

FASTER TREATMENT:

GETTING AHEAD OF OURSELVES?



PADHRAIG FLEMING

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GETTING AHEAD OF OURSELVES?



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TAURANGA 2019



Treatment Duration

Adult Orthodontics

Retention

Growing Wiser

Functional Appliances

Orthodontic Research Practice



Development of a core outcome set for orthodontic trials using a mixed-methods approach: protocol for a multicentre study

Riki Yoshida^{1,2}, Kevin O'Brien³, Anna Juhl⁴, Zoe Markman⁵, Philip Benson⁶, Fiorella B. Colomo Salazar⁶ and Padraig S. Fleming²





Thou Shalt Not Blow Your Own Trumpet - A Commandment Of The Irish Psyche

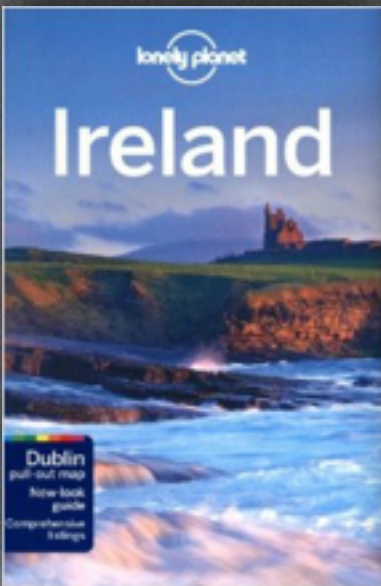
JUNE 27, 2013 BY IRISH AMERICAN MOM 30 COMMENTS

f Like 49 pe

Irish people do not like to show off. We have a palpable fear of being perceived to blow our own trumpets, so much so I feel confident in claiming self-deprecation and self-effacement are traits of the Irish psyche



THE NATIONAL PSYCHE



The Irish aren't big on talking themselves up, preferring their actions to speak for themselves. They also admire the peculiar art of self-deprecation, known locally as *an beál bocht a chur ort* – literally 'putting on the poor mouth' – the mildly pejorative practice of making out that things are far worse than they really are in order to evoke sympathy or the forbearance of creditors, of vital importance in the days when the majority of the Irish were at the mercy of an unforgiving landlord system. As a result, the Irish also have the trait of begrudgery – although it's something only recognised by them and generally kept within the wider family. It's kind of amusing, though, to note that someone like Bono is subject to more intense criticism in Ireland than anywhere else in the world.

Beneath all of the garrulous sociability and self-deprecating twaddle lurks a dark secret, which is that, at heart, the Irish are low on self-esteem. They're therefore very

SHOULD I BE GIVING THIS LECTURE?





23 MONTHS (27 VISITS)



9-MONTH FOLLOW-UP



'2 MONTHS T



FASTER TREATMENT

Clinicians

Patients

PREOCCUPATION

Researchers

Manufacturers



FASTER TREATMENT

BENEFITS OF FASTER TREATMENT?

BASELINE:
HOW LONG DOES IT
TAKE ANYWAY?



EJO Open Session 2017

Accelerating tooth movement: more than a placebo effect?

A 3-way quick-fire debate



Martyn Colbourne, King's College London, UK
Alpdoğan Kantarci, Forsyth Institute, Boston University and Harvard University, Boston, USA
Pádraig Fleming, Queen Mary's University London, UK
Moderator David Rice, Editor EJO

The session has 3 high calibre speakers and will focus on non-surgical adjuncts (vibration and lasers/light) to orthodontic tooth movement. The experts will review the rationale and evidence for effect, the current state of affairs and a look to the future.

FASTER TREATMENT: PURPORTED BENEFITS

Patient experiences

- Impact of fixed appliances
- Satisfaction/QoL

Iatrogenic Damage

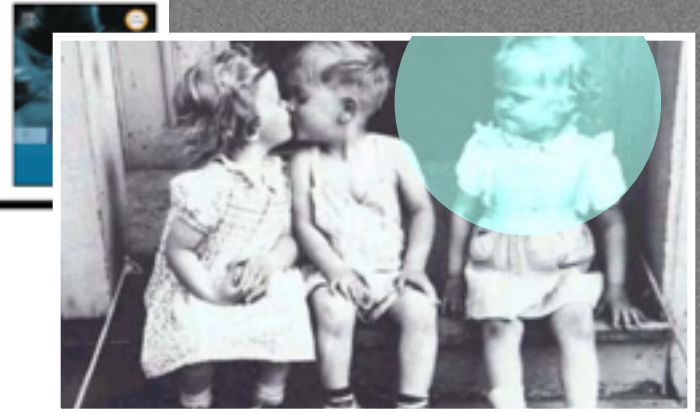
- Root resorption

Clinician-centred

- Fewer visits
- Costs/profitability



BENEFIT: PATIENT EXPERIENCES?



Are dental researchers asking patient-important questions? A scoping review

Padhraig S. Fleming^{a,*}, Despina Koletsis^{b,1}, Kevin O'Brien^c, Aliko Tsiachlakis^a, Nikolaos Pandis^d

ABSTRACT

Objectives: There is an increasing recognition that research outcomes should resonate with patients rather than fixating on technical aspects of interventions. We aimed to assess the nature of outcomes within a representative subset of clinical trials published in leading dental journals.

Methods: Randomized controlled trials published over a 3-year period up to December 31st, 2015 were identified in eight leading general and specialty dental journals: Journal of Dental Research, Journal of Dentistry, American Journal of Orthodontics and Dentofacial Orthopedics, Pediatric Dentistry, International Journal of Prosthodontics, Journal of Endodontics, International Journal of Oral and Maxillofacial Surgery and Journal of Clinical Periodontology. The number and nature of outcomes considered within these trials were assessed.

Results: Overall 220 RCTs involving 409 outcomes (257 primary and 152 secondary) were identified. Measures of disease activity were most commonly assessed as both primary (n = 91, 35%) and secondary outcomes (n = 59, 39%). Quality of life and functional measures were rarely considered as primary outcome domains. Overall, 182 (44%) outcomes were primarily clinician-focused, 140 (34%) were patient-centered, while 22% (n = 87) were both patient- and clinician- focused.

Conclusions: There is an undue emphasis on technical, clinician-centered outcomes within dental research common to all specialty areas. Development and adoption of core outcome sets representing the minimum set of data that should be obtained within a dental clinical trial would assist in addressing this issue.



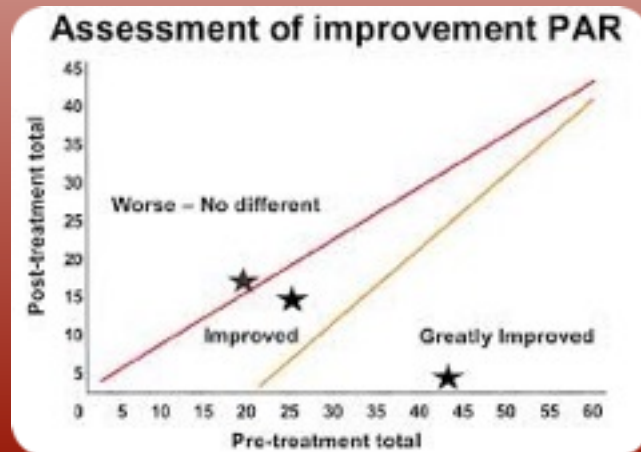
BENEFIT: PATIENT EXPERIENCES?

'Old Glory'

CLINICIAN-CENTRED

PAR scores

Andrews' 6 keys



Six Keys to Normal Occlusion



BENEFIT: PATIENT EXPERIENCES?

PATIENT-CENTRED

Efficiency important

12-month barrier

But **outcome** most

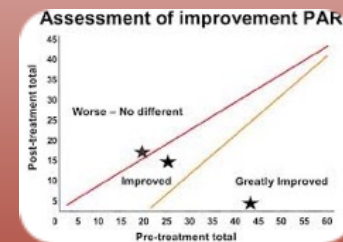


Barts and The London
School of Medicine and Dentistry

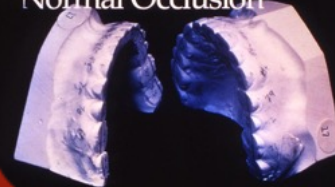
CLINICIAN-CENTRED

PAR scores

Andrews' 6 keys



Six Keys to
Normal Occlusion



PATIENT-CENTRED

Efficiency important

12-month barrier


Outcome



Barts and The London
School of Medicine and Dentistry

PATIENT EXPERIENCES?

19. Would you be willing to wear a brace on the inside surface of your teeth (a lingual brace)?



☐ Yes ☐ No

ID: 30

This question has display logic

20. What is the maximum length of time that you would be prepared to wear the brace on the inside surface of your teeth (a lingual brace) (in months)?

☐ 6 ☐ 9 ☐ 12 ☐ 15


☐ 18 ☐ 21 ☐ 24

☐ More than 24 months

ID: 32

Page 8: Types of orthodontic appliances (braces)

17. Would you be willing to wear a ceramic (tooth-coloured) brace, with a white wire on the outside surface of your teeth?



☐ Yes ☐ No

ID: 27

This question has display logic

18. What is the maximum length of time that you would be prepared to wear the ceramic (tooth-coloured) brace with a white wire (in months)?


☐ 6 ☐ 9 ☐ 12 ☐ 15

☐ 18 ☐ 21 ☐ 24

☐ More than 24

ID: 29

24. Once brace treatment is complete, would you be willing to accept the final outcome achieved in the picture below?




☐ Yes ☐ No

ID: 38

This question has display logic

25. Would you be willing to wear a brace for 3 months longer to achieve the outcome below?




☐ Yes ☐ No

ID: 39

This question has display logic

26. Would you be willing to wear a brace for 6 months longer to achieve the outcome shown below?



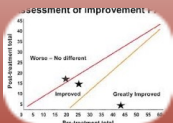
☐ Yes ☐ No

ID: 40

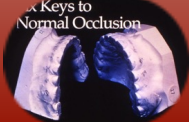
CLINICIAN-CENTRED

PAR scores

Andrews' 6 keys



Keys to Normal Occlusion



CONSENSUS: OVERLY LENGTHY

NON-SURGICAL
ADJUNCTS

SURGICAL
ADJUNCTS

COMPROMISE:
SHORT-TERM
ORTHODONTICS

FASTER TREATMENT



NON-SURGICAL ADJUNCTS

Research Reports: Clinical

Supplemental Vibrational Force During Orthodontic Alignment: A Randomized Trial

N.R. Woodhouse^{1,2}, A.T. DiBiase³, N. Johnson², C. Slipper², J. Grant², M. Alsaleh¹, A.N.A. Donaldson⁴, and M.T. Cobourne¹

Journal of Dental Research
2015, Vol. 94(3) 682-689
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for Dental Research 2015
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DOI: 10.1177/0022034115576195
jdr.sagepub.com



