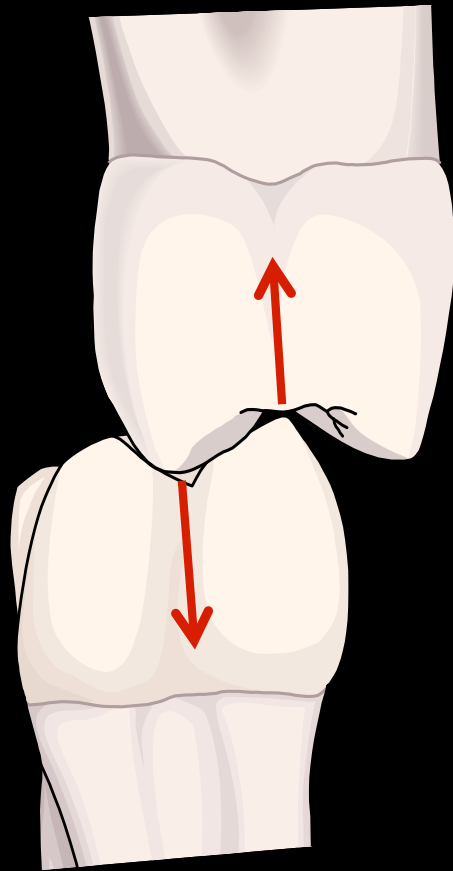




Components of Designed Occlusion

- Condyle-disc appropriately positioned
- Posterior teeth touch simultaneously

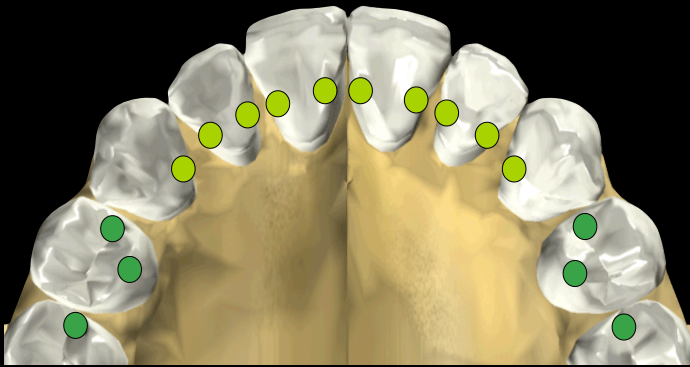




Components of Designed Occlusion

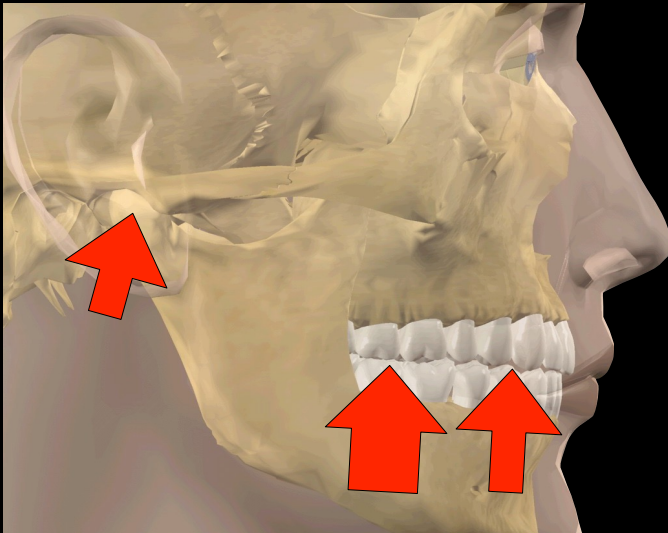
- Condyle-disc appropriately positioned
- Posterior teeth touch simultaneously
- Forces directed down long axis

Components of Designed Occlusion

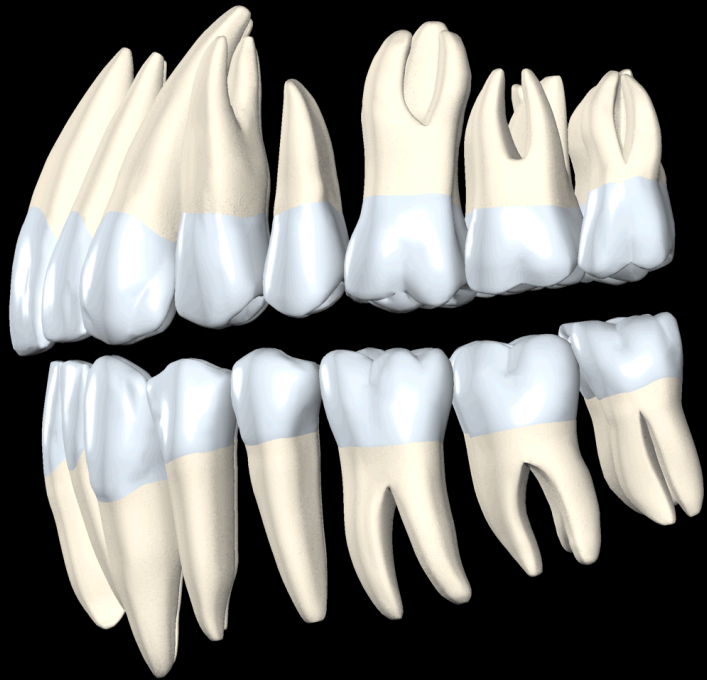


- **Condyle-disc appropriately positioned**
- **Posterior teeth touch simultaneously**
- **Forces directed down long axis**
- **Front teeth have lighter contact**

Components of Designed Occlusion



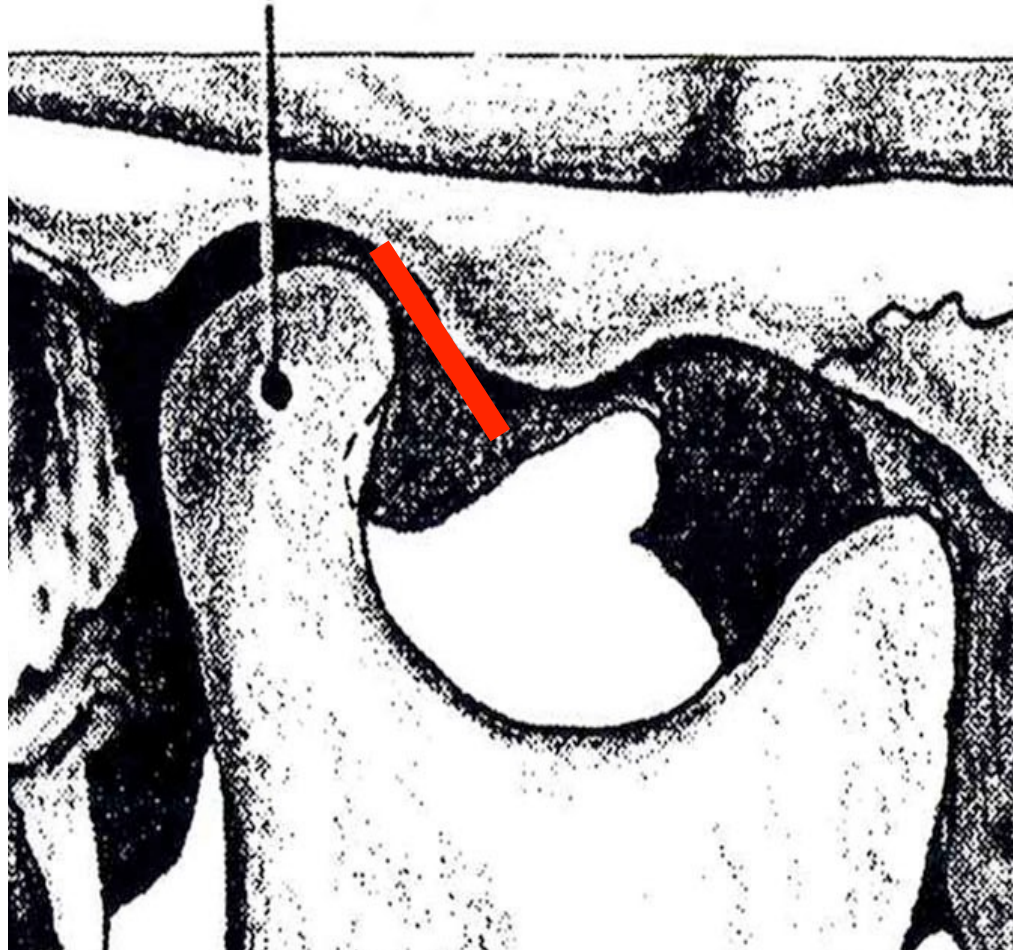
- **Condyle-disc appropriately positioned**
- **Posterior teeth touch simultaneously**
- **Forces directed down long axis**
- **Front teeth have lighter contact**
- **Under clench -
neither jaw nor teeth deflect**



