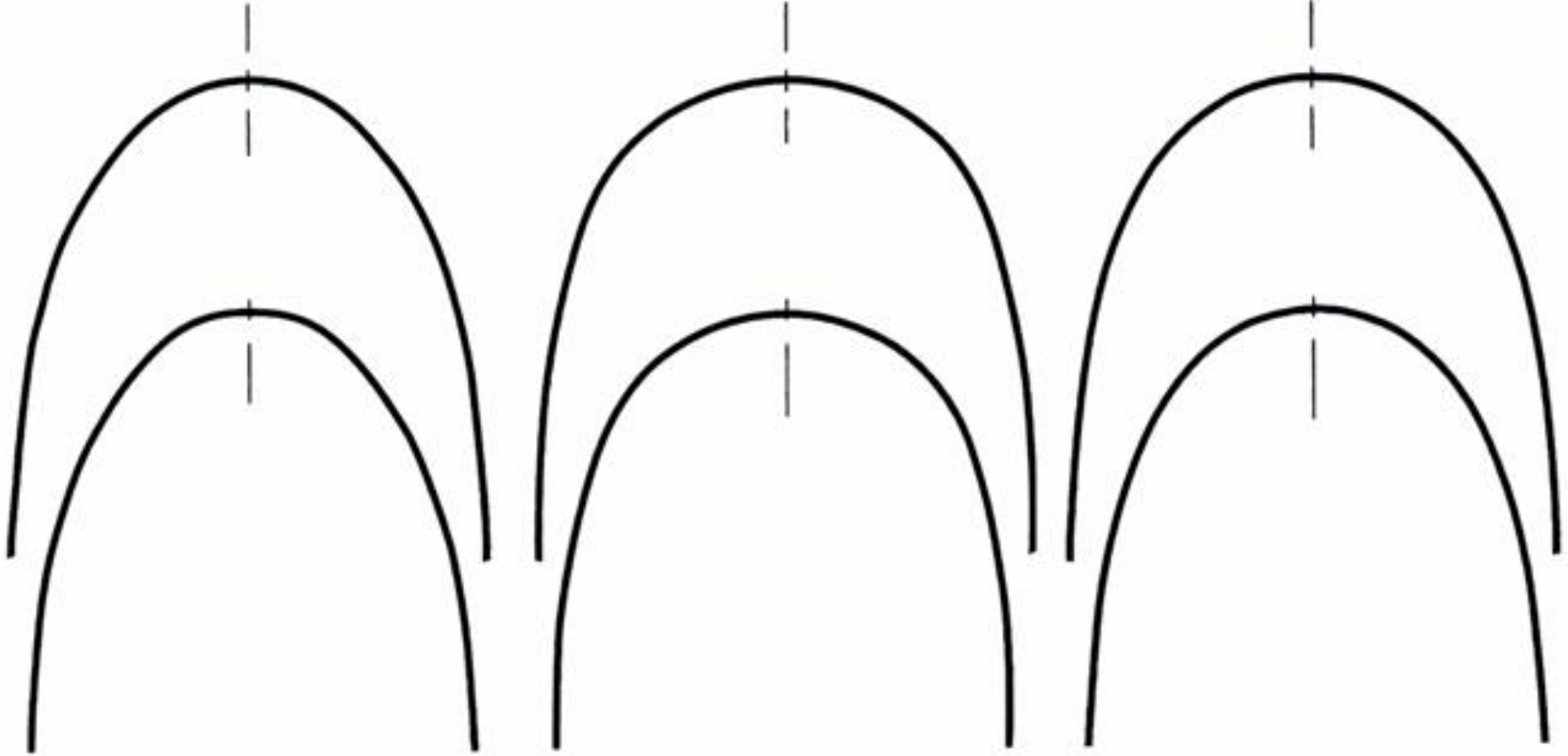


IZBIRA LOKOV



Tapered 45%
Ovoid 45%
Square 10%

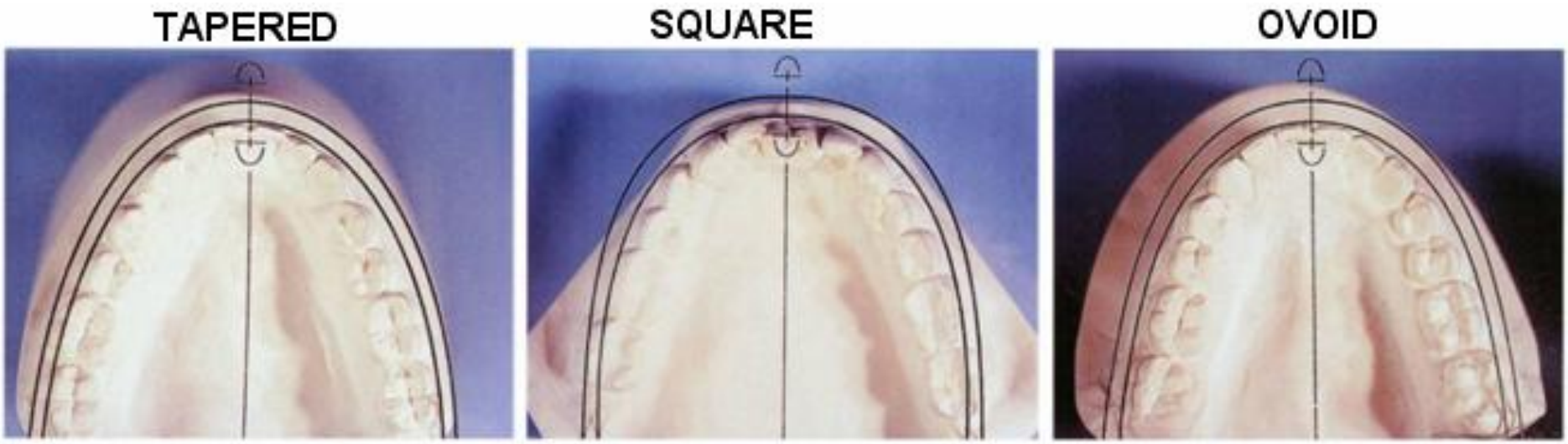
Recommended ratios



Tapered

Square

Ovoid



Clear templates may be used at the start of treatment to assess whether the patient's lower arch has a tapered, square or ovoid form.