AcceleDentTM
System

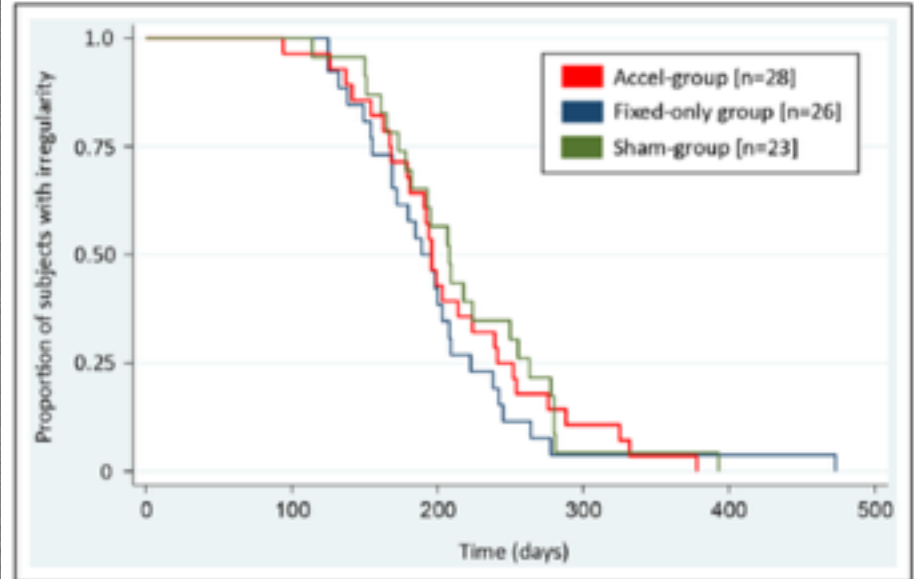


Figure 2. Kaplan-Meier curves comparing patterns of alignment for the 3 experimental groups. The y-axis shows the proportion of subjects with irregularity, and the x-axis shows the number of days from baseline. There were no significant differences among interventions (Accel-only group, Accel-sham group, and fixed-only group). Numbers represent those subjects in each experimental group analyzed from baseline to final alignment.

DAMON[®]SYSTEM
More than straight teeth[™]

Non-surgical adjunctive interventions for accelerating tooth movement in patients undergoing fixed orthodontic treatment (Review)

El-Angebawi A, McIntyre GT, Fleming PS, Bearn DR

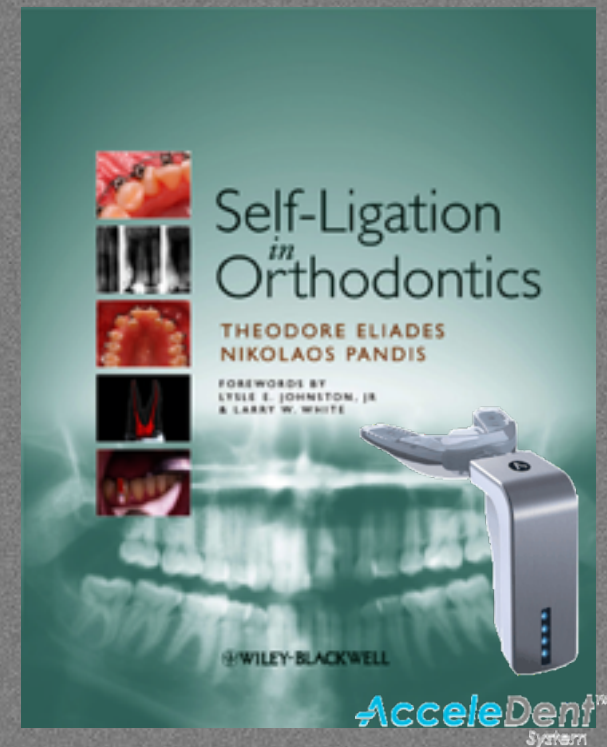


**Cochrane
Library**

Cochrane Database of Systematic Reviews

«...many look more to industry rather than to academia for guidance; however, a company's fiduciary responsibility is to its stockholders, not to us.»

LYSLE E. JOHNSTON JR.





The 7 Worst Things About Being a Male

The psychological burdens of carrying around a Y chromosome

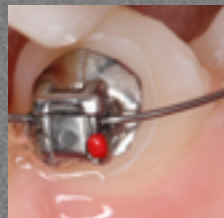
- More irrational
- Self-destructive
- Less supported than women
- Shorter lives



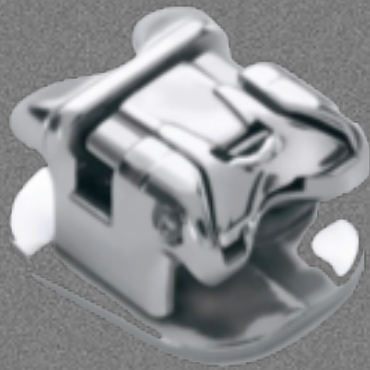
3M Unitek



Patented Logo © 2014 Unitek



DAMON[®] SYSTEM
More than straight teeth™



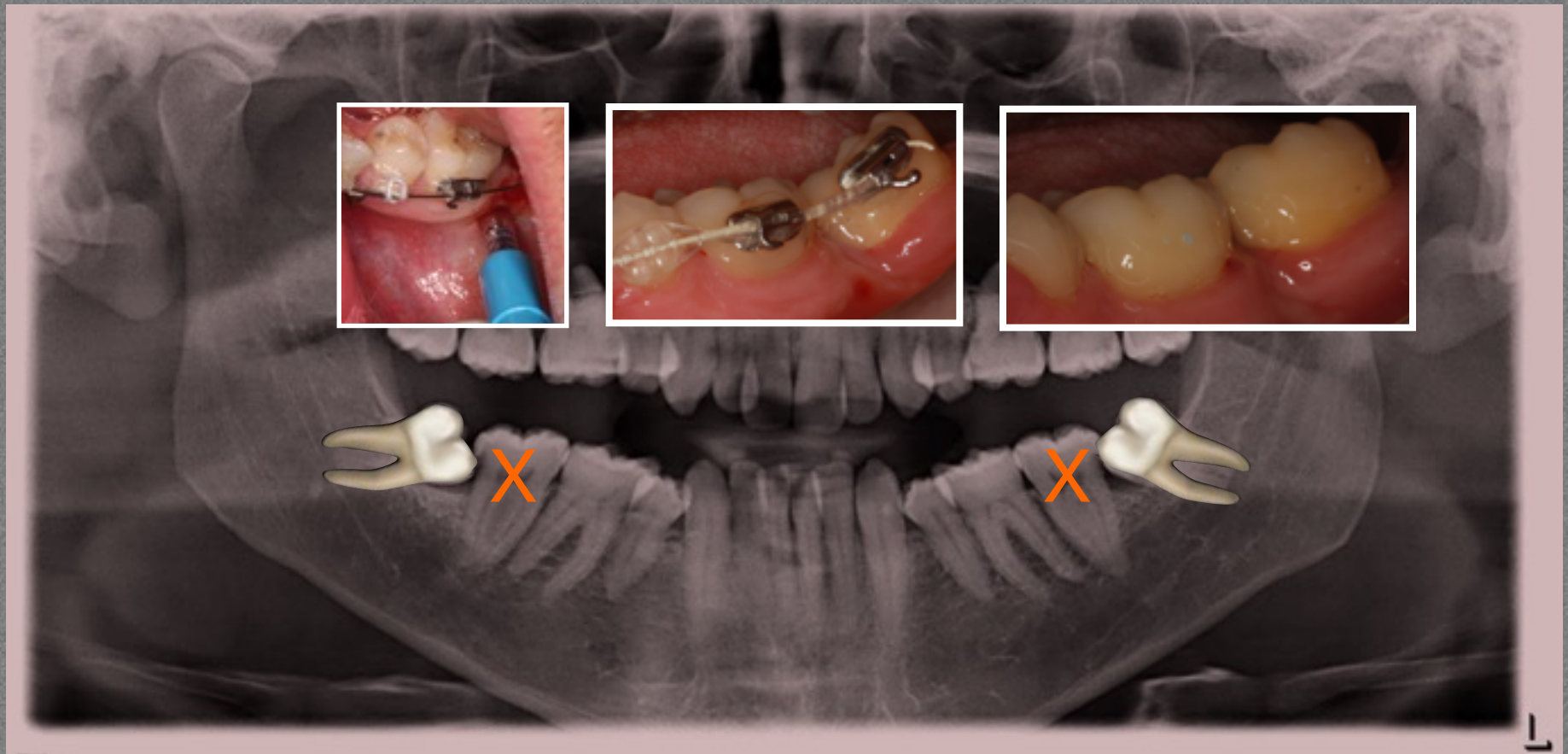
tive research and clinical reality. The efficiency of a course of orthodontic treatment is based on a complex interaction of parameters including appliance type, compliance, biologic age, and bone remodeling, with biologic processes as the ultimate arbiter dictating the maximum speed of the process. Although technological advances might sound and look alluring, osteoclasts are less easily impressed than clinicians. As our specialty progresses, further technological advancement and greater intrusion from private companies with financial backing are inevitable. It is important that a degree of introspection occurs and that salutary lessons are learned when appraising the benefits of new, heavily marketed appliance systems and “new”



SURGICAL ADJUNCTS

Surgical adjunctive procedures for accelerating orthodontic treatment (Review)

Fleming PS, Fedorowicz Z, Johal A, El-Angbawi A, Pandis N

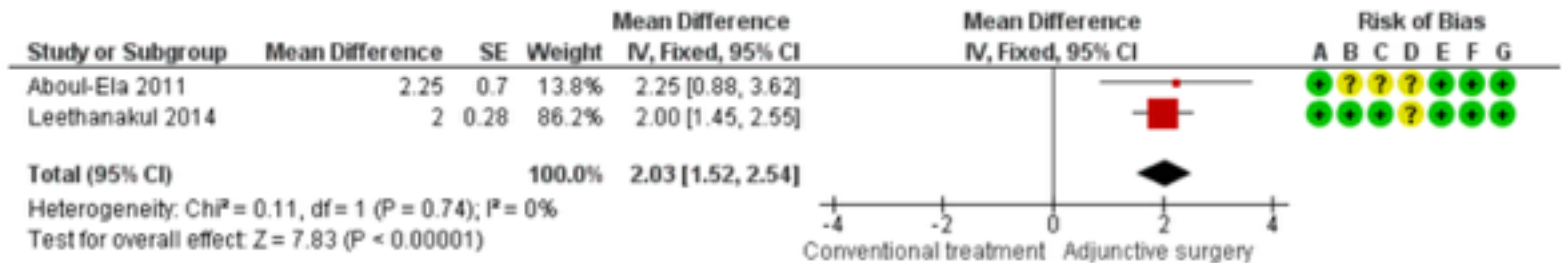


SURGICAL ADJUNCTS

Surgical adjunctive procedures for accelerating orthodontic treatment (Review)

Fleming PS, Fedorowicz Z, Johal A, El-Angbawi A, Pandis N

Figure 4. Forest plot of comparison: I Surgical adjunctive procedures versus conventional treatment, outcome: I.2 Rate of tooth movement (3 months)



SURGICAL ADJUNCTS

Main results

We included four RCTs involving a total of 57 participants ranging in age from 11 to 33 years. The interventions evaluated were corticotomies to facilitate orthodontic space closure or alignment of an ectopic maxillary canine, with the effect of repeated surgical procedures assessed in one of these studies. The studies did not report directly on the primary outcome as prespecified in our protocol: duration of orthodontic treatment, number of visits during active treatment (scheduled and unscheduled) and duration of visits. The main outcome assessed within the trials was the rate of tooth movement, with periodontal effects assessed in one trial and pain assessed in one trial. A maximum of just three trials with small sample sizes were available for each comparison and outcome. We assessed all of the studies as being at unclear risk of bias.

