Table 1 Demographics of the sports and sports categories

	Median age	Age <u><</u> 24	Gender (male)	white British	with/studying
	(Range)	n (%)	n (%)	n (%)	for University degree
					n (%)
Whole group*	25 (18-39)	167 (48.5%)	236 (67%)	275 (80%)	162 (47%)
(N = 344)					
Sport:					
Rugby (n = 72)	25 (19-31)	28 (41.8%)	59 (82%)	54 (80%)	29 (44%)
Rowing (n= 60)	27 (18-39)	13 (21.7%)	34 (56%)	54 (90%)	47 (78%)
Cycling (n = 51)	25 (18-38)	25 (45.8%)	38 (74.5%)	29 (62%)	4 (8.5%)
Swimming (n = 46)	21 (18-30)	38 (82.6%)	31 (67%)	46 (100%)	16 (35%)
Hockey (n = 46)	25 (22-35)	18 (39.1%)	22 (48%)	46 (100%)	40 (67%)
Football (n = 26)	21 (18-35	23 (88.5%)	26 (100%)	11 (42%)	2 (7%)
Athletics (n = 21)	24 (19-31)	14 (66.7%)	9 (43%)	7 (33%)	15 (71%)
Gymnastics (n = 15)	22 (18-30)	11 (73.3%)	8 (53%)	13 (86%)	2 (13%)
Sailing (n = 15)	29 (25-36)	0	9 (60%)	15 (100%)	7 (46%)
Sport category:					
Strength and power (n = 50)	22.5 (18-31)	35 (70%)	25 (50%)	31 (62%)	16 (32%)
Endurance (n = 143)	25 (18-39)	63 (45%)	96 (67%)	118 (85%)	68 (49%)
Mixed (n = 159)	25 (18-36)	69 (44.8%)	116 (73%)	126 (82%)	78 (51%)

^{*}N=352 for Gender

Table 2 Summary measures of number of teeth and proportion of athletes with caries by characteristics of the group

Median (IQR)	Range	
30 (28-32)	22 - 32	
27 (23-30)	12-32	
Number of athletes with caries (%)	Chi squared test	Odds Ratio (95% CI)
173 (49.1%)		
	P = 0.914	1.04 (0.68-1.59)
82 (49.1%)		
85 (48%)		
	P = 0.367	1.23 (0.79-1.92)
120 (50.8%)		
53(45.7%)		
	P = 0.587	0.90 (0.53-1.52)
132 (48.0%)		
35 (52.2%)		
	P = 0.235	1.27 (0.83-1.95)
93 (51.7%)		
73 (45.1%)		
	P = 0.004	
29 (58.0%)	S+P v Endurance P = 0.078*	2.21 (1.15-4.25)
55 (38.5%)	Mixed v Endurance P = 0.009*	2.03 (1.28-3.22)
89 (56.0%)	S+P v Mixed P > 0.999*	1.09 (0.57-2.06)
	27 (23-30) Number of athletes with caries (%) 173 (49.1%) 82 (49.1%) 85 (48%) 120 (50.8%) 53(45.7%) 132 (48.0%) 35 (52.2%) 93 (51.7%) 73 (45.1%) 29 (58.0%) 55 (38.5%)	27 (23-30) 12-32

^{*}Bonferroni correction

Table 2a Odds ratio of caries in different sports (compared to Rowing)

Sport (n)	Number of athletes in sport with caries (%)	Odds ratio (95% CI)	P value
Rowing (60)	20 (33.3%)	1 (Reference)	
Rugby (72)	44 (61.1%)	3.14 (1.54-6.43)	0.002
Cycling (51)	25 (49.0%)	1.92 (0.89-4.15)	0.095
Swimming (46)	19 (41.3%)	1.41 (0.64-3.12)	0.400
Hockey (46)	21 (45.7%)	1.68 (0.76-3.70)	0.198
Football (26)	16 (61.5%)	3.2 (1.23-8.32)	0.017
Athletics (21)	12 (57.1%)	2.67 (0.96-7.38)	0.059
Gymnastics (15)	8 (53.3%)	2.29 (0.73-7.20)	0.158
Sailing (15)	8 (53.3%)	2.29 (0.73-7.20)	0.158

