

The Subgingival Microbiome Relationship to Periodontitis in Older Women

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APPENDIX

1. Details on Study Methods

2. Appendix Table 1. CLR mean OTUs for the 211 taxa identified that did not differ significantly with periodontal disease categories following correction for multiple testing, and linear correlations for CLR mean OTUs with pocket depth and clinical attachment level.

3. Appendix Table 2. Prevalence (% present at any abundance) of the 267 identified taxa according to periodontal disease categories.

Details on Study Methods

Oral Examination and Subgingival Plaque Collection

Whole mouth oral examinations were conducted by trained and calibrated dental hygienists (LaMonte et al., 2013; Banack et al., 2018;). Probing pocket depth (PD) was defined as the distance in millimeters from the gingival margin (GM) to the base of the gingival sulcus measured using a constant force (20 g) electronic probe on six surfaces per tooth (distobuccal, midbuccal, mesiobuccal, distolingual, midlingual and mesiolingual) in all the teeth present except for third molars. A Michigan O periodontal probe was used to measure the distance from the cement-enamel junction (CEJ) to the GM at the same six sites per tooth listed above. Clinical attachment loss (CAL) was calculated according to the following formulae: $CAL = PD - (GM -$

CEJ) if the GM was coronal to the CEJ; or, $CAL = PD + (GM - CEJ)$ if the GM was apical to the CEJ. Gingival bleeding (absent or present) was assessed at three sites per tooth using the Michigan O probe. Reproducibility of these measurements has been published (LaMonte et al., 2018). Subgingival plaque samples were obtained using the paper points method (Brennan et al., 2007). Fine paper points were placed in the gingival pockets of up to 12 pre-specified teeth (6 maxillary and 6 mandibular teeth) for 10 seconds. The paper point were placed into 4 mL lactated Ringer's solution, which was vortexed and then aliquoted into 0.5 mL cryovials and frozen immediately at -80°C .

Subgingival Plaque DNA Isolation and Purification

Genomic DNA was isolated using the QIASymphony SP automated system and the QIASymphony DSP Virus/Pathogen Mini Kit (Qiagen, Valencia, CA) according to the Complex200_V6_DSP protocol. Samples were isolated in batches of 85 to 88 patient samples with positive (mock DNA, subgingival plaque pools) and negative (PCR grade water, extraction buffer) controls. All procedures were carried out in a disinfected biosafety cabinet, using Gilson DNA-free tips (Gilson, Inc., Middleton, WI) and disinfected pipettes. Briefly, 500 μl of oral plaque sample, derived from the combination of one upper and one lower arch aliquot from each subject was transferred to a 2 ml Sarstedt tube. Bacteria were pelleted by centrifugation at $5000\times g$ for 10 min, resuspended in a 300 μl lysis solution (20 mg/ml lysozyme in 20 mM Tris-HCl, pH 8.0; 2 mM EDTA; 1.2% Triton X-100) and incubated at 37°C for 30 min. Following incubation, tubes were briefly centrifuged and DNA extraction and purification was done according to the Qiasymphony DSP Virus /Pathogen Kit Instructions. Carrier RNA-AVE mixture was added to all samples to increase recovery of nucleic acids. After DNA purification, samples were eluted in a barcoded 96 well elution plate. DNA extracted material was quantified

with the Quant-iT PicoGreen ds DNA Assay Kit (Invitrogen), with most samples yielding average concentrations between 0.3-2 ng/ μ l.

Subgingival Microbiome Analysis

Details on the procedures used to characterize the microbiome of subgingival plaque samples have been published (Banack et al., 2018). Briefly, metagenomic DNA was amplified using the 16S V3 (341F) forward and V4 (805R) reverse primer pairs with added Illumina adapter overhang nucleotide sequences. PCR amplifications and sequencing were performed on 96 samples at a time with both positive (mock DNA, subgingival plaque pools) and negative (PCR grade water, extraction buffer) controls. Samples were multiplexed and 300 bp pair-end sequenced on an Illumina MiSeq. The paired-end reads were joined with PEAR version 0.9.6. The percentage of joined-reads was recorded as the “Merge Rate”. Then, sequence quality filtering was performed using Fastx-Toolkit to identify reads with 90% of their bases having a score higher than Q30. Reads that did not meet this criterion were removed and the percentage of the remaining reads was recorded as the “Pass Rate”. After the primer was removed, sequences were clustered at 97% identity against the Human Oral Microbiome Database (HOMD) version 14.5 (Chen et al., 2010) with BLAST (Altschul et al., 1990) aiming at the species level. Sequences that failed to match the database were discarded. We obtained a total of 773 OTUs with a number of reads ranging from 17 to 4,347,294 per sample. As a preprocessing step, we require a “Merge Rate” $\geq 90\%$, “Pass Rate” $\geq 60\%$, and “Hit Count” per sample $\geq 3,000$. Samples failing to meet the criterion were removed from downstream analysis, leaving 267 taxa for analysis. We filtered the raw OTU table by discarding those with a frequency $< 0.02\%$ of the total read count. In order to sequence 1200 samples, batches of 85-88 samples were processed

together, randomly arranged on the 96 well plates with negative and positive quality control samples and standardized procedures were applied to minimize batch effects.

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Appendix Table 1. CLR mean OTUs for the 211 taxa identified that did not differ significantly with periodontal disease categories following correction for multiple testing, and linear correlations for CLR mean OTUs with pocket depth and clinical attachment level.