Tooth movement was found to be slightly quicker with surgically assisted orthodontics in comparison with conventional treatment over periods of one month (MD 0.61 mm; 95% CI 0.49 to 0.72; P value < 0.001) and three months (MD 2.03 mm, 95% CI 1.52 to 2.54; P value < 0.001). Our results and conclusions should be interpreted with caution given the small number of included studies. Information on adverse events was sought; however, no data were reported in the included studies.

Authors' conclusions

This review found that there is limited research concerning the effectiveness of surgical interventions to accelerate orthodontic treatment, with no studies directly assessing our prespecified primary outcome. The available evidence is of low quality, which indicates that further research is likely to change the estimate of the effect. Based on measured outcomes in the short-term, these procedures do appear to show promise as a means of accelerating tooth movement. It is therefore possible that these procedures may prove useful; however, further prospective research comprising assessment of the entirety of treatment with longer follow-up is required to confirm any possible benefit.



SURGICAL ADJUNCTS

Patients', parents', and orthodontists' perceptions of the need for and costs of additional procedures to reduce treatment time

Flavio Uribe,^a Soumya Padala,^b Veerasathpurush Allareddy,^c and Ravindra Nanda^d
Farmington, Conn, Columbus, Ohio, and Iowa City, Iowa

lem for fee collection. **Conclusions:** Orthodontists and patients alike are interested in techniques that can accelerate tooth movement. Similarities between all groups were found regarding the acceptance of different approaches to accelerate tooth movement and the percentage of the orthodontic fee that would be paid for these techniques. Less-invasive techniques had greater acceptability in all groups. (Am J Orthod Dentofacial Orthop 2014;145:S65-73)

Authors' conclusions

This review found that there is **limited research** concerning the effectiveness of surgical interventions to accelerate orthodontic treatment, with no studies directly assessing our prespecified primary outcome. The available **evidence is of low quality**, which indicates that further research is likely to change the estimate of the effect. Based on measured outcomes in the short-term, these procedures do appear to show promise as a means of accelerating tooth movement. It is therefore possible that these procedures may prove useful; however, further prospective research comprising assessment of the entirety of treatment with longer follow-up is required to confirm any possible benefit.



COMPROMISE: SHORT-TERM ORTHODONTICS



- 'All you need to be an orthodontist is an impression..'
- Misconceptions/Misinformation?

Myths and realities in orthodontics

P. S. Fleming,^{a1} S. D. Springate^a and R. A. C. Chate^b

IN BRIEF

- Delineates myth and reality in orthodontics.
- Clarifies the limitations and benefits of definitive orthodontics.
- Illustrates nine common misconceptions concerning orthodontic treatment.

PRACTICE



COMPROMISE: SHORT-TERM ORTHODONTICS

STO JUGGERNAUT

'I promise **6-month** treatment'



VS.

CONVENTIONAL ORTHO

'It will take him **2-3 years**'



COMPROMISE: SHORT-TERM ORTHODONTICS

STO JUGGERNAUT



CONVENTIONAL ORTHO



A survey of undergraduate orthodontic training and factors affecting pursuit of postgraduate training

P. Jauhar,¹ P. A. Mossey,² H. Popat,³ J. Seehra⁴ and P. S. Fleming^{*1}

RESEARCH



24. Would you like to undertake any of the following options for further training in Orthodontics?

Value	Percent	Count	Statistics
Orthodontic Specialist Training	36.4%	87	👏👍👍 Total Responses 239
Invisalign course	59.0%	141	
Six-month Smiles course	41.0%	98	😓😡😱
Inman Aligners course	25.1%	60	
No further training	20.9%	50	
Total		239	

TREATMENT: HOW LONG DOES IT REALLY TAKE?

SYSTEMATIC REVIEW  AJO-DO

How long does treatment with fixed orthodontic appliances last? A systematic review

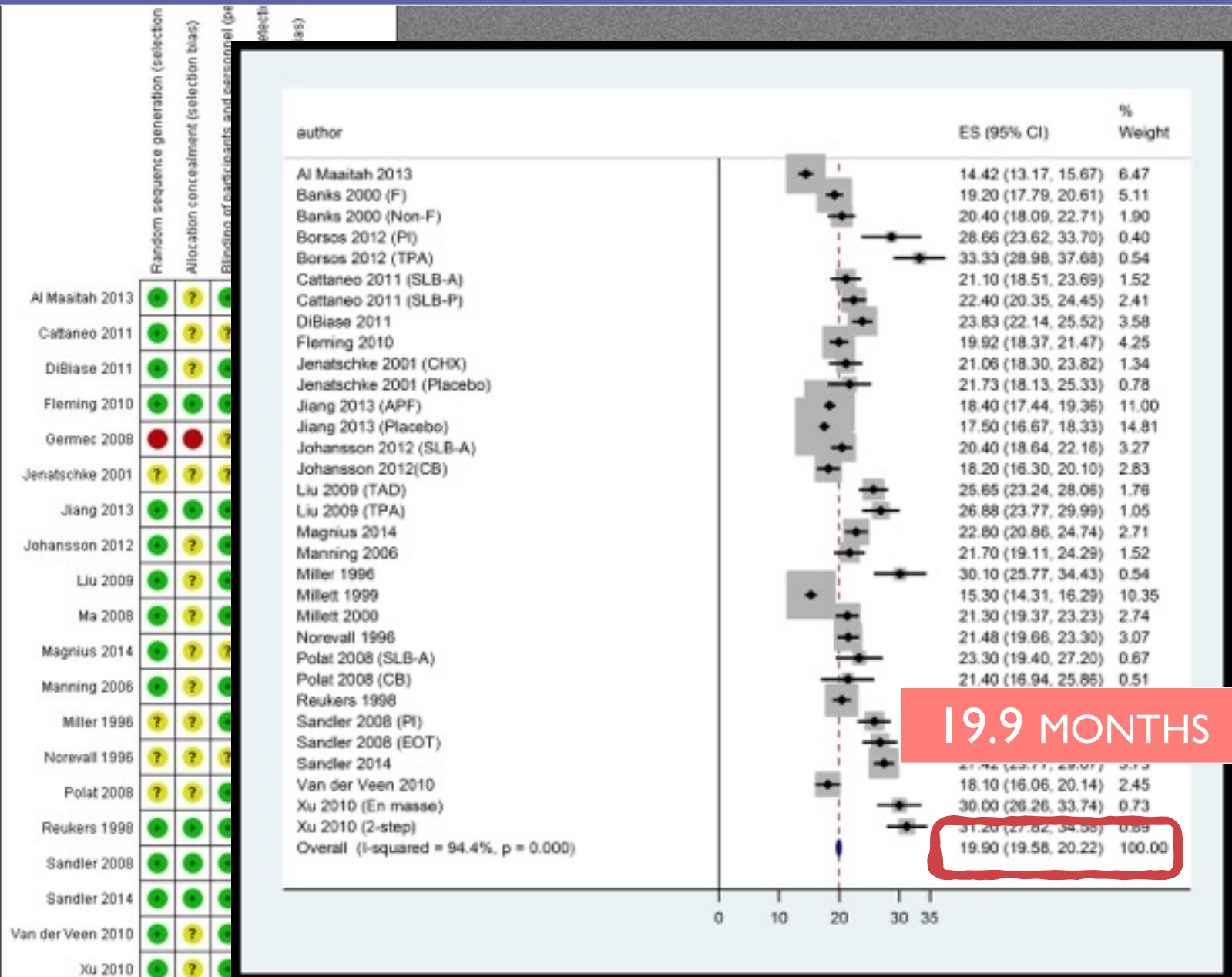
Aliki Tsichlaki,^a Siew Yee Chin,^b Nikolaos Pandis,^c and Padhraig S. Fleming^d
London, United Kingdom, Bern, Switzerland, and Corfu, Greece

Epidemiological review

- Prospective studies
- Not comparing interventions
- Does orthodontics take 2-3 years?

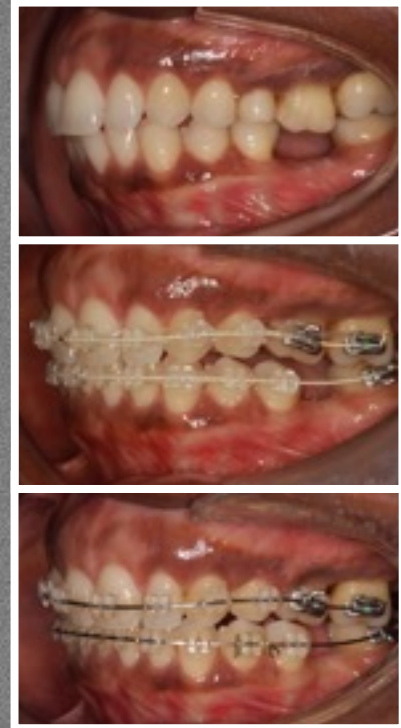


TREATMENT: HOW LONG DOES IT REALLY TAKE?



