Quality and Efficiency Studies Comparing SureSmile and Conventional Treatment

Two peer-reviewed studies comparing the quality and efficiency of SureSmile to Conventional treatment were recently published. Both studies show that SureSmile enables doctors to provide better quality care in a shorter time. A summary of the studies is provided below.

STUDY DESIGN AND RESULTS SUMMARY

Study	Sample Size	Treatment Time Figure 1	SureSmile Treatment Efficiency	SureSmile Quality Improvement Figure 2
Saxe et al (WJO), 2010 University of Las Vegas [1]	SureSmile: 38 Conventional: 24 Doctors: 3	SureSmile: 14.7 months Conventional: 20 months	25% less (6 months)	14.3% better
Alford et al (Angle), 2011 University of Indiana [2]	SureSmile: 69 Conventional: 63 Doctors: 1	SureSmile: 15.8 months Conventional: 23 months	31% less (7.2 months)	11% better

Note: Both studies used consecutively treated, non-extraction cases.
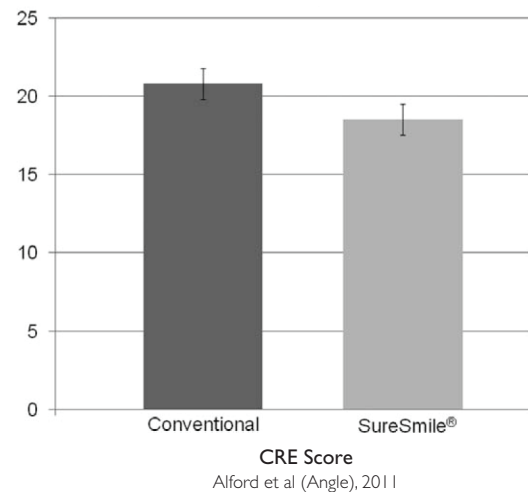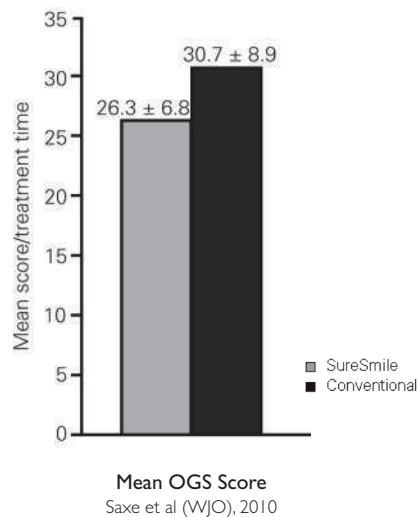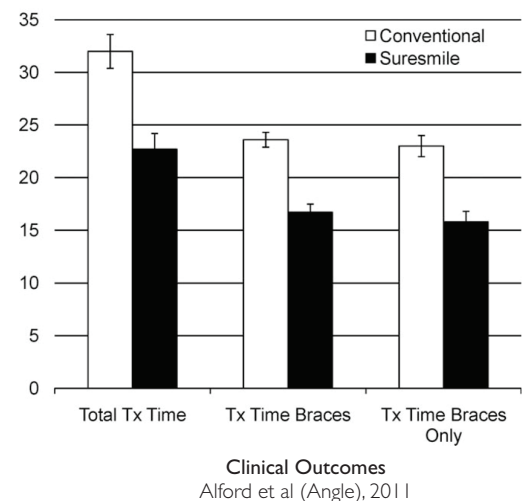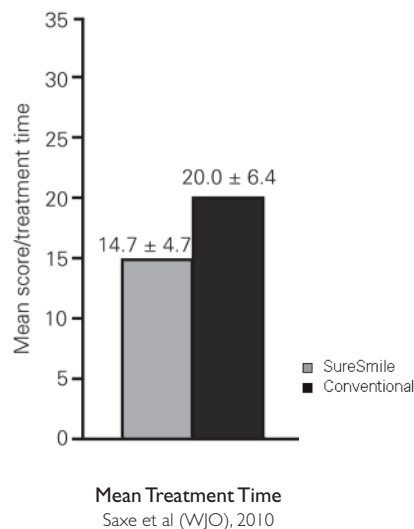
FIGURE 1
ABO OGS / CRE Scores