.015 multistrand
.0175 multistrand
.014 round stainless steel
.016 round stainless steel
.018 round stainless steel
.020 round stainless steel
.016 HANT

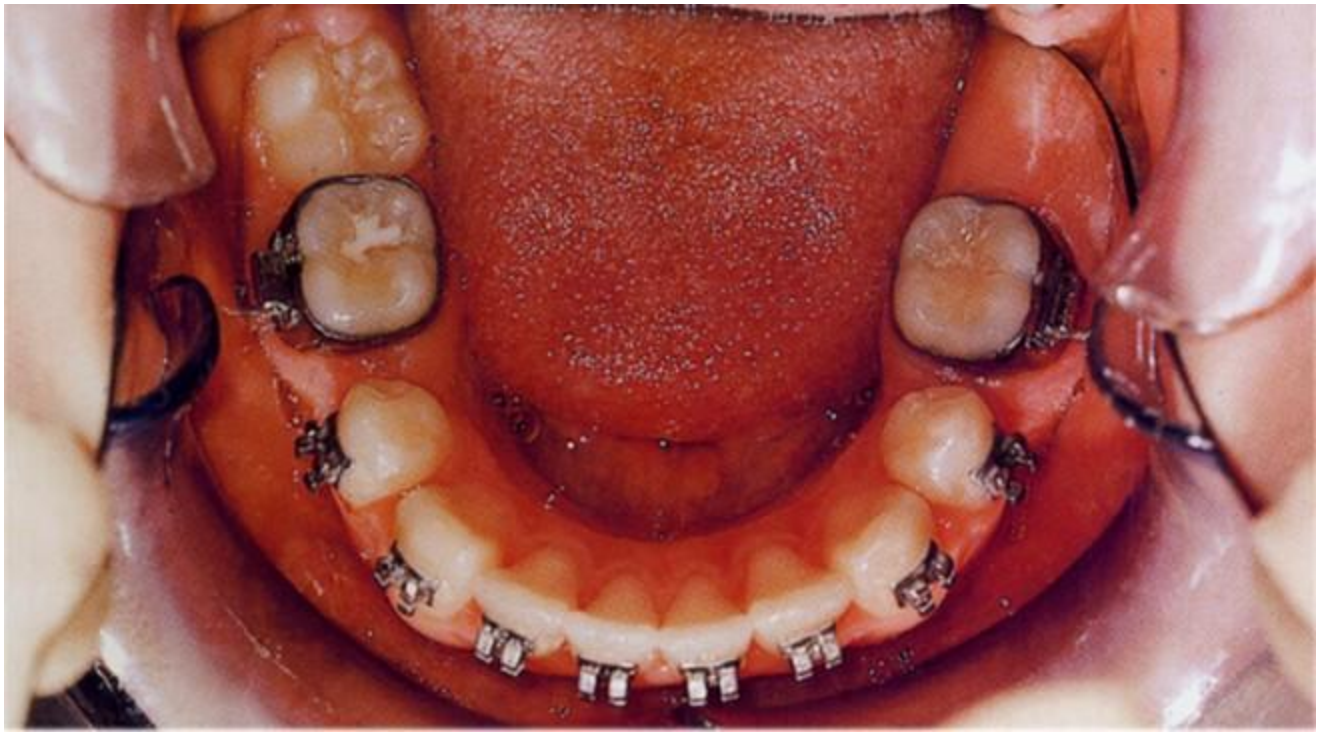
Stocked in ovoid shape only and modified to templates as necessary

.019/.025 HANT

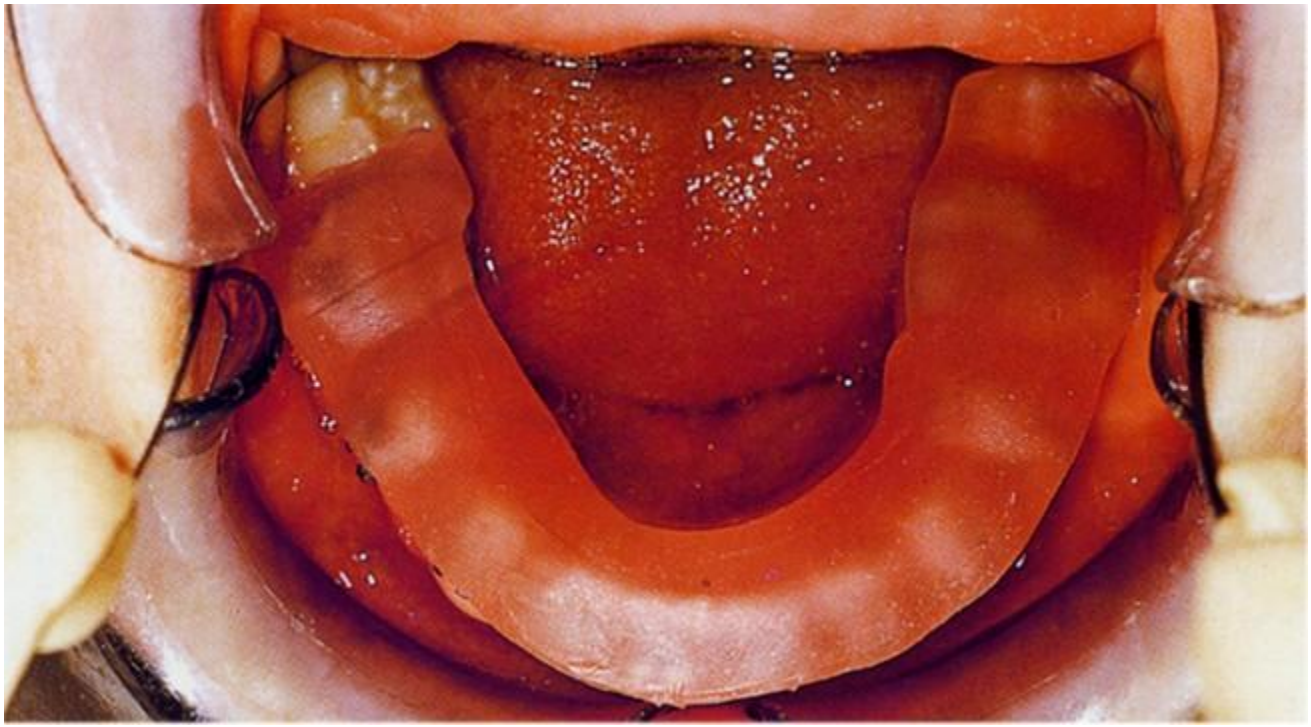
Stocked in three shapes:
– 45% tapered
– 10% square
– 45% ovoid

.019/.025 stainless steel with soldered hooks

Stocked in ovoid only, or in three shapes (ovoid, tapered and square) and modified to the patient's IAF from the wax template



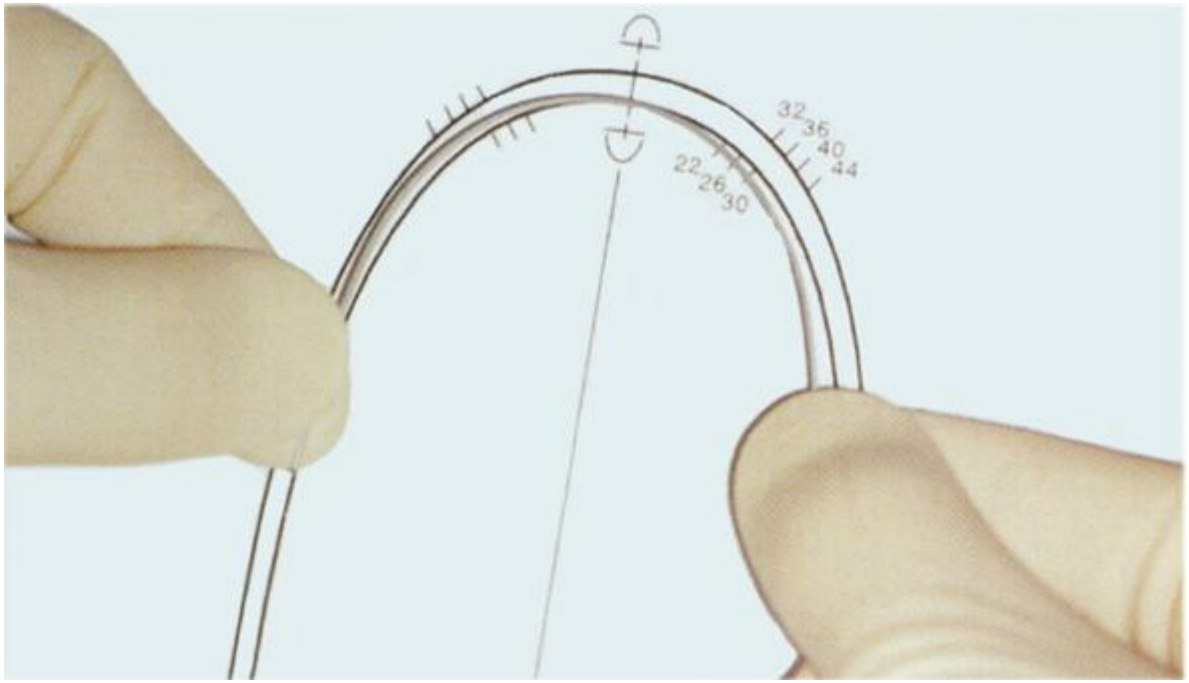
The lower rectangular HANT wire has been removed.