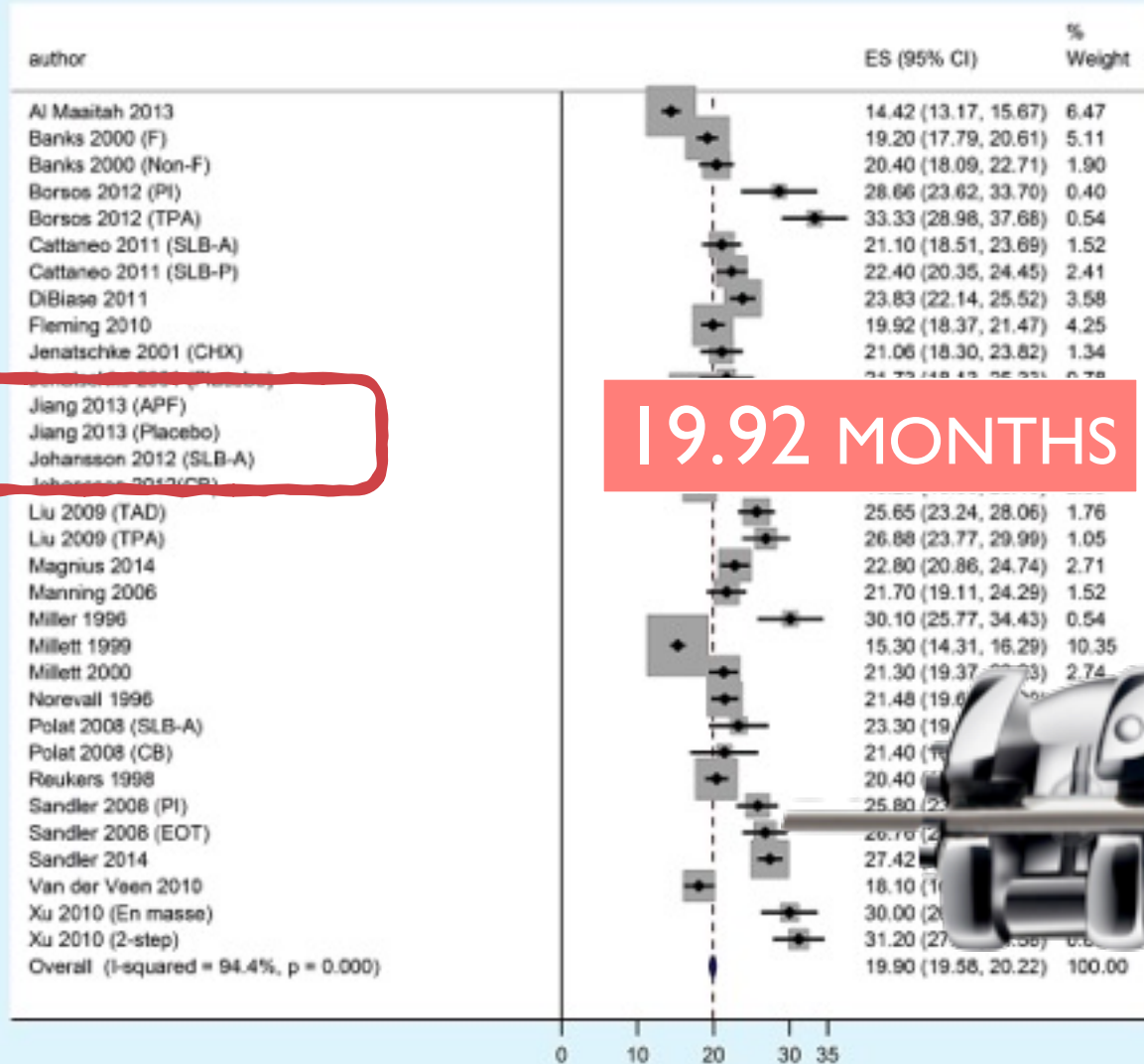
LITTLE EVIDENCE THAT ADJUNCTS HELP

- Adjuncts helpful?
 - Individual basis
 - Speculative
- STO inherently limited
- Faster treatment a reasonable wish
- What can we do?



Dear Santa: Bring me what I want for Christmas or Prancer and Dancer are next.

TREATMENT: HOW LONG DOES IT REALLY TAKE?



19.92 MONTHS

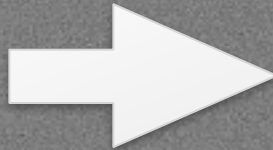


Randomized clinical trial of orthodontic treatment efficiency with self-ligating and conventional fixed orthodontic appliances

Padhraig S. Fleming,^a Andrew T. DiBiase,^b and Robert T. Lee^c
London and Canterbury, United Kingdom

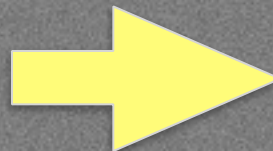


Recruited 2006



19.92 months

Now 2019



6-8 months LESS?

LITTLE EVIDENCE THAT
ADJUNCTS CAN HELP



SIX MONTH SMILES®
Cosmetic Braces System

MY INVENTORY



Attitudes, awareness, and barriers toward evidence-based practice in orthodontics

Asha Madhavji,^a Eustaquio A. Araujo,^b Ki Beom Kim,^c and Peter H. Buschang^d
St Louis, Mo, and Dallas, Tex



I change my practice based on.....



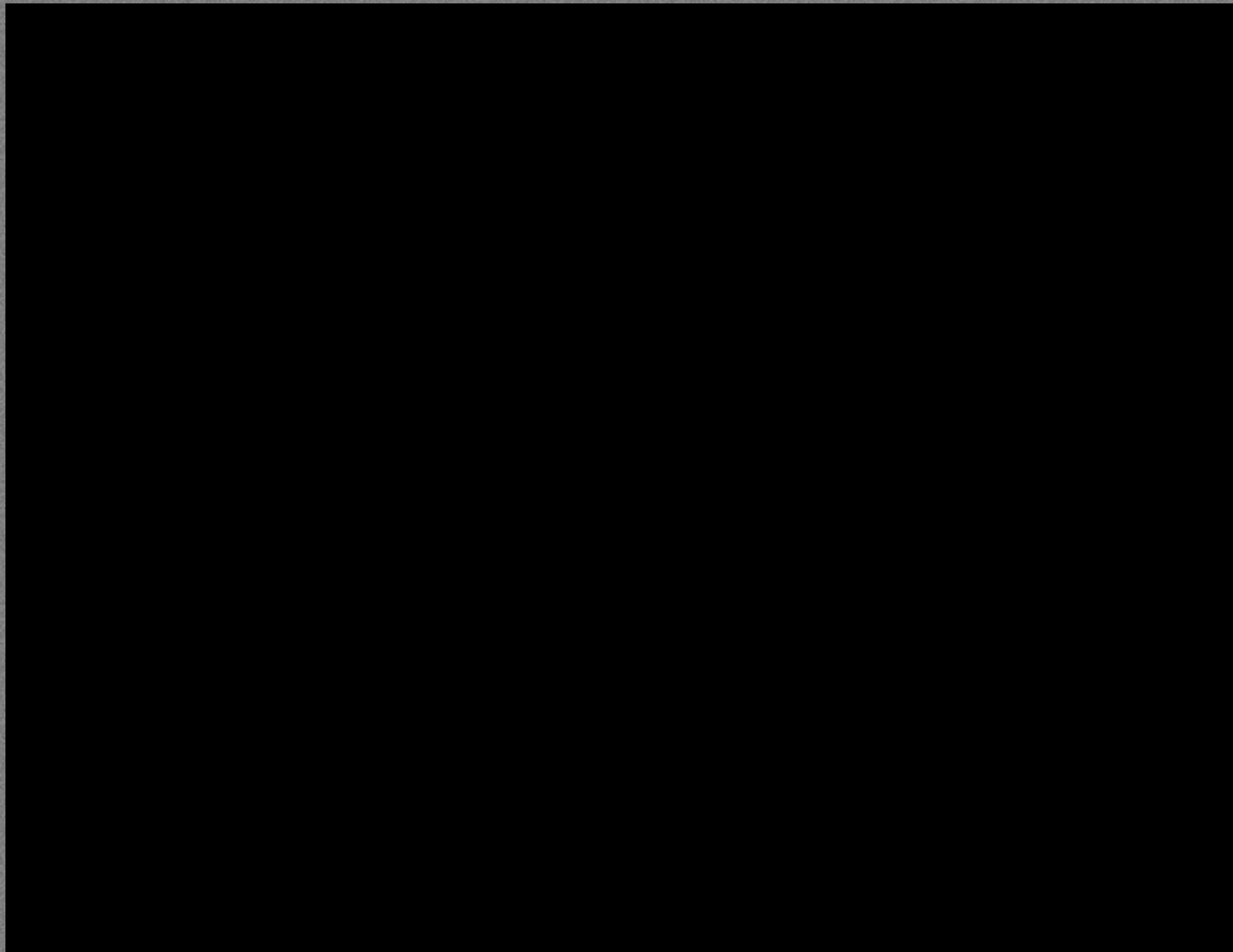
	Age* ($P < 0.001$)		
	≤ 40 y	41–60 y	≥ 61 y
Colleague advice	24%	12%	9%
Expert advice	32%	35%	36%
Clinical journals	15%	26%	29%
Literature reviews	18%	13%	11%
Other	11%	14%	15%
Total	100%	100%	100%

ANECDOTAL ORTHODONTICS



PADHRAIG FLEMING





TREATMENT PHASES + CO-ORDINATION



LEVEL AND ALIGN	OVERBITE REDUCTION	OVERJET REDUCTION	SPACE CLOSE	FINISH + DETAIL
6 months	2 months	3 months	2 months	2 months



VERTICAL: OVERBITE REDUCTION



- URA:
 - 4 months
 - Not dealing with anything else

Don't question where the time has gone.
Sitting idly by allowing time to slip away.

- TTM

VERTICAL: OVERBITE REDUCTION

Compliance with removable orthodontic appliances and adjuncts: A systematic review and meta-analysis

Dalya Al-Moghrabi,^a Fiorella Colonio Salazar,^b Nikolaos Pandis,^c and Padhraig S. Fleming^d
London, United Kingdom, Riyadh, Saudi Arabia, Bern, Switzerland and Corfu, Greece



