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APPENDICES

APPENDIX A

Component of The Peer Assessment Rating (PAR) Index

There are 11 components of the PAR Index to be assessed according to the criteria of Richmond et al.⁵³

Table A1 The PAR index components⁵³

1.	Upper right segment
2.	Upper anterior segment
3.	Upper left segment
4.	Lower right segment
5.	Lower anterior segment
6.	Lower left segment
7.	Right buccal occlusion
8.	Overjet
9.	Overbite
10.	Centreline
11.	Left buccal occlusion

Buccal segments

The measuring zone is from the mesial anatomical contact point of the first permanent molar to the distal anatomical contact point of the canine (Figure 2).

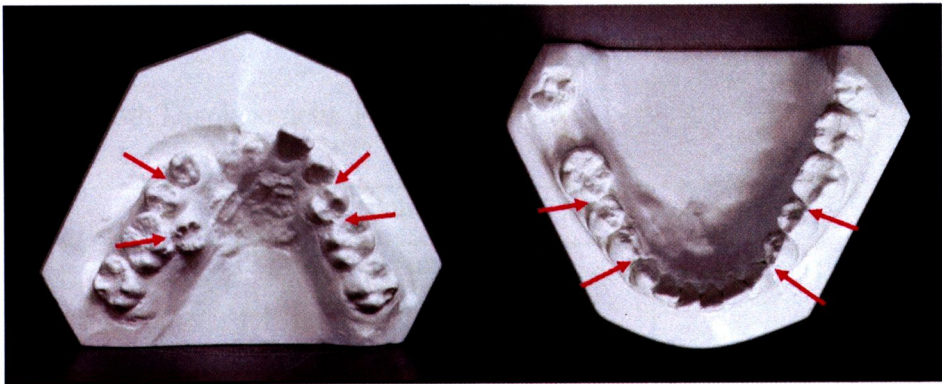


Figure 2 Showing the measuring zone of buccal segments in cleft lip and palate patient’s models

Anterior segments

The measuring zone is from the mesial anatomical contact point of the canine on one side to the mesial anatomical contact point of the canine on the opposite side (Figure 3).

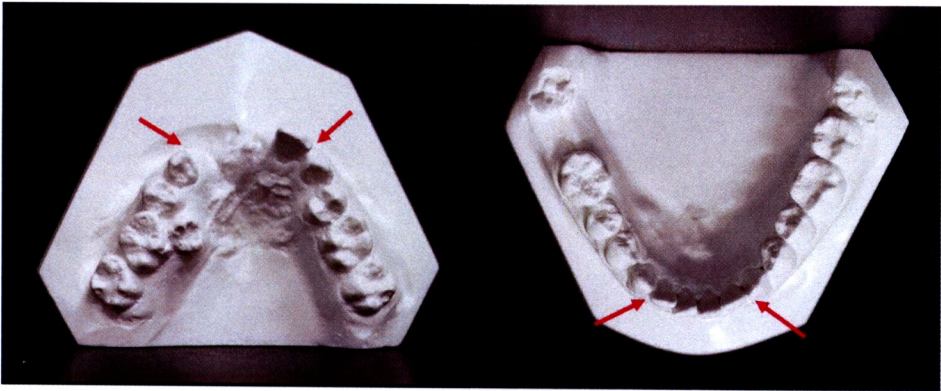


Figure 3 Showing the measuring zone of anterior segments in cleft lip and palate patient’s models

The occlusal features recorded are crowding, spacing, and impacted teeth. Displacements are recorded as the shortest distance between contact points of adjacent teeth. The greater the distance, the greater the PAR score.

An impacted tooth is recorded when the space for this tooth is less than or equal to 4 mm. Impacted canines are recorded in the anterior segment.

Table A2 Tooth Displacement PAR scores⁵³

Score	Discrepancy
0	0 mm to 1 mm
1	1.1 mm to 2 mm
2	2.1 mm to 4 mm
3	4.1 mm to 8 mm
4	greater than 8 mm
5	impacted teeth

Buccal occlusion

The recording zone is from the canine to the last molar (first, second, or third molar)(Figure 4). All discrepancies are recorded in three planes when the teeth are in occlusion.

