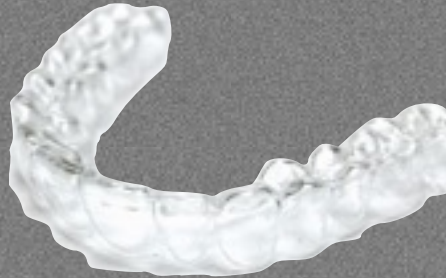


# ADULT ORTHODONTICS: NOT GETTING IT WRONG



PADHRAIG FLEMING

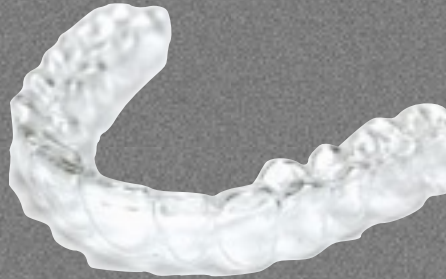


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# ADULT ORTHODONTICS: NOT GETTING IT WRONG



PADHRAIG FLEMING



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# thelondonsmile:)clinic®



Excellence in Cosmetic Dentistry

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# thelondonsmile:)clinic<sup>®</sup>



Excellence in Cosmetic Dentistry



- Quick restorative fixes

# CHILD VS. ADULTS

DECISION-MAKING





# VARIABLES: GENERAL

- General health e.g. bisphosphonates
- Slower bone turnover: Root movement
- Non-growing: Molar correction
- Motivation
- Previous treatment
- Compliance

Live  
your life  
as if everything  
is rigged in your  
favour.

*Rumi*



# PREVIOUS TREATMENT



- Root resorption
- Previous extractions
- Relapse and stability
- Motivation





# VARIABLES: LOCAL

- Age
- Function
- Pathology
- Dentistry

Live  
your life  
as if everything  
is rigged in your  
favour.

*Rumi*

# NOT GETTING IT WRONG ...



- Aims and objectives: All in?
  - Outcomes and experiences
- Periodontal compromise
- Restorative compromise
- Gingival response





# VARIABLES: GENERAL

- General health e.g. bisphosphonates
- Slower bone turnover: Root movement
- Non-growing: Molar correction
- Motivation
- Previous treatment
- Compliance

Live  
your life  
as if everything  
is rigged in your  
favour.

*Rumi*



## Finances

- Gingival margins
- Discing or build-up?
- Space management







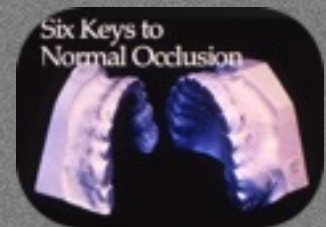
- Prepare problem list
- Identify which problems to correct
- Identify which problems to accept
- Common, clear aims



# ARE WE GOOD AT OUR JOB?



DECISION-MAKING





# PATIENT EXPERIENCES

## PATIENT-CENTRED

Efficiency important

12-month barrier

But **outcome** most important



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## CLINICIAN-CENTRED

PAR scores

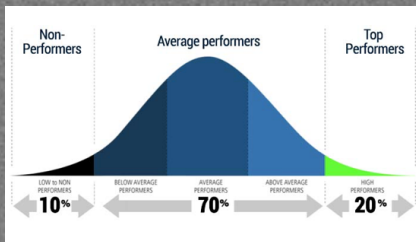
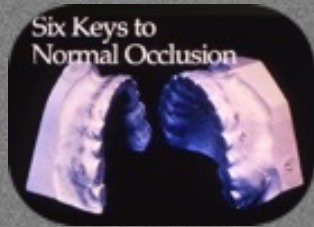
Andrews' 6 keys



Six Keys to  
Normal Occlusion



# OUTCOME VS PROCESS? ADULTS



- Three pillars: Health, Stability and Aesthetics
- Realistic timeframe
- Limit burden and risk:
  - QoL
  - Dental health:
    - Adults: Periodontal
    - All: Root resorption
    - Children: Demineralisation





# JOINT PLANNING: COMPROMISED DENTITION

- Orthodontic Opinion
- Joint planning
- Crowding: Book with me
- Rebook restorative:
  - Tooth positioning
  - Gingival heights

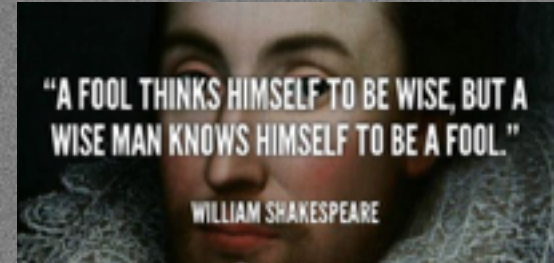


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## An orthodontic registry: Producing evidence from existing resources

James L. Vaden,<sup>a</sup> Christopher S. Riolo,<sup>b</sup> and Michael L. Riolo<sup>c</sup>  
Cookeville, Tenn, Seattle, Wash, and Detroit, Mich



PREDICTABLE

WHAT WORKS?

hospitals unless there is evidence to support their clinical efficacy. The Federal Drug Administration does not allow drugs to be used unless these drugs have been tested and proven to have a predictable value for the patient. Why are there not similar safeguards in orthodontics? A registry would help the specialty to improve its performance on 2 fundamental levels. (1) On an individual level, a registry will enhance each clinician's understanding of his or her performance. (2) On the population level, a registry will facilitate the establishment of a standard of care for the many problems being treated.<sup>12,13</sup>



