

Evaluating aerosol and splatter following dental procedures: addressing new challenges for oral healthcare and rehabilitation

Allison JR, Currie CC, Edwards DC, Bowes C, Coulter J, Pickering K, Kozhevnikova E, Durham J, Nile CJ, Jakubovics N, Rostami N, Holliday R

Supplementary Table 1

Position on operator/assistant/mannequin	Min								
	Mean (SD)								
	Max Sum [n]	Total surface area (mm ²)				Fluorescence (RFU)			
		Anterior crown prep (no suction) [†]	Anterior crown prep with suction [‡]	Anterior crown prep with suction and assistant [§]	Ultrasonic scaling with suction [¶]	3-in-1 spray with suction [#]	Anterior crown prep (no suction) [†]		
							Initial collection	30-40 min post-procedure collection	60-70 min post-procedure collection
Mannequin	Upper Left	98.69	105.02	370.96	213.92	247.77	777	0	0
		269.27	162.92	398.40	269.82	371.86	43,286	0	0
		(237.35)	(61.11)	(44.60)	(49.29)	(121.58)	(51,113)	(0)	(0)
		540.33	226.80	449.86	307.01	490.78	100,000	0	0
		807.81	488.77	1,195.19	809.46	1,115.59	129,858	0	0
	Upper Right	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[2]
		43.06	30.40	19.28	88.91	41.35	997	0	0
		111.44	35.59	28.71	111.02	148.61	52,658	0	0
		(59.47)	(8.94)	(10.68)	(35.16)	(123.87)	(49,643)	(0)	(0)
		151.13	45.91	40.30	151.56	284.91	100,000	0	0
	Lower Left	334.31	106.76	86.14	333.06	445.83	157,973	0	0
		[3]	[3]	[3]	[3]	[3]	[3]	[3]	[2]
		14.07	4.48	10.46	0.00	11.24	680	0	0
		38.97	9.77	12.68	0.01	21.53	5,353	0	0
		(29.90)	(4.61)	(2.43)	(0.02)	(11.32)	(5,913)	(0)	(0)
	Lower Right	72.13	12.97	15.27	0.03	33.66	12,000	0	0
		116.91	29.30	38.03	0.03	64.59	16,058	0	0
		[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
		0.82	1.69	0.02	0.00	1.38	743	0	0
		2.75	4.11	0.95	0.01	3.87	3,213	0	0
Operator	Head	(2.65)	(2.45)	(0.96)	(0.01)	(4.08)	(3,572)	(0)	(0)
		5.77	6.59	1.94	0.02	8.58	7309	0	0
		8.25	12.34	2.85	0.02	11.62	9639	0	0
		[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
		0.00	0.08	0.00	0.00	0.00			
	Left chest	0.14	0.53	0.20	0.01	0.00			
		(0.19)	(0.61)	(0.34)	(0.01)	(0.00)			
		0.27	1.23	0.60	0.02	0.00			
		0.27	1.58	0.60	0.02	0.00			
		[2]	[3]	[3]	[3]	[3]			
	Right chest	469.58	269.52	222.95	206.68	19.51			
		535.70	484.97	423.03	308.71	76.51			
		(59.23)	(199.98)	(212.60)	(89.07)	(50.68)			
		583.91	664.65	646.27	370.95	116.46			
		1,607.11	1,454.90	1,269.10	926.12	229.53			
		[3]	[3]	[3]	[3]	[3]			
		0.53	0.00	0.00	1.38	0.01			
		2.83	2.02	0.50	11.25	7.04			
		(3.71)	(3.40)	(0.85)	(8.74)	(6.42)			
		7.12	5.95	1.49	18.01	12.58			
		8.50	6.07	1.50	33.75	6.34			
		[3]	[3]	[3]	[3]	[3]			