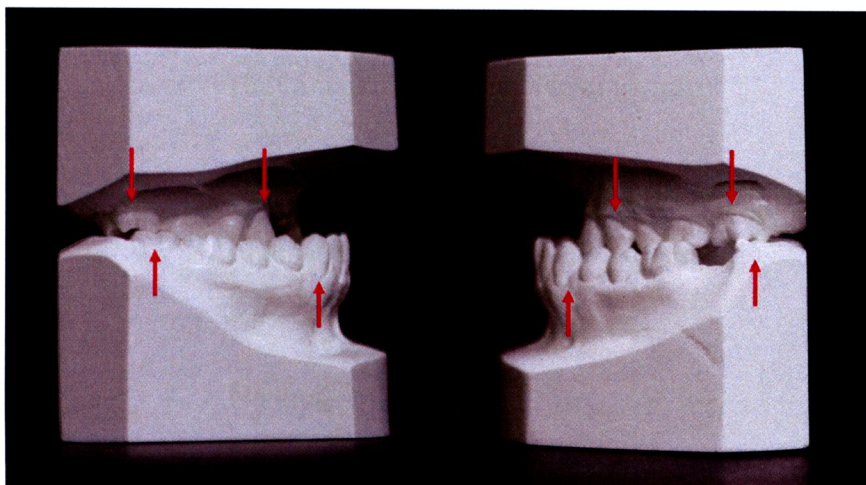


Figure 4 Showing the measuring zone of buccal occlusion in cleft lip and palate patient's models

Buccal occlusion assessments (Temporary developmental stages and submerging deciduous teeth are excluded.)

Table A3 Buccal occlusion PAR assessments⁵³

Score	Discrepancy
Antero-posterior	
0	Good interdigitation Class I, II and III
1	Less than half unit discrepancy
2	Half a unit discrepancy (cusp to cusp)
Vertical	
0	No discrepancy in interdigitation
1	Lateral open bite on at least two teeth greater than 2 mm
Transverse	
0	No cross-bite
1	Cross-bite tendency
2	Single tooth in cross-bite
3	More than one tooth in cross-bite
4	More than one tooth in scissor bite

Overjet

The recording zone is from the left to right lateral incisors (Figure 5). The most prominent aspect of any one incisor is recorded.

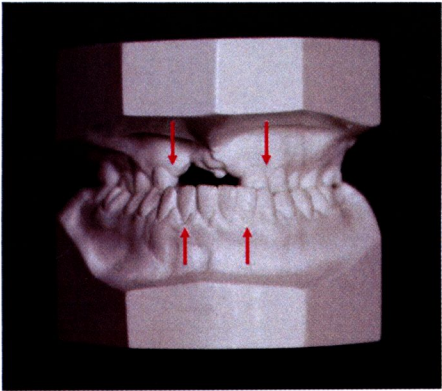


Figure 5 Showing the measuring zone of overjet and overbite in cleft lip and palate patient’s models

Table A4 Overjet PAR measurements⁵³

Score	Discrepancy
Over jet	
0	0 - 3 mm
1	3.1 - 5 mm
2	5.1 - 7 mm
3	7.1 - 9 mm
4	Greater than 9 mm
Anterior cross-bites	
0	No discrepancy
1	One or more teeth edge-to-edge
2	One single tooth in cross-bite
3	Two teeth in cross-bite
4	More than two teeth in cross-bite

Overbite

The recording zone includes the lateral incisors (Figure 5). The tooth with the greatest overlap is recorded as the vertical overlap or open bite.

Table A5 Overbite PAR measurements⁵³

Score	Discrepancy
Open bite	
0	No open bite
1	Open bite less than and equal to 1 mm
2	Open bite 1.1 – 2 mm
3	Open bite 2.1 – 3 mm
4	Open bite greater than or equal to 4 mm
Overbite	
1	Less than or equal to one third coverage of the lower incisor
2	Greater than one third, but less than two thirds coverage of the lower incisor
3	Greater than two thirds coverage of the lower incisor
4	Greater than or equal to full tooth coverage

Centreline

The center-line discrepancy is recorded in related to the lower incisors (Figure 6). If a lower central incisor has been extracted the measurement is not recorded.

