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Miniscrew biomechanics of maxillary posterior segment intrusion

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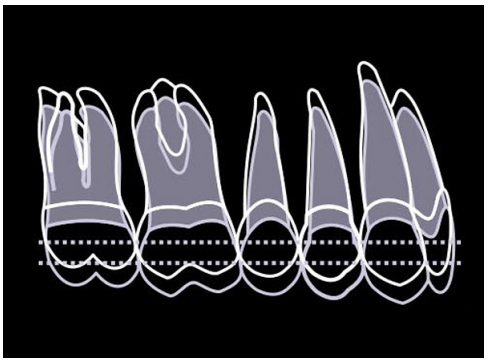
Types of intrusion

Parallel:
Molars and premolar intrude to same level. Indication: gummy smile, Long face.

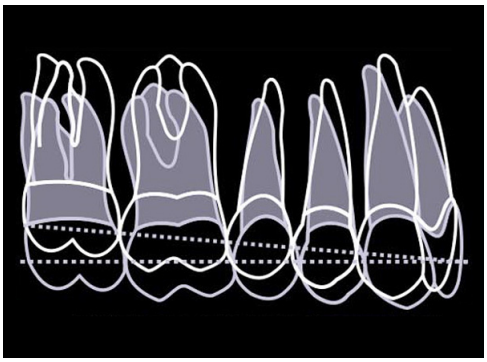
Non Parallel:
2nd molar intrude more than the 1st premolar. Indication: Open bite.

Unilateral:
Control of tooth movement in all three planes of space difficult.

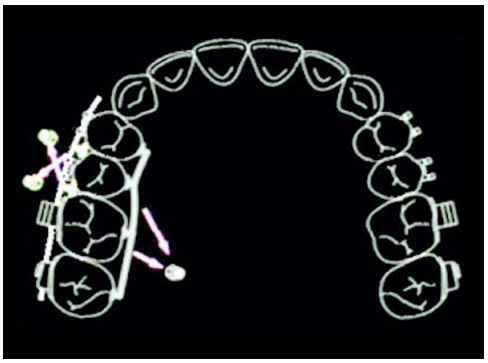
Bilateral:
Three dimensional control of tooth movement possible.



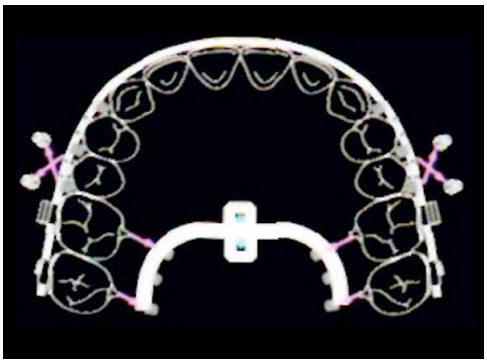
Parallel intrusion



Non Parallel intrusion



Unilateral intrusion



Bilateral intrusion

Biomechanical consideration for 1st order and 3rd order control (control of arch form & torque)

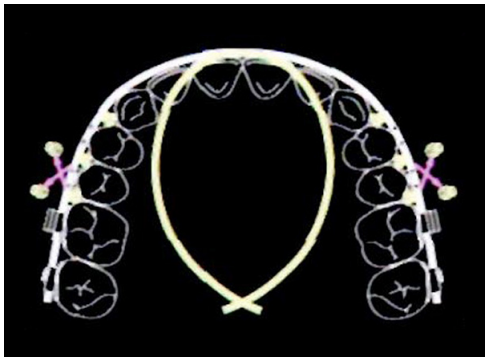
Type I
Buccal intrusive force. Palatal torque in arch wire. Disadv: Arch expansion, bowing of arch.

Type II
Buccal intrusive force. Constrictive bend in arch wire. Disadv: No control of second molar.

Type III
Buccal and palatal intrusive force. Disadv: no control in point of palatal force application.

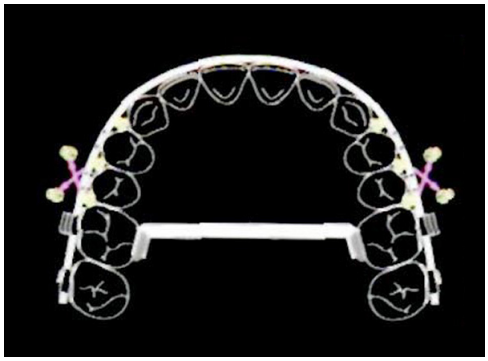
Type IV
Bucccal intrusive force. Cross arch splinting. Disadv: Reduced efficiency of movement, insufficient torque control.