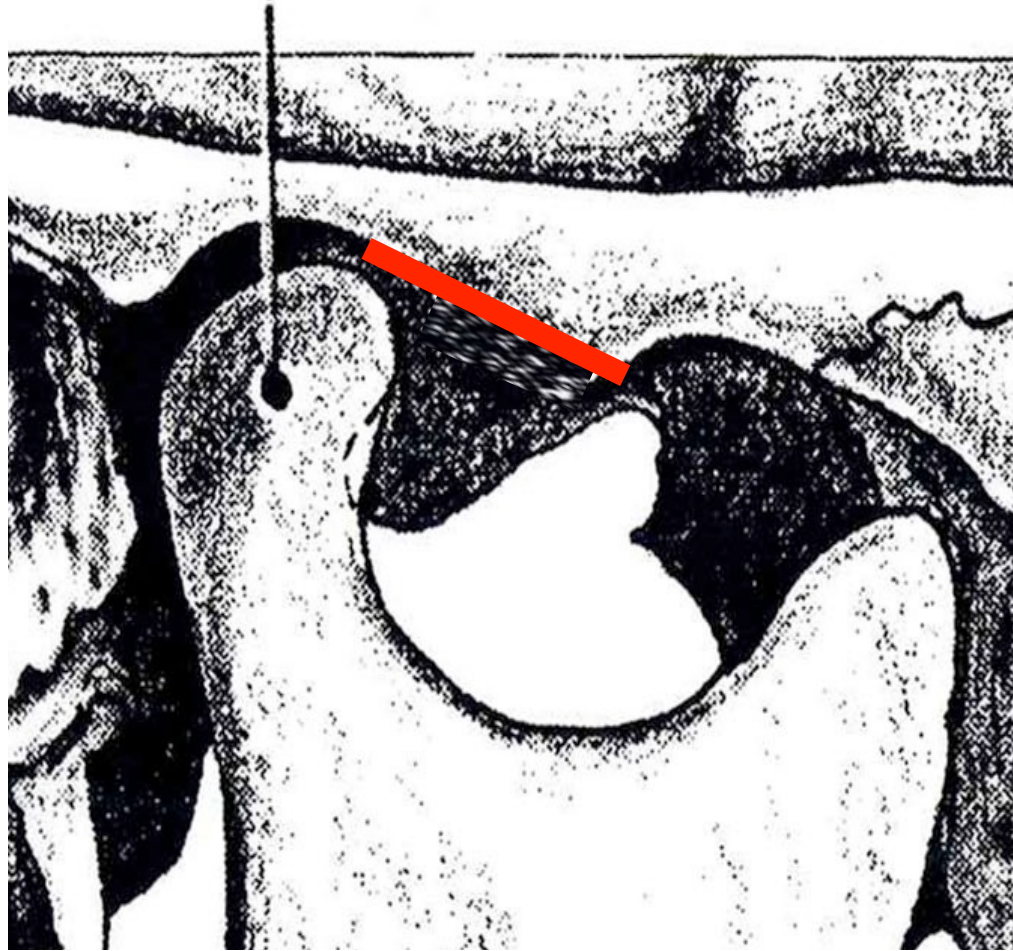
GUIDANCE



Posterior

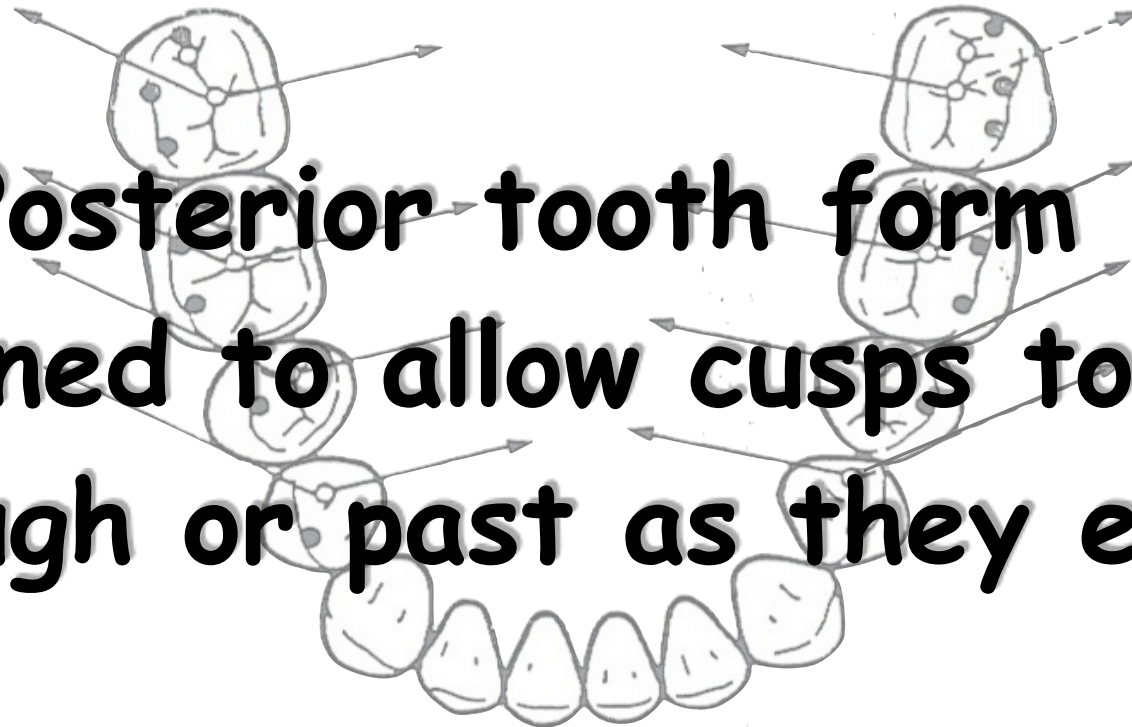


**Angle of the
Emminence
STEEP
back teeth
separate quickly**

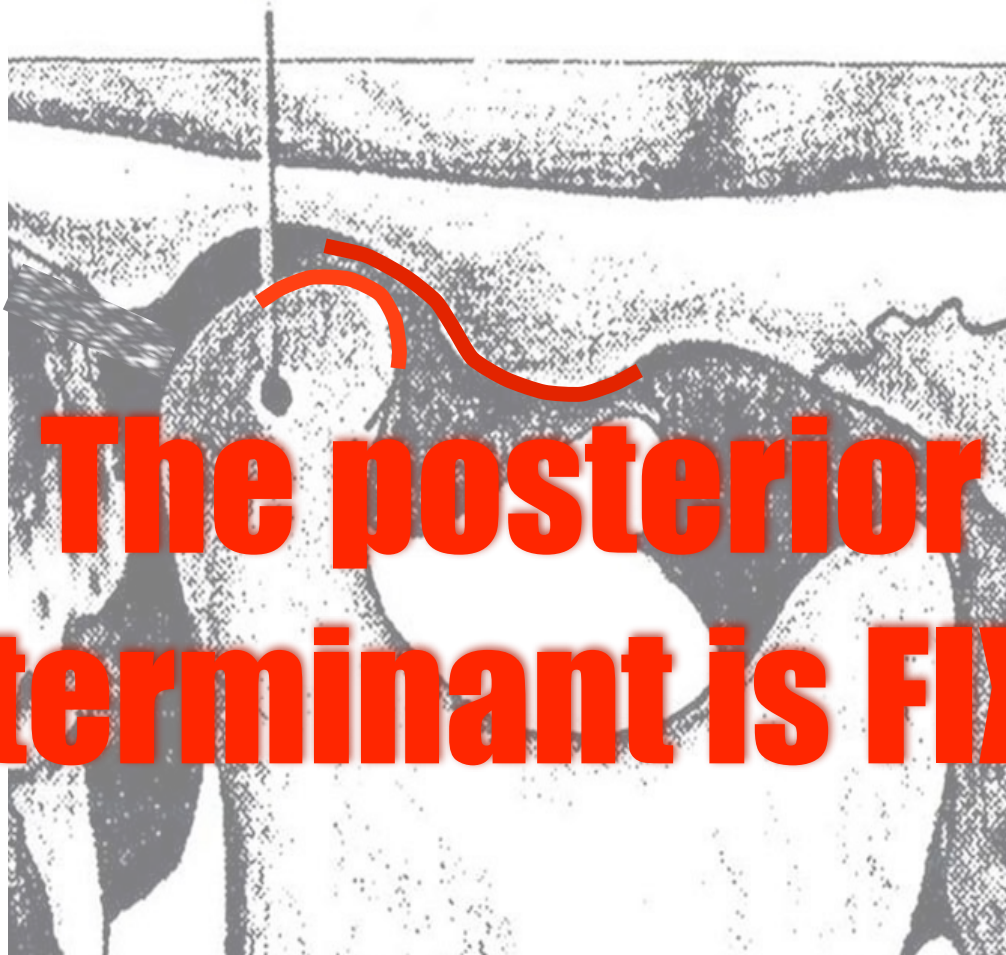


**Angle of the
Emminence
SHALLOW
back teeth
separate slowly**

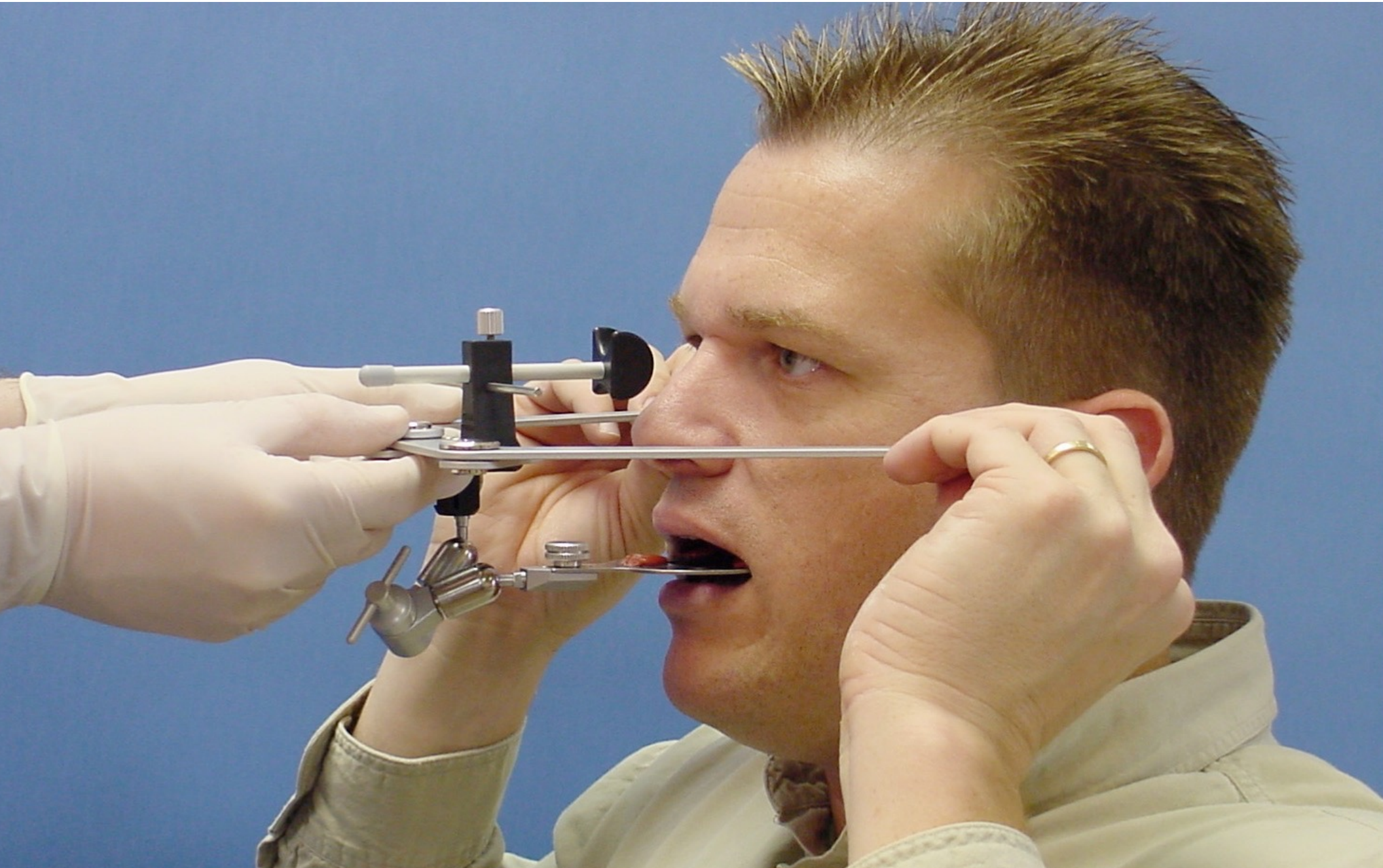
Posterior tooth form is designed to allow cusps to move through or past as they escape