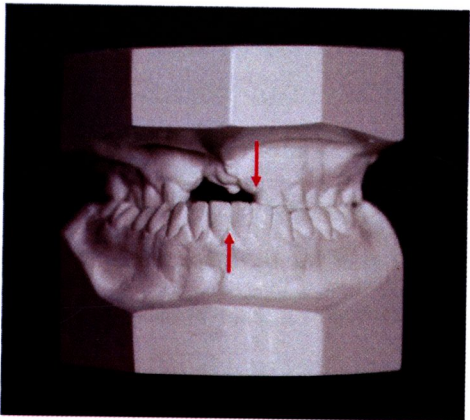


Figure 6 Showing centreling measurment

Table A6 Centre-line PAR assessments⁵³

Score	Discrepancy
0	Coincident and up to one quarter lower incisor width
1	One quarter to one half lower incisor width
2	Greater than one half lower incisor width

Table A7 Degree of improvement of PAR assessments⁵³

Score reduction (Pretreatment - Posttreatment)	Degree of improvement
≥ 22	Greatly improved
< 22 and ≥ 30%	Improved
< 22 and ≤ 30%	Worse-no different

Conventions for the PAR index⁵³

General

1. All scoring is accumulative.
2. There is no maximal cut-off level
3. The occlusion should be scored disregarding functional displacement (this cannot be determined from dental casts alone).
4. The contact points between first, second, and third molars are not recorded. The contact points between molars are so variable, however, severe deviations will produce a cross-bite, and will be noted in the buccal occlusions.
5. If the contact point displacement is as a result of poor restorative work (restorations or crowns), the displacement is not recorded.
6. Contact points between deciduous teeth are not recorded.
7. Extraction spaces are not recorded if the patient is to receive a prosthetic replacement. However, if space closure is intended, the distance between adjacent teeth should be noted.



Canines

1. Where there are missing canines, displacements resulting from discrepancies between the mesial contact point to the first premolar and the distal of the lateral incisor should be recorded in the anterior segment.

2. Canine cross-bites should be recorded in the overjet section.

3. Contact points between the canines and premolars are scored as follows: the distal contact point of the canine to the midpoint on the mesial surface of the adjacent premolar. (These contact points are so variable. When untreated normal occlusions were assessed this relationship seemed to be the most acceptable.)

Impactions

If a tooth is unerupted and displaced from the line of the arch either buccally or palatally due to insufficient space, this is regarded as an impaction. However, if the tooth is erupted and displaced, the displacement score is recorded.

Incisors

1. If there is agenesis of the upper incisor or the tooth has been lost due to trauma or caries the procedure is as follows:

(a) if the space is maintained (for a prosthesis), the distance between adjacent teeth is not recorded;

(b) if the space is to be closed, the distance between adjacent teeth is recorded.

2. When recording an overjet, if the tooth falls on the line the lower grade is recorded.

3. If a lower incisor has been extracted or is missing, the centerline is not recorded.

Molars

1. Contact points between first and second molars are not recorded. If the first molars have been extracted, the contact point of the second molar is recorded.

2. If the first molars have been extracted, the contact point of the second molar is recorded.

APPENDIX B
Reliability of the PAR Index

Table B1 The reliability of PAR Index score between two trained examiners by Intra-class Correlation Coefficient (ICC)

Reliability	ICC	95% CI of ICC
Intra-examiner1	0.989	0.956 – 0.997
Intra-examiner2	0.994	0.977 – 0.999
Inter-examiner (1 st time)	0.989	0.957 – 0.997
Inter-examiner (2 nd time)	0.988	0.951 – 0.977

APPENDIX C

Raw Data for Patient's General Characteristics

Table C1 Gender and age of all samples

No	Gender	Age (year)
1	Male	11
2	Female	11
3	Male	16
4	Male	13
5	Male	11
6	Female	18
7	Female	12
8	Female	12
9	Female	12
10	Male	12
11	Female	15
12	Male	18
13	Female	11
14	Male	21
15	Male	28
16	Female	18
17	Female	16
18	Female	17
19	Female	22
20	Male	13
21	Female	14
22	Female	17
23	Female	12
24	Female	13
25	Female	12
26	Female	15
27	Female	11
28	Male	16
29	Female	13
30	Female	18
31	Female	23
32	Female	30
33	Male	14
34	Male	11

APPENDIX D

Raw Data for PAR Index Score

PAR Index Score of Orthodontic Treatment Alone Group

Table D1 Case No. 1

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 3, (2-1) 0, (1-1) 0 (1-2) 2, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 3, (5-4) 2, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 1, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 2, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 2 V 0 T 1	AP 0 V 0 T 0		
Total	33	0	33	100

Table D2 Case No. 2

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 5, (5-4) 2, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 5, (2-1) 0, (1-1) 0 (1-2) 1, (2-3) 5	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 5, (5-4) 3, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 1, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 1 T 0 V 2	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 1 V 0 T 0		
Total	42	3	39	92.86