Mean OGS Score
Saxe et al (WJO), 2010

CRE Score
Alford et al (Angle), 2011

FIGURE 2
SureSmile vs. Conventional Treatment Time

Mean Treatment Time
Saxe et al (WJO), 2010

Clinical Outcomes
Alford et al (Angle), 2011

Individual Components Scores

Saxe et al (WJO), 2010
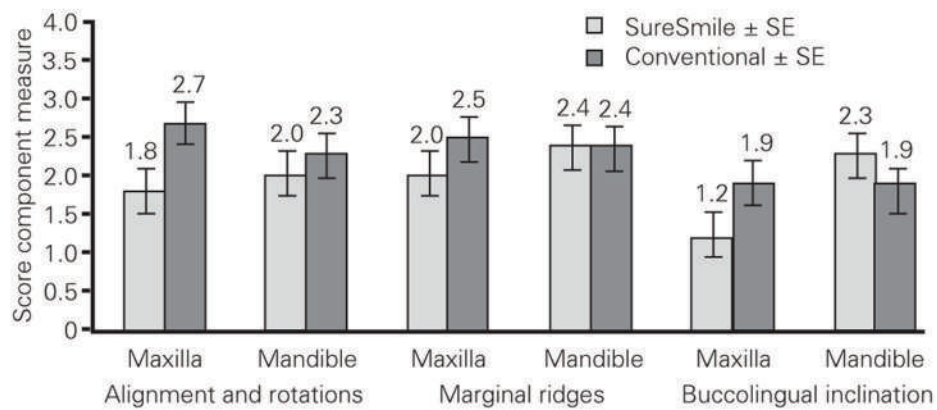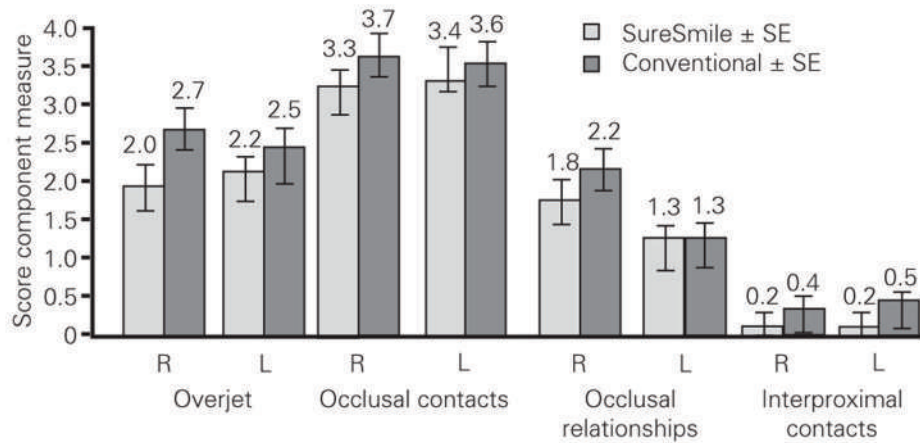
Component	SureSmile		Conventional		Mean difference	Significance (t test, P)
	Mean	SE	Mean	SE		
Alignment and rotations (max)	1.8	0.09	2.7	0.14	0.9	< .05
Alignment and rotations (man)	2.0	0.11	2.3	0.14	0.3	
Marginal ridges (max)	2.0	0.11	2.5	0.17	0.5	< .05
Marginal ridges (man)	2.4	0.12	2.4	0.16	0.0	
Buccolingual inclination (max)	1.2	0.13	1.9	0.18	0.7	< .05
Buccolingual inclination (man)	2.3	0.17	1.9	0.17	−0.4	
Overjet R	2.0	0.15	2.7	0.15	0.7	< .05
Overjet L	2.2	0.14	2.5	0.17	0.3	
Occlusal contacts	3.3	0.18	3.7	0.16	0.4	
Occlusal contacts lingual	3.4	0.18	3.6	0.18	0.2	
Occlusal relationships R	1.8	0.15	2.2	0.18	0.4	
Occlusal relationships L	1.3	0.13	1.3	0.13	0.0	
Interproximal contacts R	0.2	0.05	0.4	0.07	0.2	
Interproximal contacts L	0.2	0.05	0.5	0.09	0.3	< .05

