Appendix 2

Equipment table

	Study ID	Author	Primary equipment model detail	Speed/Power	Baseline suction?	Comparative study?	Procedure Duration	Additional Information
Ultrasonic n=44	5	Balcos et al. 2019	Woodpecker UDS-K piezoelectric ultrasonic scaler	3 frequency levels (3-5) tested	**YES** Simple or surgical suction (comparison)	Simple v surgical suction 3 frequencies tested	10 min	Comparison of simple or surgical suction testing 3 ultrasonic frequency levels
	6	Barnes et al. 1998	magnetostrictive ultrasonic scaler	25,000 cycle per second	**YES** Large diameter (8x10mm) disposable suction tip (HVE) (3-5cm away from operating site). attached to the central evacuation unit to capture aerosols	No	30 Seconds	
	8	Bentley et al. 1994	NOT STATED	NOT STATED	**YES** Conventional saliva ejector	No	30 minutes (aerosol with ultrasonic)	

	9	Choi et al. 2018	NOT STATED	NOT STATED	**NOT STATED**	Mouthrinse -gargling with and without 0.01% chlorhexidine before US scaling	not stated	
	10	Chuang et al. 2014	Bobcat Cavitron, Dentsply	25 kHz power (supplied with distilled water)	**YES** Regular-power fluent suction (low volume)	No	30 sec gargling Scaling time: approx 15 min	
	16	Devker et al. 2012	Piezoelectric with ultrasonic inserts [Varios (550 NSK Japan)]	NOT STATED	**YES** **Low volume suction** **High volume suction** - HIGH VOLUME EVACUATOR COMPARISON WITH & WITHOUT HVE (vacuum of HVE attachment standardised at 140 mm Hg)	High Volume Evacuator (HVE) with and without suction 3 grps: (i) Mouthrinse - Rinse of 0.2% chlorhexidine gluconate prior to scaling. (ii): HVE attachment during scaling (iii): Mouthrinse - Rinse of 0.2% chlorhexidine gluconate prior to scaling & use of HVE attachment. Control grp: split-mouth design No suction or mouth rinse	10 min	Comparison with and without HVE suction

						and Mouthrinse and HVE alone or together		
	21	Feres et al. 2010	Cavitron Select, Dentsply with distilled water	NOT STATED	**NOT STATED**	Mouthrinse: (i) 0.05% CPC (ii) 0.12% CHX (iii)water (iv) no rinse	10 min	N/A
	22	Fine et al. 1992	Cavitron Model 3000, Dentsply International, York, PA.	Medium setting	**NOT STATED**	Mouthrinse: (i) antiseptic (ii) 5% hydroalcohol control rinse	10 min	mouthwash split mouth
	23	Fine et al. 1993	Cavitron Model 3000, Dentsply	NOT STATED	**NOT STATED**	No	ultrasonic scaling **5 min** (hand scaling 30 min)	Air flow vacuum set at 55 cubic feet/hour.
	24	Fine et al. 1993	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: NOT STATED	**NOT STATED**	Control v antiseptic mouthrinse	10 min	N/A
	25	Graetz et al. 2014	3 devices 1) **sonic scaler** AIR (Synea, W&H, Bürmoos, Austria) and 2). T**wo ultrasonic hand-**	NOT STATED	**YES** Saliva ejector and high-speed evacuation	Compared high volume cannula tips	2 min	1st arm: saliva ejector; 2nd arm: high-speed

			pieces *TIG (Tigon+, W&H, Bürmoos, Austria) and *VEC (Vector, Dürr, Bietigheim-Bissingen, Germany) with slimline tips		(standardized suction of 300 S ml/min and a depression of 180 mbar)			evacuation system
	29	Greenier 1995	**MODEL DETAILS**: NOT STATED	NOT STATED	**NOT STATED**	No	Ultrasonic scaling=15 min	
	31	Gupta et al. 2014	**MODEL DETAILS**: Piezoelectric	Not stated	**YES** MOTORIZED SUCTION	YES 3 GROUPS - mouthrinse a) HRB; 2) 0.2% chlorhexidine gluconate (CHX) and 3) water	30 min	High volume suction
	32	Hallier et al. 2010	**MODEL DETAILS**: NOT STATED	NOT STATED	**YES** HIGH VOLUME SUCTION	YES Compares with different procedures - cavity prep, H&E and tooth extraction	NOT STATED	Suction? HVA
	33	Harrel et al. 1996	**MODEL DETAILS**: NOT STATED	Scaler set at full power from 3 settings	**YES** COMPARISON with and without High Volume Evacuator attachment (used at 140mm/Hg)	With and without High Volume Evacuator attachment	1 min	water coolant volume 17.5ml per min