Table D3 Case No. 3

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 1, (1-1) 2 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 3, (5-4) 0, (4-3) 0	(6-5) 1, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 2, (5-4) 2, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 2	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	2	2		
Left buccal occlusion	AP 0 V 0 T 2	AP 0 V 0 T 0		
Total	22	3	19	86.36

Table D4 Case No. 4

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 2, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 0, (1-1) 3 (1-2) 3, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 2, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 0, (1-1) 0 (1-2) 1, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 2	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 3	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 0 V 0 T 0		
Total	36	1	35	97.22

Table D5 Case No. 5

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 2, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 5	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 1, (4-3) 0	(6-5) 1, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 1 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 1 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 3	AP 0 V 0 T 0		
Total	24	1	23	95.83

Table D6 Case No. 6

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 4, (1-1) 2 (1-2) 4, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 0, (4-3) 0	(6-5) 1, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 1, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 2, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 2	AP 2 V 0 T 0		
Overjet	OJ 3 x-bite 4	OJ 1 x-bite 0		
Overbite	openbite 4 OB 2	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 2	AP 0 V 0 T 0		
Total	36	4	32	88.89

Table D7 Case No. 7

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 5, (5-4) 2, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 2, (1-1) 3 (1-2) 0, (2-3) 3	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 1, (1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 4	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 1 x-bite 0		
Overbite	openbite 2 OB 0	openbite 0 OB 0		
Centerline	2	0		
Left buccal occlusion	AP 1 V 0 T 2	AP 0 V 0 T 0		
Total	42	1	41	97.62

Table D8 Case No. 8

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 3, (4-3) 3	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 0, (1-1) 3 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 2, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 2, (4-3) 3	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 2	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 3	openbite 0 OB 0		
Centerline	2	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 0 V 0 T 0		
Total	30	1	29	96.67

Table D9 Case No. 9

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 1, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 0, (1-1) 3 (1-2) 5, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 1		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 1		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 1, (1-1) 0 (1-2) 1, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 2	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	2	1		
Left buccal occlusion	AP 1 V 0 T 0	AP 1 V 0 T 0		
Total	29	5	24	82.76

Table D10 Case No. 10

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 1, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 2, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 2, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 5, (5-4) 3, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 3, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 1	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 0 V 0 T 2	AP 1 V 0 T 0		
Total	28	1	27	96.43

Table D11 Case No. 11

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 1, (2-1) 0, (1-1) 0 (1-2) 1, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 1, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 0, (1-1) 2 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 1 OB 0	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 0 V 0 T 0		
Total	20	1	19	95.00

Table D12 Case No. 12

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 2, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 1, (5-4) 2, (4-3) 0	(6-5) 1, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 1, (2-1) 1, (1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 2, (4-3) 2	(6-5) 1, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 1	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 2 V 0 T 4	AP 0 V 0 T 0		
Total	29	2	27	93.10

Table D13 Case No. 13

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 3, (5-4) 3, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 0, (1-1) 5 (1-2) 5, (2-3) 5	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 5, (5-4) 2, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 4	AP 2 V 0 T 0		
Overjet	OJ 3 x-bite 0	OJ 0 x-bite 0		
Overbite	openbite 1 OB 2	openbite 0 OB 0		
Centerline	2	1		
Left buccal occlusion	AP 2 V 0 T 1	AP 1 V 0 T 0		
Total	45	4	41	91.11

Table D14 Case No. 14

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1, (5-4) 2, (4-3) 1	(6-5) 0, (5-4) 1, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 0, (1-1) 2 (1-2) 4, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 2, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 2, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 2, (5-4) 2, (4-3) 0	(6-5) 2, (5-4) 2, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 1 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 0	OJ 0 x-bite 0		
Overbite	openbite 0 OB 3	openbite 0 OB 2		
Centerline	2	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 0 V 0 T 0		
Total	26	10	16	61.54

Table D15 Case No. 15

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 0, (1-1) 2 (1-2) 2, (2-3) 2	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 2, (2-1) 2, (1-1) 0 (1-2) 0, (2-3) 2	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1, (5-4) 2, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 2 V 0 T 4		
Overjet	OJ 0 x-bite 3	OJ 0 x-bite 0		
Overbite	openbite 1 OB 0	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 2 V 0 T 0		
Total	23	8	15	65.22