Table 3 Summary measures of number of restored teeth and proportion of athletes with restorations by characteristics of the group

Median (IQR)	Range	
2 (1-4)	1-12	
4 (2-6)	1-19	
2 (1-5)	0-10	
2 (1-7)	0-19	
2 (1-6)	0-15	
Number of athletes with restorations (%)	Chi squared test	Odds Ratio (95% CI)
252 (71.6%)		
103 (29.5%)		
	P < 0.001	0.32 (0.19-0.53)
102 (61.1%)		
147 (83.1%)		
	P = 0.453	1.15 (0.71-1.87)
172 (72.9%)		
80 (69.0%)		
	P = 0.761	0.98 (0.54-1.76)
198 (72%)		
50 (74.6%)		
	P = 0.277	0.72 (0.45-1.16)
125 (69.4%)		
122 (75.3%)		
	P = 0.793	
36 (72.0%)	S+P v Endurance	0.93 (0.45-1.91)
105 (73.4%)	Mixed v Endurance	0.84 (0.51-1.38)
111 (69.8%)	S+P v Mixed	1.11 (0.55-2.25)
	2 (1-4) 4 (2-6) 2 (1-5) 2 (1-7) 2 (1-6) Number of athletes with restorations (%) 252 (71.6%) 103 (29.5%) 102 (61.1%) 147 (83.1%) 172 (72.9%) 80 (69.0%) 198 (72%) 50 (74.6%) 125 (69.4%) 122 (75.3%) 36 (72.0%) 105 (73.4%)	2 (1-4) 1-12 4 (2-6) 1-19 2 (1-5) 0-10 2 (1-7) 0-19 2 (1-6) 0-15 Number of athletes with restorations (%) 252 (71.6%) 103 (29.5%) P < 0.001 102 (61.1%) 147 (83.1%) P = 0.453 172 (72.9%) 80 (69.0%) P = 0.761 198 (72%) 50 (74.6%) P = 0.277 125 (69.4%) 122 (75.3%) P = 0.793 36 (72.0%) S+P v Endurance

Table 4 Number of athletes with ETW (BEWE score \geq 7) by characteristics of the group

	Number (%) with	Chi squared test	Odds Ratio (95% CI)
	BEWE score ≥ 7		
All (N = 352)	148 (42%)		
Characteristics of the group (n)			
Age		P = 0.220	1.34 (0.87-2.06)
≤ 24 years (167)	77(46.1%)		
≥ 25 years (177)	69 (39.0%)		
Gender		P = <0.001	2.40 (1.48-3.85)
Male (236)	115 (48.7%)		
Female (116)	33 (28.4%)		
Ethnicity		P = 0.423	1.36 (0.79-2.35)
White British (275)	120 (43.6%)		
Other (69)	25 (37.3%)		
Educational status		P = 0.115	0.92 (0.60-1.40)
Have/studying for degree (162)	61 (37.7%)		
No degree (182)	84 (46.7%)		
Sport category		P = 0.004	
Strength and power (50)	16 (32.0%)	S+P v Endurance P >0.999*	0.87 (0.44-1.74)
Endurance (143)	50 (35.0%)	Mixed v Endurance P = 0.015*	OR 1.98 (1.25-3.15)
Mixed (159)	82 (51.6%)	S+P v Mixed P =0.072*	0.44 (0.23-0.86)

^{*}Bonferroni correction

Table 4a Odds ratio of ETW (BEWE score ≥ 7) in different sports (compared to Rowing)