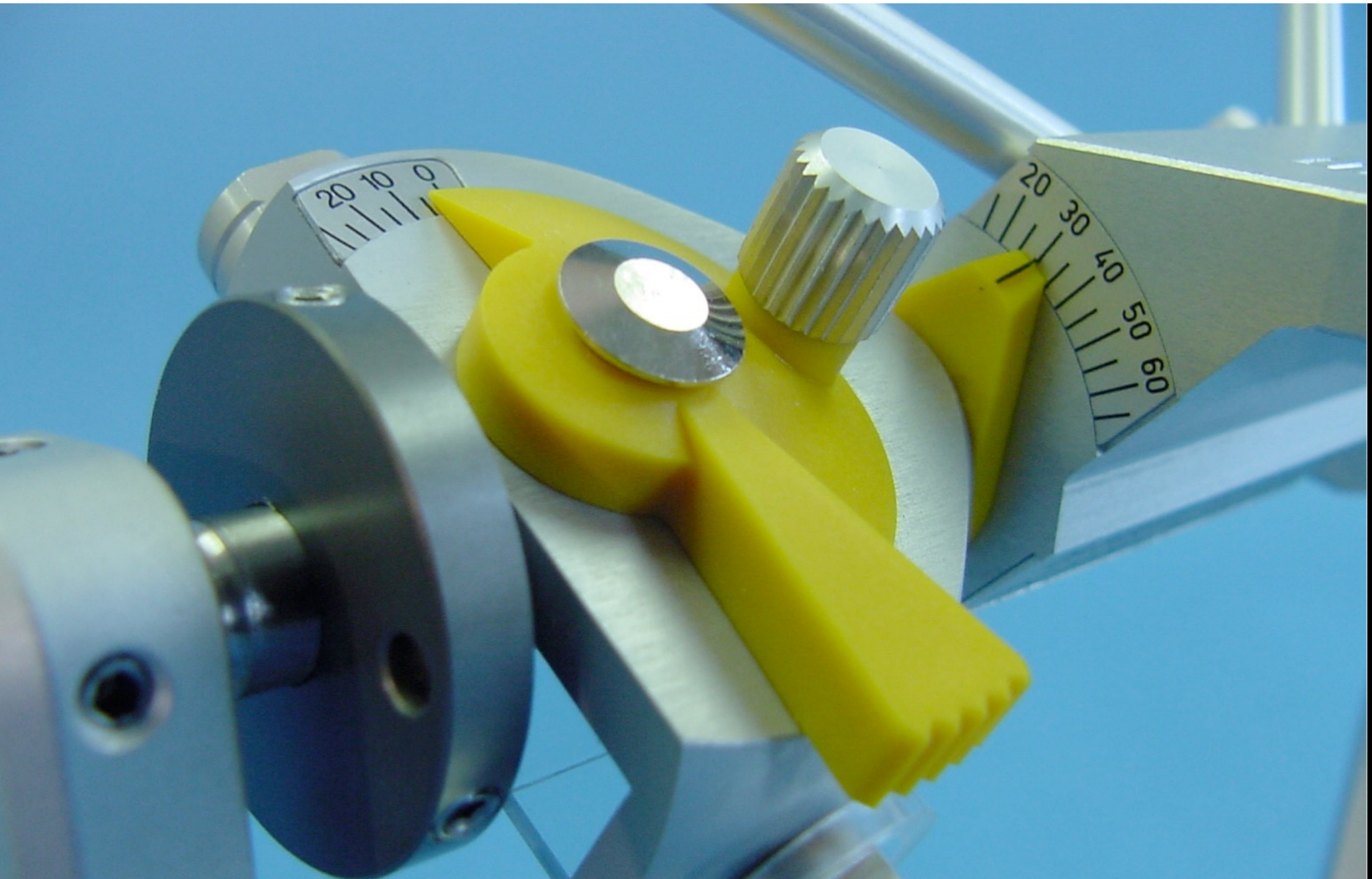
● Tip of cusp ○ Occluding fossa



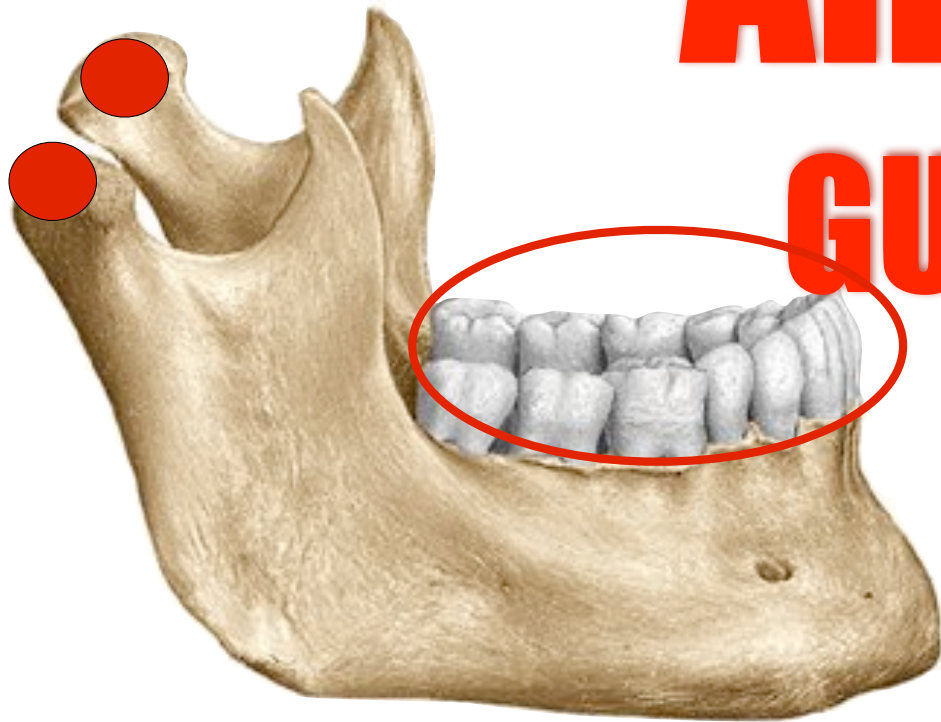
**The posterior
determinant is FIXED**

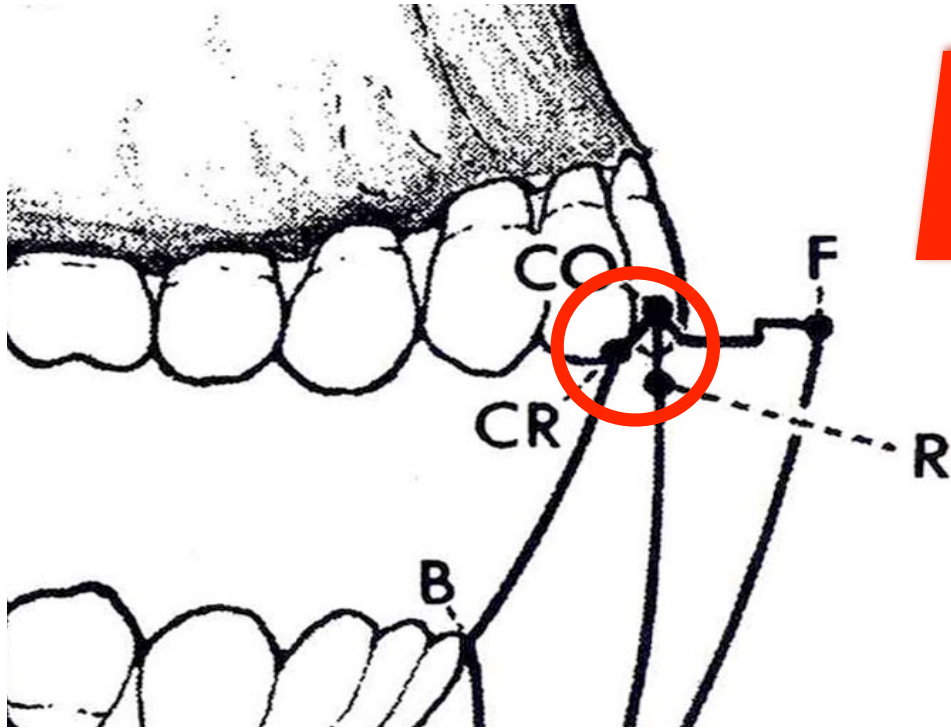




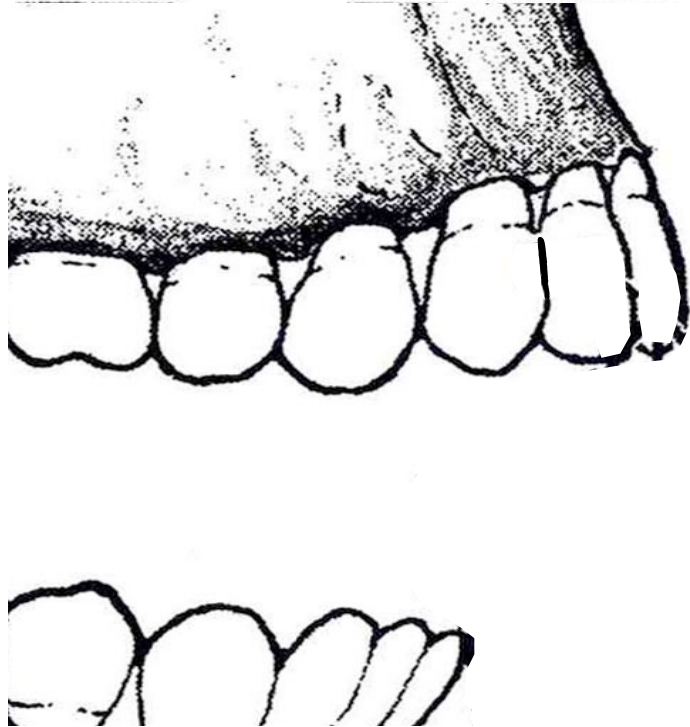


Anterior GUIDANCE

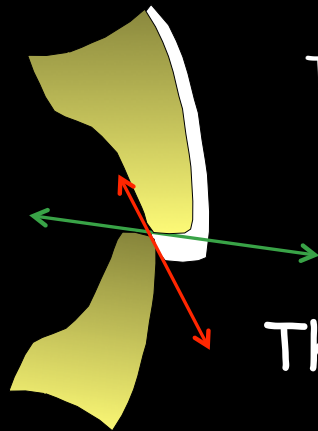




Anterior



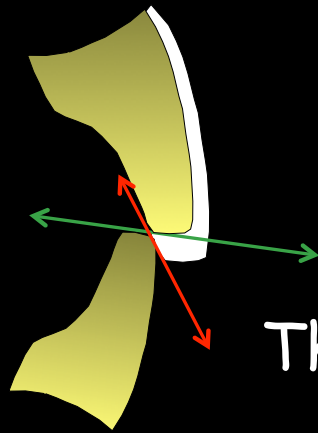
**The anterior
determinant is
CHANGEABLE**



The flatter the angle of guidance, the lower the muscle activity.

Williamson

The greater the angle, the greater the force.

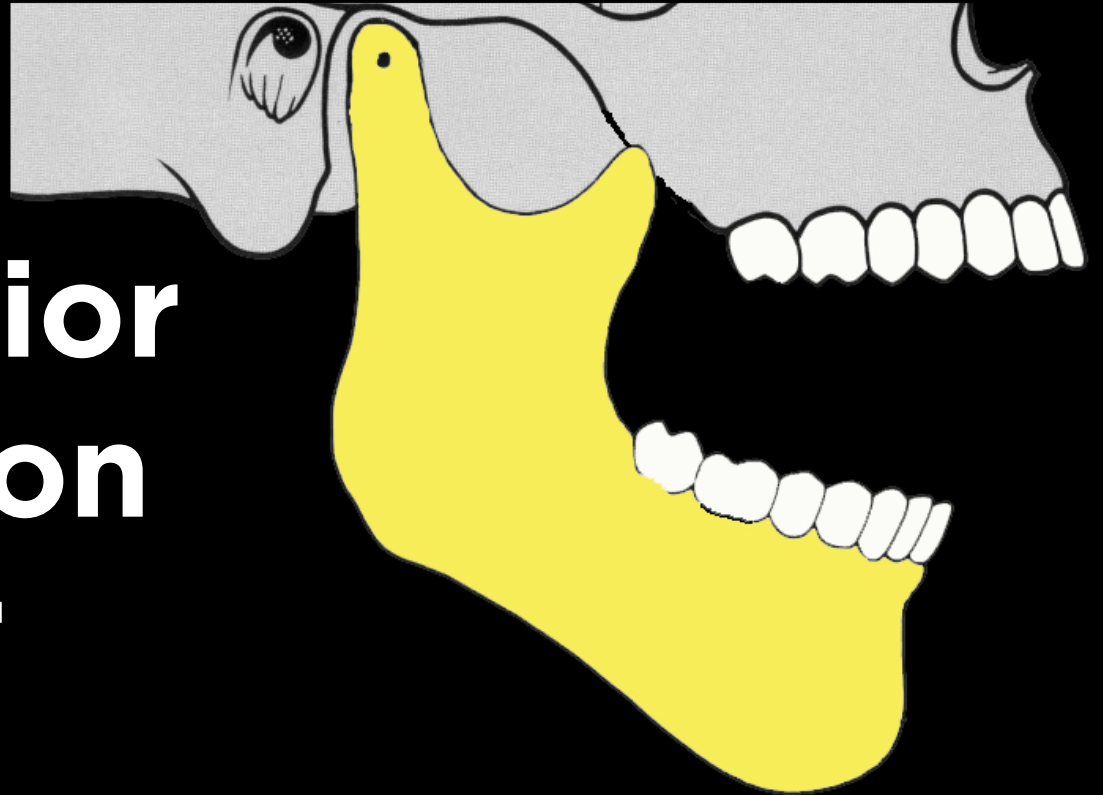


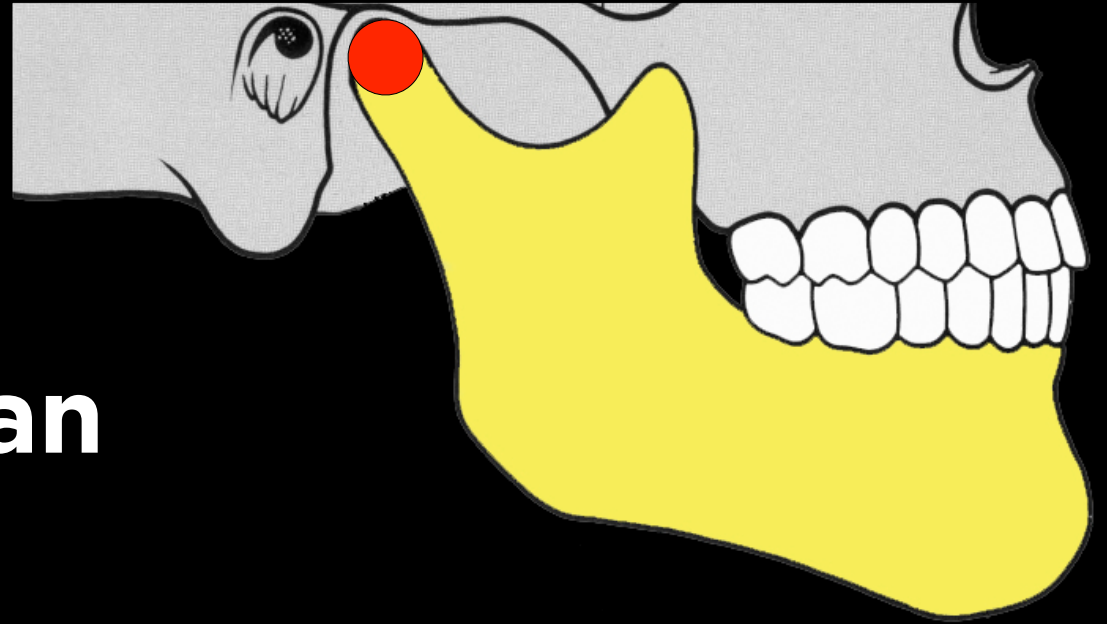
For every 10 degree change in the angle there is a 35% change in force applied.

Weinberg

The greater the angle, the greater the force.