Table D16 Case No. 16

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 2, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 2, (2-1) 1, (1-1) 0 (1-2) 0, (2-3) 3	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 2, (5-4) 1, (4-3) 0	(6-5) 0, (5-4) 1, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 2 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 1	openbite 0 OB 0		
Centerline	2	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 0 V 0 T 1		
Total	26	4	22	84.62

Table D17 Case No. 17

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 5, (5-4) 2, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 2, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 2, (5-4) 1, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 1 T 0 V 3	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	1	1		
Left buccal occlusion	AP 0 V 0 T 3	AP 0 V 0 T 0		
Total	33	2	31	93.94

Table D18 Case No. 18

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 0, (4-3) 0	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 3, (5-4) 0, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 0 V 0 T 1		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 2 V 0 T 0		
Total	13	3	10	76.92

Table D19 Case No. 19

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0, (5-4) 1, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 0, (2-1) 1, (1-1) 1 (1-2) 3, (2-3) 5	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0, (5-4) 0, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower right segment	(6-5) 0, (5-4) 2, (4-3) 2	(6-5) 0, (5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0, (2-1) 0, (1-1) 1 (1-2) 1, (2-3) 0	(3-2) 0, (2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0, (5-4) 3, (4-3) 1	(6-5) 0, (5-4) 0, (4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 2 V 0 T 0		
Overjet	OJ 0 x-bite 3	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 0 V 0 T 0		
Total	36	2	34	94.44

Table D20 Case No. 20

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5)0,(5-4) 0,(4-3) 2	(6-5) 0,(5-4) 0, (4-3) 0		
Upper anterior segment	(3-2) 3, (2-1) 3,(1-1) 1 (1-2) 0, (2-3) 3	(3-2) 0,(2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1,(5-4) 0, (4-3) 1	(6-5) 0,(5-4) 0, (4-3) 0		
Lower right segment	(6-5) 2,(5-4) 2, (4-3) 0	(6-5) 0,(5-4) 0, (4-3) 0		
Lower anterior segment	(3-2) 0,(2-1) 0, (1-1) 1 (1-2) 1, (2-3) 1	(3-2) 0,(2-1) 0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1,(5-4) 0, (4-3) 0	(6-5) 0,(5-4) 0, (4-3) 0		
Right buccal occlusion	AP 1 T 0 V 2	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 0 V 0 T 3		
Total	37	4	33	89.19

Table D21 Case No. 21

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5)0, (5-4) 1, (4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 1,(2-1) 4, (1-1) 1 (1-2) 0, (2-3) 2	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 1, (5-4) 1, (4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Lower right segment	(6-5) 0, (5-4)2, (4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 2, (2-1)1, (1-1) 0 (1-2) 2, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)0, (5-4) 0, (4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 2 V 0 T 0		
Overjet	OJ 4 x-bite 0	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 1 V 0 T 0		
Total	32	3	29	90.63

Table D22 Case No. 22

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1,(5-4)0,(4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2)2,(2-1) 3,(1-1) 3 (1-2) 0, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5)2,(5-4) 0,(4-3) 2	(6-5)0,(5-4) 0,(4-3) 0		
Lower right segment	(6-5)1,(5-4) 1,(4-3) 0	(6-5)0,(5-4) 0,(4-3) 0		
Lower anterior segment	(3-2) 2,(2-1)1,(1-1) 2 (1-2) 1, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 1,(5-4)1,(4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 2 V 0 T 0		
Overjet	OJ 1 x-bite 2	OJ 0 x-bite 0		
Overbite	openbite 0 OB 1	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 1 V 0 T 0	AP 0 V 0 T 0		
Total	34	2	32	94.12

Table D23 Case No. 23

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 2,(5-4)0,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 0,(2-1)0,(1-1) 2 (1-2) 2, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5)5,(5-4) 2,(4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 0,(5-4)0,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2)0,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)2,(5-4) 2,(4-3) 2	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 1 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 3	OJ 0 x-bite 0		
Overbite	openbite 3 OB 0	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 0 V 0 T 2	AP 1 V 0 T 0		
Total	35	1	34	97.14

Table D24 Case No. 24

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0,(5-4)0,(4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 0,(2-1)2,(1-1) 3 (1-2) 5, (2-3) 4	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0,(5-4)0,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5)0,(5-4) 0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2)1,(2-1) 0,(1-1) 1 (1-2) 1, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)0,(5-4) 0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 1		
Overbite	openbite 1 OB 0	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 1 V 0 T 2	AP 0 V 0 T 0		
Total	33	1	32	96.97