Sport	Number of athletes in sport with ETW (%)	Odds ratio (95% CI)	P value
Rowing (60)	16 (26.7%)	1 (Reference)	
Rugby (72)	38 (52.8%)	1.68 (0.77-3.67)	0.196
Cycling (51)	16 (26.7%)	0.96 (0.39-2.34)	0.928
Swimming (46)	23 (50%)	1.5 (0.64-3.53)	0.354
Hockey (46)	21 (45.7%)	1.26 (0.53-2.97)	0.598
Football (26)	19(73.1%)	1.06 (0.45-2.5)	0.902
Athletics (21)	2 (9.5%)	0.5 (0.09-2.79)	0.430
Gymnastics (15)	9 (60%)	2.25 (0.67-7.55)	0.189
Sailing (15)	4 (27.7%)	0.55 (0.15-2.02)	0.364

Table 5 Periodontal condition (Worst BPE score) by characteristics of the group

	Number (%) with	Number (%) with	Number (%) with	
	BPE = 0	BPE = 1 or 2	BPE = 3 or 4	
All (N =344)	4 (1.1%)	272 (77.3%)	76 (21.6%)	
		95% CI	95% CI	
		72.60 -81.35	17.60 - 26.19	
Age				chi squared
				P = 0.012
≤ 24 years (167)	4 (2.4%)	134 (80.2%)	29 (17.4%)	
≥ 25 years (177)	0	130(73.4%)	47 (26.6%)	
Gender				chi squared
				P = 0.642
Male (236)	3 (1.3%)	179 (75.8%)	54 (22.9%)	
Female (116)	1 (0.9%)	93 (80.2%)	22 (19%)	
Ethnicity				chi squared
				P = 0.082
White British (275)	4 (1.5%)	216 (78.6%)	55 (20%)	
Other (69)	0	46 (68.7%)	21 (31.3%)	
Educational status				chi squared
				P= 0.678
Have/studying for degree (162)	1 (0.6%)	124 (76.5%)	37 (22.8%)	
No degree (182)	3 (1.7%)	139 (77.2%)	38 (21.1%)	
Sport category				chi squared
				P = 0.747
Strength and power (n=50)	0	72	28	
Endurance (n = 143)	2 (1.4%)	78.3	20.3	
Mixed (n = 159)	2 (1.36%)	78	20.8	

Table 6 Extent of periodontal disease by BPE score

	Number of sextants per athletes affected						
	1 -2 sextants	1 -2 sextants 3 -4 sextants 5 -6 sextants					
BPE	n	%	n	%	n	%	
1 or 2	39	11.1	130	37	177	50.5	
3 or 4	66	18.8	9	2.6	0	0	

Table 7 Self-reported general health status by characteristics of the groups

	Number reporting	Odds Ratio	P value
	general health	(95% CI)	
	Very good/good (%)		
All (344)	310 (90.1%)		
Characteristics of the group (n)			
Age			
≤ 24 years (167)	148 (88.6%)	1	
≥ 25 years (177)	162 (91.5%)	1.39 (0.68-2.83)	0.471
Gender			
Male (236)	205 (89.9%)	1	
Female (116)	105 (90.5%)	1.07 (0.50-2.25)	>0.999
Ethnicity			
White British (275)	251 (91.3%)	1	
Other (69)	57 (85.1%)	0.55 (0.25-1.20)	0.196
Educational status			
Have/studying for degree (162)	148 (91.4%)		
No degree (182)	160 (88.9%)	0.76 (0.37-1.55)	0.561
Sport category	P =0.167		
Strength and power (50)	44 (88%)	0.66 (0.23-1.89)	0.441
Endurance (143)	122 (87.1%)	1 (Reference)	
Mixed (159)	144 (93.5%)	1.51 (0.53-4.33)	0.441
Sport	P = 0.619		
Rowing (60)	53 (88.3%)	1 (Reference)	
Rugby (67)	61 (91%)	1.34 (0.43-4.25)	0.616
Cycling (47)	42 (87.5%)	1.11 (0.33-3.75)	0.367
Swimming (46)	40 (87%)	0.88 (0.27-282)	0.830
Hockey (46)	43 (93.5%)	1.89 (0.46-7.76)	0.375
Football (26)	26 (100%)	7.43 (0.41-335.08)	0.175
Athletics (23)	18 (85.7%)	0.79 (0.02-3.39)	0.754
Gymnastics (15)	13 (86.7%)	0.86 (0.16-4.63)	0.859
Sailing (15)	14 (93.3%)	1.85 (0.21-16.30)	0.580