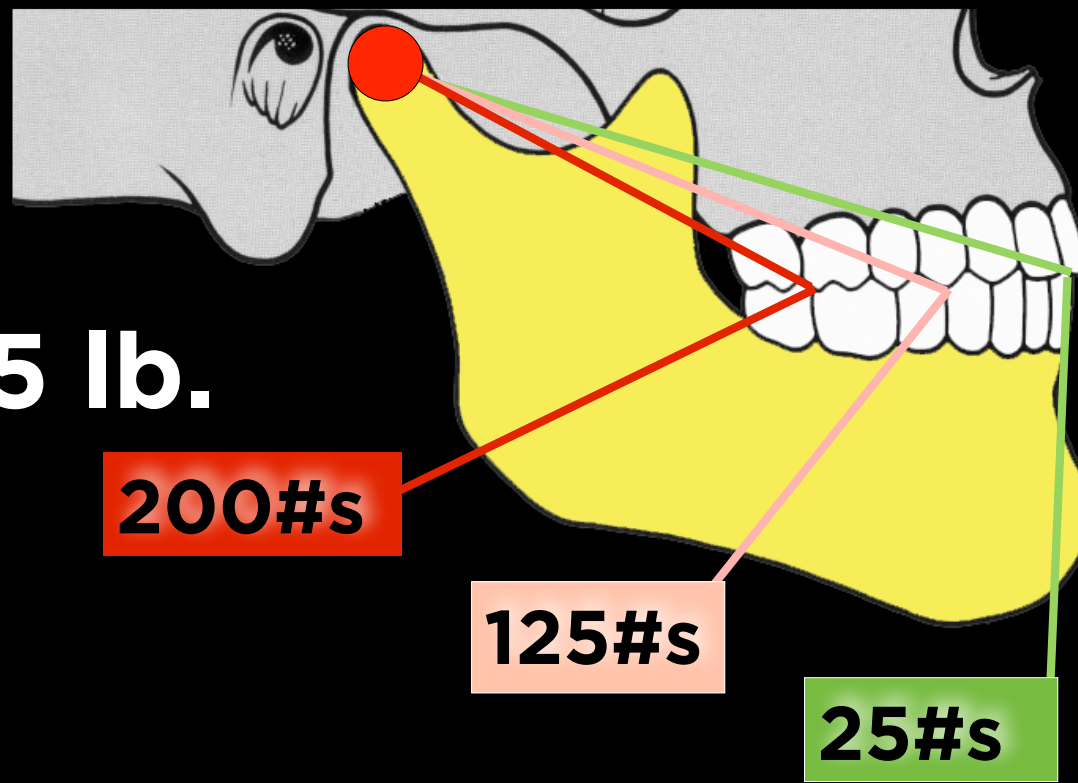
**Why anterior
guidance on
anterior
teeth?**





**Back teeth can
generate
significantly greater
bite forces**

Posterior 202.5 lb.



200#s

125#s

25#s

Anterior 22.5 lb.

A close-up photograph of a person's upper teeth. The teeth are a natural off-white color and appear healthy. In the center of the image, there is a jagged, white, irregular hole that has been cut into the teeth and gums, revealing a white interior. The text is overlaid on this image.

**Is that
what
nature
does?**

Canine Guidance

multiple studies

2.3% bilateral

10.7% unilateral

A close-up photograph of a person's upper teeth, showing the incisors and canines. The teeth are white and appear healthy. The background is a soft, out-of-focus pinkish-red, likely representing the gums. Overlaid on the center of the image is the word "YES" in a large, bold, black, sans-serif font.

YES

**13% of the
time**

**SO why do we try
to create it in
restorative dentistry?**



Canine

GUIDANCE

**If canine guidance
occurs 13% of the time
what is nature doing
the rest of the time?**

GROUP FUNCTION

A close-up photograph of a person's teeth, showing the upper and lower arches. The teeth are white and appear to be in good health. The text is overlaid on the image, centered horizontally. The background is a soft, out-of-focus pinkish-red, likely representing the gums.

WE USE

Canine

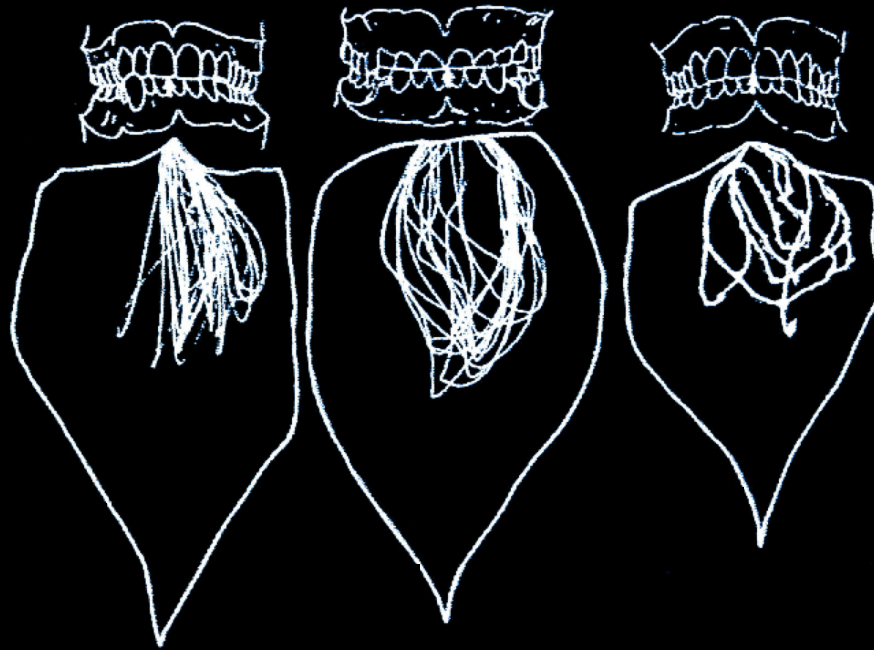
GUIDANCE

for

prosthetic convenience



Use it whenever the situation permits ...

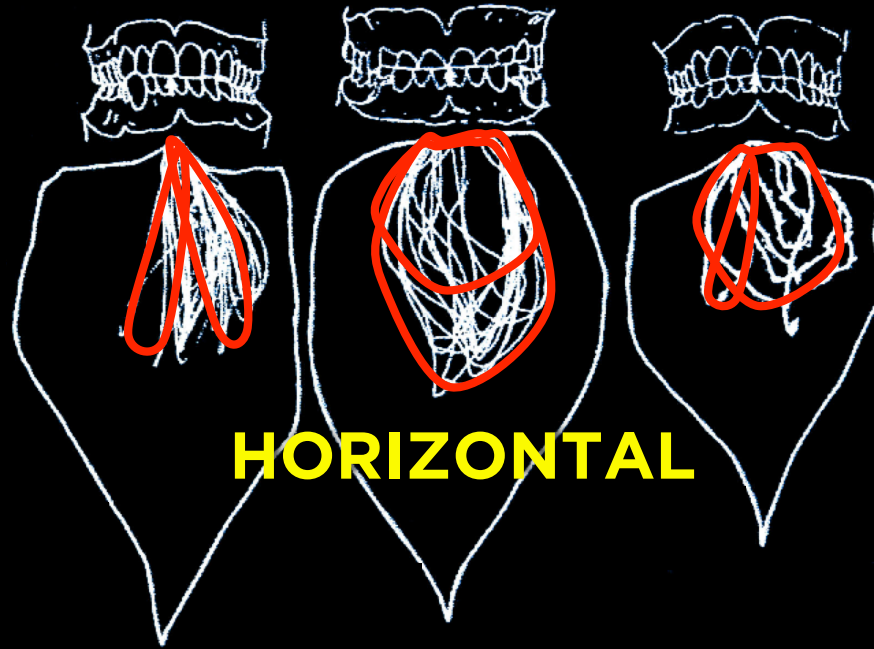


Can the envelope be altered?

Lundeen and
Gibbs

VERTICAL

VARIABLE



HORIZONTAL

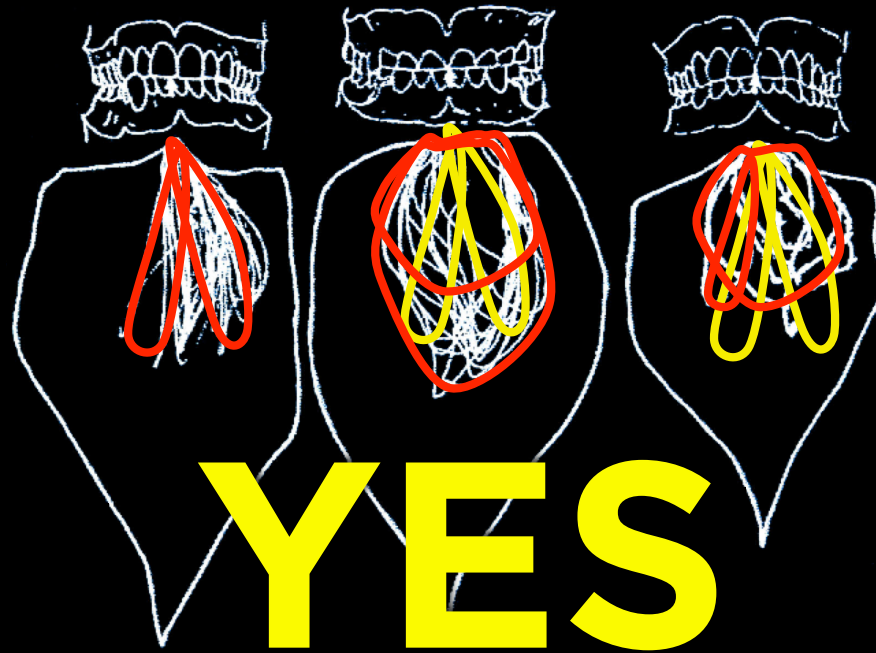
Can the envelope be altered?

Lundeen and
Gibbs

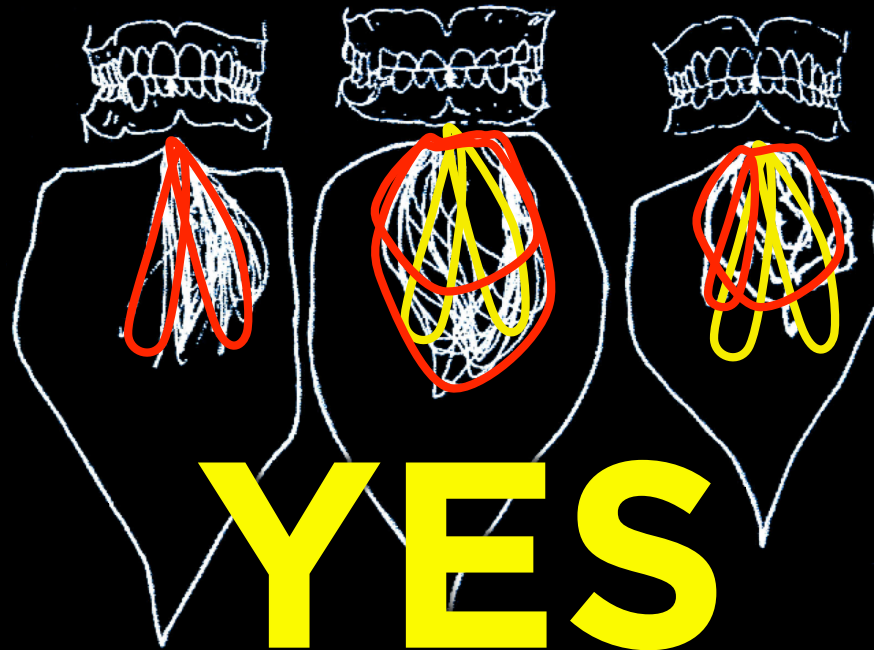


Can the envelope be altered?