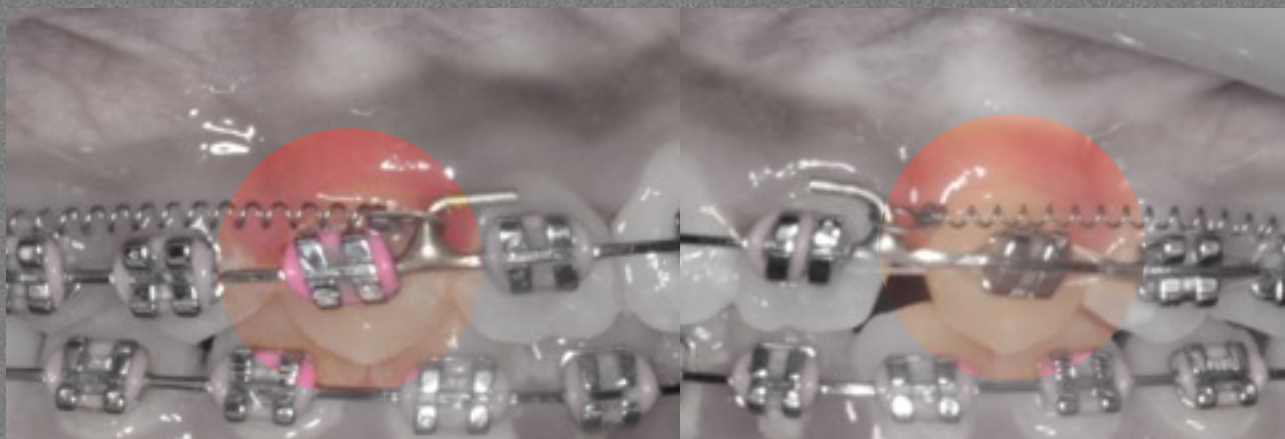
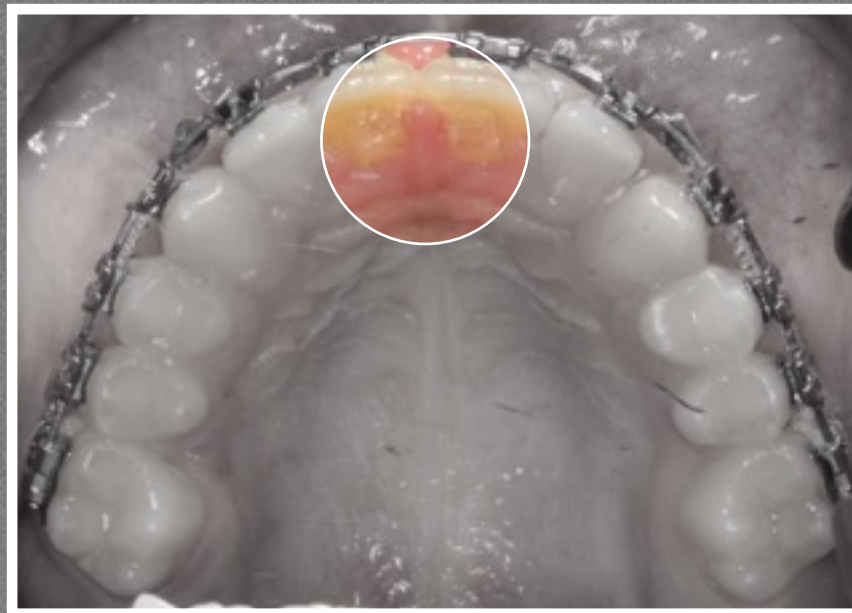
Introduction: The primary aims of this systematic review were to assess objective levels of wear of removable orthodontic appliances and components vs both stipulated and self-reported levels. We also aimed to consider patient experiences and the effectiveness of interventions geared at enhancing compliance. **Methods:** Electronic databases and reference lists of relevant studies were searched with no language restriction (PROSPERO: CRD42016036059). Randomized and nonrandomized controlled trials, prospective cohort studies, case series, qualitative and mixed-methods studies objectively assessing compliance levels were identified. The quality of the studies was assessed using the Cochrane Collaboration's risk of bias tool, risk of bias in ROBINS-I, or mixed-methods appraisal tool based on their design. **Results:** Of 4269 records, 80 full texts were obtained, with 24 studies meeting the selection criteria. Of these, 11 were included in the quantitative synthesis. A weighted estimate of objectively assessed compliance levels in relation to stipulated wear time was calculated with the discrepancy highest in the headgear group (5.81 hours per day, 95% confidence interval, 4.98, 6.64) based on 6 studies. The mean discrepancy between self-reported and objectively assessed headgear wear was 5.02 hours per day (95% confidence interval, 3.64, 6.40). Compliance level was not directly related to appliance type ($P = 0.211$). Thematic synthesis was not undertaken because of the limited number of qualitative studies. **Conclusions:** Compliance with removable orthodontic appliances and adjuncts is suboptimal, and patients routinely overestimate duration of wear. Techniques for improving compliance have promise but require further evaluation in high-level research. (Am J Orthod Dentofacial Orthop 2017; ■: ■-■)

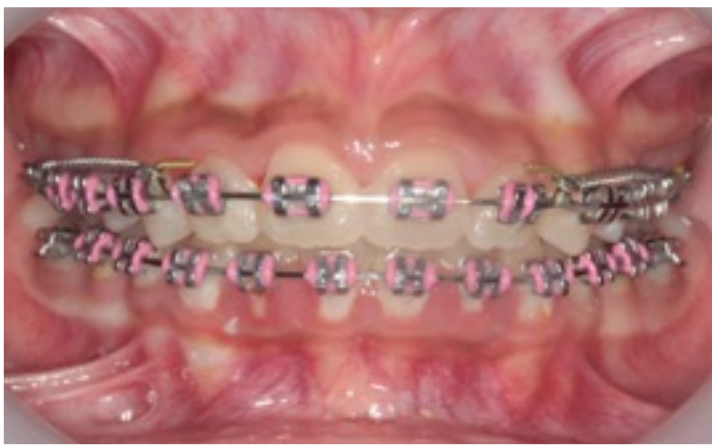
VERTICAL: OVERBITE REDUCTION



VERTICAL: OVERBITE REDUCTION









12 MONTHS



12-MONTH RECALL

VERTICAL: OVERBITE REDUCTION

JUNE 10TH



JULY 22ND



SEP 16TH



VERTICAL: OVERBITE REDUCTION



3 MONTHS



7 MONTHS

VERTICAL: OVERBITE REDUCTION



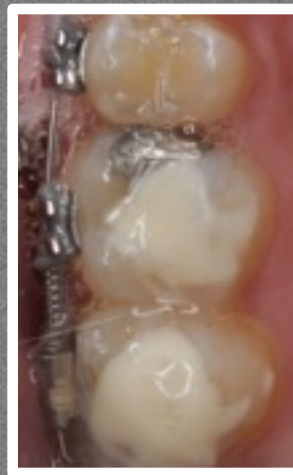
CLASS II CANINE

AOB AND CLASS II



ASYMMETRIC MOLARS

9MM



SKELETAL II

MANDIBULAR ASYMMETRY

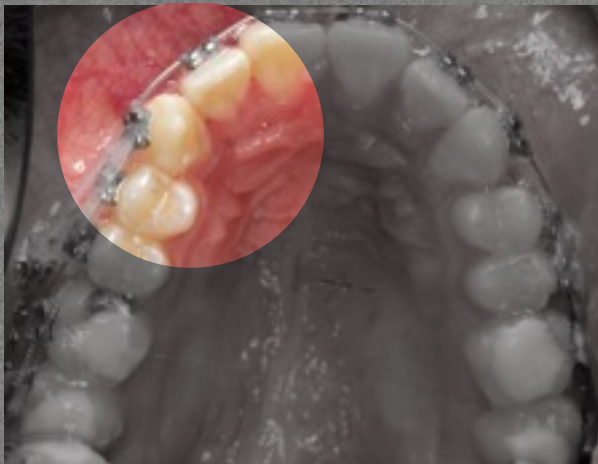
DECEMBER 2014

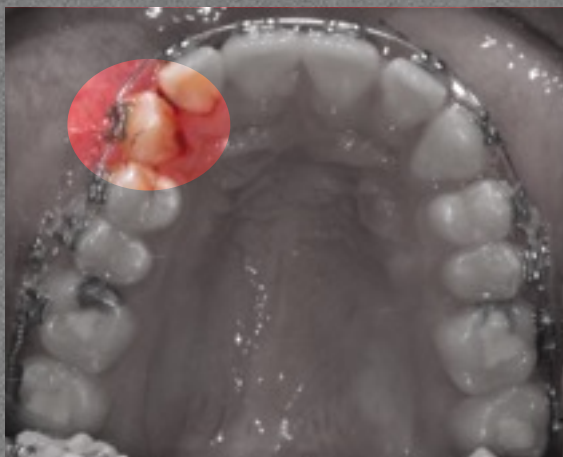
AOB AND CLASS II



DECEMBER 2014

AOB AND CLASS II





FEBRUARY 2015



MARCH 2015



MAY 2015



JULY 2015



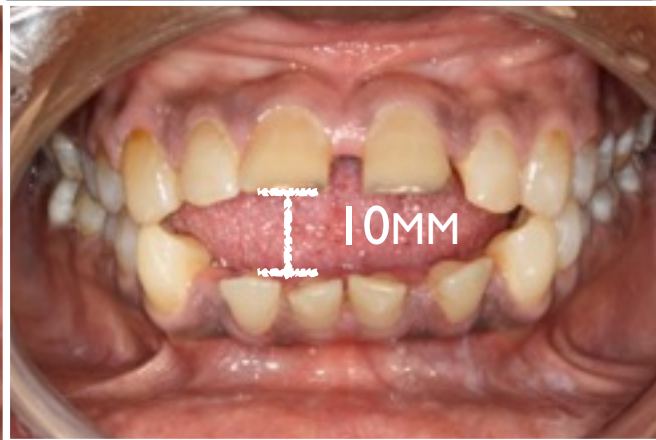
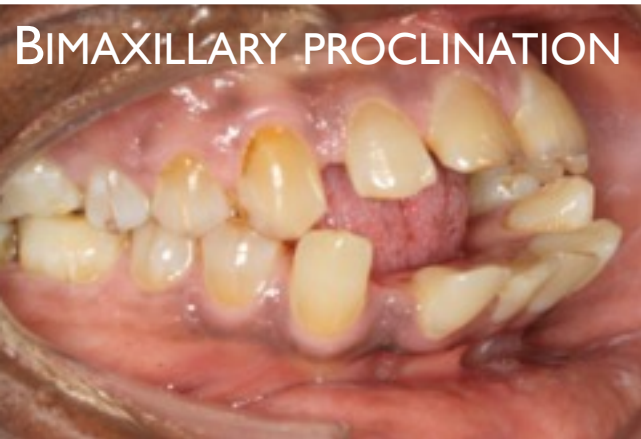
SEPTEMBER 2015