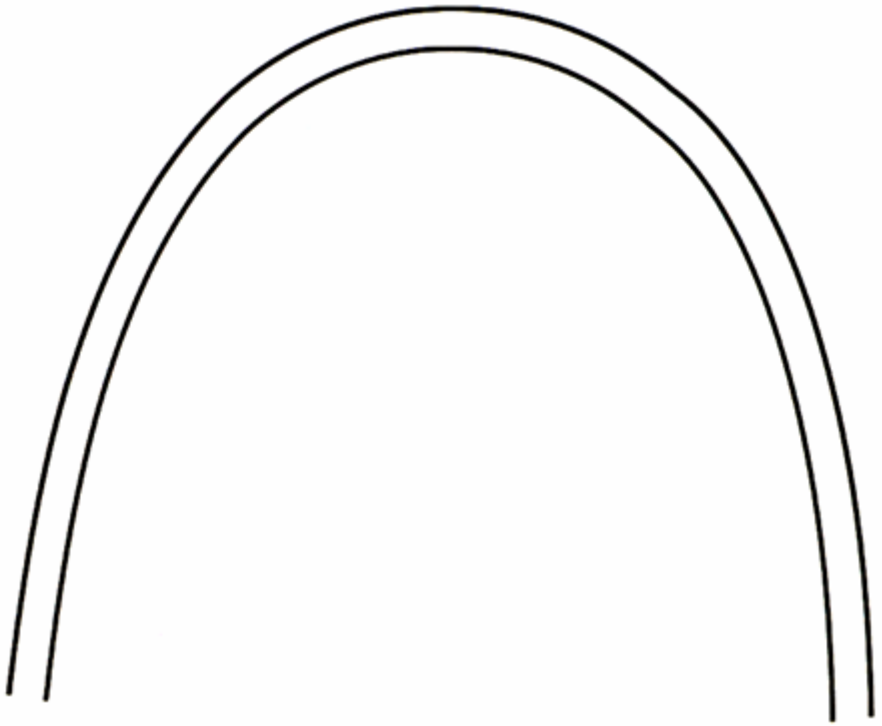
A wax template is softened in warm water and molded over the lower arch to record indentations of the brackets

The wax template viewed from the labial.

The .019/.025 rectangular steel wire is bent to the indentations

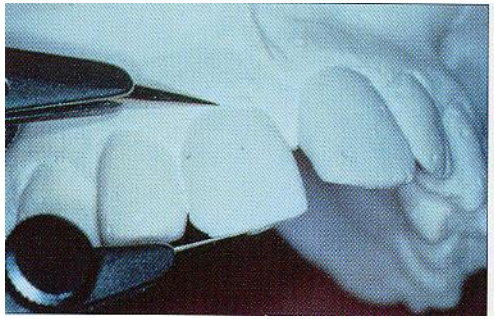


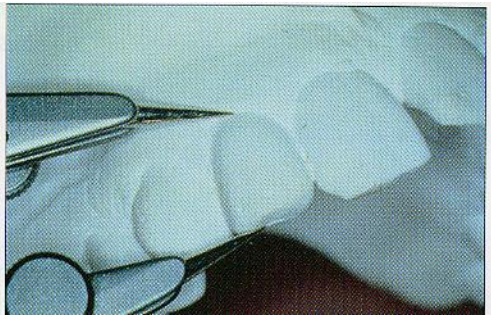
The steel rectangular wire is checked for symmetry on a template, and then a Xerox copy can be made and used as the patient's IAF for the lower arch.

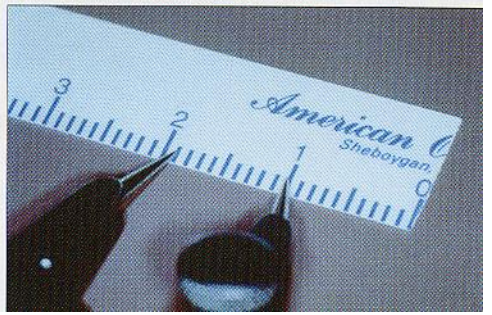


After the patient’s IAF has been determined for the lower archwire, an upper wire can be created which should superimpose approximately 3 mm outside of the lower wire.