SE = standard error, max = maxillary, man = mandibular.　　　　　　　　　　　🟥 = Lower

Individual Components Scores
Alford et al (Angle), 2011
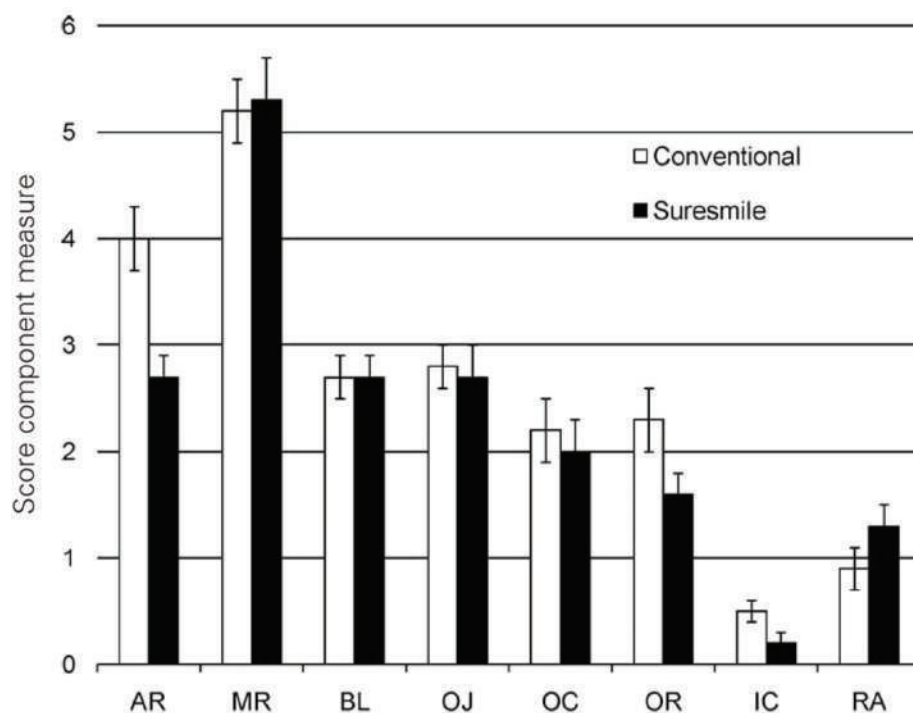
	SureSmile (n = 69)			Conventional (n = 63)		
	Min	Max	Mean (SE)	Min	Max	Mean (SE)
Age (start of treatment)	13	60	18.1 (0.9)	12	60	17.8 (0.8)
DI (Discrepancy Index)	1	33	13.2 (0.9)	3	40	15.8 (0.9)
AR (alignment and rotations)	0	7	2.7 (0.2)	0	10	4.0 (0.3)
MR (marginal ridges)	0	16	5.3 (0.4)	0	12	5.2 (0.3)
BL (buccal-lingual)	0	8	2.7 (0.2)	0	6	2.7 (0.2)
OJ (overjet)	0	10	2.7 (0.3)	0	9	2.8 (0.2)
OC (occlusal contacts)	0	10	2.0 (0.3)	0	12	2.2 (0.3)
OR (occlusal relationship)	0	7	1.6 (0.2)	0	10	2.3 (0.3)
IC (interproximal contacts)	0	2	0.2 (0.1)	0	5	0.5 (0.1)
RA (root angulation)	0	5	1.3 (0.2)	0	7	0.9 (0.2)
Total CRE score	6	38	18.5 (1.0)	9	38	20.8 (0.8)
Tx time: total	7	78	22.7 (1.5)	14	71	32.0 (1.6)
Tx time: in braces alone	7	35	16.7 (0.8)	12	38	23.6 (0.7)
Tx time: in braces-only patients	7	31	15.8 (1.0)	14	31	23.0 (1.0)

[a] CRE indicates cast/radiographic evaluation; max, maximum; min, minimum; and Tx, treatment.   ▉ = Lower

Notes

- Mandibular Buccal Lingual inclination for Conventional slightly better(1.9 (Conv.) and 2.3 (SS)) (N.S.)[1]

- Mandibular Buccal Lingual inclination no difference SureSmile vs Conventional[2]

- Root angulation was slightly better for conventional (0.9(Conv.) and 1.3(SS)) (N.S.)[2]

  - "The ABO acknowledges the distortion that frequently occurs within panoramic radiographs." [3]

  - "Panoramic images provide less reliable information regarding mesiodistal tooth angulations and might exhibit deviations in both mesial and distal directions for all teeth." [4]

1. Saxe et al. Efficiency and Effectiveness of SureSmile(WJO), Volume 11, Number 1, 2010
2. Alford et al. Clinical outcomes for patients finished with the SureSmile® method compared with conventional fixed orthodontic therapy (Angle Orthodontics) Jan 24, 2011
3. ABO OGS http://www.americanboardortho.com/professionals/downloads/Grading%20System%20Casts-Radiographs.pdf
4. Bouwens et al Comparison of mesiodistal root angulation with posttreatment panoramic radiographs and cone-beam computed tomography (AJO-DO) Jan 2011; 139(1):126-32