Table D25 Case No. 25

PAR components	Pre-treatment scores		Post-treatment scores		Improvement	
					scores	%
Upper right segment	(6-5) 5,(5-4)2,(4-3) 0		(6-5) 0,(5-4)0,(4-3) 0			
Upper anterior segment	(3-2) 0,(2-1)1,(1-1) 0 (1-2) 2, (2-3) 0		(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0			
Upper left segment	(6-5) 0,(5-4)2,(4-3) 4		(6-5) 0,(5-4)0,(4-3) 0			
Lower right segment	(6-5)1,(5-4) 0,(4-3) 3		(6-5) 0,(5-4)0,(4-3) 0			
Lower anterior segment	(3-2)2,(2-1) 1,(1-1) 0 (1-2) 2, (2-3) 2		(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0			
Lower left segment	(6-5)2,(5-4) 0,(4-3) 3		(6-5) 0,(5-4)0,(4-3) 0			
Right buccal occlusion	AP 1 T 0 V 0		AP 0 V 0 T 0			
Overjet	OJ 0 x-bite 4		OJ 0 x-bite 0			
Overbite	openbite 0 OB 3		openbite 0 OB 0			
Centerline	1		0			
Left buccal occlusion	AP 1 V 0 T 3		AP 0 V 0 T 0			
Total	45		0		45	100

Table D26 Case No. 26

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5)2,(5-4) 0,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 4,(2-1)0,(1-1) 3 (1-2) 3, (2-3) 3	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 2,(5-4)0,(4-3) 3	(6-5)1,(5-4) 0,(4-3) 0		
Lower right segment	(6-5)0,(5-4) 0,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 2	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)2,(5-4) 0,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 1 T 0 V 0	AP 0 V 0 T 0		
Overjet	OJ 4 x-bite 0	OJ 0 x-bite 0		
Overbite	openbite 4 OB 0	openbite 1 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 1 V 0 T 0	AP 0 V 0 T 0		
Total	40	2	38	95

Table D27 Case No. 27

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 5,(5-4)2,(4-3) 3	(6-5)0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 2,(2-1)1,(1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 1		
Upper left segment	(6-5) 5,(5-4)2,(4-3) 0	(6-5)0,(5-4) 0,(4-3) 0		
Lower right segment	(6-5)5,(5-4) 0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 0,(2-1)1,(1-1) 0 (1-2) 3, (2-3) 2	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)5,(5-4) 0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 0 T 0 V 0	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 3	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0 V 0 T 0	AP 1 V 0 T 0		
Total	42	3	39	92.86

PAR Index Score of Combined Orthognathic Surgery Group

Table D28 Case No. 28

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 1,(5-4)0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2)5,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 0,(5-4)0,(4-3) 0	(6-5)0,(5-4) 0,(4-3) 0		
Lower right segment	(6-5)1,(5-4) 2,(4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Lower anterior segment	(3-2) 0,(2-1)1,(1-1) 0 (1-2) 1, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0,(5-4)2,(4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	0	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 1 V 0 T 0		
Total	30	1	29	96.67

Table D29 Case No. 29

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 2,(5-4)2,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2)2,(2-1) 0,(1-1) 0 (1-2) 5, (2-3) 0	(3-2) 1,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 5,(5-4)1,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 0,(5-4)1,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 1,(2-1)1,(1-1) 0 (1-2) 1, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0,(5-4)1,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 1 x-bite 0		
Overbite	openbite 0 OB 3	openbite 0 OB 0		
Centerline	2	1		
Left buccal occlusion	AP 2 V 0 T 3	AP 0 V 0 T 0		
Total	42	3	39	92.86

Table D30 Case No. 30

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 4,(5-4)0,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2)3,(2-1) 0,(1-1) 2 (1-2) 4, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5)3,(5-4) 0,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 0,(5-4)0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 2,(2-1)1,(1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0,(5-4)0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 1		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 1		
Overbite	openbite 0 OB 3	openbite 0 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 2 V 0 T 3	AP 1 V 0 T 2		
Total	42	5	37	88.10