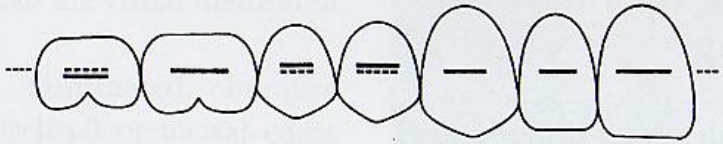
PRAKTIČNI DEL





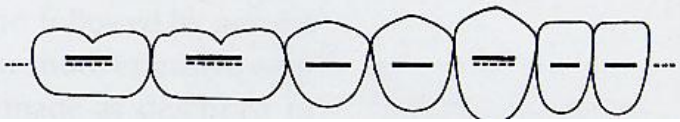


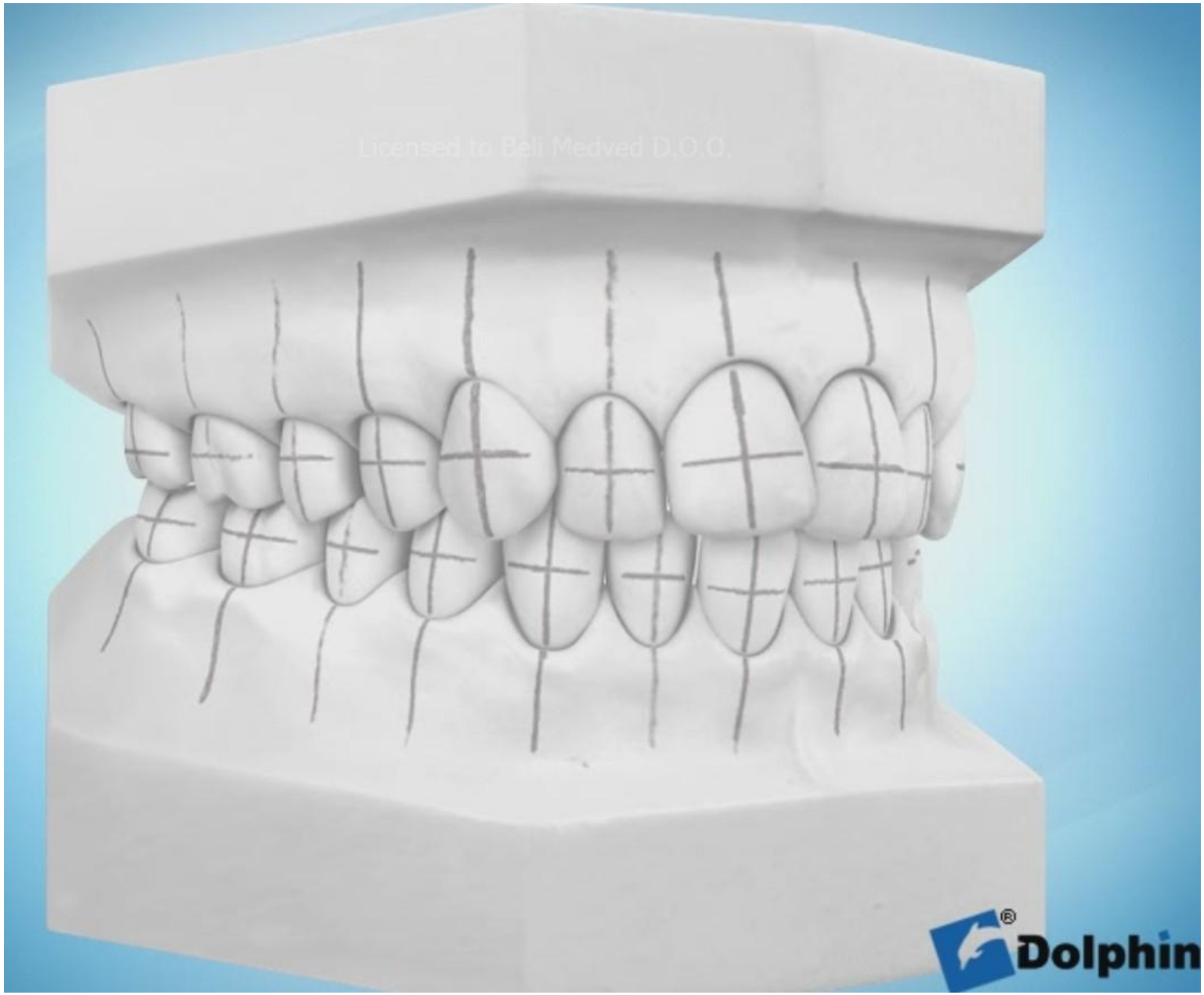
	2.0	3.5	4.0	5.0	4.0	5.0	4.5	4.0	4.5	3.0	3.0	2.5
	2.5		4.0	4.5	4.0	4.0	4.0	4.5	5.0	4.0	3.5	2.5



	U7	U6	U5	U4	U3	U2	U1		
A	2.0	4.0	5.0	5.5	6.0	5.5	6.0	+1.0mm	A
B	2.0	3.5	4.5	5.0	5.5	5.0	5.5	+0.5mm	B
C	2.0	3.0	4.0	4.5	5.0	4.5	5.0	Average	C
D	2.0	2.5	3.5	4.0	4.5	4.0	4.5	−0.5mm	D ←
E	2.0	2.0	3.0	3.5	4.0	3.5	4.0	−1.0mm	E

	L7	L6	L5	L4	L3	L2	L1		
A	3.5	3.5	4.5	5.0	5.5	5.0	5.0	+1.0mm	A
B	3.0	3.0	4.0	4.5	5.0	4.5	4.5	+0.5mm	B
C	2.5	2.5	3.5	4.0	4.5	4.0	4.0	Average	C ←
D	2.0	2.0	3.0	3.5	4.0	3.5	3.5	−0.5mm	D
E	2.0	2.0	2.5	3.0	3.5	3.0	3.0	−1.0mm	E