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD			CAL		
		Mean (SE)	Mean (SE)	Mean (SE)			Mean (SE)	r [†]	p-value	r [†]	p-value	
					†	‡	†	‡	†	‡		
Alloprevotella tannerae	2.68 (0.12)	2.19 (0.22)	2.62 (0.15)	3.65 (0.28)	<.001	0.08	0.189	<.001	<.001	0.046	0.11	1.00
Bacteroidetes_[G-5] HMT 511	-1.48 (0.09)	-1.80 (0.15)	-1.56 (0.12)	-0.71 (0.26)	<.001	0.09	0.136	<.001	<.001	0.067	0.02	1.00
Bacteroidales_[G-2] HMT 274	2.95 (0.10)	2.42 (0.19)	3.03 (0.13)	3.50 (0.23)	0.001	0.31	0.135	<.001	<.001	0.066	0.02	1.00
Alloprevotella rava	-0.69 (0.08)	-1.06 (0.15)	-0.70 (0.11)	-0.10 (0.22)	0.001	0.33	0.178	<.001	<.001	0.061	0.04	1.00
Prevotella HMT 300	1.42 (0.09)	1.02 (0.17)	1.45 (0.11)	1.95 (0.20)	0.003	0.69	0.090	0.002	0.48	0.046	0.11	1.00
Dialister invisus	3.51 (0.08)	3.13 (0.16)	3.53 (0.10)	4.03 (0.17)	<.001	0.21	0.121	<.001	0.007	0.063	0.03	1.00
Prevotella denticola	1.73 (0.10)	1.61 (0.20)	1.59 (0.14)	2.44 (0.26)	0.011	1.00	0.092	0.001	0.35	0.050	0.08	1.00
Prevotella HMT 317	2.73 (0.10)	2.42 (0.20)	2.71 (0.14)	3.25 (0.24)	0.04	1.00	0.094	0.001	0.30	0.035	0.22	1.00
Fusobacterium nucleatum_subsp._nucleatum	-0.24 (0.08)	-0.52 (0.13)	-0.28 (0.10)	0.30 (0.23)	0.004	0.99	0.036	0.22	1.00	0.080	0.006	1.00
Selenomonas sputigena	5.61 (0.08)	5.30 (0.17)	5.62 (0.10)	6.08 (0.18)	0.009	1.00	0.098	<.001	0.19	0.002	0.94	1.00
Catonella morbi	1.85 (0.08)	1.57 (0.15)	1.83 (0.10)	2.34 (0.18)	0.006	1.00	0.168	<.001	<.001	0.059	0.04	1.00
Olsenella HMT 807	-0.50 (0.07)	-0.83 (0.13)	-0.49 (0.09)	-0.06 (0.18)	0.002	0.55	0.100	<.001	0.13	0.067	0.02	1.00
TM7_[G-1] HMT 346	3.78 (0.09)	3.42 (0.18)	3.82 (0.11)	4.17 (0.19)	0.021	1.00	0.121	<.001	0.006	0.018	0.54	1.00
Peptostreptococcus stomatis	-0.81 (0.09)	-0.97 (0.16)	-0.91 (0.11)	-0.24 (0.23)	0.010	1.00	0.168	<.001	<.001	0.037	0.20	1.00
Selenomonas HMT 126	-0.61 (0.08)	-0.87 (0.15)	-0.62 (0.11)	-0.18 (0.21)	0.03	1.00	0.129	<.001	0.002	0.035	0.23	1.00
Treponema HMT 231	-1.16 (0.09)	-1.45 (0.15)	-1.14 (0.12)	-0.77 (0.25)	0.05	1.00	0.077	0.008	1.00	0.002	0.94	1.00
Campylobacter showae	2.89 (0.08)	2.54 (0.15)	2.94 (0.10)	3.23 (0.20)	0.02	1.00	0.070	0.02	1.00	0.019	0.52	1.00
Treponema HMT 237	-2.21 (0.08)	-2.40 (0.13)	-2.27 (0.11)	-1.72 (0.24)	0.02	1.00	0.108	<.001	0.05	0.061	0.03	1.00
Prevotella buccae	-1.25 (0.07)	-1.40 (0.13)	-1.31 (0.09)	-0.77 (0.20)	0.01	1.00	0.094	0.001	0.29	0.018	0.54	1.00
Mycoplasma salivarium	-1.78 (0.07)	-2.06 (0.12)	-1.76 (0.10)	-1.43 (0.19)	0.02	1.00	0.076	0.008	1.00	0.042	0.15	1.00
Prevotella HMT 376	-2.55 (0.07)	-2.70 (0.12)	-2.61 (0.09)	-2.09 (0.22)	0.02	1.00	0.099	<.001	0.15	0.033	0.25	1.00
Tannerella HMT 808	-1.76 (0.07)	-1.88 (0.12)	-1.83 (0.09)	-1.30 (0.19)	0.01	1.00	0.084	0.003	0.91	0.044	0.13	1.00
Johnsonella ignava	-0.42 (0.09)	-0.57 (0.18)	-0.47 (0.12)	0.01 (0.23)	0.11	1.00	0.068	0.02	1.00	0.052	0.07	1.00
Oribacterium HMT 078	0.65 (0.08)	0.42 (0.16)	0.66 (0.10)	1.00 (0.19)	0.08	1.00	0.064	0.03	1.00	0.039	0.17	1.00
Peptostreptococcaceae_[XI][G-9] [Eubacterium]_brac	1.70 (0.08)	1.42 (0.15)	1.74 (0.11)	1.97 (0.20)	0.09	1.00	0.111	<.001	0.031	0.034	0.24	1.00
Actinomyces israelii	-0.46 (0.06)	-0.83 (0.12)	-0.35 (0.08)	-0.29 (0.13)	0.002	0.53	0.011	0.70	1.00	0.119	<.001	0.009
Selenomonas HMT 919	0.47 (0.08)	0.24 (0.16)	0.48 (0.11)	0.78 (0.22)	0.13	1.00	0.111	<.001	0.031	-0.009	0.75	1.00
Selenomonas infelix	1.47 (0.08)	1.16 (0.17)	1.53 (0.11)	1.70 (0.19)	0.09	1.00	0.072	0.01	1.00	-0.015	0.61	1.00