Lundeen and
Gibbs



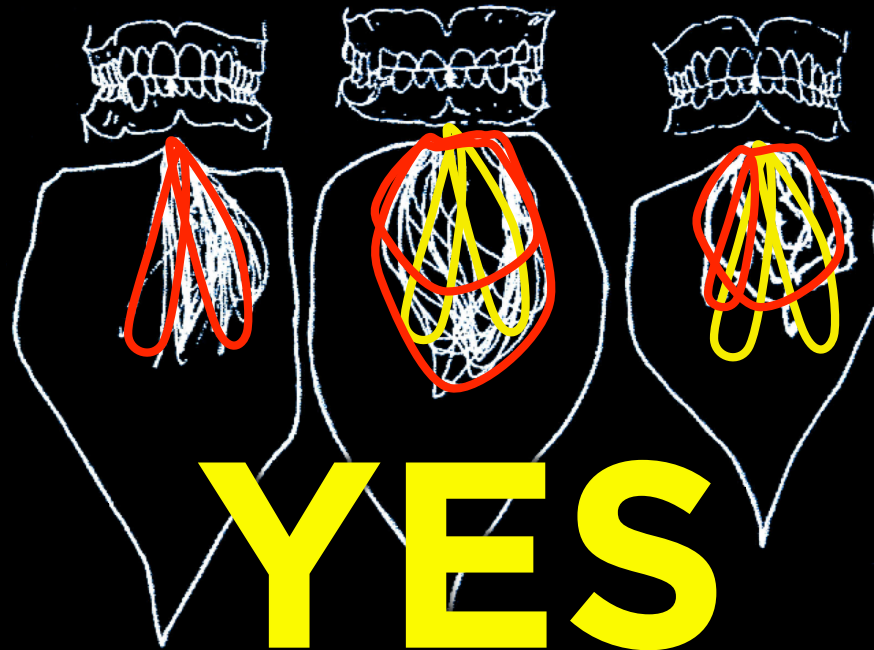
Lundeen and
Gibbs



YES

The CHEWING envelope

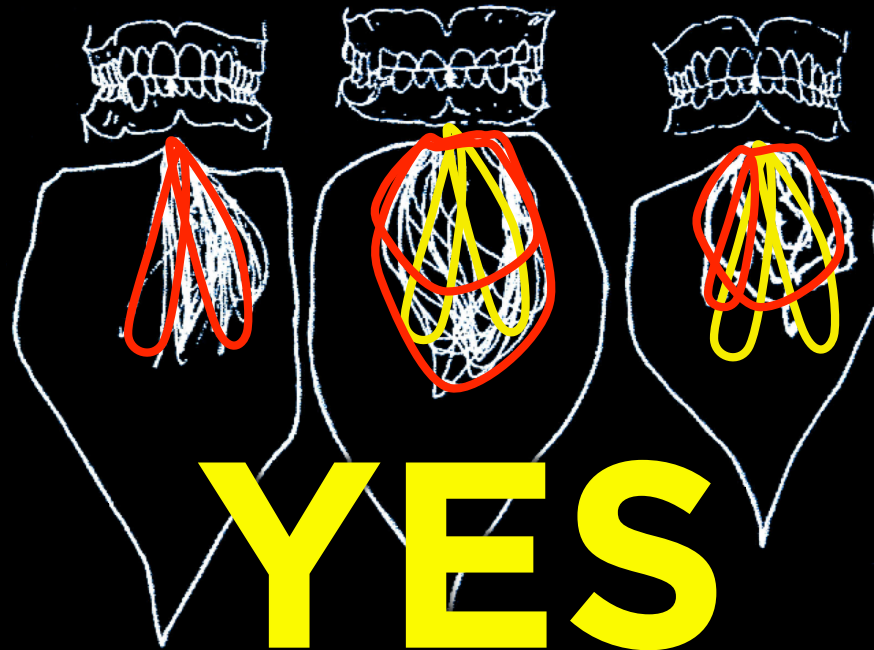
Lundeen and
Gibbs



YES

The envelope of function

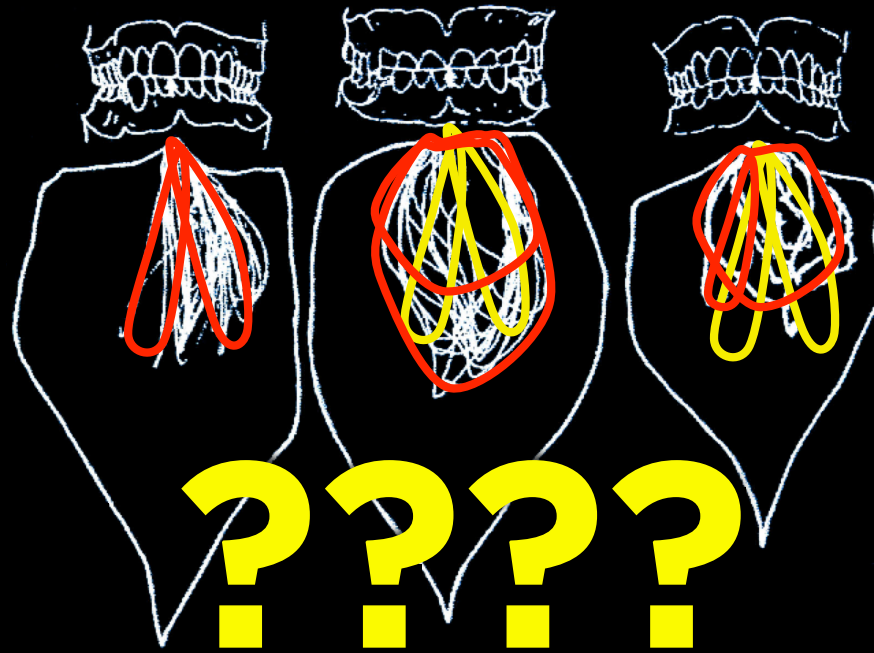
Lundeen and
Gibbs



YES

Patients can chew fine

Lundeen and
Gibbs



The envelope of motion

Lundeen and
Gibbs



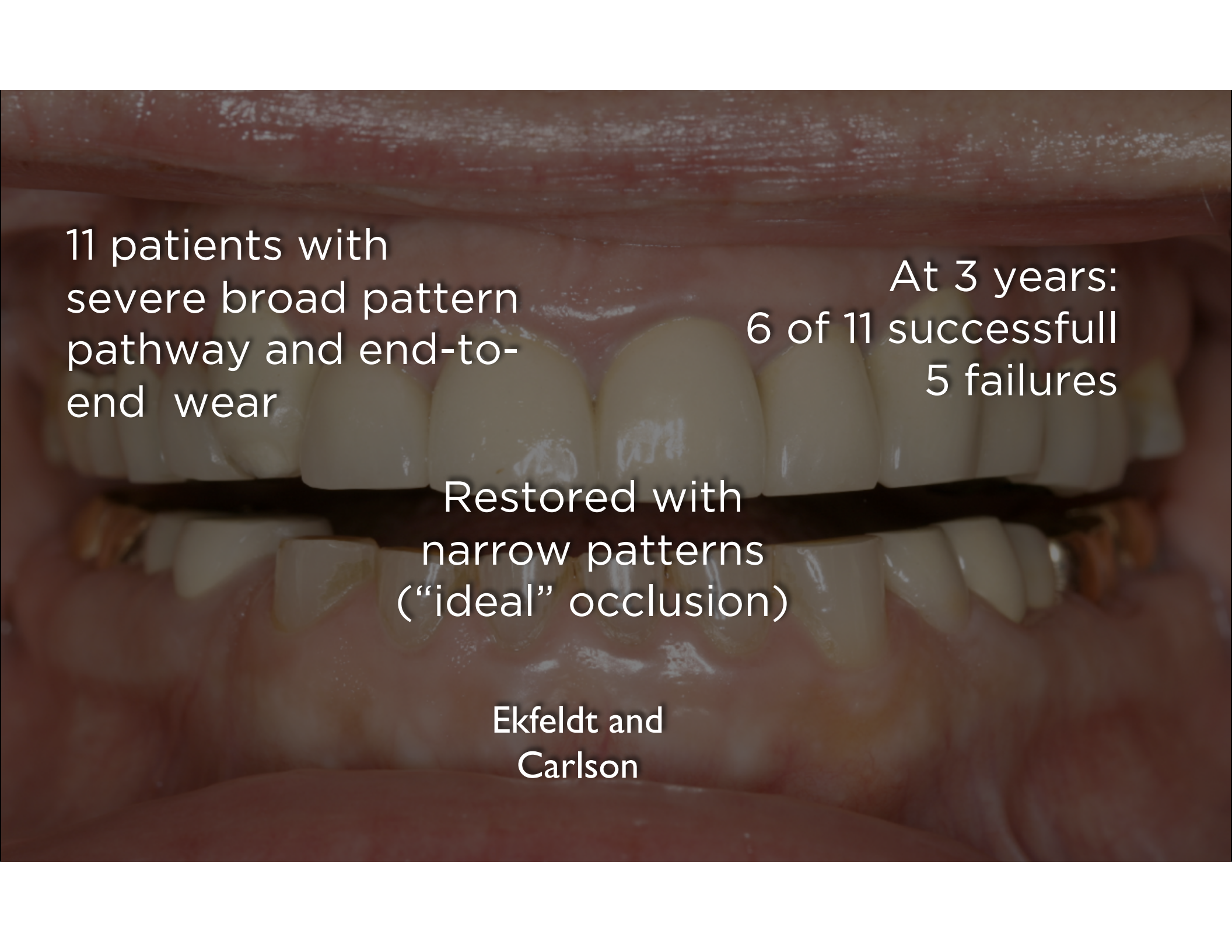
**Will they still move
dysfunctionally and BRUX?**

Lundeen and
Gibbs



Can the neuromuscular envelope of motion be altered?

Lundeen and
Gibbs



11 patients with
severe broad pattern
pathway and end-to-
end wear

At 3 years:
6 of 11 successful
5 failures

Restored with
narrow patterns
("ideal" occlusion)

Eckfeldt and
Carlson



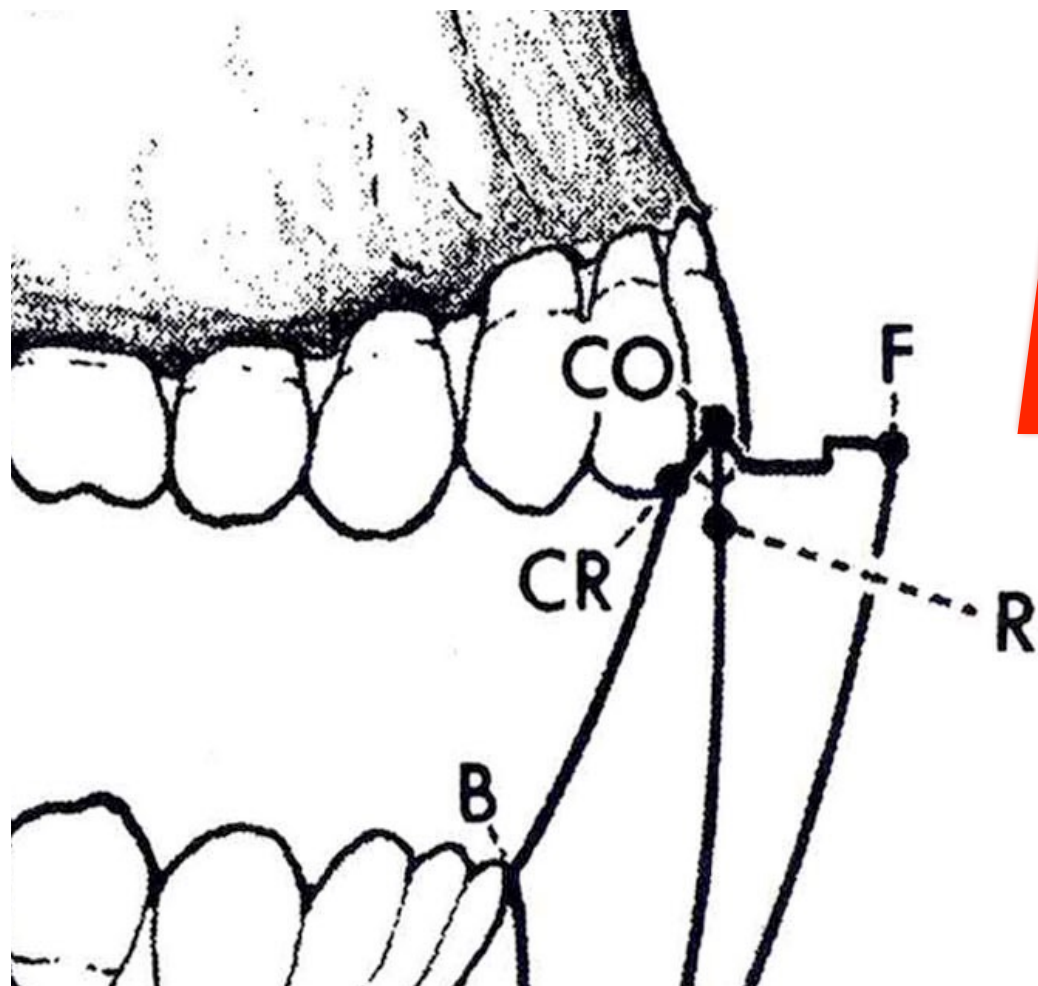
MAYBE

Lundeen and
Gibbs

A close-up photograph of a person's mouth, showing the upper and lower teeth. The teeth are highlighted with a white outline. The text "TRY IT" is overlaid in the center of the image in a bold, red, sans-serif font. The background shows the pinkish-red color of the lips and gums.