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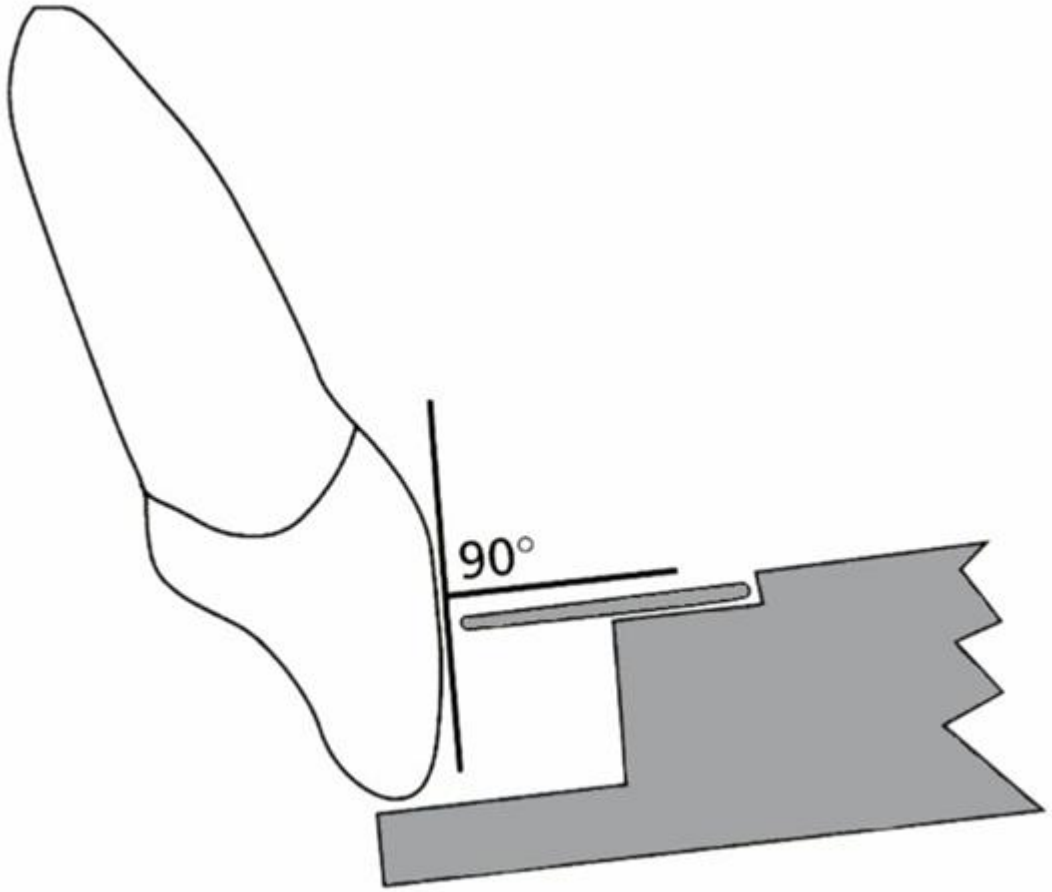
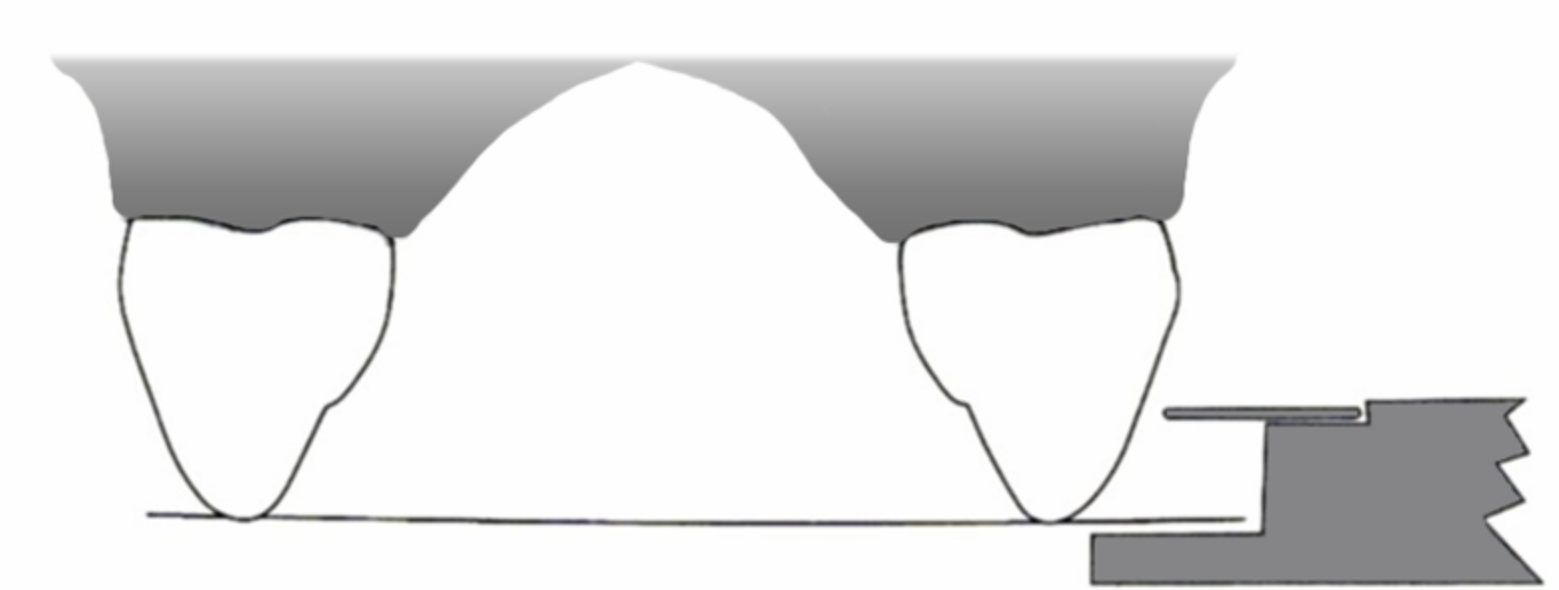
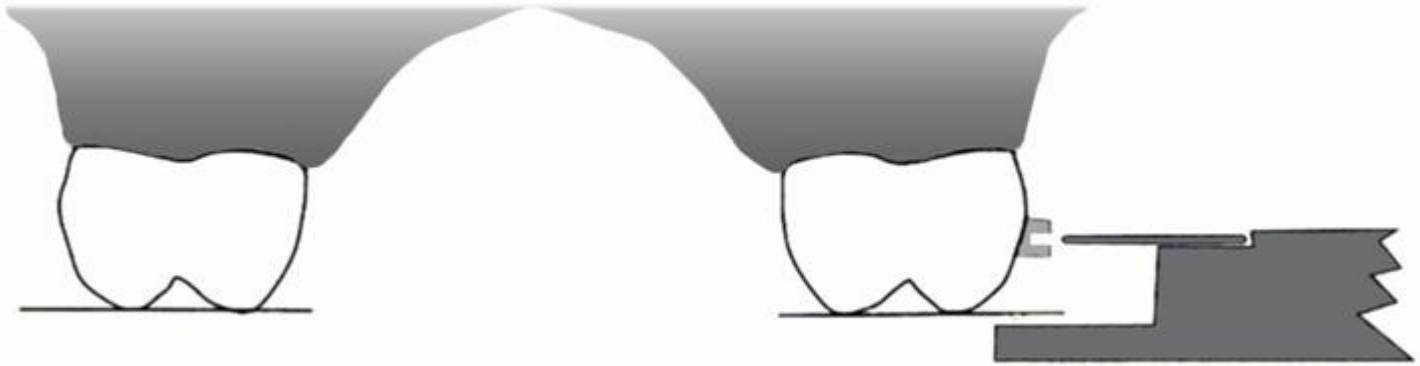


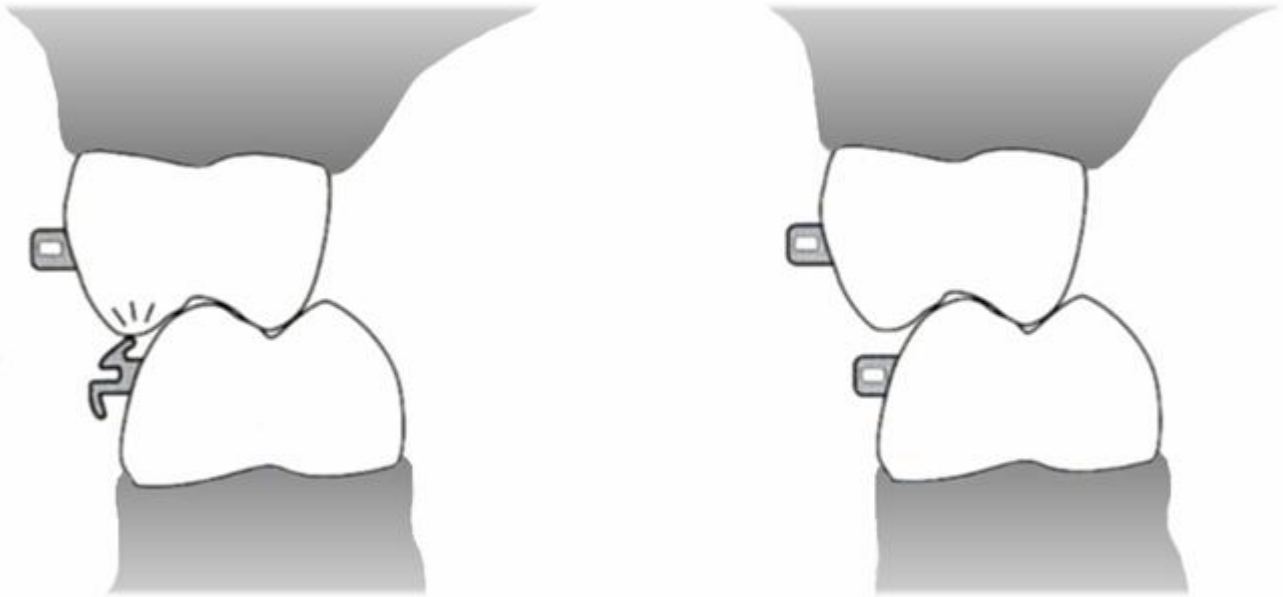
In the incisor region, the gauge is placed at 90º to the labial surface.