Table 8 Self-assessed oral health status by characteristics of the group

	Number reporting oral health	Odds Ratio (95% CI)	P value
	Very good/good (%)	(55% Ci)	
All (344)	238 (69.2%)		
Characteristics of the group (n)			
Age			
≤ 24 years (167)	119 (71.3%)	1	
≥ 25 years (177)	119 (67.2%)	0.88 (0.52-1.31)	0.489
Gender			
Male (236)	145 (63.3%)	1	
Female (116)	93 (80.2%)	2.314 (1.36-3.93)	0.002
Ethnicity			
White British (275)	198 (72%)	1	
Other (69)	39 (58.2%)	0.542 (0.31-0.94)	0.041
Educational status			
Have/studying for degree (162)	117 (72.2%)	1	
No degree (182)	119 (66.1%)	0.750 (0.47-1.19)	0.270
Sport category			
Strength and power (50)	32 (64%)	0.87 (0.44-1.71)	0.687
Endurance (143)	96 (68.6%)	1 (Reference)	
Mixed (159)	110 (71.4%)	1.10 (0.68-1.79)	0.703
Sport			
Rowing (60)	43 (71.7%)	1 (Reference)	
Rugby (67)	47 (70.1%)	0.93 (0.43-2.0)	0.851
Cycling (47)	31 (64.6%)	0.77 (0.34-1.75)	0.526
Swimming (46)	31 (67.4%)	0.82 (0.03-1.88)	0.635
Hockey (46)	36 (78.3%)	1.42 (0.58-3.50)	0.441
Football (26)	15 (57.7%)	21.32 (1.23-369.48)	0.035
Athletics (21)	14 (66.7%)	0.79 (0.27-2.30)	0.666
Gymnastics (15)	9 (60%)	0.59 (0.18-1.92)	0.384
Sailing (15)	12 (80%)	1.58 (0.40-6.31)	0.516

Table 9 Oral impacts on daily performance by characteristics of the group

	Number (%) reporting difficulty					
	Eating/ drinking	Relaxing including sleeping	Smiling, laughing, showing teeth without embarrassment	At least one oral impact on daily performance	Odds Ratio (95% CI)	P value
All (n = 344)	119 (34.6%)	52 (15.1%)	59 (17.2%)	169 (49.1%)		
Characteristics of the group (n)						
Age						
< 24 years (167)	57 (34.1%)	31 (18.6%)	31 (18.6%)	85 (50.9%)	1.147 (0.752-1.752)	0.524
≥ 25 years (177)	62 (35%)	21 (11.9%)	28 (15.8%)	84 (47.5%)	1	
Gender						
Male (236)	81 (35.5%)	29 (12.7%)	37 (16.2%)	112 (49.1%)	0.999 (0.64-1.56)	> 0.999
Female (116)	38 (32.8%)	23 (19.8%)	22 (19%)	57 (49.1%)	1	
Ethnicity					0.109	
White British (275)	87 (31.6%)	36 (13.1%)	44 (16%)	130 (47.3%)	0.644 (0.375-1.105)	0.109
Other (69)	32 (47.8%)	16 (23.9%)	15 (22.4%)	39 (58.2%)	1	
Educational status						
Have/studying for degree (162)	57 (35.2%)	22 (13.6%)	25 (15.4%)	77 (47.5%)	0.96 (0.59-1.38)	0.600
No degree (182)	62 (34.4%)	30 (16.7%)	33 (18.3%)	91 (50.6%)	1	
Sport category						
Strength and power (50)	21 (42%)	9 (18%)	9 (18%)	27 (54%)	0.99 (0.52-1.90)	0.972
Endurance ((140)	52 (37.1%)	20 (14.3%)	27 (19.3%)	76 (54.3%)	1 (Reference)	
Mixed (154)	46 (29.9%)	23 (14.9%)	23 (14.9%)	66 (42.9%)	0.63 (0.39-1.01)	0.051