	34	Harrel et al. 1998	**MODEL DETAILS** x4 US scalers - 1)Autotuned Magnetostrictive 25,000-Hz, 2)Autotuned Magnetostrictive 30,000-Hz , 3)Manually Tuned Magnetostrictive 25,000-Hz and 4)Autotuned Piezoelectric 42,000-Hz. Tested with variety of INSERTS and CONTROL Gracey 1/2 hand curette	**SPEED/POWER**: inserts tested at high, med and low and 2 power settings for manually tuned unit - tuned/detuned	**NO**	Comparison of ultrasonic power levels and tip	3 sec	No coolant water
	37	Holloman et al. 2015	**MODEL DETAILS** 30kh Cavitron Select SPS with Dentsply 30k slimline scaling tip	water dispensed & power settings -50% power 50% lavage.	**YES -** LOW VOLUME SUCTION	YES LOW VOLUME SUCTION v LOW VOLUME SUCTION WITH IOSLITE DEVICE	Mean (SD) Times scaling- Control 10.08 (2.75) & Test 9.92 (2.25)	suction - set on high & low
	41	Jawade et al. 2016	**MODEL DETAILS**: NS (universal tip)	NOT STATED	**YES** - HIGH VOLUME SUCTION ALL	Ultrasonic Coolant- (i) Distilled water (ii) Povidone iodine (iii) Chlorhexidine	20 minutes	N/A

	44	Kaur et al. 2014	**MODEL DETAILS**: NOT STATED ultrasonic scaler (universal tip)	NOT STATED	**YES** - SALIVA EJECTOR FOR ALL	Mouthrinse- (i) 0.2% Chlorhexidine (ii) Povidone iodine (iii) irrigation Ozone	10 minutes	Saliva ejector
	45	King et al. 1997	**MODEL DETAILS**: magnetostrictive ultrasonic scaler Cavitron Model 3000, Dentsply & univeral insert	NOT STATED	**YES** - WITH AND WITHOUT HIGH VOLUME SUCTION TIP (disposable high-volume suction tube attached to the handle of the ultrasonic scaler and surrounded the tip of the insert)	WITH AND WITHOUT HIGH VOLUME SUCTION TIP (aerosol reduction device)	5 minutes	NA
	48	Labaf et al. 2011	**MODEL DETAILS**: Cavitron (Dentsply, USA)	Not stated	**NOT STATED**	Compares endodontic, prosdthodontic and periodontic treatments CFUs	3 hours	NA
	90	Miller et al. 1971	**MODEL DETAILS**: Cavitron Ultrasonics Inc ultrasonic curette	NOT STATED	**NOT STATED**	No	30 sec	

	52	Mohan and Jagannathan 2016	**MODEL DETAILS**:NOT STATED **SPEED/POWER**: NOT STATED		**NOT STATED**	Preprocedural Mouthrinse - 0.2% chlorhexidine v Saline	NOT STATED	N/A
	54	Narayana et al. 2016	**MODEL DETAILS**: EMS ultrasonic scaler	NOT STATED	**YES** - COMPARISON WITHOUT and WITH high volume evacuation ran at 30–40 psi kg/cm^2.	Mouthrinse of chlorhexidine 0.12% alone With HVE & rinse v without HVE & rinse And without HVE or mouthrinse	NOT STATED	High volume evacuation
	55	Neiatidanesh et al. 2013	**MODEL DETAILS**: Cavitron, Dentsply, Addlestone, UK	NOT STATED	**NOT STATED**	Compares splatter generated by Periodontal and Prosthetic procedures	44 min (average duration of the procedure)	N/A
	59	Prospero 2003	**MODEL DETAILS**: NOT STATED	NOT STATED	**NOT STATED**	No	NOT STATED	N/A
	60	Purohit et al. 2010	**MODEL DETAILS:** Magnetostrictive scaler	30 kHz, with a water pressure of 0.3 MPa during each treatment.	**NOT STATED**	Mouthrinse - with chlorhexidine 0.12% v without (water rinse)	NOT STATED	N/A
	61	Ramesh et al. 2015	**MODEL DETAILS**: Piezoelectric scaler unit	NOT STATED	**YES** - HIGH VOLUME SUCTION ALL	Mouthrinse - with chlorhexidine 0.12% v without (saline). Grp3 - topical solution of 1.5%	5 min	High vacuum suction

						hydrogen peroxide pre CHX rinse		
	62	Rao et al. 2015	**MODEL DETAILS**: Piezoelectric	NOT STATED	**YES** - Motorized suction ALL	Mouthrinse - chlorhexidine 0.2% v without rinse	30 min	Motorized suction
	64	Reddy et al. 2012	**MODEL DETAILS**: NOT STATED	NOT STATED	**NOT STATED**	Mouthrinse - (3 groups) (1) tempered chlorhexidine 0.2% v (2) non-tempered chlorhexidine 0.2% v (3) sterile water	NOT STATED	N/A
	65	Retamal-Valdes et al. 2017	**MODEL DETAILS**: Cavitron Select, Dentsply, York, Pa	Frequency of 25 kHz on less than 50% power	**NOT STATED**	Mouthrinse - (i) 0.075% CPC, 0.28% Zn, 0.05% F rinse v (ii) Water v (iii) chlorhexidine 0.2% v (iv) no rinsing	10 min	N/A
	66	Rivera-Hidalho et al. 1999	**MODEL DETAILS**: (Cavitron 3000)+ (S) design insert (Through flow insert TFI-10, Dentsply Preventive Care)+(F) design insert (Focused spray insert FSI-10, Dentsply Preventive Care, York, PA).	30,000 cycle per second set on max. power	**YES/NO** - WITH & WITHOUT AEROSOL REDUCTION DEVICE (ARD)	WITH & WITHOUT AEROSOL REDUCTION DEVICE for x2 inserts - focused spray and standard ultrasonic insert	1 min	N/A