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD			CAL		
							Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	r [†]	p-value
	†	‡	†	‡	†	‡						
Fusobacterium nucleatum_subsp._animalis	5.38 (0.07)	5.18 (0.14)	5.38 (0.09)	5.71 (0.14)	0.04	1.00	0.067	0.02	1.00	0.021	0.48	1.00
Centipeda periodontii	-0.62 (0.08)	-0.94 (0.14)	-0.54 (0.10)	-0.42 (0.20)	0.04	1.00	0.068	0.019	1.00	0.028	0.32	1.00
Selenomonas diana	-2.37 (0.07)	-2.48 (0.12)	-2.44 (0.08)	-1.98 (0.20)	0.03	1.00	0.094	0.001	0.29	0.037	0.20	1.00
Veillonellaceae_[G-1] HMT 129	-1.72 (0.08)	-1.80 (0.15)	-1.80 (0.10)	-1.30 (0.21)	0.05	1.00	0.076	0.008	1.00	0.037	0.20	1.00
Prevotella maculosa	1.42 (0.08)	1.27 (0.16)	1.38 (0.10)	1.77 (0.17)	0.10	1.00	0.081	0.005	1.00	0.005	0.87	1.00
Fusobacterium HMT 203	4.25 (0.10)	3.95 (0.20)	4.34 (0.13)	4.38 (0.24)	0.24	1.00	0.071	0.013	1.00	0.065	0.02	1.00
Peptostreptococcaceae_[XI][G-1] [Eubacterium]_infi	-1.35 (0.07)	-1.40 (0.13)	-1.43 (0.09)	-1.00 (0.18)	0.07	1.00	0.121	<.001	0.007	0.025	0.40	1.00
Atopobium rimae	0.21 (0.09)	0.27 (0.18)	0.06 (0.12)	0.64 (0.23)	0.07	1.00	0.077	0.007	1.00	0.026	0.37	1.00
Prevotella HMT 292	-1.07 (0.08)	-1.10 (0.16)	-1.13 (0.11)	-0.79 (0.21)	0.33	1.00	0.026	0.37	1.00	0.035	0.23	1.00
Selenomonas HMT 442	-2.60 (0.05)	-2.64 (0.09)	-2.64 (0.07)	-2.35 (0.16)	0.13	1.00	0.089	0.002	0.55	0.048	0.09	1.00
Treponema lecithinolyticum	-2.01 (0.08)	-2.14 (0.13)	-2.01 (0.11)	-1.85 (0.22)	0.52	1.00	0.057	0.046	1.00	0.029	0.31	1.00
Treponema medium	-2.79 (0.06)	-2.93 (0.09)	-2.76 (0.09)	-2.66 (0.19)	0.34	1.00	0.082	0.004	1.00	0.052	0.07	1.00
Tannerella HMT 286	0.10 (0.07)	-0.19 (0.14)	0.22 (0.10)	0.08 (0.18)	0.06	1.00	-0.008	0.77	1.00	-0.013	0.65	1.00
Veillonellaceae_[G-1] HMT 155	0.99 (0.09)	0.94 (0.18)	0.95 (0.12)	1.19 (0.21)	0.61	1.00	0.021	0.47	1.00	0.000	0.99	1.00
Prevotella HMT 314	-2.28 (0.07)	-2.16 (0.14)	-2.44 (0.09)	-1.91 (0.23)	0.023	1.00	0.021	0.46	1.00	0.038	0.19	1.00
Prevotella nigrescens	4.31 (0.10)	4.38 (0.20)	4.19 (0.14)	4.62 (0.23)	0.30	1.00	0.143	<.001	<.001	0.012	0.67	1.00
Prevotella pleuritidis	-0.11 (0.12)	-0.20 (0.23)	-0.12 (0.16)	0.03 (0.32)	0.83	1.00	0.126	<.001	0.003	0.012	0.67	1.00
Butyrivibrio HMT 080	-2.97 (0.06)	-3.09 (0.09)	-2.93 (0.08)	-2.90 (0.17)	0.48	1.00	0.002	0.94	1.00	0.042	0.15	1.00
Stomatobaculum longum	-0.71 (0.07)	-0.77 (0.15)	-0.72 (0.10)	-0.59 (0.18)	0.74	1.00	0.012	0.67	1.00	0.059	0.04	1.00
Capnocytophaga HMT 336	0.69 (0.09)	0.70 (0.18)	0.64 (0.12)	0.86 (0.22)	0.69	1.00	0.036	0.21	1.00	-0.000	0.99	1.00
Prevotella multiformis	-3.09 (0.06)	-3.10 (0.09)	-3.12 (0.08)	-2.98 (0.18)	0.69	1.00	0.003	0.91	1.00	0.014	0.62	1.00
Treponema vincentii	-2.68 (0.06)	-2.80 (0.09)	-2.62 (0.08)	-2.69 (0.16)	0.45	1.00	0.026	0.37	1.00	-0.005	0.86	1.00
Leptotrichia buccalis	0.47 (0.10)	0.22 (0.19)	0.61 (0.13)	0.33 (0.23)	0.22	1.00	0.018	0.53	1.00	0.004	0.88	1.00
Prevotella oulorum	1.20 (0.09)	1.05 (0.19)	1.28 (0.11)	1.15 (0.21)	0.52	1.00	0.001	0.96	1.00	-0.002	0.96	1.00
Capnocytophaga HMT 338	-1.07 (0.09)	-1.07 (0.17)	-1.09 (0.12)	-0.98 (0.23)	0.90	1.00	0.005	0.86	1.00	-0.008	0.78	1.00
Selenomonas HMT 133	-2.37 (0.08)	-2.40 (0.15)	-2.36 (0.10)	-2.34 (0.21)	0.96	1.00	-0.045	0.12	1.00	-0.012	0.68	1.00
Selenomonas HMT 146	0.03 (0.08)	-0.01 (0.16)	0.04 (0.11)	0.04 (0.20)	0.97	1.00	0.096	<.001	0.23	-0.019	0.52	1.00
Bifidobacterium dentium	-1.86 (0.08)	-1.74 (0.17)	-1.97 (0.11)	-1.69 (0.23)	0.34	1.00	-0.016	0.58	1.00	0.047	0.100	1.00
Shuttleworthia satelles	-2.09 (0.07)	-2.00 (0.13)	-2.17 (0.09)	-1.95 (0.20)	0.38	1.00	-0.004	0.90	1.00	-0.032	0.26	1.00
Streptococcus anginosus	1.15 (0.11)	1.26 (0.21)	1.07 (0.14)	1.30 (0.26)	0.63	1.00	0.055	0.06	1.00	0.006	0.83	1.00
Selenomonas HMT 936	-0.97 (0.08)	-1.20 (0.15)	-0.82 (0.11)	-1.16 (0.19)	0.08	1.00	0.041	0.16	1.00	0.038	0.18	1.00
Prevotella oris	5.08 (0.09)	5.13 (0.17)	5.04 (0.12)	5.16 (0.22)	0.84	1.00	0.044	0.12	1.00	-0.017	0.56	1.00
Actinobaculum HMT 848	-0.70 (0.08)	-0.84 (0.16)	-0.60 (0.10)	-0.82 (0.19)	0.33	1.00	0.000	0.99	1.00	0.000	0.99	1.00