Table D31 Case No. 31

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0,(5-4)0,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2)0,(2-1) 1,(1-1) 0 (1-2) 1, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 2,(5-4)3,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 1,(5-4)0,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2) 2,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 2	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5) 0,(5-4)2,(4-3) 0	(6-5) 1,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 1	AP 0		
	T 0	V 0		
	V 0	T 0		
Overjet	OJ 0	OJ 0		
	x-bite 1	x-bite 0		
Overbite	openbite 0	openbite 0		
	OB 0	OB 0		
Centerline	1	0		
Left buccal occlusion	AP 0	AP 0		
	V 0	V 0		
	T 3	T 0		
Total	24	1	23	95.83

Table D32 Case No. 32

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5) 0,(5-4)5,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 3,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 5,(5-4)2,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 2,(5-4)3,(4-3) 0	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2)0,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 2	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)3,(5-4) 1,(4-3) 0	(6-5) 1,(5-4)0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 0 OB 0		
Centerline	1	1		
Left buccal occlusion	AP 2 V 0 T 3	AP 0 V 0 T 0		
Total	44	3	41	93.18

Table D33 Case No. 33

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5)2,(5-4)2,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 5,(2-1)0,(1-1) 2 (1-2) 3, (2-3) 0	(3-2)0,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5)5,(5-4) 2,(4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Lower right segment	(6-5)2,(5-4) 1,(4-3) 1	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2)0,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 1	(3-2)0,(2-1)0, (1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)0,(5-4) 2,(4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 3	AP 0 V 0 T 1		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 2	openbite 0 OB 0		
Centerline	2	0		
Left buccal occlusion	AP 1 V 0 T 3	AP 0 V 0 T 0		
Total	49	1	48	97.96

Table D34 Case No. 34

PAR components	Pre-treatment scores	Post-treatment scores	Improvement	
			scores	%
Upper right segment	(6-5)5,(5-4)2,(4-3) 2	(6-5) 0,(5-4)0,(4-3) 0		
Upper anterior segment	(3-2) 3,(2-1)0,(1-1) 2 (1-2) 3, (2-3) 3	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Upper left segment	(6-5) 5,(5-4)1,(4-3) 0	(6-5)0,(5-4)0,(4-3) 0		
Lower right segment	(6-5) 0,(5-4)2,(4-3) 3	(6-5) 0,(5-4)0,(4-3) 0		
Lower anterior segment	(3-2)0,(2-1) 0,(1-1) 0 (1-2) 0, (2-3) 1	(3-2) 0,(2-1)0,(1-1) 0 (1-2) 0, (2-3) 0		
Lower left segment	(6-5)0,(5-4) 2,(4-3) 1	(6-5)0,(5-4) 0,(4-3) 0		
Right buccal occlusion	AP 2 T 0 V 2	AP 1 V 0 T 0		
Overjet	OJ 0 x-bite 4	OJ 0 x-bite 0		
Overbite	openbite 0 OB 0	openbite 1 OB 0		
Centerline	1	0		
Left buccal occlusion	AP 2 V 0 T 2	AP 1 V 0 T 0		
Total	48	3	45	93.75

APPENDIX E

Raw Data for PAR Index Score Improvement Categories

Table E1 PAR index score improvement categories

No.	improvement score (%)	improvement catagories
1	33 (100.00)	1
2	39 (92.86)	2
3	19 (86.36)	2
4	35 (97.22)	2
5	23 (95.83)	2
6	32 (88.89)	2
7	41 (97.62)	2
8	29 (96.67)	2
9	24 (82.76)	2
10	27 (96.43)	2
11	19 (95.00)	2
12	27 (93.10)	2
13	41 (91.11)	2
14	16 (61.54)	2
15	15 (65.22)	2
16	22 (84.62)	2
17	31 (93.94)	2
18	10 (76.92)	2
19	34 (94.44)	2
20	33 (89.19)	2
21	29 (90.63)	2
22	32 (94.12)	2
23	34 (97.14)	2
24	32 (96.97)	2
25	45 (100.00)	1
26	38 (95.00)	2
27	39 (92.86)	2
28	29 (96.67)	2
29	39 (92.86)	2
30	37 (88.10)	2
31	23 (95.83)	2
32	41 (93.18)	2
33	48 (97.96)	2
34	45 (93.75)	2

APPENDIX F
Ethical Committee Approval Documents



มหาวิทยาลัยขอนแก่น

หนังสือฉบับนี้ให้ไว้เพื่อแสดงว่า

โครงการวิจัยเรื่อง: การประเมินผลการรักษาทางทันตกรรมจัดฟันขั้นสุดท้ายในผู้ป่วยปากแหว่งเพดานโหว่ที่ได้รับการรักษาโดยการจัดฟันเพียงอย่างเดียวและที่ได้รับการรักษาโดยการจัดฟันร่วมกับการผ่าตัดขากรรไกรโดยคณินีวีวงศ์พัชร