[•] Non-zero score

Table 9a Oral impacts on daily performance by sport

	Number (%) repo	Number (%) reporting difficulty*				
Sport	Eating/ drinking	Relaxing including	Smiling, laughing,	At least one oral	Odds ratio (95%CI)	P value
	sleeping	showing teeth without embarrassment	impact on daily performance			
Rowing (n=60)	19 (31.7%)	8 (13.3%)	5 (8.3%)	25 (41.7%)	1 (Reference)	
Rugby (n = 67)	20 (29.9%)	11 (16.4%)	10 (14.9%)	29 (43.3%)	1.07 (0.53-2.16)	0.854
Cycling (n = 47)	24 (50%)	10 (20.8%)	8 (16.7%)	31 (64.6%)	2.71 (1.23-5.99)	0.013
Swimming (n = 46)	13 (28.3%)	7 (15.2%)	15 (32.6%)	27 (58.7%)	1.80 (0.84-3.85)	0.133
Hockey (n = 46)	14 (30.4%)	5 (10.9%)	6 (13%)	20 (43.5%)	1.08 (0.49-2.34)	0.852
Football (n = 26)	8 (30.8%)	7 (26.9%)	6 (23.1%)	12 (46.2%)	1.2 (0.47-3.03)	0.699
Athletics (n = 21)	11 (52.4%)	2 (9.5%)	5 (23.8%)	12 (57.1%)	1.87 (0.68-5.1)	0.224
Gymnastics (n = 15)	6 (40%)	2 (13.3%)	3 (20%)	8 (53.3%)	1.6 (0.51-4.98)	0.418
Sailing (n = 15)	4 (26.7%)	0	1 (6.7%	5 (33.3%)	0.7 (0.21-2.30)	0.557

Non-zero score

Table 10 Oral impacts on sport performance by characteristics of the group

	Number (%) report	ing difficulty*					
	Participating in normal training	Reduction in volume of training	Performance affected	Experience of pain	At least one oral impact on sport	Odds ratio (95% CI)	P value
				·	performance		
All N = 344	31 (9%)	13 (3.8%)	20 (5.8%)	103 (29.9%)	110 (32%)		
Age							
<pre>< 24 years (167)</pre>	14 (8.4%)	8 (4.8%)	12 (7.2%)	5 (32.9%)	57 (34.1%)	1.21 (0.77-1.91)	0.405
≥ 25 years (177)	17 (9.6%)	5 (2.8%)	8 (4.5%)	48 (27.1%)	53 (29.9%)	1	
Gender							
Male (236)	13 (5.7%)	6 (2.6%)	9 (3.9%)	61 (26.8%)	64 (28.1%)	0.59 (0.371-0.95)	0.030
Female (116)	18 (15.5%)	7 (6%)	11 (9.5%)	42 (36.2%)	46 (39.7%)	1	
Ethnicity							
White British (275)	27 (9.8%)	10 (3.6%)	15 (5.5%)	78 (28.4%)	84 (30.5%)	0.69 (0.39-1.21)	0.196
Other (67)	4 (6%	3 (4.5%)	5 (7.5%)	25 (37.3%)	26 (38.8%)	1	
Educational status							
Have/studying for degree (162)	11.7% (19)	4.9% (8)	4.9% (8)	32.1% (52)	35.2% (57)	1	
No degree (182)	12 (6.7%)	5 (6.7%)	12 (6.7%)	51 (28.3%)	53 (29.4%)	0.76 (0.48-1.19)	0.229
Sport category							
Strength and power (50)	4 (8%)	2 (4%)	4 (8%)	22 (44%)	23 (46%)	1.86 (0.96-3.60)	0.066
Endurance (140)	12 (8.6%)	4 (2.9%)	8 (5.7%)	42 (30%)	44 (31.4%)	1 (Reference)	
Mixed (154)	15 (9.7%)	7 (4.5%)	8 (5.2%)	39 (25.3%)	43 (27.9%)	0.85 (0.51-1.39)	0.511