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	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	†	‡	r [†]	p-value		r [†]	p-value	
							†	‡		†	‡	
Peptostreptococcaceae_[XI][G-7] [Eubacterium]_yuri	0.07 (0.10)	-0.09 (0.19)	0.17 (0.13)	-0.06 (0.23)	0.43	1.00	0.005	0.86	1.00	-0.056	0.05	1.00
Leptotrichia HMT 498	-1.07 (0.09)	-1.20 (0.17)	-0.98 (0.12)	-1.19 (0.23)	0.51	1.00	0.059	0.04	1.00	-0.006	0.84	1.00
Prevotella veroralis	-1.84 (0.08)	-1.80 (0.16)	-1.88 (0.10)	-1.79 (0.22)	0.90	1.00	0.056	0.05	1.00	-0.023	0.42	1.00
Aggregatibacter actinomycetemcomitans	-3.02 (0.07)	-3.01 (0.11)	-3.03 (0.09)	-3.00 (0.20)	0.98	1.00	-0.081	0.005	1.00	0.040	0.17	1.00
TM7_[G-3] HMT 351	-1.51 (0.06)	-1.53 (0.12)	-1.49 (0.08)	-1.53 (0.16)	0.95	1.00	-0.001	0.97	1.00	-0.004	0.90	1.00
Prevotella micans	-2.15 (0.07)	-2.15 (0.12)	-2.16 (0.09)	-2.16 (0.18)	1.00	1.00	0.064	0.03	1.00	-0.009	0.76	1.00
Parvimonas HMT 393	0.59 (0.11)	0.67 (0.21)	0.54 (0.14)	0.65 (0.27)	0.83	1.00	-0.018	0.53	1.00	-0.016	0.57	1.00
Atopobium HMT 199	-2.26 (0.07)	-2.17 (0.14)	-2.32 (0.09)	-2.19 (0.20)	0.62	1.00	-0.035	0.23	1.00	0.018	0.53	1.00
Actinomyces meyeri	-0.05 (0.08)	-0.20 (0.15)	0.06 (0.11)	-0.22 (0.20)	0.24	1.00	0.032	0.27	1.00	0.040	0.16	1.00
Prevotella melaninogenica	1.90 (0.08)	1.87 (0.16)	1.93 (0.11)	1.82 (0.19)	0.88	1.00	-0.056	0.05	1.00	0.030	0.29	1.00
TM7_[G-2] HMT 350	-1.83 (0.09)	-1.67 (0.17)	-1.93 (0.11)	-1.72 (0.23)	0.39	1.00	0.005	0.87	1.00	-0.038	0.19	1.00
Lachnoanaerobaculum saburreum	1.07 (0.08)	1.00 (0.16)	1.14 (0.11)	0.93 (0.19)	0.54	1.00	-0.021	0.47	1.00	0.019	0.51	1.00
Actinomyces HMT 178	-0.93 (0.06)	-1.00 (0.13)	-0.86 (0.08)	-1.06 (0.14)	0.41	1.00	-0.098	<.001	0.17	-0.016	0.58	1.00
Capnocytophaga HMT 864	-1.25 (0.08)	-1.15 (0.16)	-1.30 (0.11)	-1.23 (0.21)	0.77	1.00	-0.005	0.87	1.00	-0.022	0.45	1.00
Solobacterium moorei	-0.52 (0.06)	-0.48 (0.13)	-0.52 (0.09)	-0.56 (0.16)	0.92	1.00	0.047	0.10	1.00	0.033	0.25	1.00
Streptococcus parasanguinis_II	0.75 (0.09)	0.67 (0.17)	0.83 (0.12)	0.59 (0.22)	0.56	1.00	-0.104	<.001	0.076	0.075	0.009	1.00
Megasphaera micronuciformis	0.68 (0.09)	0.68 (0.17)	0.70 (0.11)	0.59 (0.21)	0.90	1.00	-0.016	0.57	1.00	-0.016	0.58	1.00
Porphyromonas HMT 278	-2.30 (0.07)	-2.15 (0.13)	-2.37 (0.09)	-2.27 (0.19)	0.39	1.00	0.006	0.83	1.00	0.021	0.47	1.00
Actinomyces oris	2.36 (0.08)	2.21 (0.15)	2.51 (0.10)	2.09 (0.19)	0.07	1.00	-0.082	0.004	1.00	0.024	0.41	1.00
Selenomonas noxia	4.81 (0.08)	4.73 (0.16)	4.91 (0.10)	4.60 (0.17)	0.29	1.00	-0.125	<.001	0.004	-0.013	0.64	1.00
Leptotrichia shahii	0.11 (0.10)	0.07 (0.21)	0.18 (0.14)	-0.07 (0.25)	0.67	1.00	-0.015	0.60	1.00	-0.033	0.25	1.00
Campylobacter gracilis	5.19 (0.05)	5.13 (0.11)	5.27 (0.06)	4.99 (0.11)	0.09	1.00	-0.038	0.18	1.00	0.008	0.78	1.00
Pyramidobacter piscolens	-3.52 (0.04)	-3.35 (0.07)	-3.61 (0.05)	-3.49 (0.16)	0.03	1.00	-0.141	<.001	<.001	0.003	0.91	1.00
Capnocytophaga HMT 326	0.42 (0.10)	0.50 (0.20)	0.41 (0.14)	0.35 (0.24)	0.89	1.00	-0.013	0.64	1.00	-0.012	0.68	1.00
Prevotella loescheii	-1.22 (0.09)	-1.14 (0.17)	-1.24 (0.13)	-1.30 (0.24)	0.85	1.00	-0.030	0.29	1.00	-0.004	0.90	1.00
Prevotella saccharolytica	-0.37 (0.07)	-0.21 (0.15)	-0.43 (0.10)	-0.40 (0.18)	0.47	1.00	0.017	0.56	1.00	-0.054	0.06	1.00
Prevotella salivae	0.32 (0.08)	0.38 (0.17)	0.34 (0.11)	0.19 (0.19)	0.73	1.00	-0.030	0.30	1.00	0.036	0.21	1.00
Ruminococcaceae_[G-1] HMT 075	-0.80 (0.08)	-0.66 (0.16)	-0.85 (0.10)	-0.86 (0.18)	0.58	1.00	-0.043	0.14	1.00	-0.047	0.10	1.00
Fusobacterium naviforme	3.58 (0.08)	3.58 (0.16)	3.63 (0.11)	3.38 (0.19)	0.52	1.00	-0.029	0.32	1.00	-0.035	0.22	1.00
Selenomonas HMT 892	0.98 (0.08)	1.05 (0.17)	0.98 (0.11)	0.85 (0.20)	0.74	1.00	0.042	0.14	1.00	0.018	0.54	1.00
Campylobacter curvus	-1.67 (0.07)	-1.61 (0.14)	-1.65 (0.10)	-1.82 (0.18)	0.64	1.00	-0.071	0.014	1.00	0.002	0.96	1.00
Streptococcus cristatus	3.29 (0.07)	3.26 (0.15)	3.37 (0.10)	3.05 (0.16)	0.30	1.00	-0.113	<.001	0.021	0.008	0.78	1.00
Lachnospiraceae_[G-3] HMT 100	0.59 (0.08)	0.70 (0.16)	0.58 (0.11)	0.48 (0.19)	0.69	1.00	-0.045	0.12	1.00	-0.051	0.08	1.00
Megasphaera HMT 123	-2.53 (0.08)	-2.28 (0.17)	-2.64 (0.10)	-2.52 (0.22)	0.18	1.00	0.012	0.68	1.00	0.037	0.20	1.00