TRY IT



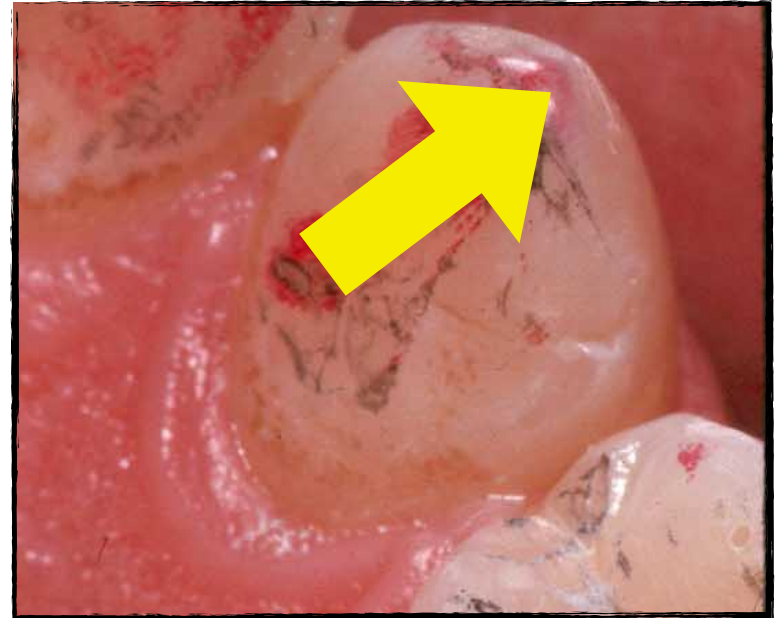


Anterior

MUTUALLY PROTECTED

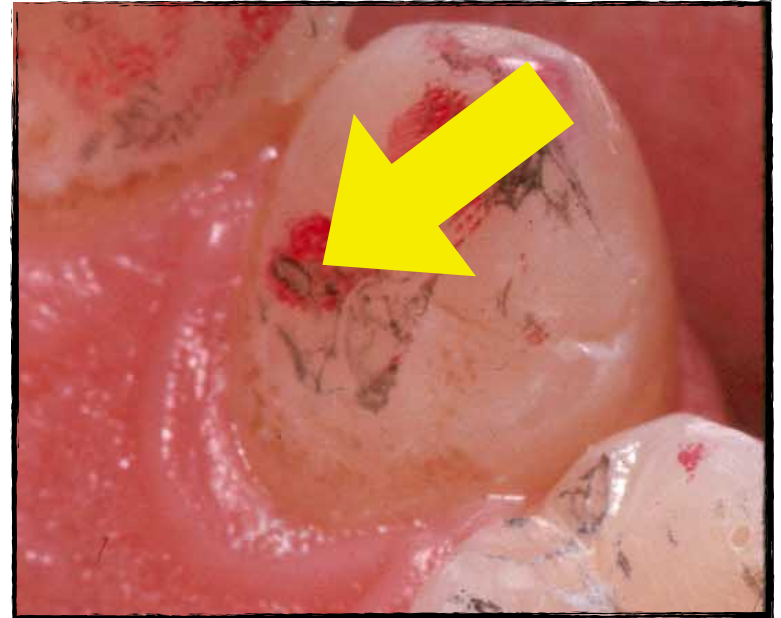
Mutually Protected Occlusion

- **Canines are guiding teeth**



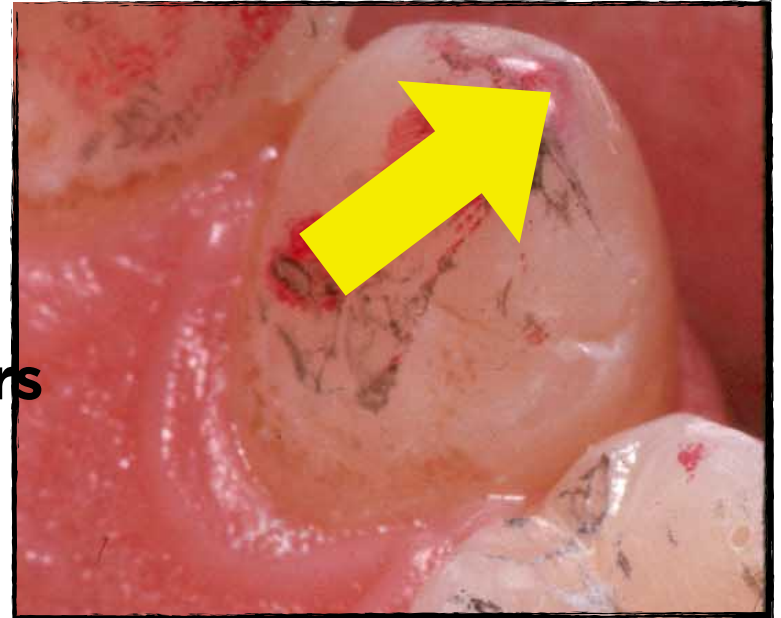
Mutually Protected Occlusion

- **Canines are guiding teeth**



Mutually Protected Occlusion

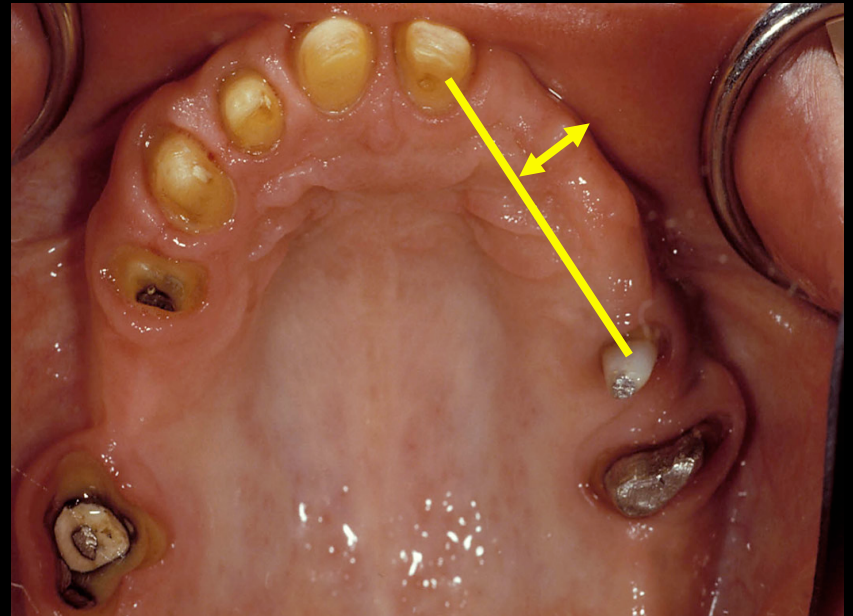
- **Canines are guiding teeth**
- **Guidance moves forward to incisors**



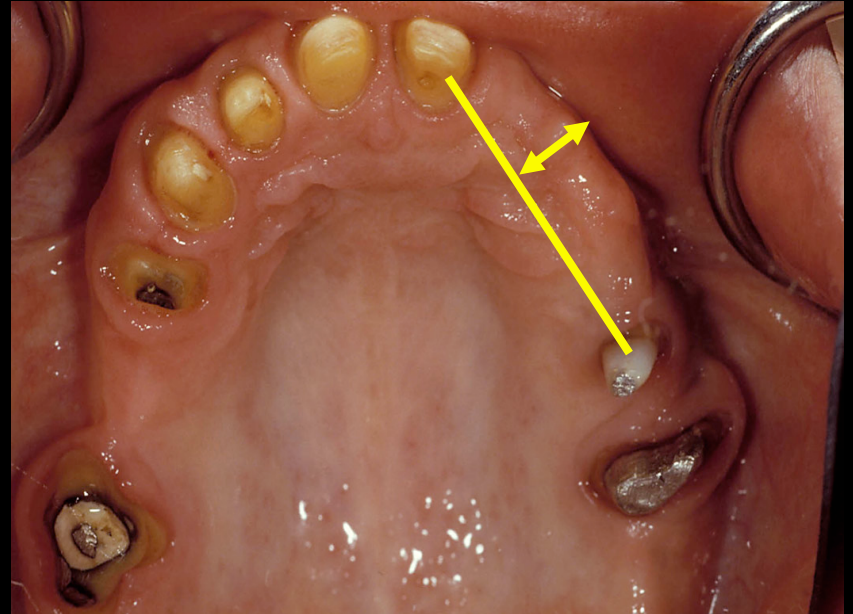
Don't use it when the forces mandate some assistance from other teeth

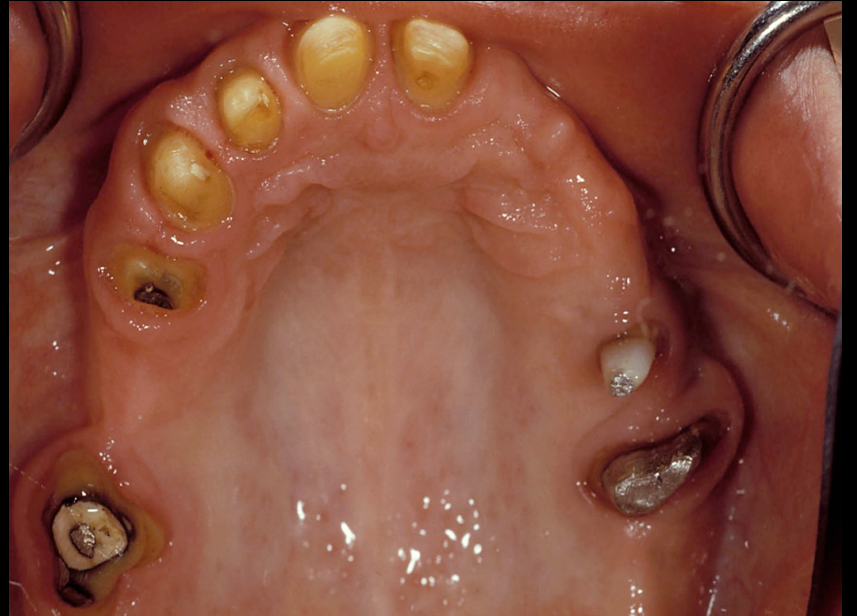
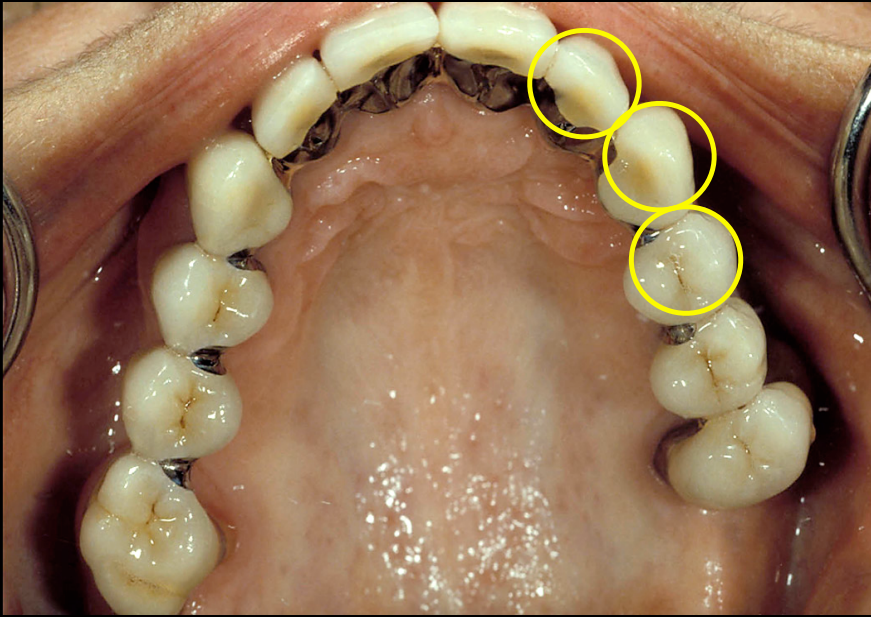


Don't use it when the forces mandate some assistance from other teeth



Canine Pontic





Structural deficiency



Inadequate Bone



Bruxers



Bruxers



Bruxers



**Patients who are
only comfortable
with an appliance
that has posterior
excursive contacts**

.....



Some patients require FORCE DISTRIBUTION



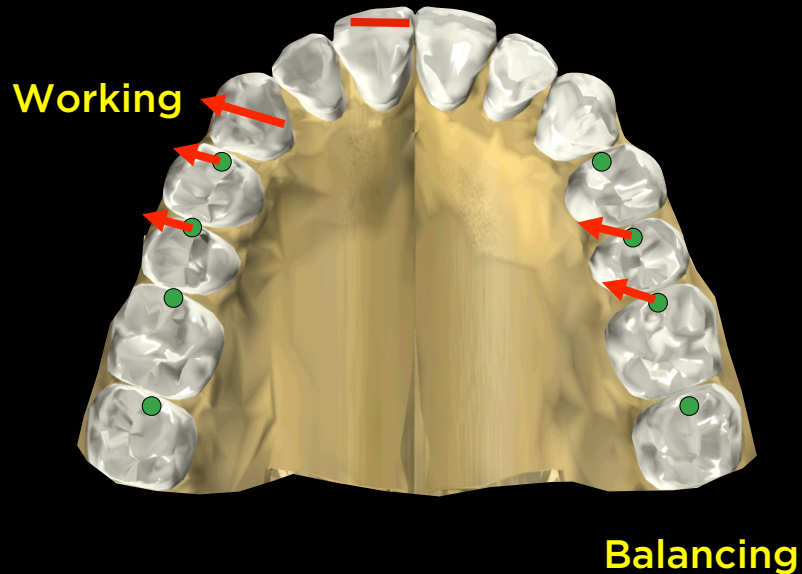


GROUP FUNCTION
Distribute the Force

MUTUALLY PROTECTED
Keep back teeth apart

Components of Designed Occlusion

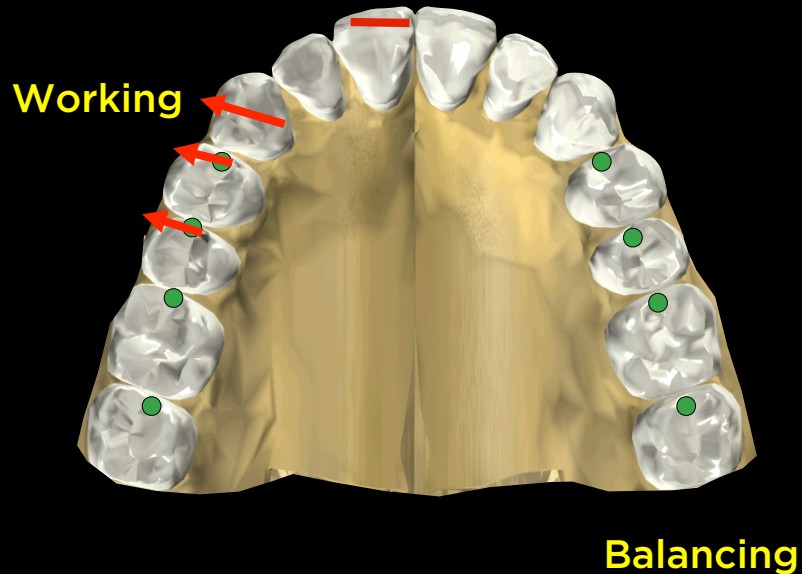
- If group function is appropriate - canines and bis carry to centrals