[•] Non-zero score

Table 10a Oral impacts on sport performance by sport

Sport	Number (%) report	ing difficulty*					
	Participating in	Reduction in	Performance	Experience of	At least one oral	Odds ratio	P value
	normal training	volume of training	affected	pain	impact on sport performance	(95%CI)	
Rowing (n=60)	5 (8.3%)	1 (1.7%)	1 (1.7%)	16 (26.7%)	18 (30%)	1 (Reference)	
Rugby (n = 67)	5 (7.5%)	3 (4.5%)	5 (7.5%)	16 (23.9%)	18 (26.9%)	0.86 (0.39-1.86)	0.696
Cycling (n = 47)	6 (12.5%)	3 (6.3%)	7 (14.6%)	20 (41.7%)	20 (41.7%)	1.73 (0.77-3.84)	0.179
Swimming (n = 46)	4 (8.7%)	2 (4.3%)	2 (4.3%)	13 (28.3%)	13 (28.3%)	0.92 (0.39-2.14)	0.843
Hockey (n = 46)	7 (15.2%)	4 (8.7%)	3 (6.5%)	13 (28.3%)	14 (30.4%)	1.02 (0.44-2.36)	0.961
Football (n = 26)	2 (7.7%)	0	0	7 (26.9%)	8 (30.8%)	1.04 (0.38-2.81)	0.943
Athletics (n = 21)	1 (4.8%)	0	1 (4.8%)	9 (33.3%)	8 (38.1%)	1.44 (0.51-4.06)	0.495
Gymnastics (n = 15)	0	0	1 (6.7%)	8 (53.3%)	8 (53.3%)	2.67 (0.84-8.46)	0.096
Sailing (n = 15)	1 (6.7%)	0	0	3 (20%)	3 (20%)	0.58 (0.15-2.32)	0.444

[•] Non-zero score

Table 11 Oral impacts on daily performance by clinical indicators of oral health, self-assessed general health and oral health status

	Number (%) reporting difficulty*					
	Eating/ drinking	Relaxing including sleeping	Smiling, laughing or showing teeth	At least one oral impact on daily		
			without embarrassment	performance		
All (n = 344)	119 (34.6%)	52 (15.1%)	59 (17.2%)	169 (49.1%)		
Number with condition (n)						
Established caries						
No decay (179)	52 (29.4%)	22 (12.4%)	28 (15.8%)	78 (44.1%)		
Caries in one or more teeth (173)	67 (40.1%)	30 (18%)	31 (18.6%)	91 (54.5%)		
Chi squared test	P = 0.048	P = 0.200	P = 0.595	P = 0.068		
Any PUFA						
No (340)	111 (33.4%)	44 (13.3%)	57 (17.2%)	160 (48.2%)		
Yes (12)	8 (66.7%)	8 (66.7%)	16.7%	75% (9)		
Chi squared test	P = 0.027	P <0.001	P >0.999	P = 0.082		
Periodontal condition						
BPE 0, 1 or 2 (276)	86 (32.1%)	41 (15.3%)	44 (16.4%)	125 (46.6%)		
BPE 3 or 4 (76)	33 (43.4%)	11 (14.5%)	15 (19.7%)	44 (57.9%)		
Chi squared test	P = 0.076	P > 0.999	P = 0.605	P = 0.092		
TSL						
BEWE score < 6 (204)	68 (34.3%)	29 (14.6%)	30 (15.2%)	93 (47%)		
BEWE score <u>></u> 7 (148)	51 (34.9%)	23 (15.8%)	29 (19.9%)	76 (52.1%)		
Chi squared test	P > 0.999	P = 0.879	P = 0.311	P = 0.383		
Self-reported general health						
Very/good (310)	102 (32.9%)	37 (11.9%)	49 (15.8%)	145 (46.8%)		
Fair- very poor (34)	17 (50%)	15 (44.1%)	10 (29.4%)	24 (70.6%)		
Chi squared test	P = 0.057	P < 0.001	P = 0.056	P = 0.011		
Self-reported oral health						
Very/good (238)	67 (28.2%)	27 (11.3%)	30(2.6%)	97 (40.8%)		
Fair-very poor (106)	52 (49.1%)	25 (23.6%)	29 (27.4%)	72 (67.9%)		
Chi squared test	P<0.001	P = 0.005	P = 0.001	P < 0.001		