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD			CAL		
	Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	†	‡	r [†]	p-value		r [†]	p-value	
								†	‡		†	‡
TM7_[G-1] HMT 952	2.58 (0.10)	2.83 (0.18)	2.47 (0.13)	2.58 (0.23)	0.30	1.00	-0.018	0.53	1.00	-0.074	0.01	1.00
Aggregatibacter HMT 513	-2.65 (0.07)	-2.52 (0.13)	-2.68 (0.09)	-2.77 (0.19)	0.48	1.00	-0.021	0.46	1.00	-0.044	0.13	1.00
Treponema HMT 247	-3.45 (0.05)	-3.33 (0.07)	-3.46 (0.06)	-3.59 (0.14)	0.19	1.00	-0.075	0.009	1.00	0.014	0.63	1.00
Leptotrichia wadei	2.15 (0.11)	2.20 (0.21)	2.19 (0.14)	1.93 (0.24)	0.65	1.00	-0.081	0.005	1.00	-0.033	0.25	1.00
Aggregatibacter HMT 458	-0.25 (0.09)	-0.29 (0.17)	-0.14 (0.12)	-0.57 (0.20)	0.22	1.00	-0.029	0.31	1.00	-0.032	0.27	1.00
Fusobacterium HMT 370	-2.20 (0.06)	-2.11 (0.11)	-2.19 (0.08)	-2.40 (0.15)	0.28	1.00	0.013	0.65	1.00	0.008	0.77	1.00
Capnocytophaga HMT 412	-1.89 (0.08)	-1.71 (0.16)	-1.93 (0.11)	-2.01 (0.19)	0.41	1.00	0.022	0.45	1.00	-0.031	0.27	1.00
Selenomonas flueggei	0.80 (0.08)	0.94 (0.17)	0.79 (0.11)	0.63 (0.18)	0.47	1.00	-0.018	0.54	1.00	-0.065	0.02	1.00
Atopobium parvulum	-0.26 (0.08)	-0.18 (0.15)	-0.23 (0.11)	-0.49 (0.18)	0.42	1.00	-0.018	0.52	1.00	-0.048	0.093	1.00
Eikenella corrodens	2.87 (0.07)	2.96 (0.14)	2.90 (0.09)	2.65 (0.15)	0.32	1.00	-0.012	0.69	1.00	-0.002	0.94	1.00
Prevotella HMT 313	-1.50 (0.08)	-1.24 (0.16)	-1.60 (0.10)	-1.55 (0.20)	0.15	1.00	-0.037	0.20	1.00	-0.031	0.28	1.00
TM7_[G-1] HMT 348	-0.52 (0.08)	-0.40 (0.16)	-0.52 (0.11)	-0.71 (0.19)	0.48	1.00	-0.046	0.11	1.00	-0.048	0.09	1.00
Selenomonas artemidis	2.51 (0.11)	2.42 (0.21)	2.66 (0.14)	2.10 (0.27)	0.16	1.00	-0.083	0.004	1.00	-0.049	0.09	1.00
Streptococcus lactarius	-1.32 (0.07)	-1.24 (0.13)	-1.28 (0.09)	-1.57 (0.18)	0.27	1.00	-0.092	0.001	0.36	0.019	0.52	1.00
Capnocytophaga granulosa	2.73 (0.09)	2.77 (0.19)	2.80 (0.12)	2.44 (0.21)	0.37	1.00	-0.088	0.002	0.61	-0.038	0.19	1.00
Selenomonas HMT 478	-2.49 (0.06)	-2.56 (0.10)	-2.35 (0.08)	-2.89 (0.13)	0.004	1.00	-0.113	<.001	0.02	-0.032	0.26	1.00
Prevotella pallens	-0.93 (0.08)	-0.82 (0.16)	-0.92 (0.11)	-1.17 (0.19)	0.37	1.00	-0.070	0.016	1.00	-0.024	0.40	1.00