# OUTCOME VS PROCESS? ADULTS

GUEST EDITORIAL

AJO-DO

An orthodontic registry: Producing evidence from existing resources

James L. Vaden,<sup>\*</sup> Christopher S. Riolo,<sup>b</sup> and Michael L. Riolo<sup>c</sup>  
Cookeville, Tenn, Seattle, Wash, and Detroit, Mich



- Debonded patients January to June 2018
- 53 patients (52 adults and 1 adolescent)
- 10.8 months average
- Range: 4-23 months



# OUTCOME VS PROCESS? ADULTS



- Debonded patients January to June 2018
- Labial: 29 patients; 10.5 months
- Lingual: 9 patients; 11.7 months
- Invisalign: 15 patients; 11.1 months BUT 7 had fixed to finish
- Fixed retention on all (1 detachment)





# APPLIANCE SELECTION

- My hands: Typically favour labial ceramic
- Exceptions/Equivocations:
  - Live abroad (and want to stick with me)
  - AOBs (Invisalign)
  - Labial restorative work (Invisalign or Lingual):
    - New
    - Variable thickness
- Torque??



# APPLIANCE SELECTION





# APPLIANCE SELECTION



- Not Invisalign?
  - Black triangles
  - Control and reactivity



# SIMPLE ALIGNMENT



6 MONTHS



# Effect of orthodontic treatment on periodontal clinical attachment: a systematic review and meta-analysis

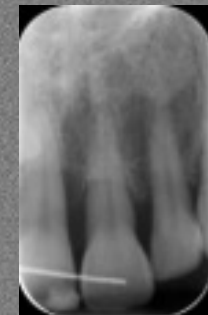
Spyridon N. Papageorgiou<sup>1</sup>, Anastasia A. Papadelli<sup>2</sup> and Theodore Eliades<sup>1</sup>



**Results:** A total of 9 trials were identified that included 335 treated patients (at least 34 per cent male / 66 per cent female) with an average age of 22.6 years. The average pooled clinical attachment loss was 0.11 mm (9 studies; 335 patients; 95 per cent CI = 0.12 mm gain to 0.34 mm loss;  $P = 0.338$ ) with high heterogeneity. Furthermore, one study hinted that a small amount of clinical attachment might be gained by intrusion of upper incisors. Additional analyses indicated that the results were robust to addition of untreated patient groups, while patient age and timing of outcome measurement might play an important role.

**Conclusions:** According to existing evidence from longitudinal clinical studies orthodontic treatment with fixed appliances has little to no clinically relevant effect on periodontal clinical attachment levels.

**Registration:** PROSPERO (CRD42017057042).



# PERIODONTAL SUPPORT





# PERIODONTAL SUPPORT



# PERIODONTAL SUPPORT



- AGREED PRIORITIES AND AIMS:

1. MAINTAIN/IMPROVE DENTAL HEALTH
2. CLOSE SPACE (AS FAR AS POSSIBLE)
3. LIMIT TREATMENT DURATION

2 AND 3 RELY ON OVERBITE REDUCTION



# PERIODONTAL SUPPORT



- REDUCE OVERBITE (3-3) EARLY
- CLOSE LOCAL SPACES EARLY

# PERIODONTAL SUPPORT



- AVOID WORKING (19X25 SS) WIRES
- NO REVERSE CURVES
- NO CLASS IIs
- TIME TO FINISH???





# 38-YEAR-OLD FEMALE



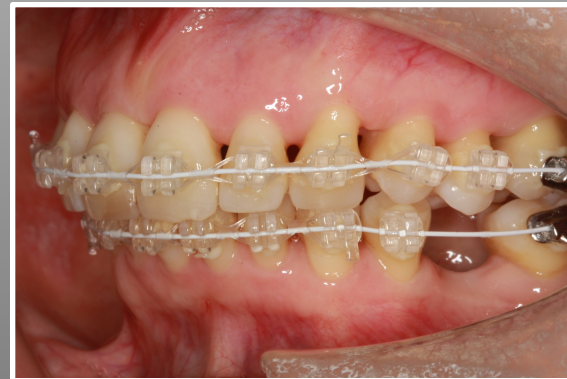
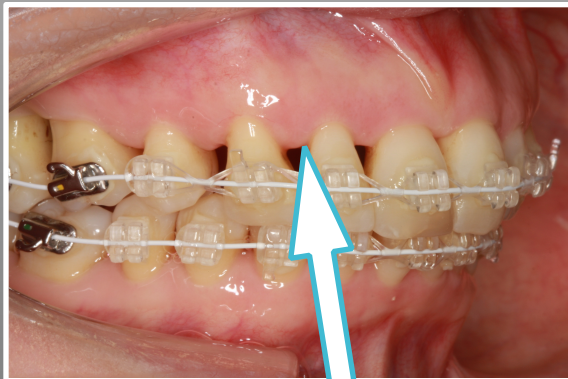
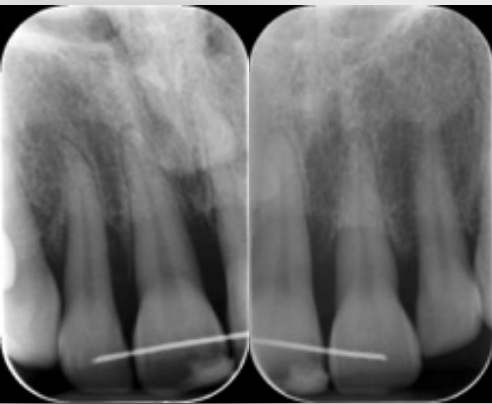
# PROBLEM LIST