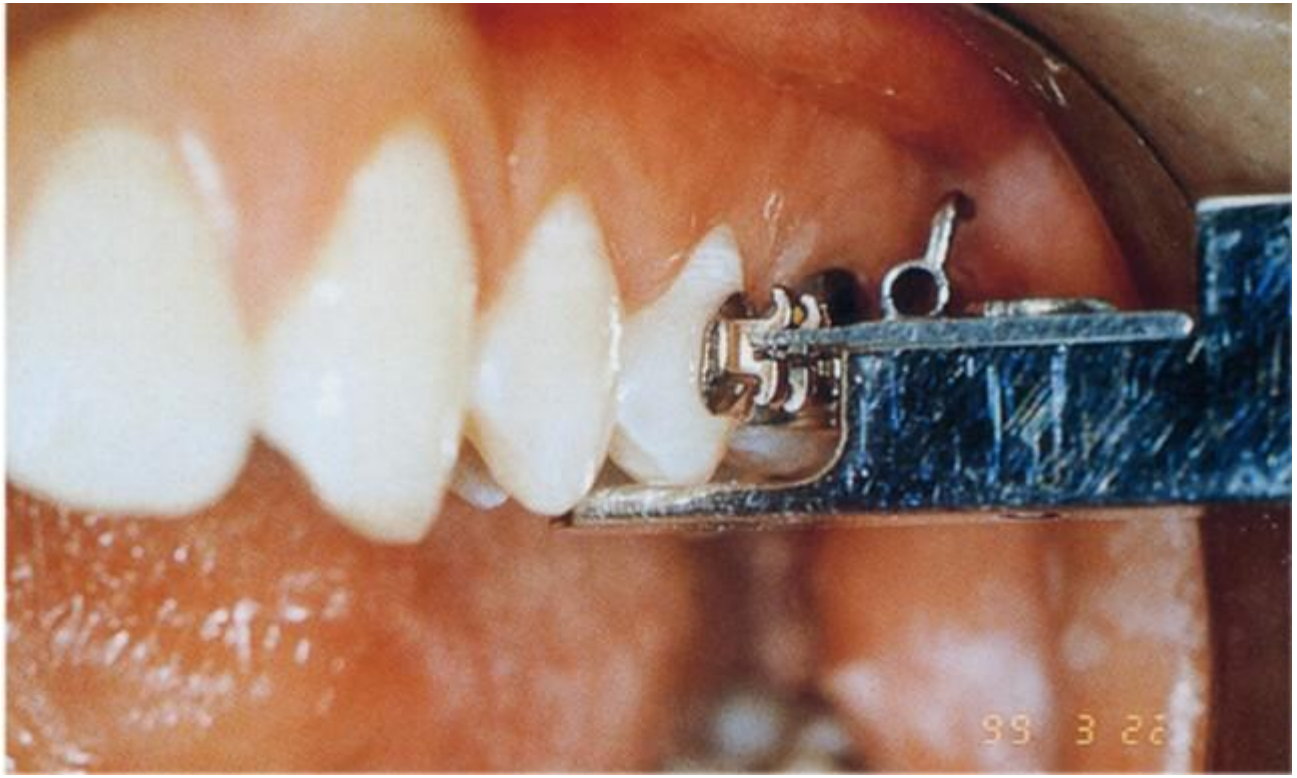
In the canine and premolar regions, the gauge is placed parallel with the occlusal plane.



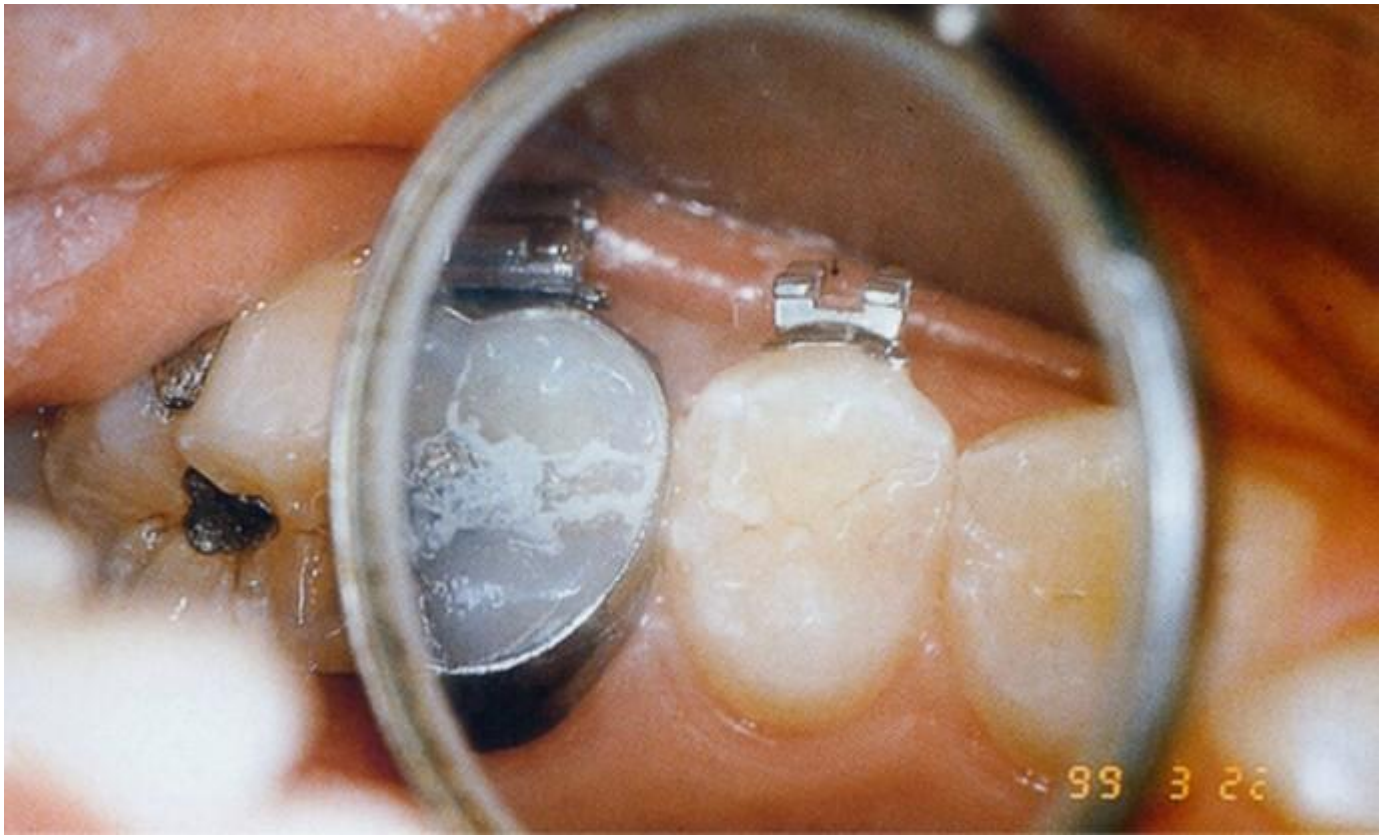
In the molar regions, the gauge is placed parallel with the occlusal surface of each individual molar.