TM7_[G-1] HMT 488	-0.39 (0.10)	-0.35 (0.20)	-0.31 (0.13)	-0.70 (0.25)	0.37	1.00	-0.071	0.013	1.00	-0.053	0.07	1.00
Neisseria subflava	-1.88 (0.09)	-1.65 (0.17)	-1.95 (0.12)	-2.01 (0.23)	0.31	1.00	-0.035	0.23	1.00	0.014	0.64	1.00
Selenomonas HMT 136	1.85 (0.09)	2.01 (0.17)	1.84 (0.11)	1.65 (0.21)	0.41	1.00	-0.071	0.01	1.00	-0.025	0.39	1.00
Veillonella HMT 780	-1.94 (0.08)	-1.74 (0.16)	-1.97 (0.10)	-2.11 (0.19)	0.31	1.00	0.059	0.04	1.00	-0.038	0.19	1.00
Veillonella rogosae	0.89 (0.09)	0.95 (0.19)	0.96 (0.12)	0.58 (0.22)	0.32	1.00	-0.055	0.06	1.00	-0.042	0.15	1.00
Prevotella HMT 475	-2.87 (0.06)	-2.80 (0.10)	-2.81 (0.08)	-3.16 (0.14)	0.07	1.00	-0.037	0.21	1.00	-0.018	0.54	1.00
Alloprevotella HMT 473	-1.86 (0.08)	-1.92 (0.15)	-1.72 (0.11)	-2.29 (0.19)	0.03	1.00	-0.016	0.58	1.00	-0.030	0.30	1.00
Selenomonas HMT 149	-2.62 (0.06)	-2.45 (0.11)	-2.64 (0.07)	-2.83 (0.16)	0.11	1.00	-0.102	<.001	0.10	-0.062	0.03	1.00
Veillonella atypica	2.86 (0.09)	3.03 (0.17)	2.85 (0.12)	2.65 (0.20)	0.37	1.00	-0.087	0.002	0.64	-0.003	0.92	1.00
Streptococcus HMT 074	0.16 (0.07)	0.25 (0.15)	0.20 (0.09)	-0.13 (0.18)	0.18	1.00	-0.081	0.005	1.00	0.028	0.32	1.00
Capnocytophaga HMT 332	-2.49 (0.07)	-2.39 (0.14)	-2.45 (0.09)	-2.78 (0.18)	0.18	1.00	-0.080	0.005	1.00	-0.026	0.37	1.00
Selenomonas HMT 937	-2.35 (0.06)	-2.20 (0.12)	-2.34 (0.08)	-2.61 (0.15)	0.09	1.00	-0.091	0.001	0.40	-0.074	0.01	1.00
Mitsuokella HMT 131	-1.80 (0.09)	-1.65 (0.18)	-1.78 (0.11)	-2.07 (0.20)	0.29	1.00	-0.084	0.003	0.89	0.028	0.34	1.00
Streptococcus sobrinus	-3.05 (0.07)	-3.00 (0.10)	-2.97 (0.09)	-3.43 (0.16)	0.03	1.00	-0.089	0.002	0.51	-0.020	0.48	1.00
Leptotrichia hofstadii	0.21 (0.10)	0.35 (0.21)	0.23 (0.13)	-0.08 (0.24)	0.38	1.00	-0.066	0.02	1.00	-0.051	0.08	1.00
Capnocytophaga leadbetteri	2.88 (0.09)	2.96 (0.19)	2.95 (0.12)	2.52 (0.21)	0.21	1.00	-0.085	0.003	0.80	-0.027	0.36	1.00
Leptotrichia HMT 223	-1.82 (0.08)	-1.58 (0.16)	-1.86 (0.10)	-2.02 (0.20)	0.18	1.00	0.000	0.99	1.00	-0.112	<.001	0.028
Actinomyces HMT 180	1.44 (0.07)	1.66 (0.14)	1.41 (0.09)	1.21 (0.16)	0.10	1.00	-0.055	0.06	1.00	-0.055	0.06	1.00