EVALUATION OF THE FINAL PHASE TREATMENT OUTCOMES OF DENTO-SKELETAL PROBLEMS IN COMPLETE CLEFT LIP AND PALATE PATIENTS WITH AND WITHOUT SURGERY USING THE PEER ASSESSMENT RATING (PAR) INDEX

ผู้วิจัย:

1. นางสาวสุทธินันท์ คำนธ์ารกุล
คณะทันตแพทยศาสตร์ มหาวิทยาลัยขอนแก่น
2. รองศาสตราจารย์ทันตแพทย์หญิงทัศนีย์ วงศ์ริมงคล
คณะทันตแพทยศาสตร์ มหาวิทยาลัยขอนแก่น
3. รองศาสตราจารย์ทันตแพทย์มนเทียร มโนสุตประสิทธิ์
คณะทันตแพทยศาสตร์ มหาวิทยาลัยขอนแก่น

สำหรับเอกสาร:

1. เอกสาร ขอปรับปรุงแก้ไขโครงการวิจัยที่ผ่านการรับรองจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยขอนแก่น ฉบับที่ ศธ 0514.13.3/31 ลงวันที่ 21 มกราคม พ.ศ. 2554
2. แบบรายงานการแก้ไขปรับปรุงโครงการวิจัย คอคณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยขอนแก่น ลงวันที่ 21 มกราคม พ.ศ. 2554
3. ประวัติ และความชำนาญของนักวิจัย
 - รศ.ทพ. มนเทียร มโนสุตประสิทธิ์
 - รศ.ทพญ.ดร. ทัศนีย์ วงศ์ริมงคล

ลำดับที่ 4.6.04: 05/2554

เลขที่: HE 532082

วันหมดอายุ: 14 มีนาคม พ.ศ.2554

คณะกรรมการจริยธรรมการวิจัยในมนุษย์มหาวิทยาลัยขอนแก่น

Institutional Review Board Number; IRB00001189

สำนักงาน: อาคารสมเด็จพระศรีนครินทราบรมราชชนนี อนุสาวรีย์ (ชั้น 17)

Federal Wide Assurance; FWA00003418

โทร. (043) 366616, (043) 366617 โทรสาร (043) 366617

ได้ผ่านการรับรองจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์มหาวิทยาลัยขอนแก่น โดยยึดหลักเกณฑ์ตาม
คำประกาศเฮลซิงกิ (Declaration of Helsinki) และแนวทางการปฏิบัติการวิจัยทางคลินิกที่ดี (ICH GCP)

ให้ไว้ ณ วันที่ 7 กุมภาพันธ์ พ.ศ. 2554



(นายแพทย์เกรียงศักดิ์ เวทีวุฒาจารย์)

ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์มหาวิทยาลัยขอนแก่น

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โทร. (043) 366616, (043) 366617 โทรสาร (043) 366617

RESEARCH PUBLICATIONS

1. **Danthumrongkul S**, Manosudprasit M, Wangsrimongkol T. Evaluation of the final phase treatment outcomes of dento-skeletal problems in complete cleft lip and palate patients with and without surgery using the Peer Assessment Rating (PAR) Index. Proceedings of the 12th graduate research conference; 2011 Jan 28th; Khon Kaen, Thailand. Khon Kaen University.
2. **Danthumrongkul S**, Manosudprasit M, Wangsrimongkol T. Evaluation of the final phase treatment outcomes of dento-skeletal problems in complete cleft lip and palate patients with and without surgery using the Peer Assessment Rating (PAR) Index. Final programme booklet of the 87th Congress of the European Orthodontic Society; 2011 Jun 19th-23rd; Istanbul, Turkey. European Orthodontic Society.

VITAE



Name: Miss Suthinun Danthumrongkul.

Date of Birth: February 29th, 1980

Place of Birth: Bangkok Province, Thailand.

Address: 1/75, Moo 7, Ramindra Road, Tarang, Bangkaen,
Bangkok. Thailand 10220.

Education:

1997-2003	Bachelor Degree of Doctor of Dental Surgery. (Second Honor), Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand.
2008-2011	Student of the Master of Science in Orthodontics, Department of Orthodontics, Faculty of Dentistry, Khon Kaen University, Khon Kaen, Thailand.