**FULL GROUP
FUNCTION**

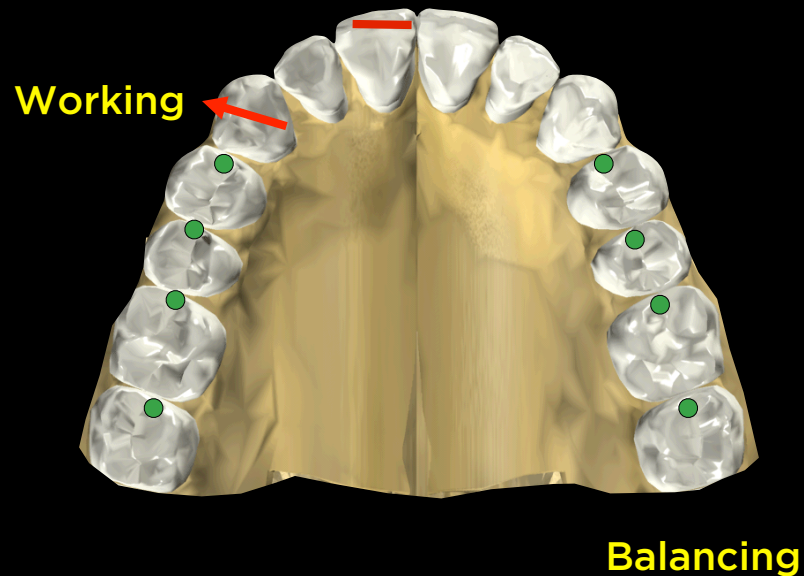
Components of Designed Occlusion

- If group function is appropriate - canines and bis carry to centrals



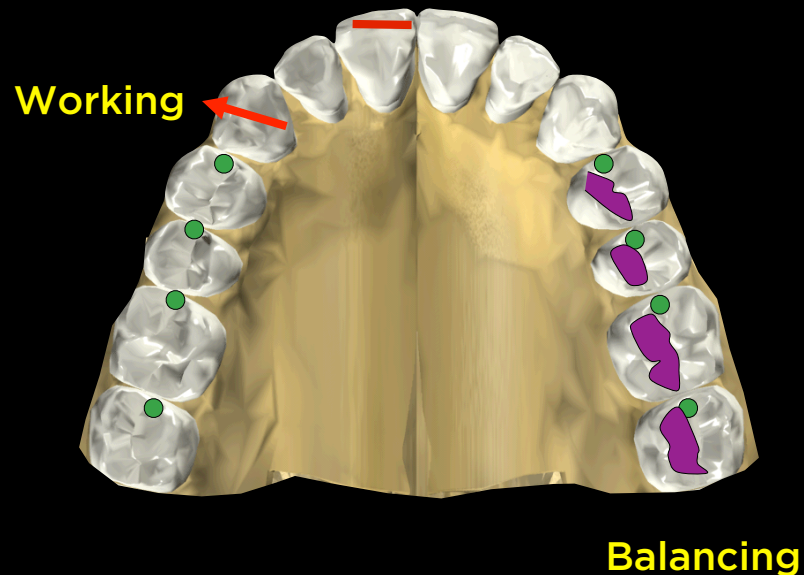
**WORKING GROUP
FUNCTION**

Components of Designed Occlusion



- If group function is appropriate - canines and bis carry to centrals
- If canine guidance is appropriate - canines carry to centrals

Components of Designed Occlusion



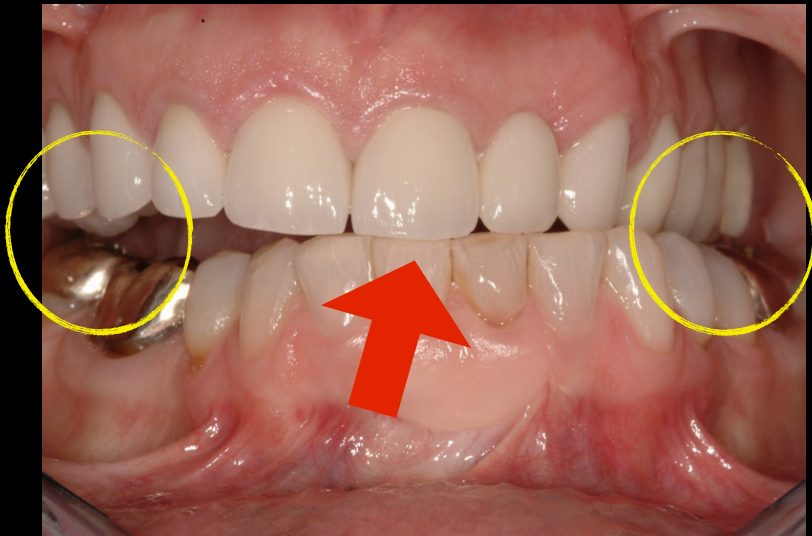
- If group function is appropriate - canines and bis carry to centrals
- If canine guidance is appropriate - canines carry to centrals
- No balancing interferences

Components of Designed Occlusion



- If group function is appropriate - canines and bis carry to centrals
- If canine guidance is appropriate - canines carry to centrals
- No balancing interferences
- Lat Crossover supported by

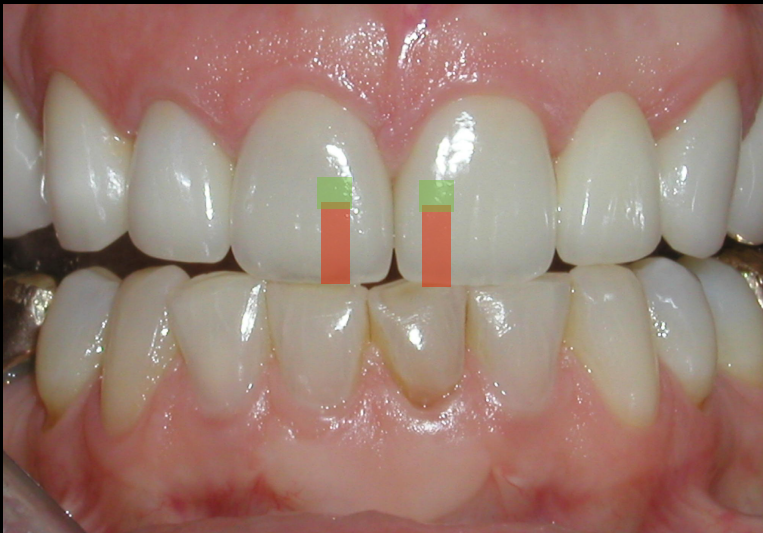
Components of Designed Occlusion



- If group function is appropriate - canines and bis carry to centrals
- If canine guidance is appropriate - canines carry to centrals
- No balancing interferences
- Lat Crossover supported by

Components of Designed Occlusion

- If group function is appropriate - canines and bis carry to centrals
- If canine guidance is appropriate - canines carry to centrals
- No balancing interferences
- Lat Crossover supported by anteriors
- Straight protrusive on both centrals



- **Condyle-disc appropriately positioned**
- **Posterior teeth touch simultaneously**
- **Forces directed down long axis**
- **Front teeth have lighter contact**
- **Under clench - neither jaw nor teeth deflect**
- **If group function is appropriate -
 canines and premolars carry to centrals**
- **If canine guidance is appropriate -
 canines carry to the centrals**
- **No balancing interferences**
- **Lat Crossover supported by anteriors**
- **Straight protrusive on both centrals**

A close-up photograph of a person's mouth, showing the lips and teeth. The lips are slightly parted, revealing the upper and lower teeth. The text "How do I make the plan work in the mouth?" is overlaid in the center of the image in a bold, yellow font.

**How do I make the
plan work in the
mouth?**

A close-up photograph of a person's mouth, focusing on the upper teeth. The lips are slightly parted, revealing the maxillary central incisors. The text is overlaid on the image in a bold, yellow font.

**I begin with the edge of
the maxillary central
incisors**

A close-up photograph of a person's mouth, showing the lips and teeth. The lips are a natural pinkish-red color and appear slightly parted. The teeth are white and show some wear. The background is a soft, out-of-focus skin tone.

**NEXT - I look at
the lower
anterior**

A close-up photograph of a person's mouth, focusing on the front teeth. The lips are a natural pinkish-red color. The teeth are white, and there is visible dental work, including a crown on the upper central incisor and a filling on the lower central incisor. The text "MAKE THE FRONT TEETH WORK" is overlaid in the center of the image in a bold, yellow, sans-serif font.

**MAKE THE FRONT
TEETH WORK**













SMOOTH













SMOOTH





**MAKE THE BACK
TEETH WORK**











A close-up photograph of a patient's teeth, showing the occlusal surfaces. The teeth are marked with black and red ink, indicating areas of wear or planned equilibration. The text "Equilibration of the Natural Dentition" is overlaid in white, bold font. The background shows the pinkish-red gum tissue.

Equilibration of the Natural Dentition

A close-up photograph of a dental procedure. A handpiece is being used to work on a tooth. The tooth is white and has several small red spots on its surface. The handpiece is silver and has a diamond bur attached to it. The background is a light-colored, textured surface, likely the patient's skin or a dental chair. The text "MAINTAIN NATURAL FORM" is overlaid in the center of the image.

**MAINTAIN NATURAL
FORM**

A close-up photograph of a dental procedure. A handpiece is being used on a tooth, and a dental mirror is visible in the foreground. The tooth has some red spots, possibly from a diagnostic dye. The text is overlaid in the center of the image.