[•] Non-zero score

Table 12 Oral impacts on sport performance by clinical indicators of oral health, self-assessed general and oral health status

	Number (%) reporting difficulty*						
	Participating in normal	Reduction in volume	Performance affected	Experience of pain	At least one oral impact	At least one oral impact on	
	training	of training			on sport performance	daily or sport performance	
All (n = 344)	31 (9%)	13 (3.8%)	20 (5.8%)	103 (29.9%)	110 (32%)	180 (52.3%)	
Number with condition (n)							
Established caries							
None (179)	14 (7.9%)	6 (3.4%)	8 (4.5%)	50 (28.2%)	55 (31.1%)	83 (46.9%)	
Caries in one or more teeth (173)	17 (10.2%)	6 (4.2%)	12 (7.2%)	57 (31.7%)	55 (32.9%)	97 (58.1%)	
Chi squared test	P = 0.585	P = 0.915	P = 0.409	P = 0.556	P = 0.799	P = 0.049	
Any PUFA							
No (340)	26 (7.8%)	11 (3.3%)	19 (5.7%)	94 (28.3%)	101 (30.4%)	170 (51.2%)	
Yes (12)	5 (41.7%)	2 (16.7%)	1 (8.3%)	9 (75%)	9 (75%)	10 (83.3%)	
Chi squared test	P =0.002	P = 0.070	P >0.999	P =0.001	P = 0.002	P =0.038	
Periodontal condition							
BPE 0, 1 or 2 (276)	25 (9.3%)	10 (3.7%)	16 (6%)	76 (28.4%)	80 (29.9%)	134 (50%)	
BPE 3 or 4 (76)	6 (7.9%)	3 (3.9%	4 (5.3%)	27 (35.5%)	30 (39.5%)	46 (60.5%)	
Chi squared test	P = 0.823	P >0.999	P >0.999	P = 0.253	P = 0.126	P = 0.119	
Erosion							
BEWE score < 6 (204)	20 (10.1%)	8 (4%)	12 (6.1%)	62 (31.3%)	65 (32.8%)	100 (50.5%)	
BEWE score > 7 (148)	11 (7.5%)	5 (3.4%)	8 (5.5%)	41 (28.1%)	45 (30.8%)	80 (54.8%)	
Chi squared test	P = 0.452	P = 0.786	P >0.999	P = 0.553	P = 0.727	P = 0.446	
Self-reported general health							
Very/good (310)	23 (7.4%)	9 (2.9%)	14 (4.5%)	87 (28.1%)	93 (30.0%)	155 (50%)	
Fair- very poor (34)	23.5%	4 (11.8%)	6 (17.6%)	16 (47.1)	17 (50%)	25 (73.5%)	
Chi squared test	P = 0.006	P = 0.030	P = 0.008	P = 0.029	P = 0.021	P = 0.011	
Self-reported oral health							
Very/good (238)	20 (8.4%)	9 (3.8%)	11 (4.6%)	62 (26.1%)	68 (28.6%)	165 (44.1%)	
Fair-very poor (106)	11 (10.4%)	4 (3.8%)	9 (8.5%)	41 (38.7%)	42 (39.6%)	75 (70.8%)	
Chi squared test	P = 0.684	P >0.999	P = 0.210	P =0.022	P = 0.046	P<0.001	