- SPACING
- H/O AGGRESSIVE PERIODONTITIS
- BACK TRIANGLES
- LOWER MIDLINE SHIFT



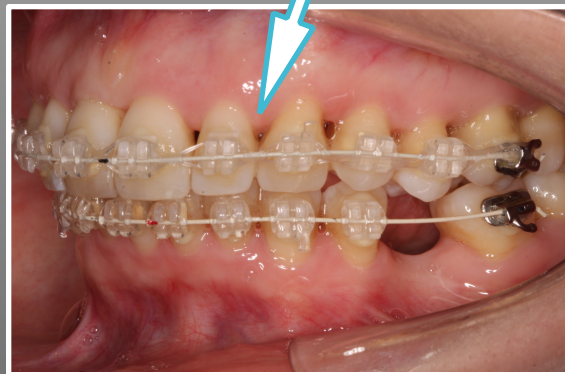
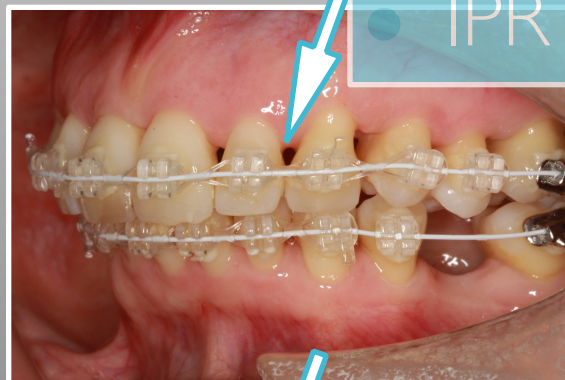
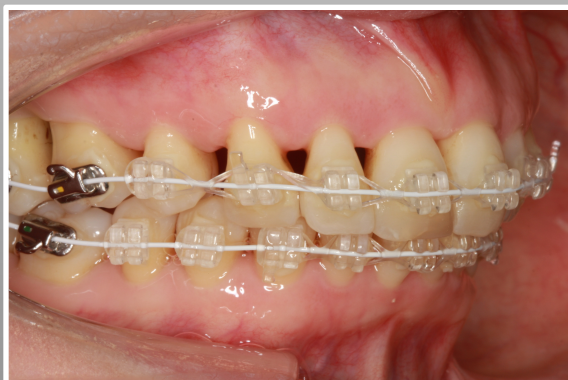
## 38-YEAR-OLD FEMALE



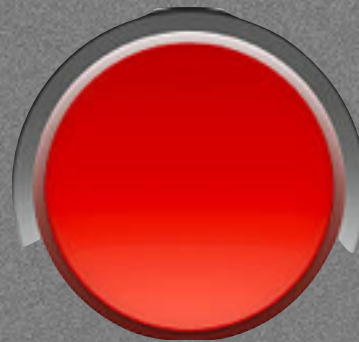
- Space closure: Then start IPR

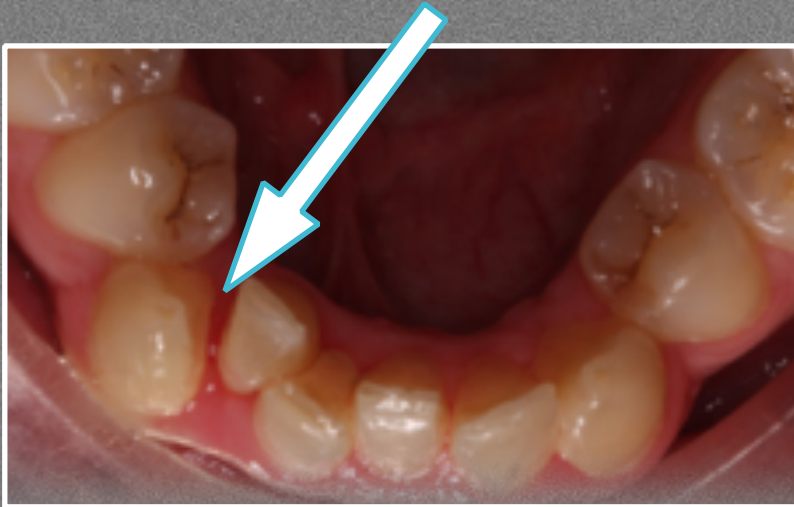


# 38-YEAR-OLD FEMALE









# Myths and realities in orthodontics

P. S. Fleming,<sup>\*1</sup> S. D. Springate<sup>2</sup> and R. A. C. Chate<sup>3</sup>

## Dental health assessed more than 10 years after interproximal enamel reduction of mandibular anterior teeth

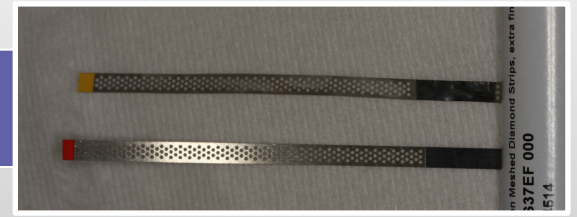
Björn U. Zachrisson,<sup>\*</sup> Lise Nyoygaard,<sup>\*</sup> and Karim Mobarak<sup>\*</sup>  
Oslo, Norway

**Introduction:** We investigated whether interdental enamel reduction using fine diamond disks with air cooling, followed by polishing, leads to iatrogenic damage or reduced interradicular distances. **Methods:** Our subjects were 61 consecutive patients who had received mesiodistal enamel reduction of all 6 mandibular anterior teeth more than 10 years previously. Dental caries, bleeding on probing, probing depths, and gingival recessions were assessed with standard techniques. Incisor irregularities and tooth width/thickness ratios were measured on models, and the patients were asked about any increased tooth sensitivity. The reference group comprised 16 students. **Results:** No new caries lesions were detected. Three mature adults had some minor labial gingival recessions. There was no evidence of root pathology. The distance between the roots of the mandibular incisors was statistically significantly greater in the patients who had received stripping than in those who had not; 59 of 61 patients reported no increased sensitivity to temperature variations. The overall irregularity index at follow-up was only 0.67 (SD, 0.64). **Conclusions:** Interdental enamel reduction according to this protocol did not result in iatrogenic damage. Dental caries, gingival problems, or alveolar bone loss did not increase, and the distances between the roots of the teeth in the mandibular anterior region were not reduced. The overall incisor irregularity at the follow-up examination was small. (Am J Orthod Dentofacial Orthop 2007;131:162-8)