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD			CAL		
							Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	r [†]	p-value
	†	‡	†	‡	†	‡						
Capnocytophaga HMT 903	-2.17 (0.08)	-1.90 (0.15)	-2.24 (0.10)	-2.36 (0.19)	0.11	1.00	-0.043	0.14	1.00	-0.037	0.20	1.00
Streptococcus sinensis	-2.13 (0.06)	-2.07 (0.11)	-2.05 (0.08)	-2.53 (0.14)	0.01	1.00	-0.110	<.001	0.035	0.002	0.93	1.00
Capnocytophaga HMT 380	-2.70 (0.07)	-2.52 (0.12)	-2.70 (0.09)	-2.97 (0.18)	0.10	1.00	-0.085	0.003	0.81	-0.038	0.19	1.00
Capnocytophaga HMT 902	-1.64 (0.08)	-1.57 (0.16)	-1.56 (0.11)	-2.02 (0.20)	0.12	1.00	-0.058	0.05	1.00	0.007	0.80	1.00
Streptococcus gordonii	4.21 (0.08)	4.17 (0.16)	4.37 (0.10)	3.69 (0.19)	0.008	1.00	-0.102	<.001	0.10	0.006	0.82	1.00
Leptotrichia HMT 879	-2.59 (0.07)	-2.36 (0.14)	-2.62 (0.09)	-2.85 (0.16)	0.06	1.00	-0.064	0.03	1.00	-0.042	0.14	1.00
Aggregatibacter segnis	-0.77 (0.10)	-0.66 (0.19)	-0.72 (0.13)	-1.15 (0.23)	0.21	1.00	-0.023	0.43	1.00	-0.032	0.27	1.00
Streptococcus parasanguinis_I	-0.26 (0.08)	-0.18 (0.15)	-0.17 (0.10)	-0.68 (0.17)	0.04	1.00	-0.126	<.001	0.003	-0.005	0.85	1.00
Leptotrichia HMT 417	0.84 (0.09)	0.81 (0.18)	1.00 (0.12)	0.30 (0.21)	0.02	1.00	-0.027	0.35	1.00	-0.022	0.44	1.00
Leptotrichia HMT 215	-0.04 (0.08)	0.10 (0.16)	0.00 (0.11)	-0.41 (0.20)	0.11	1.00	-0.048	0.09	1.00	-0.025	0.39	1.00
Capnocytophaga HMT 323	-1.94 (0.08)	-1.67 (0.16)	-1.99 (0.11)	-2.18 (0.18)	0.10	1.00	-0.125	<.001	0.003	-0.043	0.13	1.00
Actinobaculum HMT 183	0.33 (0.08)	0.51 (0.16)	0.35 (0.10)	0.00 (0.18)	0.12	1.00	-0.043	0.14	1.00	-0.032	0.27	1.00
Prevotella HMT 472	0.45 (0.10)	0.74 (0.21)	0.39 (0.13)	0.22 (0.24)	0.21	1.00	-0.018	0.53	1.00	-0.058	0.05	1.00
Actinomyces gerencseriae	0.57 (0.08)	0.61 (0.15)	0.68 (0.10)	0.09 (0.18)	0.02	1.00	-0.139	<.001	<.001	-0.056	0.05	1.00
Scardovia wiggisiae	-1.93 (0.09)	-1.72 (0.17)	-1.94 (0.12)	-2.24 (0.21)	0.17	1.00	-0.056	0.05	1.00	-0.035	0.22	1.00
GN02_[G-2] HMT 873	-3.06 (0.05)	-2.83 (0.11)	-3.06 (0.07)	-3.37 (0.13)	0.008	1.00	-0.104	<.001	0.08	0.014	0.64	1.00
Aggregatibacter aphrophilus	-0.29 (0.11)	-0.15 (0.22)	-0.24 (0.15)	-0.69 (0.25)	0.25	1.00	-0.063	0.03	1.00	-0.011	0.70	1.00
Neisseria pharyngis	-2.86 (0.06)	-2.62 (0.12)	-2.88 (0.08)	-3.17 (0.15)	0.02	1.00	-0.077	0.008	1.00	-0.030	0.30	1.00
Granulicatella adiacens	4.17 (0.06)	4.36 (0.11)	4.19 (0.08)	3.82 (0.15)	0.015	1.00	-0.165	<.001	<.001	0.006	0.83	1.00
Corynebacterium matruchotii	4.83 (0.07)	5.05 (0.14)	4.83 (0.10)	4.50 (0.15)	0.05	1.00	-0.099	<.001	0.16	-0.035	0.23	1.00
TM7_[G-6] HMT 870	-1.71 (0.08)	-1.53 (0.15)	-1.67 (0.10)	-2.10 (0.19)	0.06	1.00	-0.042	0.14	1.00	-0.029	0.32	1.00
Kingella denitrificans	0.55 (0.09)	0.76 (0.18)	0.57 (0.12)	0.19 (0.21)	0.12	1.00	-0.070	0.01	1.00	-0.025	0.38	1.00
Bergeyella HMT 907	-1.81 (0.07)	-1.72 (0.14)	-1.71 (0.09)	-2.31 (0.15)	0.006	1.00	-0.083	0.004	1.00	-0.010	0.72	1.00
Neisseria sicca	1.73 (0.11)	2.11 (0.22)	1.64 (0.14)	1.51 (0.27)	0.13	1.00	-0.023	0.43	1.00	0.005	0.85	1.00
Leptotrichia HMT 392	0.34 (0.09)	0.61 (0.19)	0.31 (0.12)	0.01 (0.22)	0.11	1.00	-0.017	0.56	1.00	-0.081	0.005	1.00
Leptotrichia HMT 225	-0.78 (0.10)	-0.58 (0.20)	-0.75 (0.12)	-1.18 (0.23)	0.14	1.00	-0.058	0.05	1.00	-0.074	0.010	1.00
Veillonella dispar	8.26 (0.06)	8.42 (0.13)	8.31 (0.08)	7.82 (0.14)	0.004	1.00	-0.146	<.001	<.001	-0.033	0.25	1.00
Streptococcus australis	-1.51 (0.07)	-1.28 (0.15)	-1.50 (0.09)	-1.89 (0.17)	0.03	1.00	-0.122	<.001	0.006	-0.042	0.14	1.00
Selenomonas HMT 137	0.95 (0.11)	1.23 (0.23)	0.92 (0.15)	0.59 (0.28)	0.20	1.00	-0.022	0.44	1.00	-0.019	0.51	1.00
Haemophilus haemolyticus	-1.81 (0.08)	-1.58 (0.16)	-1.79 (0.10)	-2.22 (0.18)	0.04	1.00	-0.042	0.15	1.00	0.002	0.94	1.00
Neisseria bacilliformis	-1.89 (0.09)	-1.66 (0.18)	-1.86 (0.12)	-2.30 (0.20)	0.07	1.00	-0.086	0.003	0.76	-0.011	0.72	1.00
Gemella sanguinis	-0.19 (0.07)	0.11 (0.14)	-0.22 (0.09)	-0.55 (0.17)	0.01	1.00	-0.139	<.001	<.001	-0.046	0.11	1.00
Rothia mucilaginosa	1.95 (0.08)	2.05 (0.15)	2.08 (0.10)	1.39 (0.19)	0.004	1.00	-0.151	<.001	<.001	0.007	0.81	1.00
Gemella morbillorum	3.16 (0.09)	3.36 (0.18)	3.21 (0.12)	2.70 (0.21)	0.06	1.00	-0.059	0.04	1.00	-0.032	0.26	1.00
SR1_[G-1] HMT 874	-1.98 (0.07)	-1.59 (0.14)	-2.06 (0.09)	-2.26 (0.16)	0.002	0.60	-0.086	0.003	0.76	-0.059	0.04	1.00