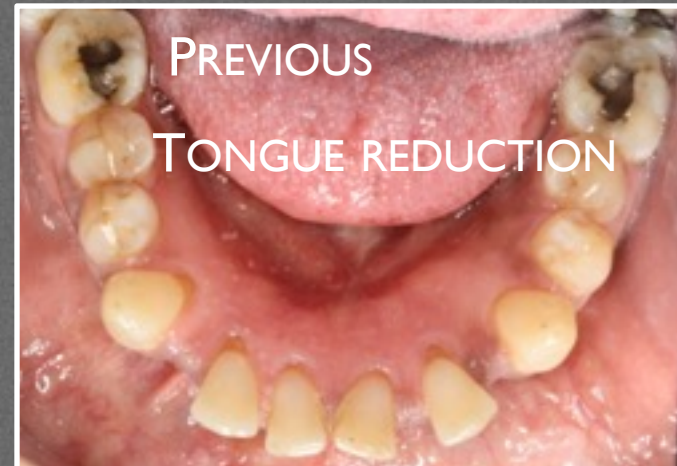
DECEMBER 2015

BIMAXILLARY PROCLINATION



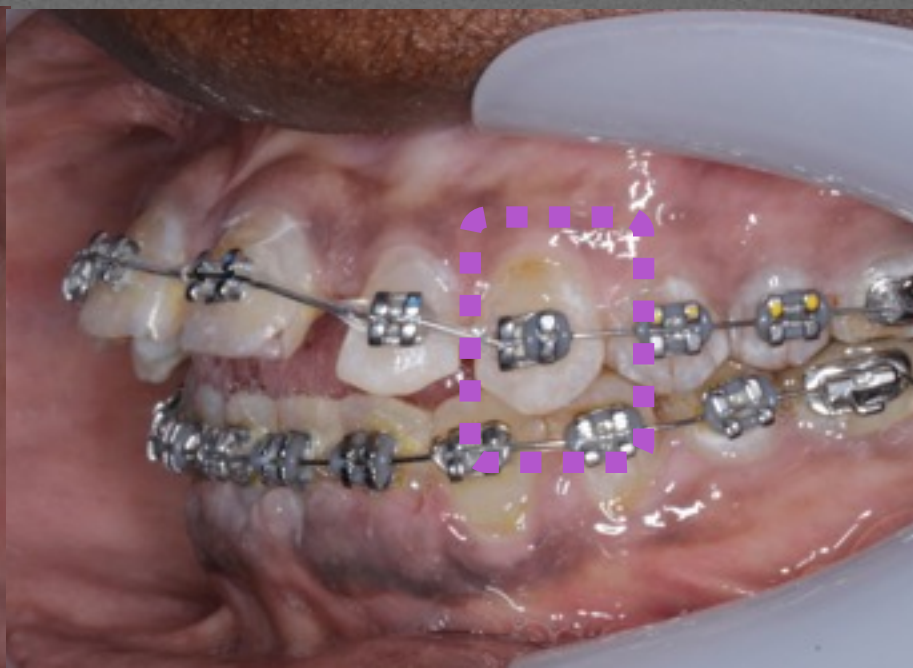
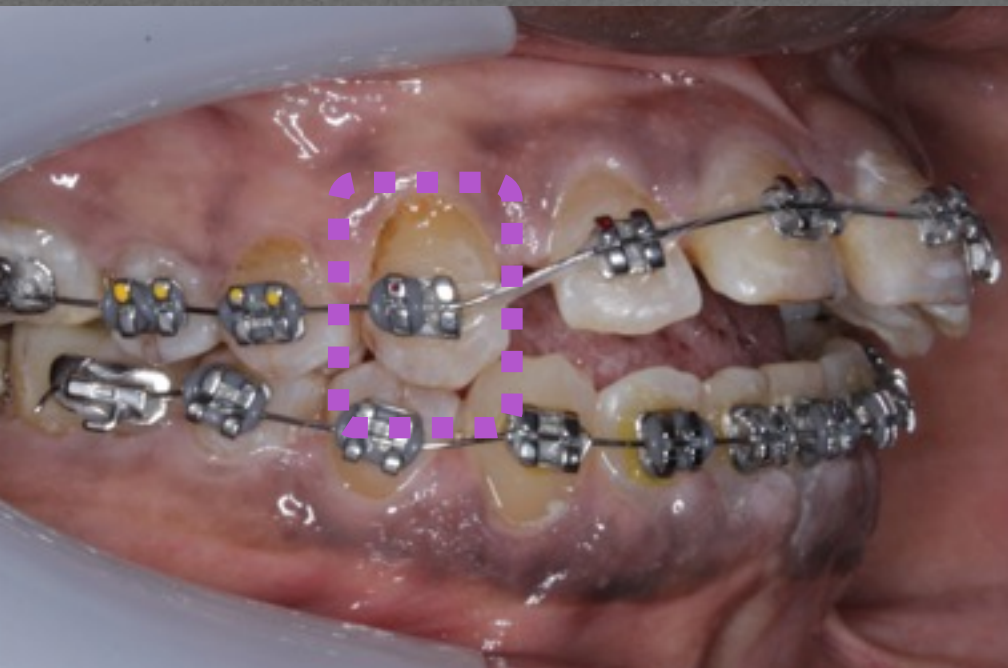
GENERALISED SPACING

OSA



PREVIOUS
TONGUE REDUCTION

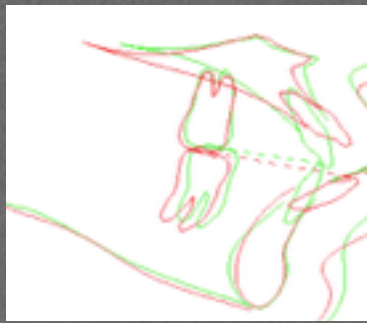






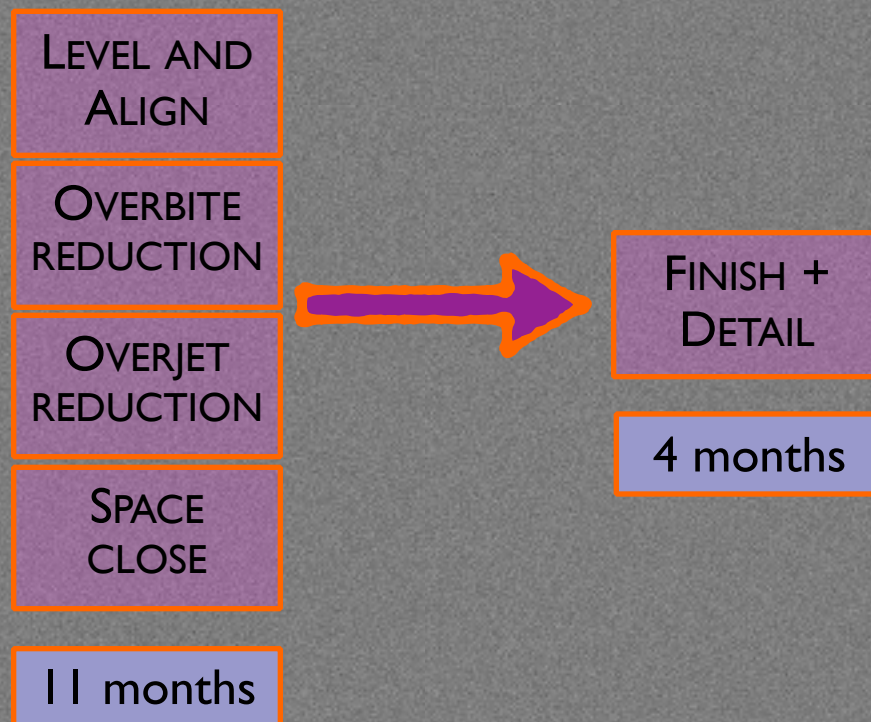


15 MONTHS

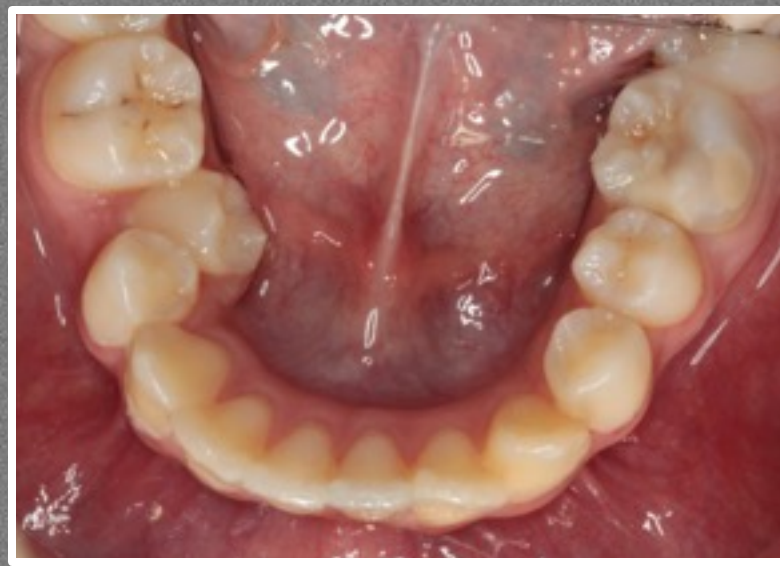


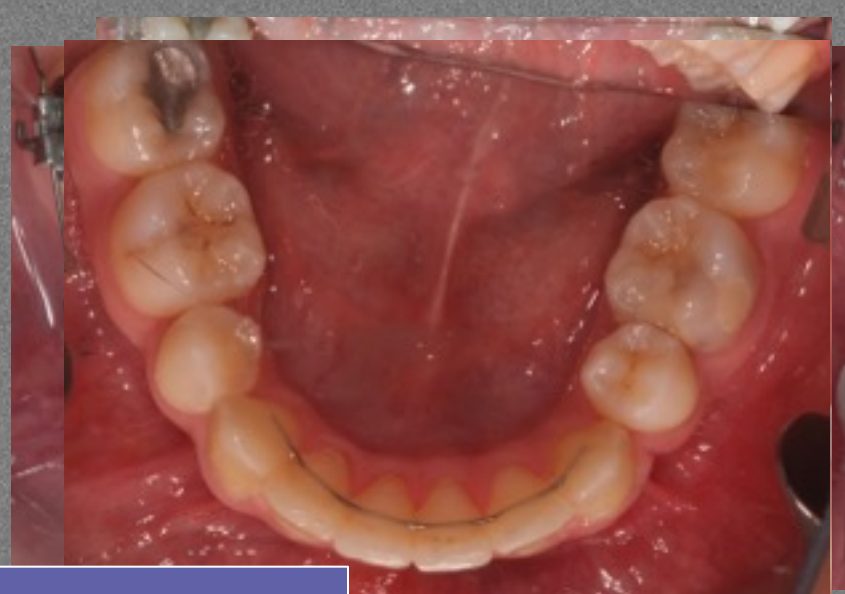


LEVEL AND ALIGN	OVERBITE REDUCTION	OVERJET REDUCTION	SPACE CLOSE	FINISH + DETAIL
6 months	2 months	3 months	2 months	2 months



ANTERO-POSTERIOR





14 MONTHS

NANCE PALATAL ARCH: INDIVIDUAL RETRACTION



30TH OCT



12TH DEC



22ND FEB



25TH SEP



Effectiveness of 3 methods of anchorage reinforcement for maximum anchorage in adolescents: A 3-arm multicenter randomized clinical trial

Jonathan Sandler,^a Allison Murray,^b Badri Thiruvengkatachari,^c Rodrigo Gutierrez,^d Paul Speight,^a and Kevin O'Brien^f



closure. Anchorage supplementation was discontinued once the canines were Class 1 and there was sufficient space in the maxillary arch to complete the correction of the malocclusion. At this point, the operator judged that no further anchorage supplementation was needed; therefore, the headgear was stopped, and the TADs or the acrylic Nance button was removed.

Outcomes, primary and secondary

The primary outcome measure in this study was movement of the molars. The following secondary outcome measures were collected from the patients' treatment records.

1. The process of treatment (number of attendances, duration of treatment, number of missed and canceled appointments, and any emergency appointments).
2. The dento-occlusal outcome of treatment using the PAR index with the United Kingdom weightings.⁹ Calibrated dental technicians, blinded to treatment allocation, performed this.

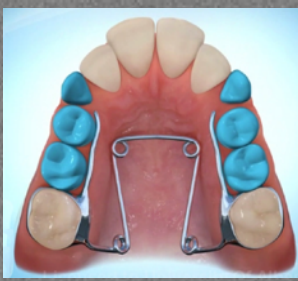
- 27 Months
- No Evidence
- Study Design?