**ADJUST THE TOOTH
THAT WILL BE LEAST
AFFECTED**

Have the
Patient

GRIND in RED

TAP in GREEN

Have the
Patient

GRIND in RED

TAP in BLUE


Have the
Patient

GRIND in RED

TAP in BLACK

Step 1

**Adjust end-to-end
and crossover
excursions**



**Adjust so both
centrals
contact end to
end
in protrusive**











Step 2

**Create even
posterior contacts
in CR on
all posterior teeth
and canines**

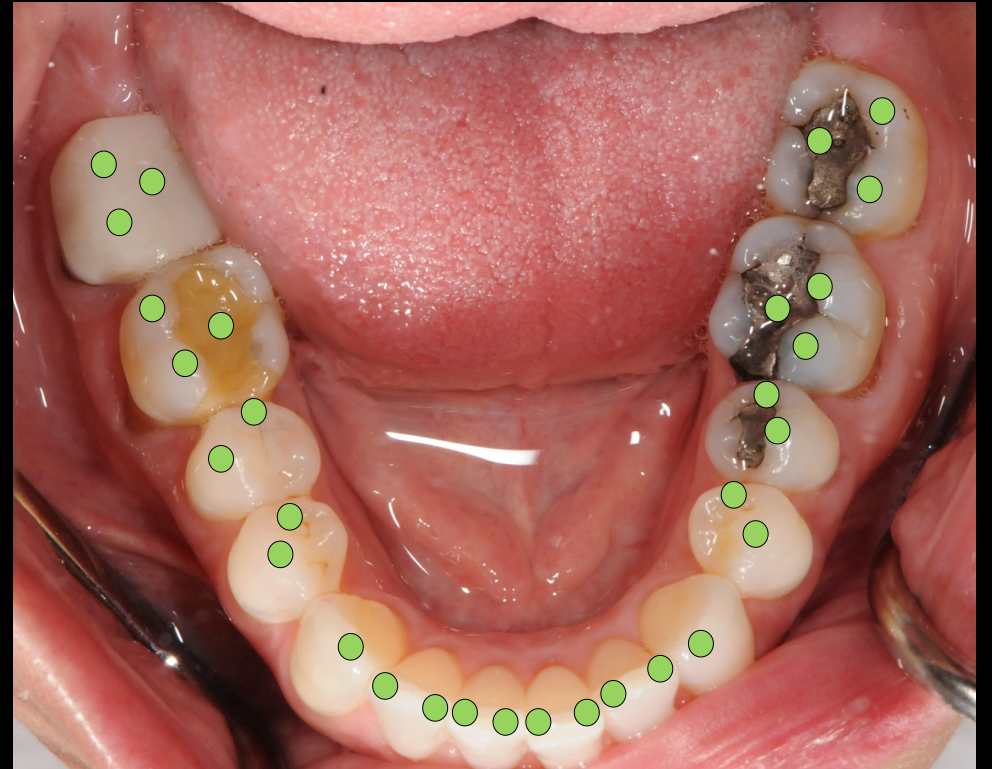
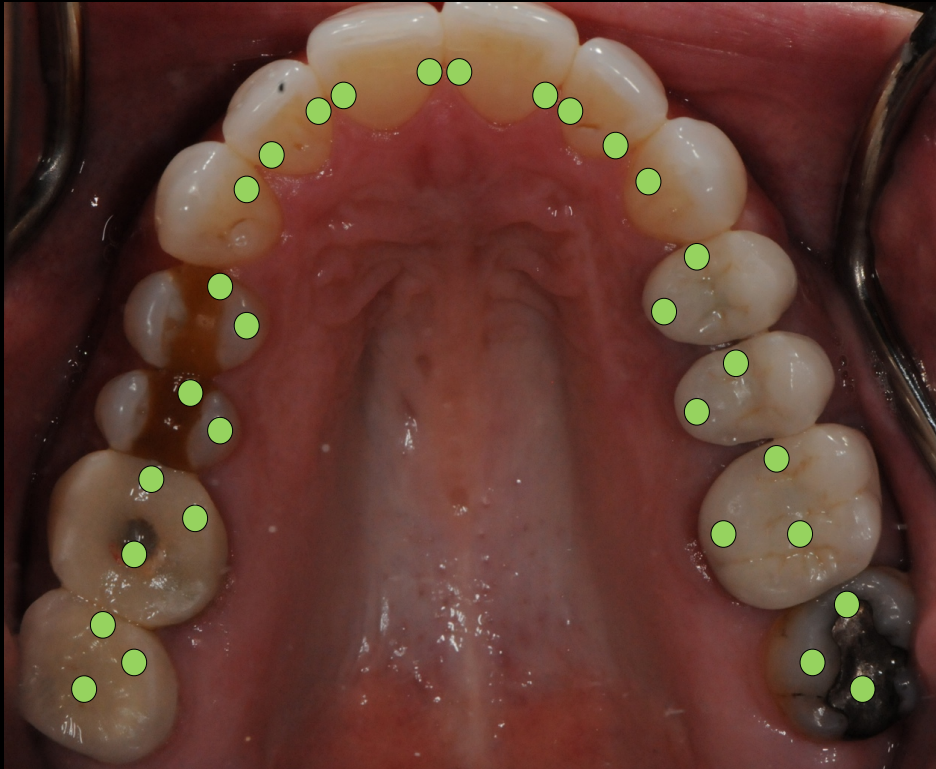






**When is Step 2
Completed?**

**When all
interferences to
centric closure
are eliminated**



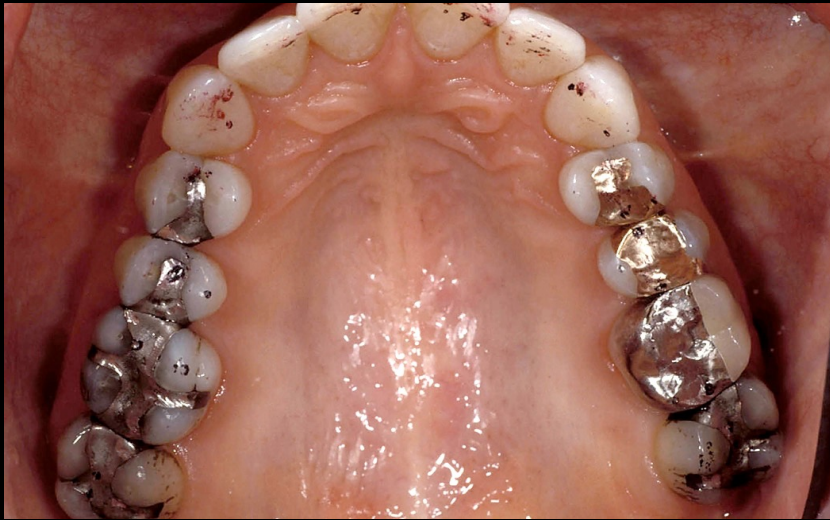
**When the
cuspid is in
contact**



Step 3

**Eliminate lateral
contacts on
posterior teeth**

Step 4
Eliminate
protrusive
contacts on
posterior teeth*



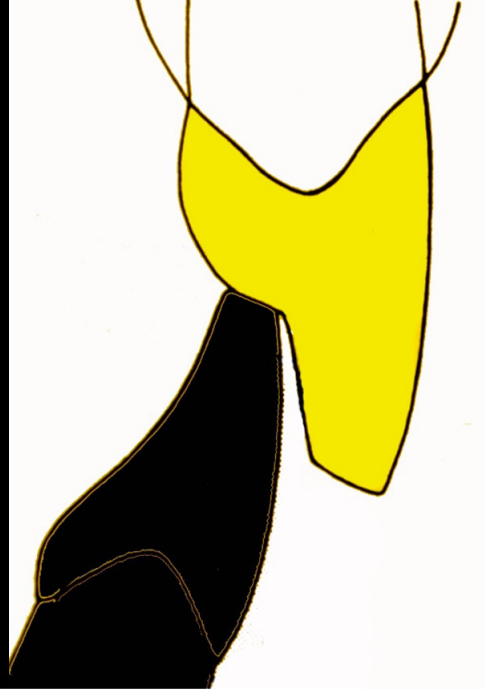
DOTS in back



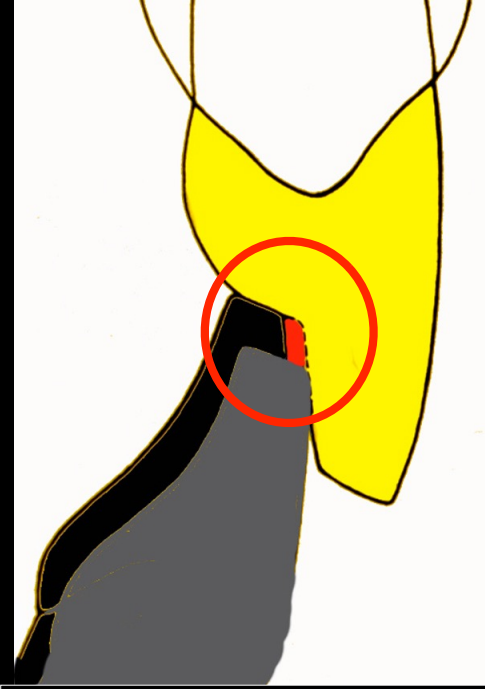
Stripes in front

Step 5
Check and
SMOOTH the
harmony of the
Anterior Guidance

Step 6
**Adjust postural
freedom**



Head Back



Head Upright

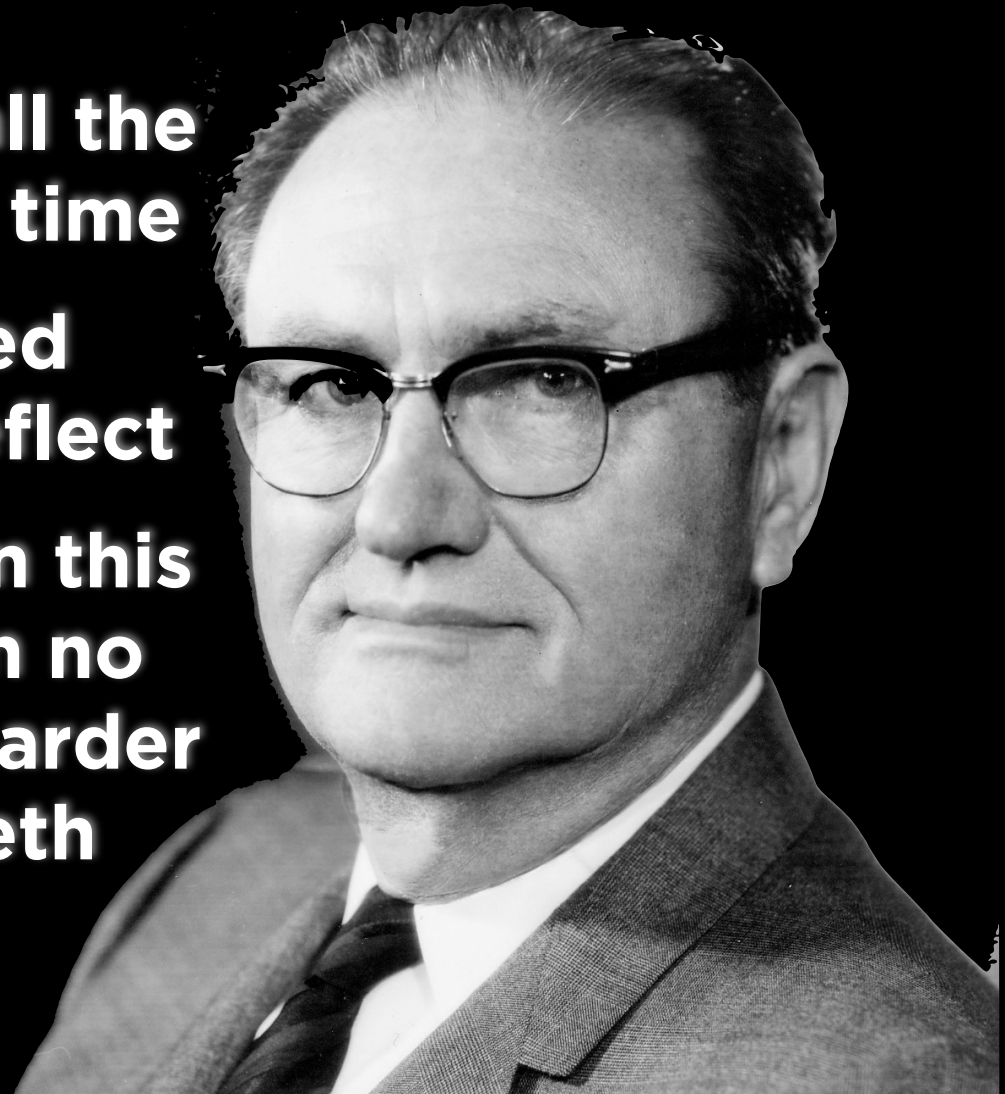
Step 7

**Re-evaluate all
contacts and
excursions and
polish**

**When the jaw is closed all the
teeth touch at the same time**

**When power is applied
neither teeth nor jaw deflect**

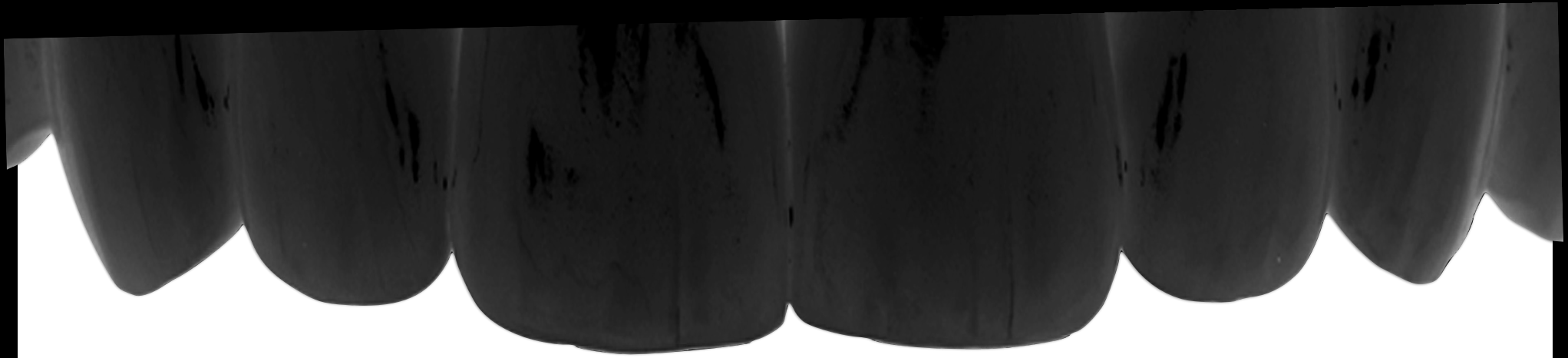
**In movements away from this
fully contacted position no
back tooth hits before, harder
than, or after front teeth**



Occlusion is Simple

**Now you must learn when to apply
those principles appropriately to each
individual patient you have the
privilege to serve**

simple BUT NOT EASY



BDA British Dental Association

gdewood@speareducation.com