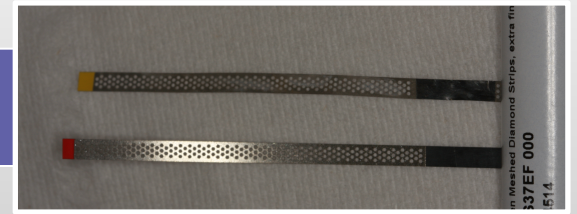


10 MONTHS





10 MONTHS





# PREVIOUS RESTORATIONS



# PREVIOUS RESTORATIONS



- AIMS:

1. MAINTAIN/IMPROVE DENTAL HEALTH
2. ALIGN ARCHES
3. MAINTAIN POSITIVE OVERJET AND OVERBITE
4. LOWER MIDLINE CORRECTION



# PROBLEM RESTORATIONS !!





# PROBLEM RESTORATIONS !!





# PREVIOUS RESTORATIONS



# PROBLEM RESTORATIONS !!



- PLAN:

1. UPPER AND LOWER FIXED
2. EXTRACTION UR5, UL6
3. NON-EX LOWER ARCH WITH IPR  
AND LOCAL BRACKET VARIATIONS;  
CLASS III TRACTION



# PREVIOUS RESTORATIONS



# PREVIOUS RESTORATIONS







JULY 2019



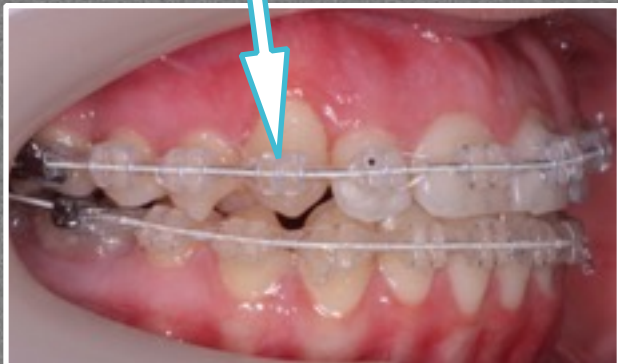


JULY 2019



Inverted lower premolar

AUGUST 2019





# ADULT ORTHODONTICS: FACILITATION



# ORTHODONTIC-RESTORATIVE





# ADULT ORTHODONTICS: FACILITATION

Bradstock-Smith of the London Smile Clinic believes the combination of these two techniques takes cosmetic dentistry to another level. "Tooth position and gum levels are vital when setting up a really beautiful smile. Get this right, then the porcelain veneers are just the cherry on top."

[londonsmile.co.uk](http://londonsmile.co.uk)  
020 7255 2559

## Case Study:

*Dentist:* Dr Tim Bradstock-Smith

*Orthodontist:* Professor Padhraig Fleming

*Patient motivation:* "After having awful teeth for so many years, I was fed up of my smile letting me down. I needed a mid-life boost."

"Brilliant results that definitely exceeded my expectations. I look younger and feel so much more confident. The dimples have returned and I'm using my smile muscles that haven't been used in years!"



Dr Tim  
Bradstock-Smith

## Patient Experience:

"Thank you, thank you for my fabulous smile. My teeth look fabulous and I'm so grateful to you for giving me my confidence back. All the team have been superbly supportive. On every visit I felt welcome as soon as I walked in. The London

Smile Clinic is full of friendly faces and has really made my entire dental makeover experience!"

the**london**smile:)clinic®

Excellence in Cosmetic Dentistry



10 MONTHS

# ORTHODONTIC-RESTORATIVE









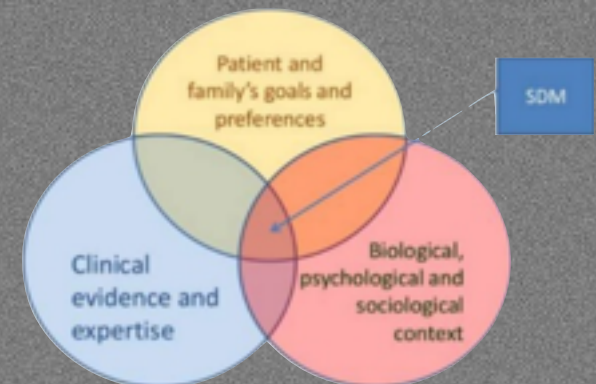
- 54-YEAR-OLD FEMALE; DOESN'T SMILE
- RESTORED AND WORN DENTITION
- ASYMMETRIC WEAR AND OVER-ERUPTION
- UPPER AND LOWER MIDLINE SHIFTS
- WANTS 'MAKEOVER'