Lower first molar non-convertible tubes are often preferable to convertible tubes, because they are less bulky. They are stronger, more comfortable, and cause fewer interferences.



Horizontal and vertical accuracy can be checked from the buccal aspect



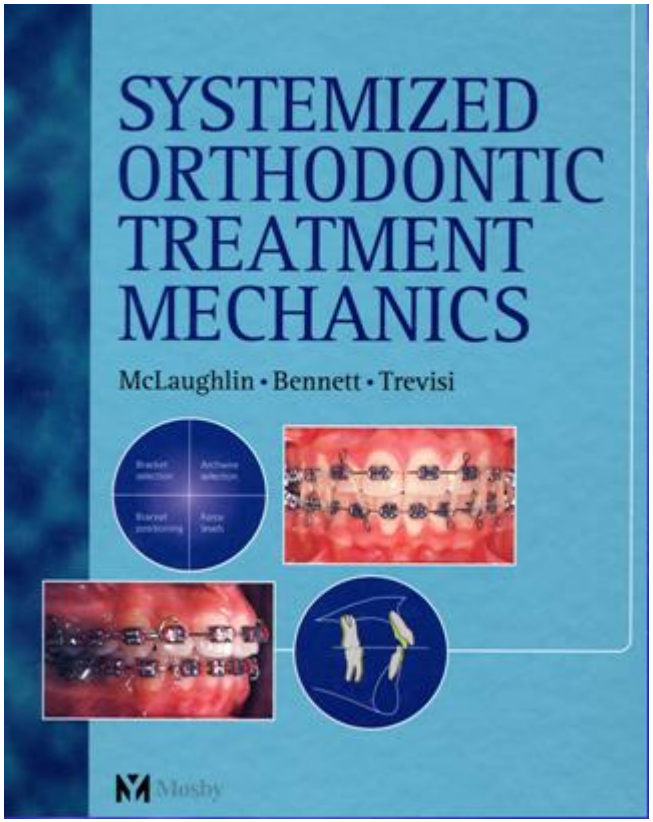
Horizontal accuracy in the canine, premolar, and molar regions should be checked with a mouth mirror.

LOUPE

Povzetek predavanja

- Natančna ortodontska diagnostika
- Določitev točnega cilja ortodontske terapije
- Izbira pravega sistema za ortodontsko zdravljenje
- Individualizaciji sistema
- Natančnost pri namestitvi nosilcev

Literatura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	30	35	40	50	40	50	50	40	50	45	40	30	
	70	68	88	88	83	84	82	82	100	77	71	68	
	35	35	45	50	40	40	40	40	50	40	35	35	
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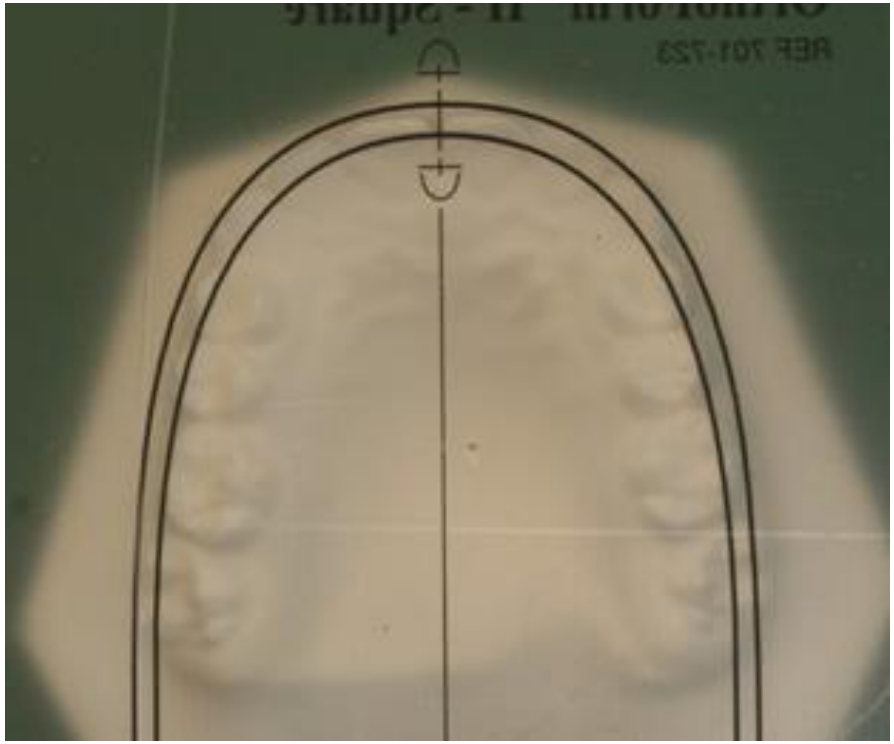
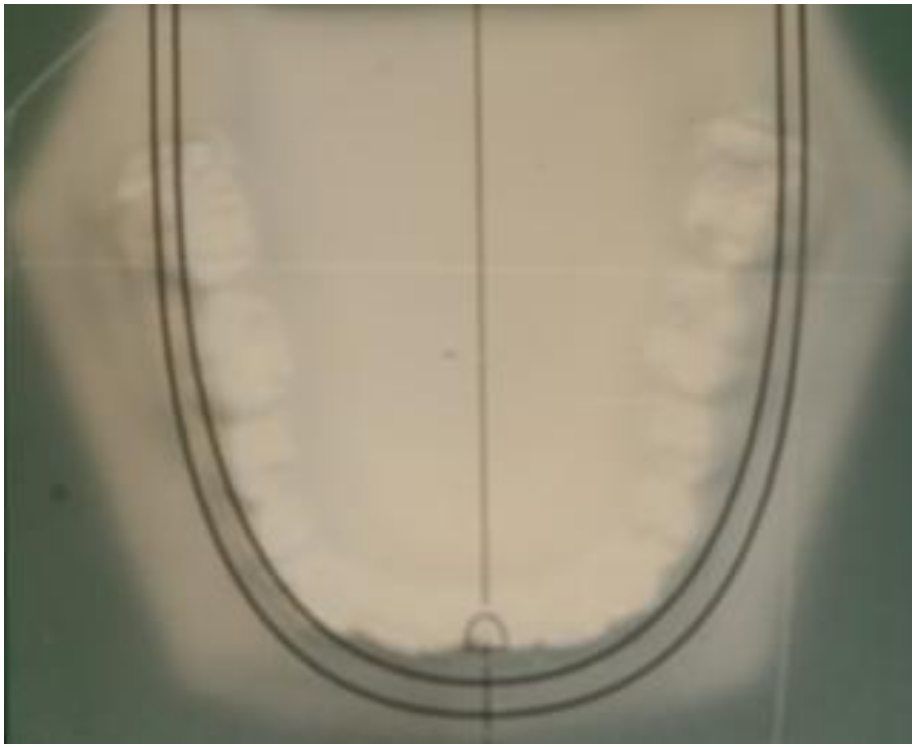
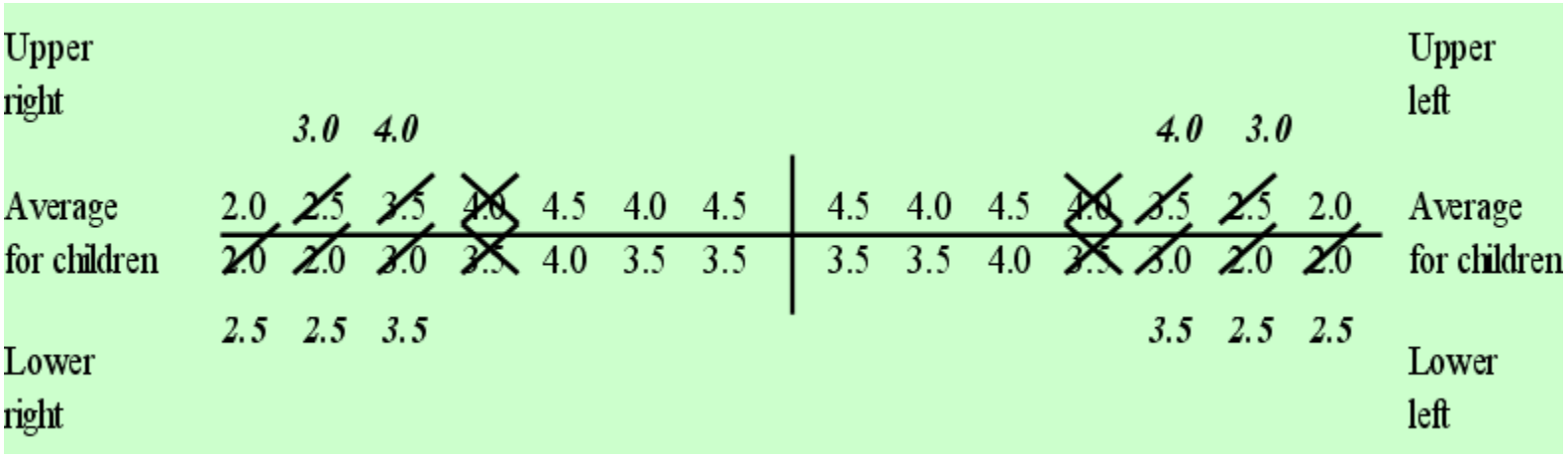
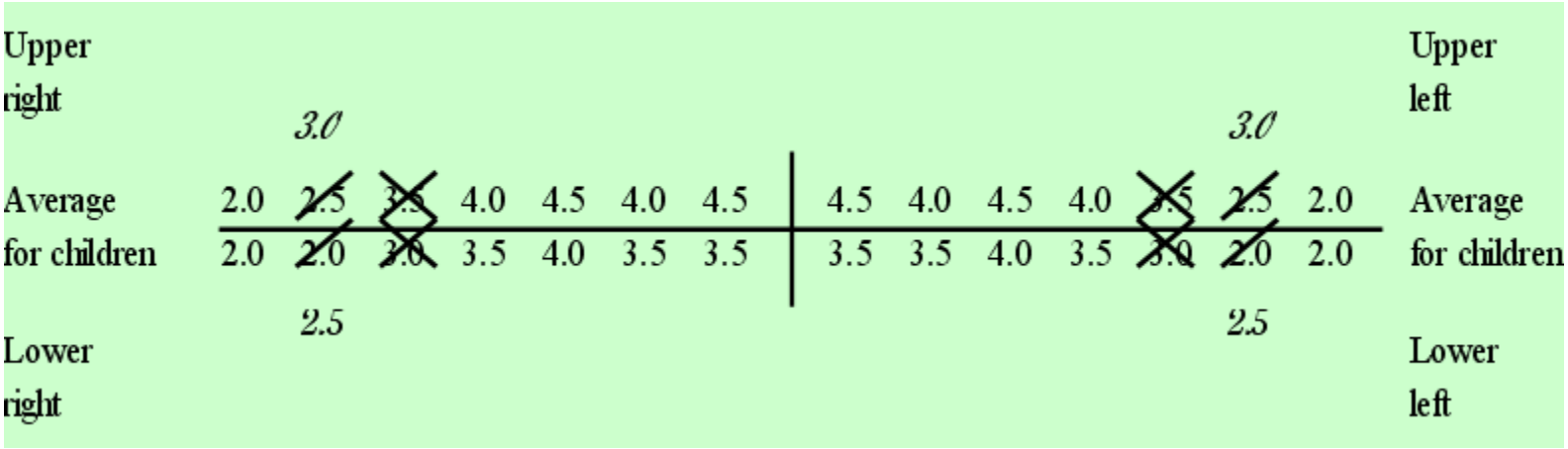