Biomechanical consideration for 1st order and 3rd order control-Type I



Biomechanical consideration for 1st order and 3rd order control-Type II

Biomechanical consideration for 1st order and 3rd order control-Type III



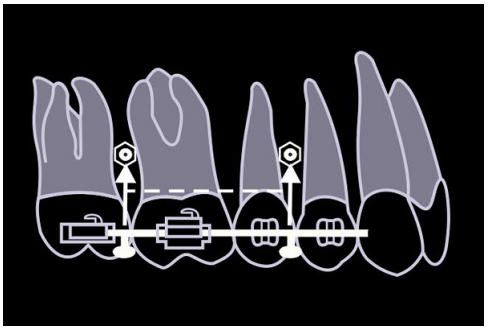
Biomechanical consideration for 1st order and 3rd order control-Type IV

Biomechanical consideration for 2nd order control (control of occlusal plane)

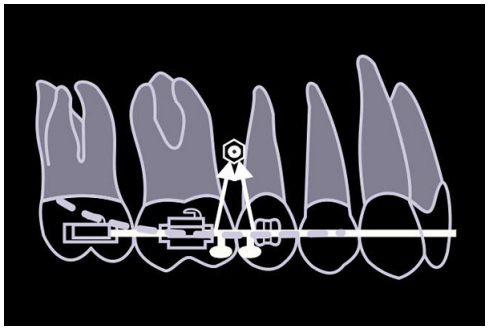
Type I
Intrusive force near second molar. Ideal for sagittal control of the occlusal plane.

Type II
Second order bend for second molar control.

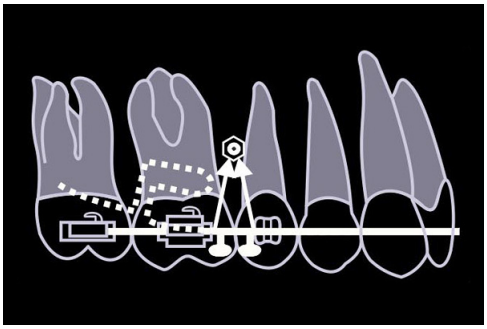
Type III
Single implant. Two forces to generate moment. 'L' bend to increase biomechanical efficiency.



Biomechanical consideration for 2nd order control-Type I



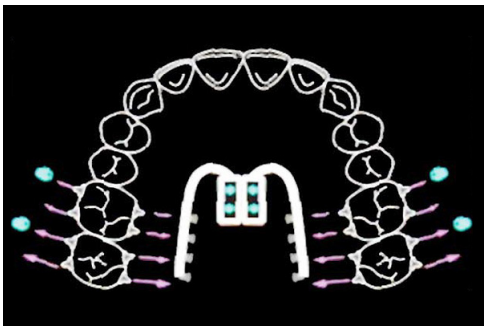
Biomechanical consideration for 2nd order control-Type II



Biomechanical consideration for 2nd order control-Type III

Ideal appliance system

Buccal and palatal force near the molars. Superior in all biomechanical aspect. Controls vertical position, arch form, axis and torque of individual teeth and inclination of occlusal plane.



Ideal appliance system

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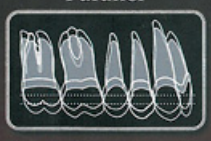
Poster Faksimile:

MICROSCREW BIOMECHANICS OF MAXILLARY POSTERIOR SEGMENT INTRUSION

PoS-04

TYPES OF INTRUSION

Parallel



Molars and premolars intrude to the same level.
Indication: Gummy smile, Long face

Non Parallel

2nd molar intrudes more than the 1st premolar.
Indication: Open bite

Unilateral

Control of tooth movement in all three planes of space is difficult

Bilateral

Three dimension control of tooth movement possible

BIOMECHANICAL CONSIDERATIONS FOR 1ST ORDER AND 3RD ORDER CONTROL (CONTROL OF ARCH FORM & TORQUE)

Buccal intrusive force. Palatal torque in arch wire.

Disadv:
- **Arch expansion**
- **Bowing of arch**

Buccal intrusive force. Constrictive bend in arch wire.

Disadv:
No control of second molar

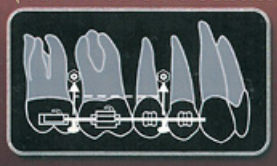
Buccal and palatal intrusive force.

Disadv:
No control in the point of palatal force application.

Bucccal intrusive force.
Cross arch splinting.

Disadv:
Reduced efficiency of movement.
Insufficient torque control.

BIOMECHANICAL CONSIDERATIONS FOR 2ND ORDER CONTROL (CONTROL OF OCCLUSAL PLANE)



Intrusive force near second molar
Ideal for sagittal control of the occlusal plane

Second order bend for 2nd molar control

Single implant.
Two forces to generate moment.
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IDEAL APPLIANCE SYSTEM

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Superior in all biomechanical aspect.
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