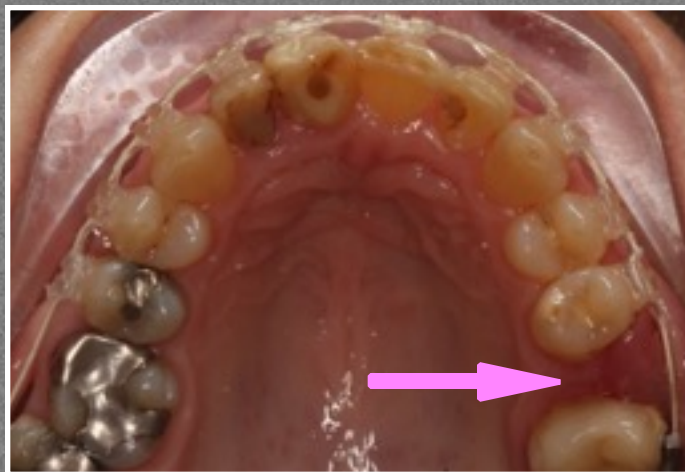
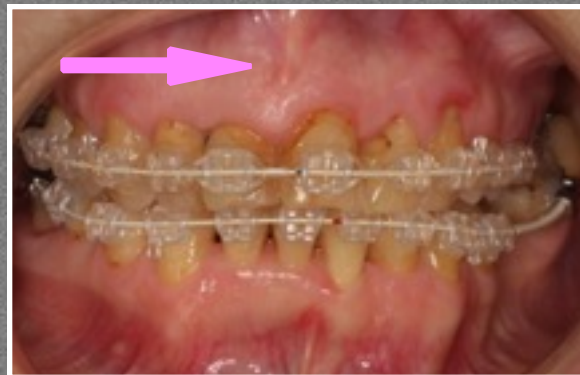




- AGREED AIMS:

1. ALIGN THE ARCHES
2. CORRECT UPPER MIDLINE
3. ACCEPT LOWER MIDLINE
4. FACILITATE RESTORATIVE TREATMENT









11 MONTHS



- Rebook restorative:

- Tooth positioning
- Gingival heights



# CROWN LENGTHENING & VENEERS









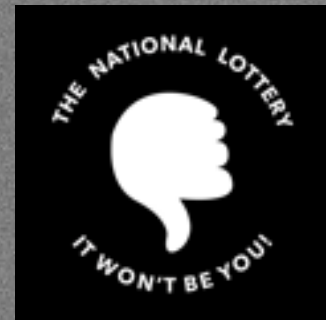
# 62-YEAR-OLD FEMALE







- 62-YEAR-OLD FEMALE
- MISSING LL1; LOSS OF LR6
- ASYMMETRIC WEAR
- LOCAL OVER-ERUPTION
- DEEP OVERBITE





- AGREED AIMS:

1. ALIGN THE ARCHES
2. REDUCE OVERBITE
3. ATTEMPT SPACE CLOSURE LRQ
4. FACILITATE RESTORATIVE TREATMENT







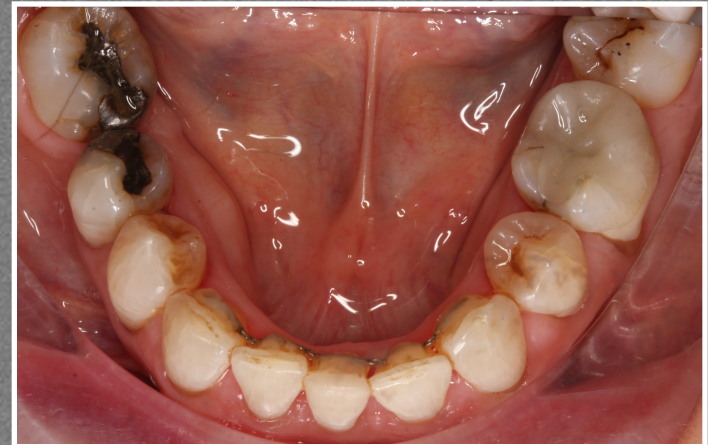
- CLASS II RHS
- EARLY SPACE CLOSURE



14 MONTHS



# CROWN LENGTHENING & VENEERS







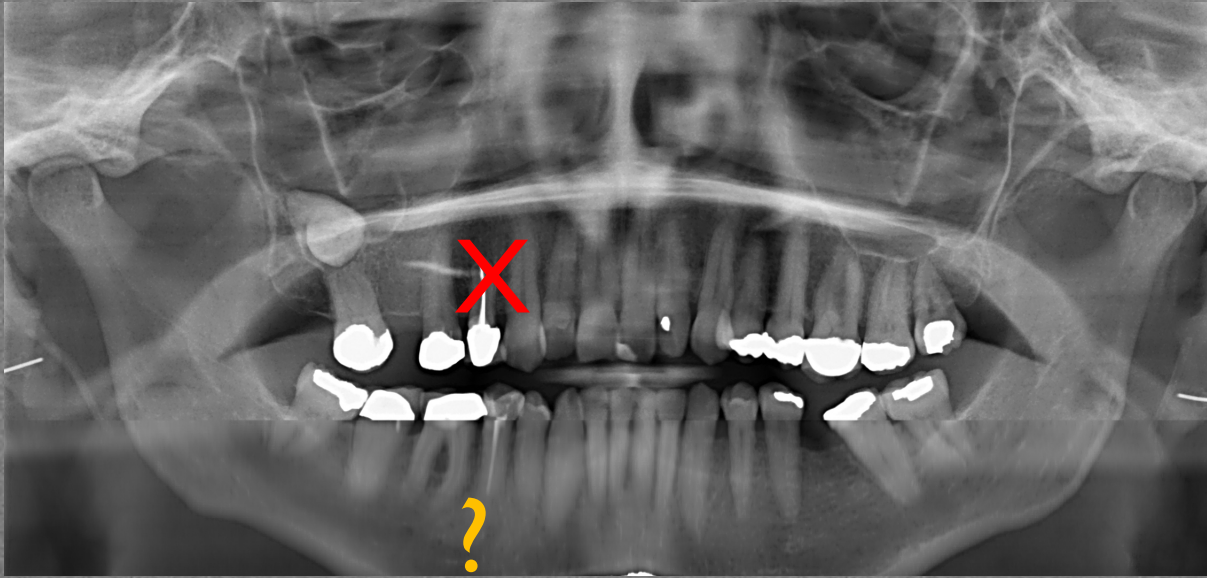




# 58-YEAR-OLD FEMALE







# 58-YEAR-OLD FEMALE







SPACE REQUIRED? 0MM



RELIEVE CROWDING 3MM

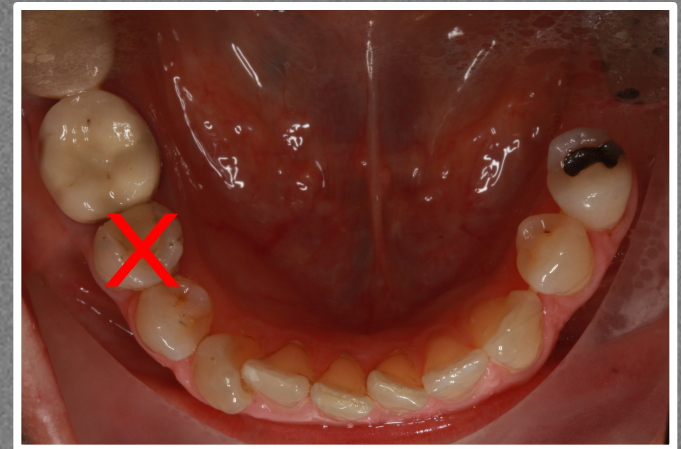
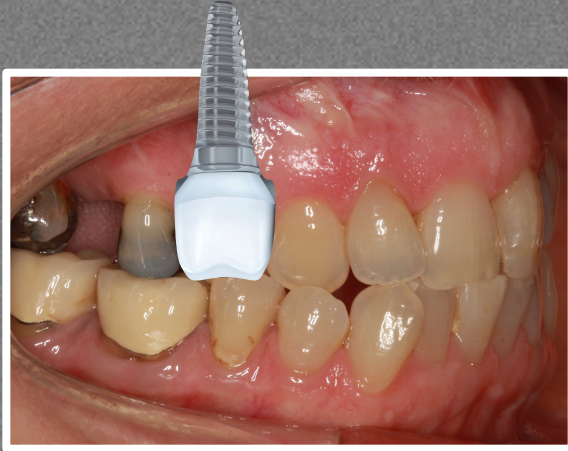
CONSTRICT LOWER ARCH 3MM: 1MM

RETRACT ANTERIORS 2MM: 4MM

TOTAL 8MM



# 58-YEAR-OLD FEMALE





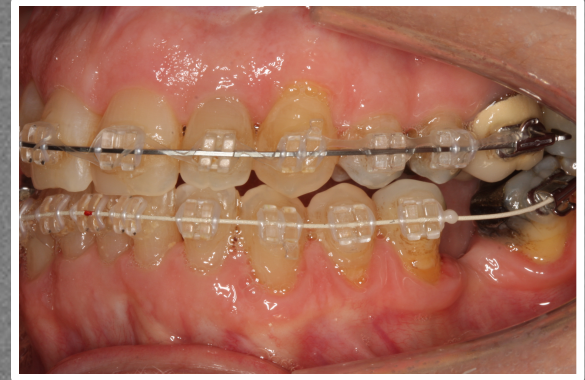
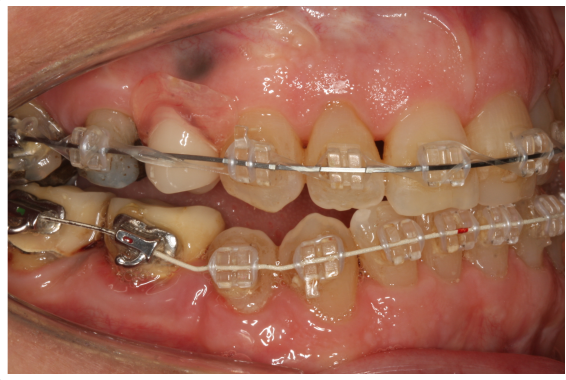
# 58-YEAR-OLD FEMALE



## • AGREED AIMS:

1. ALIGN THE ARCHES
2. CORRECT CLASS III
3. ATTEMPT SPACE CLOSURE LRQ:
  - CROWN LR6; SIZE AND SHAPE?
4. REDUCE SPACE UR7 REGION
5. FACILITATE RESTORATIVE TREATMENT