TRANSVERSE

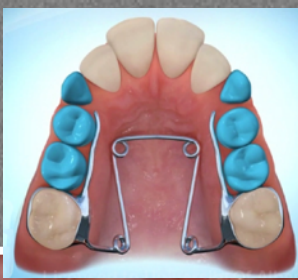


- Quadhelix:
 - 4 months
 - Not dealing with anything else
 - Not even deal with the crossbite
 - Adverse effects + + +

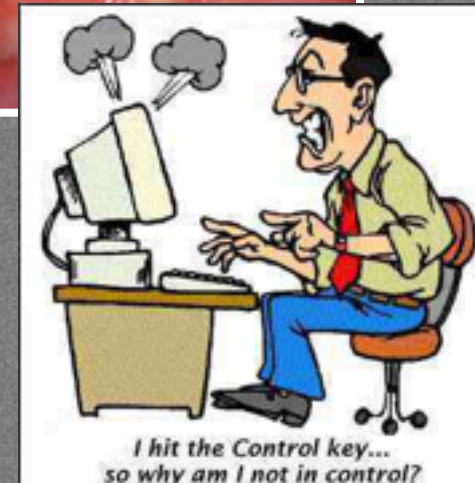


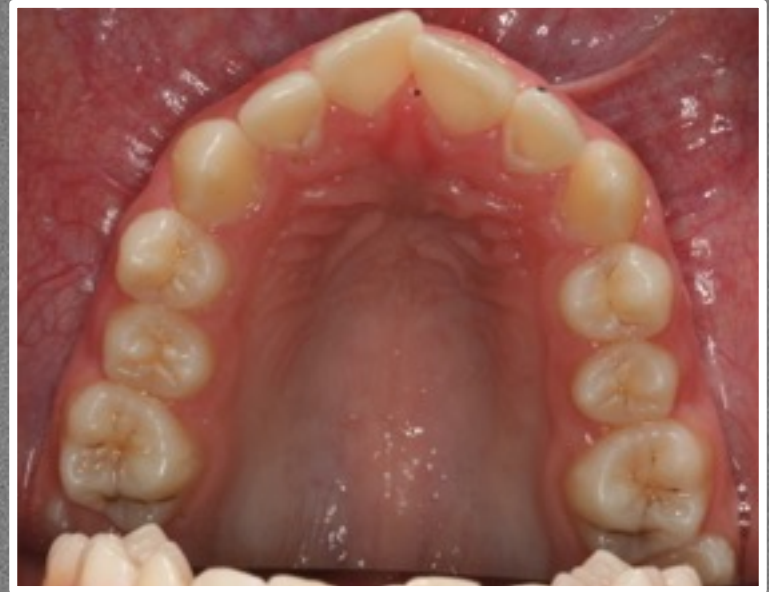
TRANSVERSE





TRANSVERSE

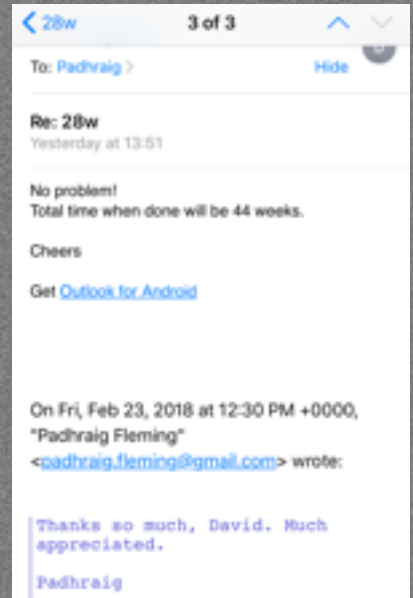






12 MONTHS

TRANSVERSE

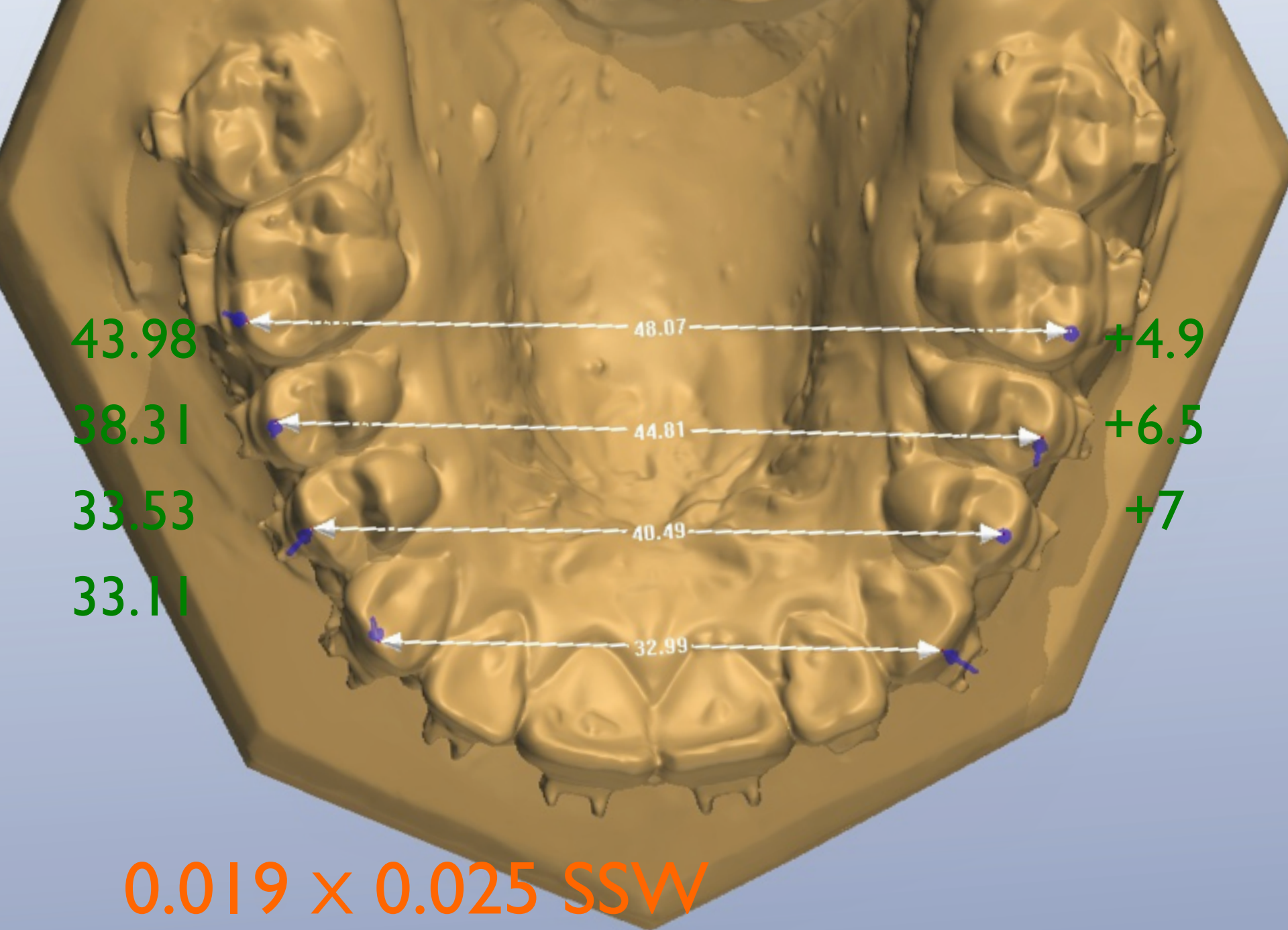


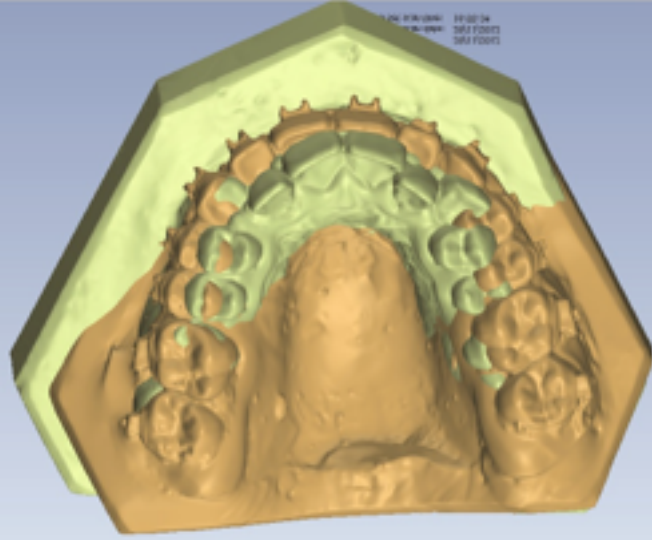
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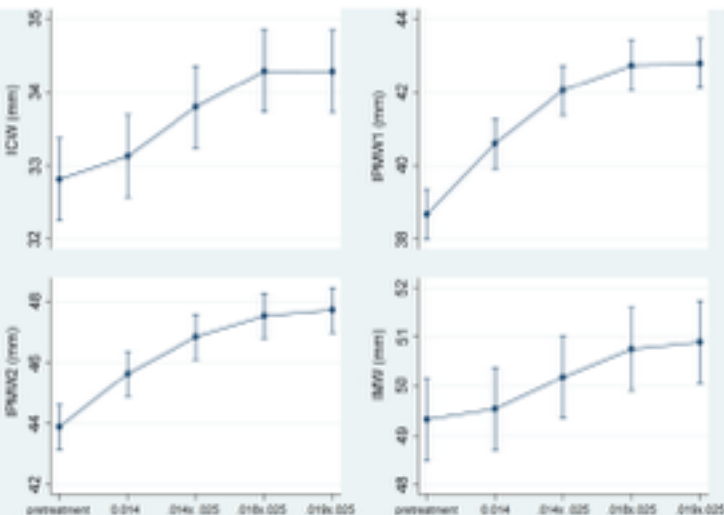




PRE-TREATMENT
POST-TREATMENT



JOURNAL OF DENTISTRY 43 (2014) 1–6



The timing of significant arch dimensional changes with fixed orthodontic appliances: Data from a multicenter randomised controlled trial



Padhraig S. Fleming^{a,*}, Robert T. Lee^b, Tom McDonald^b, Nikolaos Pandis^{c,d}, Ama Johal^a