[•] Non-zero score

Table 13 Oral impacts on daily performance by self-reported oral health problems

	Number (%) reporting dif	ficulty#		
	Eating /drinking	Relaxing including sleeping	Smiling, laughing or showing	At least one oral impact on
			teeth without embarrassment	daily performance
All (n = 344)	119 (34.6%)	52 (15.1%)	59 (17.2%)	169 (49.1%)
Current pain/problem				
No (325)	104 (32.8%)	40 (12.6%)	51 (16.1%)	146 (46.1%)
Yes (27)	15 (55.6%)	12 (44.4%)	8 (29.6%)	23 (85.2%)
Chi squared test	P =0.030	P <0.001	P = 0.127	P < 0.001
Sensitivity to hot or				
cold				
No (258)	74 (29.2%)	37 (14.6%)	42 (16.6%)	113 (44.7%)
Yes (94)	45 (49.5%)	15 (16.5%)	17 (18.7%)	56 (61.5%)
Chi squared test	P = 0.001	P = 0.800	P = 0.772	P = 0.008
Self-reported bleeding				
when cleaning teeth				
No (215)	54 (30.7%)	19 (10.8%)	27 (15.3%)	74 (42%)
Yes (137)	44 (39.3%)	23 (20.5%)	18 (16.1%)	61 (54.5%)
Chi squared test	P = 0.169	P = 0.035	P >0.999	P = 0.053
History of wisdom				
tooth swelling*				
No (270)	72 (27.5%)	33 (12.6%)	39 (14.9%)	106 (40.5%)
Yes (82)	47 (57.3%)	19 (23.2%)	20 (24.4%)	63 (76.8%)
Chi squared test	P <0.001	P = 0.031	P = 0.068	P < 0.001

[•] Previous 12 months # Non-zero score

Table 14 Oral impacts on sport performance by self-reported oral health problems

	Number (%) reporting difficulty*						
	Participating in	Reduction in volume	Performance	Experience of pain	At least one oral		
	normal training	of training.	affected		impact on sport		
					performance		
All (n = 344)	31 (9%)	13 (3.8%)	20 (5.8%)	103 (29.9%)	110 (32%)		
Current pain/problem							
No (325)	23 (7.3%)	10 (3.2%)	16 (5%)	83 (26.2%)	89 (28.1%)		
Yes (27)	8 (29.6%)	3 (11.1%)	4 (14.8%)	20 (74.1%)	21 (77.8%)		
Chi squared test	P < 0.001	P =0.120	P = 0.098	P <0.001	P < 0.001		
Sensitivity to hot or							
cold							
No (258)	25 (9.9%)	12 (4.7%)	14 (5.5%)	68 (26.9%)	72 (28.5%)		
Yes (94)	6 (6.6%)	1 (1.1%)	6 (6.6%)	35 (38.5%)	38 (41.8%)		
Chi squared test	P = 0.468	P = 0.214	P = 0.913	P = 0.053	P = 0.028		
Self-reported bleeding							
when cleaning teeth							
No (215)	16 (9.1%)	5 (2.8%)	9 (5.1%)	44 (25%)	48 (27.3%)		
Yes (137)	8 (7.1%)	4 (3.6%)	5 (4.5%)	35 (31.3%)	38 (33.9%)		
Chi squared test	P = 0.716	P > 0.999	P >0.999	P = 0.306	P = 0.284		
History of wisdom							
tooth swelling*							
No (270)	18 (6.9%)	6 (2.3%)	11 (4.2%)	64 (24.4%)	70 (26.7%)		
Yes (82)	13 (15.9%)	7 (8.5%)	9 (11%)	39 (47.6%)	40 (48.8%)		
Chi squared test	P = 0.024	P = 0.024	P = 0.044	P < 0.001	P < 0.001		

[•] Previous 12 months

Table 15 Comparison of clinical data with other studies

	Caries	ETW	Gingivitis	Periodontitis
London 2012 Olympics	55%	45%	76%	15%
Systematic review 2014	15% - 75%	36% - 85%	up to 76%	up to 15%
English professional football 2014	37%	53%	80%	5%
Elite and professional sport 2016	49%	42%	77%	22%
Adult dental health survey 2009	29% - 35%	52% - 69%	50% - 55%	19% - 36%