# MID-TREATMENT



# EARLY SPACE CLOSURE



# MID-TREATMENT





# POST-TREATMENT





# POST-TREATMENT



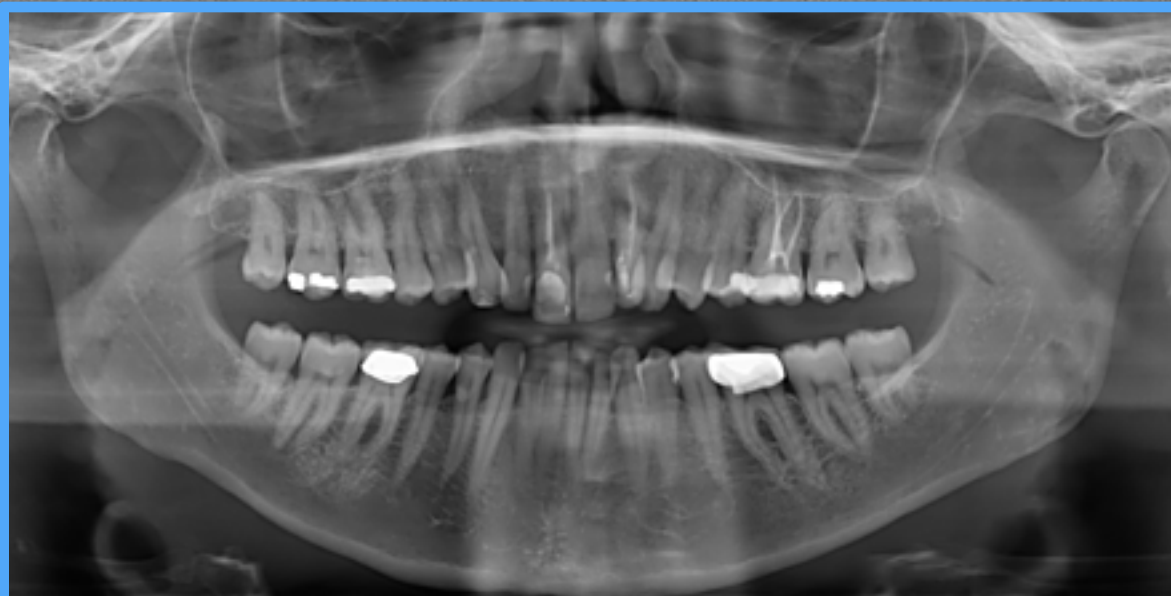
# 44-YEAR-OLD FEMALE







# 44-YEAR-OLD FEMALE





- FASHION MARKETING
- LITTLE APPETITE FOR ORTHODONTICS
- UNAESTHETIC RESTORATIVE WORK
  - VARIABLE THICKNESS
  - NOT OPEN TO LINGUAL/INVISALIGN
- GINGIVAL MARGINS
- FANNING OF LOWER ANTERIORS





- VARIABLE THICKNESS
- UNAESTHETIC
- TEETH MOVE IF UNRETAINED
- ORTHODONTICS ACCESSIBLE





- FASHION MARKETING
- LITTLE APPETITE FOR ORTHODONTICS
- UNAESTHETIC RESTORATIVE WORK
  - VARIABLE THICKNESS
  - NOT OPEN TO LINGUAL/INVISALIGN
- GINGIVAL MARGINS
- FANNING OF LOWER ANTERIORS



# MID-TREATMENT



# MID-TREATMENT





# MID-TREATMENT



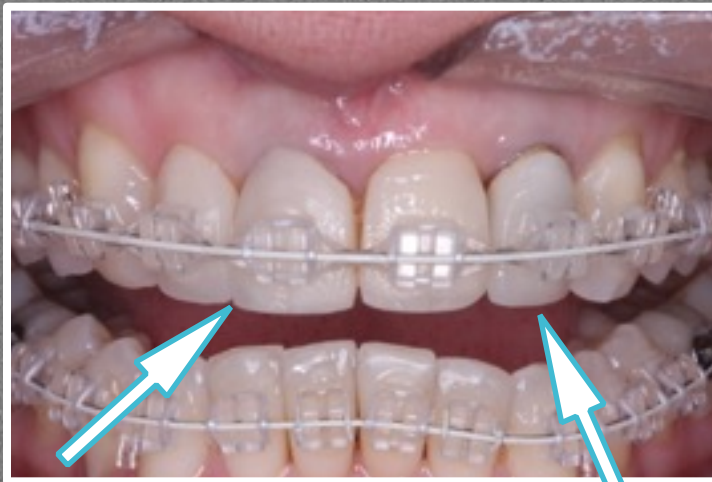
# MID-TREATMENT



- RECONTOURING
- REPOSITIONING: LEVEL UL1 MARGIN



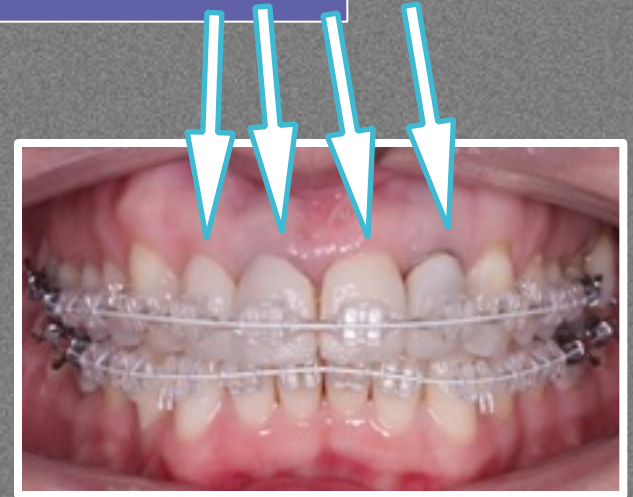
AUGUST 2019



Disc edges



# GINGIVAL MARGINS





# GINGIVAL MARGINS



# 56-YEAR-OLD FEMALE







- SUBGINGIVAL FRACTURE: UR1

- RECESSION UR1

- SMILE LINE

- MILD LOWER CROWDING

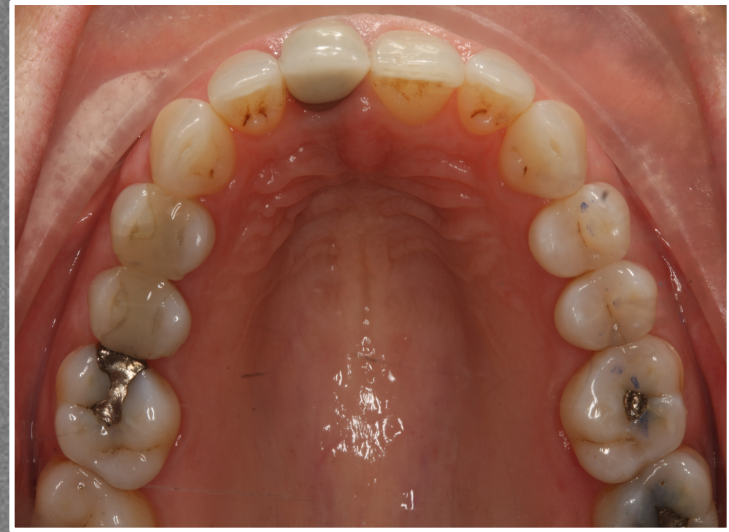




- AGREED AIMS:

1. ALIGN THE ARCHES
2. FACILITATE REPLACEMENT UR1
3. ATTEMPT TO IMPROVE GINGIVAL HARMONY





- TEAMWORK:
- 1. ENDODONTIST
- 2. PERIODONTIST
- 3. PROSTHODONTIST

# 56-YEAR-OLD FEMALE





## GINGIVAL BONDING



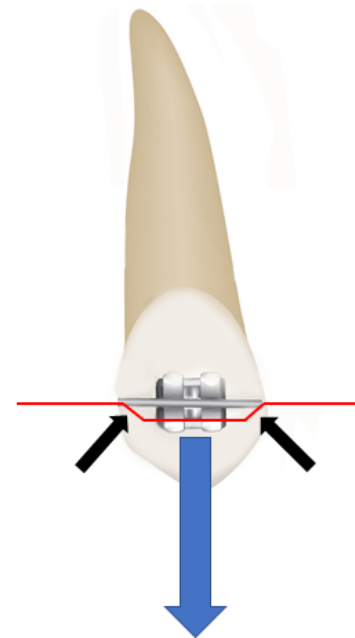
## DISCING INCISALLY



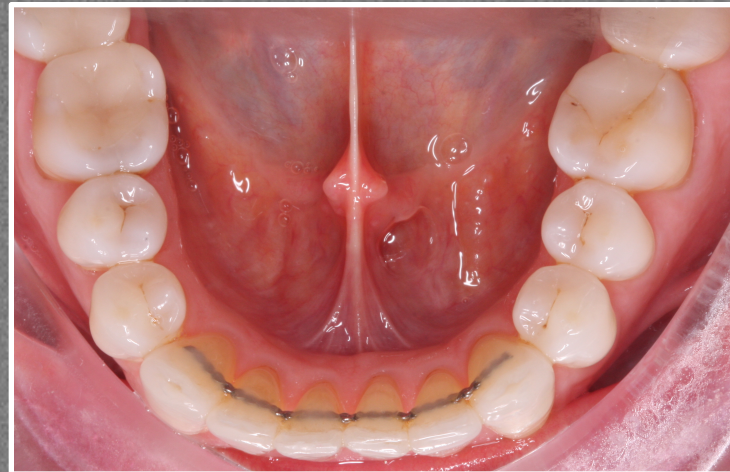
## EXTRUSION BENDS



8 MONTHS  
PLUS 4  
MONTHS  
INTERIM  
RETENTION











### Gingival response:

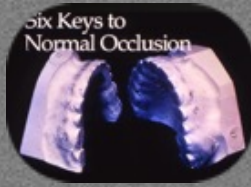
- Unpredictable
- Thin biotype: Extrusion problematic
- Thick Biotype: Intrusion problematic







## MY ADULT TREATMENT: SELF-REFLECTION

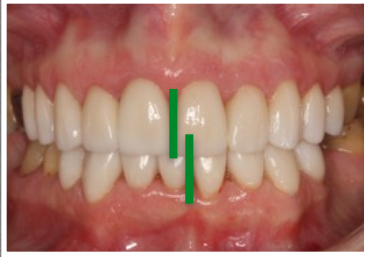
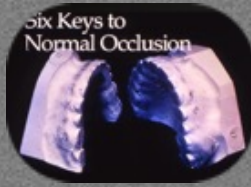


- Health, aesthetics and stability?
- Ideal outcomes? 5 of 8
- Unpredictable 'wins': 2 of 8
  - LR6 space closure
  - (Almost) Levelled margin UR1





# MY ADULT TREATMENT: SELF-REFLECTION



## Limitations:

- Lower midline x 2 cases: Previous loss
- Gingival margin: 1 case
- Molar occlusion in perio case



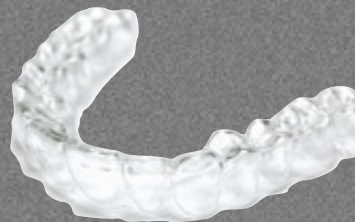
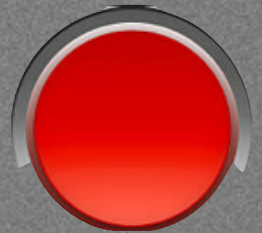




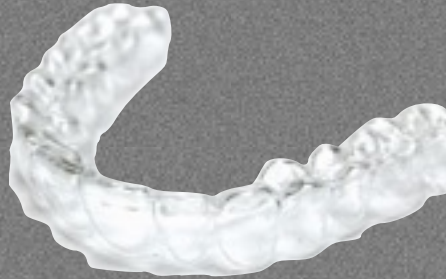
# CONCLUSIONS



- RISK VS. BENEFIT
- EVERY CASE IS DIFFERENT
- BESPOKE AIMS AND OBJECTIVES
- AGREED OUTCOME AND PROCESS



# ADULT ORTHODONTICS: NOT GETTING IT WRONG



PADHRAIG FLEMING



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