Individualized bracket-positioning chart for a first premolar extraction case



Individualized bracket-positioning chart for a second premolar extraction case.

	Tapered (%)	Squared (%)	Ovoid (%)
Andrews' cases	27	20	53
Class I sample	60	3	37
Class II sample	53	7	40

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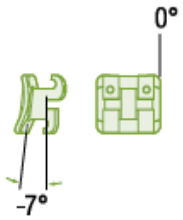
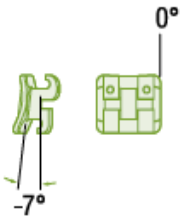
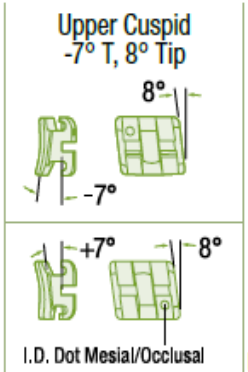
Maxillary



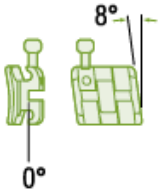
Upper 2nd Bicuspid
-7° T, 0° Tip



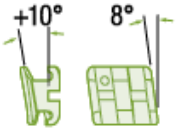
Upper 1st Bicuspid
-7° T, 0° Tip



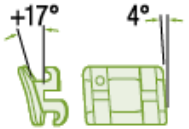
Upper Cuspid
+7° T, 8° Tip



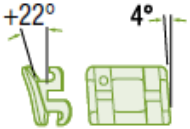
Upper Cuspid with
Ball Hook
0° T, 8° Tip



Upper Lateral
+10° T, 8° Tip

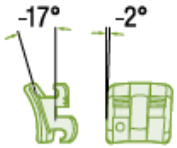


Upper Central
+17° T, 4° Tip

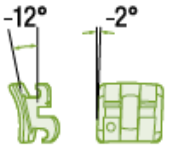


Upper Central
+22° T, 4° Tip

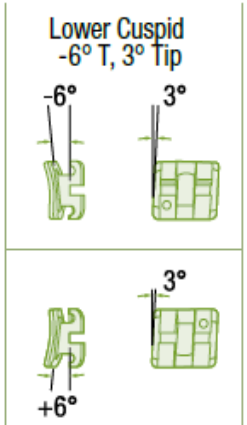
Mandibular



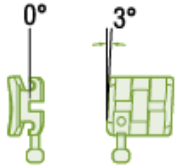
Lower 2nd Bicuspid
-17° T, 2° Tip



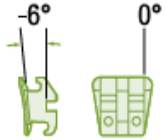
Lower 1st Bicuspid
-12° T, 2° Tip



Lower Cuspid
+6° T, 3° Tip



Lower Cuspid with
Ball Hook
0° T, 3° Tip



Lower Anterior
-6° T, 0° Tip