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Supplementary Table 1

Left arm	558.02	638.73	352.45	9.05	1.74
	638.17	660.86	527.30	17.02	9.04
	(77.48)	(27.20)	(157.84)	(8.46)	(7.87)
	712.67	691.23	659.26	25.89	17.37
	1,875.91	1,982.57	1,581.91	51.07	27.11
	[3]	[3]	[3]	[3]	[3]
Right arm	0.00	0.79	0.01	2.35	0.01
	9.59	1.05	0.60	11.25	7.04
	(8.57)	(0.40)	(1.01)	(13.47)	(6.42)
	16.51	1.51	1.76	26.75	12.58
	28.78	3.15	1.79	33.74	21.12
	[3]	[3]	[3]	[3]	[3]
Left leg	0.00	0.00	0.00	40.44	77.98
	0.03	1.28	30.92	194.70	173.71
	(334.69)	(2.09)	(46.90)	(208.73)	(118.20)
	579.72	3.70	84.89	432.20	305.83
	579.75	3.85	92.75	584.09	521.12
	[3]	[3]	[3]	[3]	[3]
Right leg	0.00	0.00	0.00	0.00	0.00
	0.76	0.02	0.01	0.14	1.06
	(0.31)	(0.03)	(0.02)	(0.02)	(1.00)
	2.27	0.05	0.03	0.04	2.00
	2.27	0.05	0.03	0.04	3.19
	[3]	[3]	[3]	[3]	[3]
Visor-upper right	0.00	0.00	0.00	0.00	0.00
	0.02	0.01	0.03	0.01	0.00
	(0.03)	(0.02)	(0.05)	(0.02)	(0.00)
	0.05	0.03	0.09	0.03	0.00
	0.07	0.03	0.09	0.03	0.00
	[3]	[3]	[3]	[3]	[3]
Visor-upper mid	0.00	0.00	0.00	0.00	0.00
	0.19	0.10	0.01	0.01	0.00
	(0.62)	(0.17)	(0.02)	(0.01)	(0.00)
	1.16	0.30	0.03	0.02	0.00
	1.35	0.30	0.03	0.02	0.00
	[3]	[3]	[3]	[3]	[3]
Visor-upper left	0.00	0.00	0.00	0.00	0.00
	0.79	0.01	0.01	0.01	0.00
	(0.96)	(0.02)	(0.01)	(0.01)	(0.00)
	1.86	0.03	0.02	0.03	0.00
	2.36	0.03	0.03	0.03	0.00
	[3]	[3]	[3]	[3]	[3]
Visor-lower left	8.33	0.09	0.12	0.00	0.00
	12.74 (4.63)	8.02	1.84	0.83	0.01
	17.56	(6.86)	(2.89)	(1.02)	(0.01)
	38.22	12.00	5.18	1.97	0.02
	[3]	24.05	5.52	2.49	0.02
		[3]	[3]	[3]	[3]
Visor-lower mid	348.98	17.92	11.41	74.03	0.00
	444.87	63.61	70.51	96.06	12.43
	(137.03)	(47.68)	(101.58)	(33.92)	(19.89)
	601.81	113.05	187.78	135.12	35.37
	1,334.60	190.82	211.53	288.19	37.30

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Supplementary Table 1

Assistant		[3]	[3]	[3]	[3]	[3]
	Visor-lower right	0.01	0.00	0.00	0.00	0.00
		0.15	0.01	0.04	0.01	0.00
		(0.23)	(0.02)	(0.04)	(0.01)	(0.00)
		0.42	0.03	0.09	0.02	0.00
		0.45	0.03	0.12	0.02	0.00
		[3]	[3]	[3]	[3]	[3]
	Mask- left			0.00		
				0.03		
				(0.03)		
				0.06		
				0.10		
				[3]		
	Mask- mid			0.00		
				0.00		
				(0.01)		
				0.01		
				0.01		
				[3]		
	Mask- right			0.00		
				0.00		
				(0.01)		
				0.01		
				0.01		
				[3]		
Assistant	Head			0.00		
				0.01		
				(0.01)		
				0.02		
				0.02		
				[3]		
	Left chest			0.12		
				21.94		
				(37.70)		
				65.46		
				65.81		
				[3]		
	Right chest			0.04		
				0.14		
				(0.14)		
				0.30		
				0.42		
				[3]		
	Left arm			0.00		
				11.52		
				(15.37)		
				28.97		
				34.56		
				[3]		
	Right arm			0.10		
				4.29		
				(3.99)		

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Left leg	8.04	
	12.87	
	[3]	
	0.08	
	0.58	
	(0.48)	
Right leg	1.04	
	1.74	
	[3]	
	0.00	
	0.37	
	(0.64)	
Visor-upper right	1.12	
	1.12	
	[3]	
	0.00	
	0.00	
	(0.00)	
Visor-upper mid	0.00	
	0.00	
	0.00	
	[3]	
	0.00	
	0.00	
Visor-upper left	(0.00)	
	0.00	
	0.00	
	[3]	
	0.00	
	0.00	
Visor-lower left	(0.00)	
	0.00	
	0.00	
	[3]	
	0.00	
	0.00	
Visor-lower mid	(0.03)	
	0.05	
	0.05	
	[3]	
	0.00	
	0.00	
Visor-lower right	(0.01)	
	0.01	
	0.01	
	[3]	
	0.00	
	0.00	
Mask- left	0.00	

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Supplementary Table 1

Mask- mid	0.01
	(0.01)
	0.01
	0.01
	[3]
Mask- right	0.00
	0.00
	(0.00)
	0.00
	0.00
	[3]
	0.00
	0.02
	(0.04)
	0.07
	0.07
	[3]

Supplementary Table 1. summary of surface area and spectrofluorometric data collected from the mannequin, operator and assistant. Each location represents three repetitions. RFU: relative fluorescence units.

† Anterior crown preparation on upper right central incisor without suction or assistant. 10 minutes duration.

‡ Anterior crown preparation on upper right central incisor with suction. 10 minutes duration.

§ Anterior crown preparation on upper right central incisor with suction and assistant. 10 minutes duration.

¶ Full mouth ultrasonic scaling with suction. 10 minutes duration.

3-in-1 spray with suction of a MO cavity in upper right first premolar tooth. 30 second duration to replicate washing acid etchant.