EXTRACTION VS NON-EXTRACTION

THE EDITOR'S CORNER

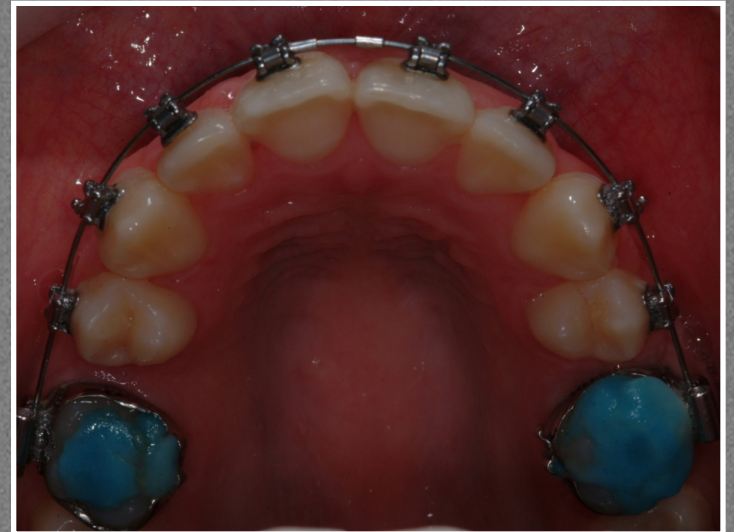
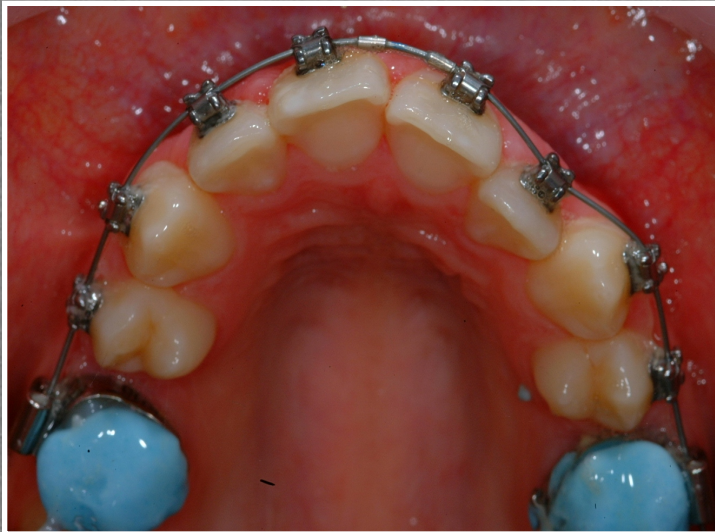
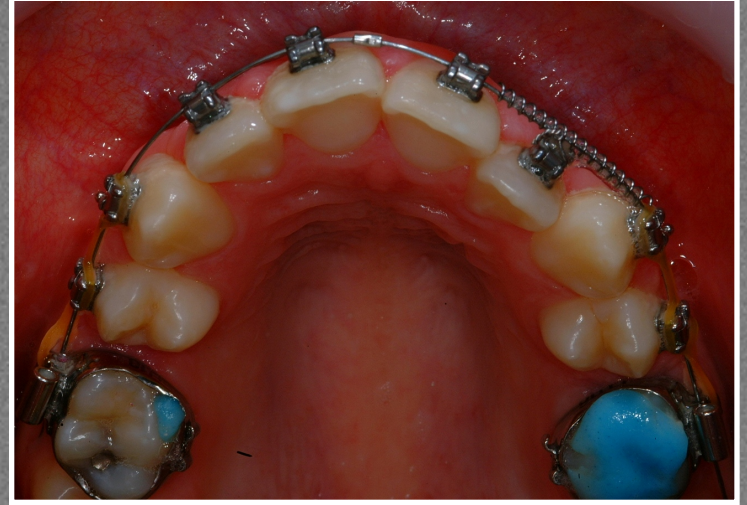
Pushing the Extraction Envelope

It seems that the great extraction debate is an inherent artifact of the specialty of orthodontics. I took up the subject in JCO as recently as December 2014, when Drs. Daniel J. Rinchuse, Lauren Sigler Busch, Daniel DiBagno, and Mauro Cozzani began a comprehensive two-part Overview of the extraction literature. Although the 2014 JCO Study of Orthodontic Diagnosis and Treatment Procedures (October 2014) reported that the median percentage of patients treated with extractions has declined from 35% in 1986 (the year of our first survey) to 15% in 2014, the debate seems to linger. Having just returned from a great AAO annual session in San Francisco, I am still

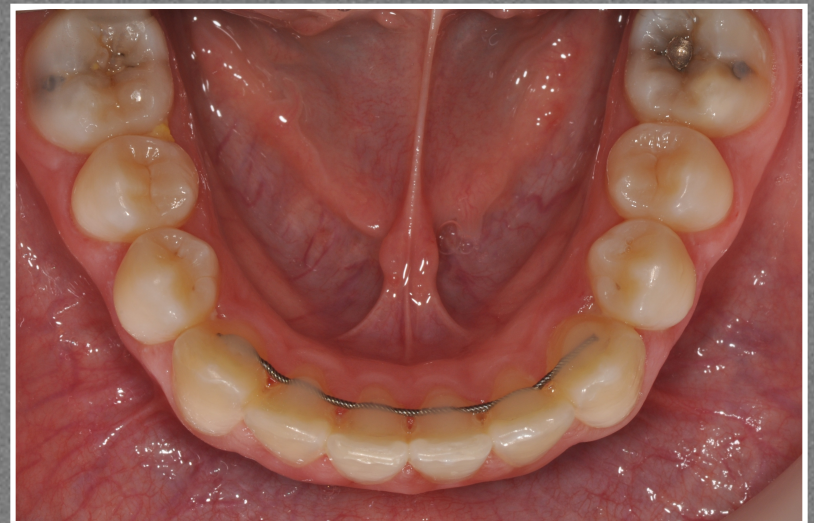


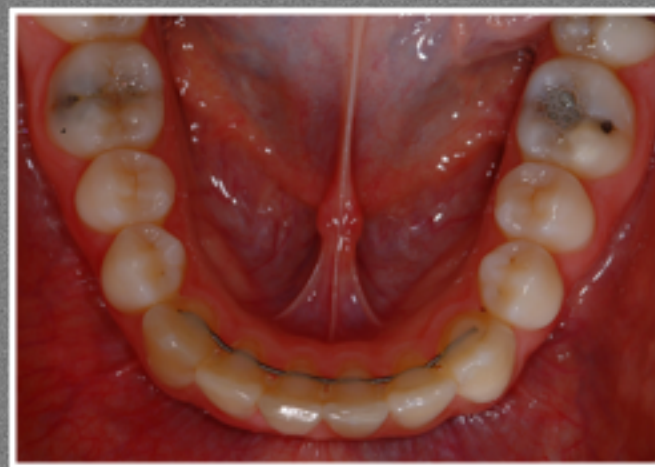
EXTRACTIONS: TIMING



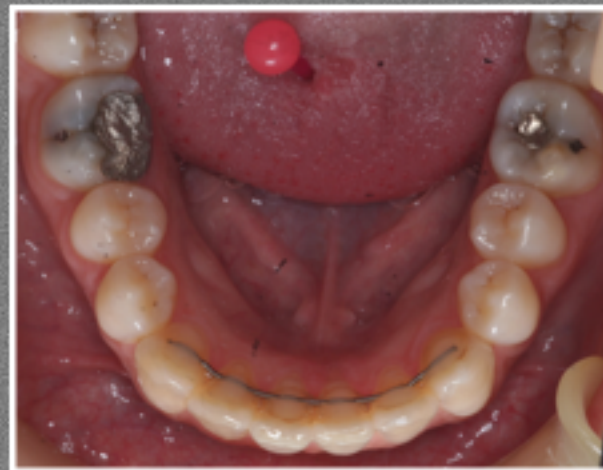


EXTRACTIONS: TIMING





2-YEAR RECALL



7-YEAR RECALL

EXTRACTIONS: TIMING



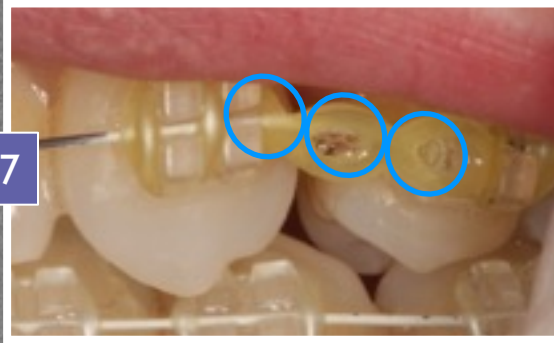
SEP 1ST 2017

ADULT PREMOLAR EXTRACTION

SEP 1ST 2017



OCT 8TH 2017



OCT 8TH 2017



ADULT PREMOLAR EXTRACTION

SEP 1ST 2017



OCT 8TH 2017



JAN 7TH 2018



ADULT PREMOLAR EXTRACTION



JULY 20TH 2018

ADULT PREMOLAR EXTRACTION



SEP 1ST 2017

ADULT PREMOLAR EXTRACTION



JULY 20TH 2018

ADULT PREMOLAR EXTRACTION

PRIORITISATION



“Beware that, when fighting monsters, you yourself do not become a monster... for when you gaze long into the abyss. The abyss gazes also into you.”

— Friedrich Nietzsche





DECEMBER 2018



APRIL 2019



MAY 2019



JUNE 2019



JULY 2019



AUGUST 2019

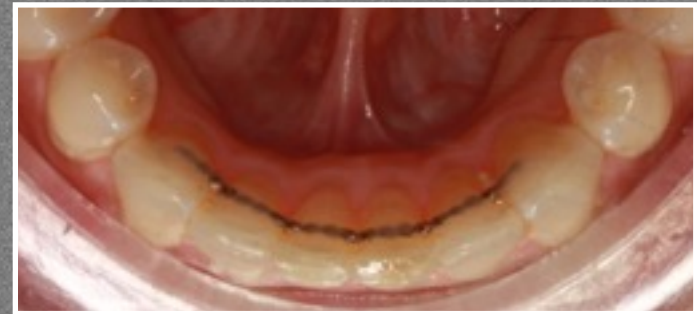
WHAT HAPPENED HERE?



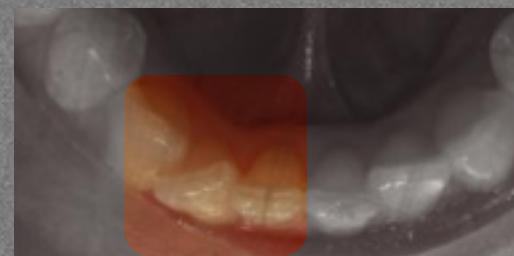
“Beware that, when fighting monsters, you yourself do not become a monster... for when you gaze long into the abyss. The abyss gazes also into you.”

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SIX MONTH SMILES®
Cosmetic Braces System



Treatment Time: AN ETERNITY



Treatment Time: AN ETERNITY



WHAT HAPPENED HERE?

DECEMBER 2014



JUNE 2015



SEPTEMBER 2015



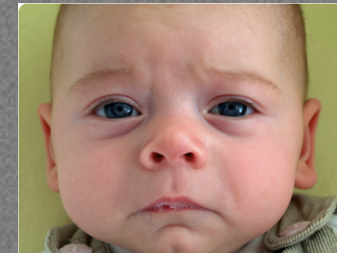
APRIL 2016



- Bone topography: 'fanning' of lower incisors
- Contact displacement 2 to 3 but NOT 1 to 2



CONCLUSIONS



Not turn our back on technology..
Key to progress
Healthy degree of skepticism



Barts and The London
School of Medicine and Dentistry

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PADHRAIG.FLEMING@GMAIL.COM

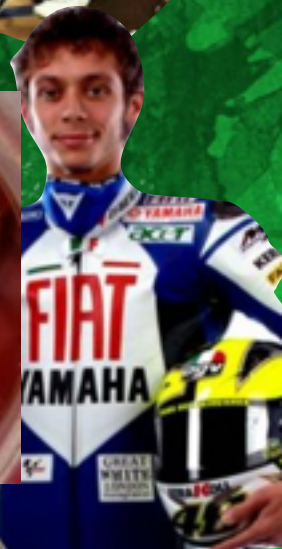
Sunset in Enniscrone



IT'S NOT WHAT WE USE IN ORTHODONTICS-
IT'S WHAT WE DO



italian
SPEED



PADHRAIG.FLEMING@GMAIL.COM