	69	Sadun et al. 2020	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: NOT STATED	**NOT STATED**	Mouthrinse -20 mL of Listerine v dyed sterile water (control)	NOT STATED	N/A
	70	Saini 2015	**MODEL DETAILS**: EMS ultrasonic scaler	**SPEED/POWER**: Coolant water flow and power settings adjusted to a medium mode and coolant water flow volume adjusted to 15 ml per min	**NOT STATED**	Mouthrinse- (i) Chlorine Dioxide ClO_2 (ii) water (iii) 0.2% CHX	10 min	N/A
	71	Sawhney et al. 2015	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: Medium power setting and medium water pressure	**YES/NO** - WITH AND WITHOUT HIGH SUCTION DEVICE	SPLIT-MOUTH DESIGN WITH AND WITHOUT HIGH SUCTION DEVICE Mouthrinse- (i) Water (ii) Chlorine Dioxide ClO_2 (iii) Listerine	NOT STATED	High volume evacuation
	72	Serban et al. 2013	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: NOT STATED	**NOT STATED**	Mouthrinse- (i) Sterile Water	NOT STATED	

						(ii) 0.1% Chlorhexidine		
	73	Sethi et al. 2019	**MODEL DETAILS:** NOT STATED	**SPEED/POWER**: NOT STATED	**YES** - SALIVA EJECTOR ALL	Ultrasoninc coolant- (i) Chlorhexidine (ii) Cinamon extract (iii) Distilled water	20 min	
	74	Shetty et al. 2013	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: NOT STATED	**NOT STATED**	Mouthrinse- (i) Water (ii) 0.2% Chlorhexidine (iii) Tea tree oil	10 min	N/A
	76	Singh et al. 2016	**MODEL DETAILS**: Piezoelectric ultrasonic unit	**SPEED/POWER**: 'Constant' frequency and 'constant' water coolant pressure	**YES** - motorized suction ALL	No	20 min	Motorized suction
	78	Swaminathan et al. 2014	**MODEL DETAILS:** Piezoelectric ultrasonic unit.	**SPEED/POWER:** Unit set at 7 KiloHertz for all patients	**YES** - High speed evacuator/ suction used for ALL.	Mouthrinse- (i) Saline (ii) 0.2% Chlorhexidine (iii) Herbal	30 min	N/A

	80	Timmerman et al. 2004	**MODEL DETAILS:** Piezoelectric ultrasonic scaler (Piezo Master 400, EMS, Nyon, Switzerland) with an exchangeable 250 ml coolant reservoir	**SPEED/POWER:** NOT STATED	**YES** - either high-volume evacuation (HVE) canula of 8.0mm in diameter suction flow of 6.0 l/min for HVE **or** conventional dental suction (CDS) canula of 3.3mm in diameter with a suction flow of 1.1 l/ min for CDS	High volume evacuation (HVE) & conventional dental suction (CDS)	40 min	The use of the HVE and the CDS was randomly assigned within each patient. For both types of suction, regular, commerciall y available, disposable tubes were used: a canula of 8.0mm in diameter with a suction flow of 6.0 l/min for HVE and a canula, 3.3mm in diameter with a suction flow of 1.1 l/ min

								for CDS (Fig. 2). The HVE was handled by an assistant.
	83	Veena et al. 2015	**MODEL DETAILS:** Autotuned Magnetostrictive ultrasonic scaler	**SPEED/POWER:** 25,000 Hz/	**YES** - SIMULTANEOUS USE OF A CONVENTIONAL LOW VOLUME SALIVA EJECTOR	No	15 min	low volume saliva ejector
	85	Watanabe et al. 2013	**MODEL DETAILS:** Solfy F, Morita Mfg. Corp,. Tokyo	**SPEED/POWER:** NOT STATED	**NOT STATED**	No	NOT STATED	N/A
	87	Yamada et al. 2011	**MODEL DETAILS**: NOT STATED	**SPEED/POWER**: NOT STATED	**NOT STATED**	PROCEDURES 3RD MOLAR EXT, FULL CROWN PREP, INLAY CAVITY PREP AND ULTRASONIC SCALING	NOT STATED	Extraoral evacuator systems (2 at different distances 50cm, 100cm)