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD			CAL		
							Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	r [†]	p-value
	†	‡	†	‡								
Ottowia HMT 894	-1.30 (0.08)	-0.97 (0.16)	-1.34 (0.11)	-1.64 (0.19)	0.03	1.00	-0.085	0.003	0.85	-0.049	0.09	1.00
Porphyromonas HMT 284	0.09 (0.10)	0.34 (0.20)	0.11 (0.12)	-0.33 (0.23)	0.08	1.00	-0.043	0.13	1.00	-0.047	0.10	1.00
Prevotella histicola	-0.76 (0.09)	-0.39 (0.18)	-0.83 (0.12)	-1.07 (0.21)	0.04	1.00	-0.092	0.001	0.38	0.005	0.85	1.00
TM7_[G-1] HMT 347	-0.96 (0.09)	-0.67 (0.18)	-0.97 (0.12)	-1.35 (0.23)	0.06	1.00	-0.057	0.05	1.00	-0.048	0.09	1.00
Fusobacterium nucleatum_subsp._polymorphum	5.19 (0.07)	5.33 (0.14)	5.29 (0.09)	4.64 (0.16)	<.001	0.26	-0.130	<.001	0.002	-0.082	0.004	1.00
Prevotella HMT 306	-2.10 (0.07)	-1.81 (0.14)	-2.11 (0.10)	-2.51 (0.16)	0.01	1.00	-0.123	<.001	0.005	-0.030	0.30	1.00
Fusobacterium periodonticum	-0.02 (0.07)	0.31 (0.16)	-0.06 (0.10)	-0.39 (0.18)	0.01	1.00	-0.093	0.001	0.33	-0.042	0.15	1.00
Actinomyces HMT 171	0.67 (0.08)	0.77 (0.15)	0.79 (0.10)	0.07 (0.19)	0.003	0.77	-0.113	<.001	0.02	-0.077	0.008	1.00
Neisseria elongata	1.66 (0.10)	1.82 (0.21)	1.74 (0.14)	1.11 (0.24)	0.06	1.00	-0.084	0.004	0.97	-0.051	0.08	1.00
Veillonella denticariosi	-1.36 (0.09)	-1.12 (0.18)	-1.33 (0.12)	-1.83 (0.21)	0.04	1.00	-0.114	<.001	0.02	-0.041	0.16	1.00
Lachnoanaerobaculum umeaense	-0.47 (0.07)	-0.24 (0.16)	-0.43 (0.09)	-0.97 (0.17)	0.006	1.00	-0.092	0.001	0.37	-0.071	0.01	1.00
Alloprevotella HMT 308	-1.14 (0.07)	-0.95 (0.13)	-1.08 (0.09)	-1.67 (0.16)	0.002	0.46	-0.106	<.001	0.06	-0.080	0.006	1.00
Streptococcus mutans	1.39 (0.11)	1.61 (0.22)	1.44 (0.15)	0.87 (0.24)	0.09	1.00	-0.117	<.001	0.01	0.001	0.96	1.00
Campylobacter concisus	2.41 (0.06)	2.62 (0.13)	2.46 (0.08)	1.89 (0.16)	<.001	0.24	-0.094	0.001	0.29	-0.039	0.17	1.00
Leptotrichia hongkongensis	2.02 (0.09)	2.17 (0.19)	2.12 (0.12)	1.43 (0.22)	0.02	1.00	-0.055	0.06	1.00	-0.039	0.17	1.00
Lactobacillus gasseri	-2.95 (0.06)	-2.70 (0.12)	-2.92 (0.09)	-3.45 (0.14)	<.001	0.20	-0.139	<.001	<.001	-0.029	0.31	1.00
Actinomyces johnsonii	0.98 (0.07)	1.24 (0.14)	1.00 (0.10)	0.49 (0.18)	0.004	1.00	-0.099	<.001	0.15	-0.140	<.001	<.001
Veillonella parvula	7.61 (0.07)	7.82 (0.13)	7.67 (0.09)	7.06 (0.17)	<.001	0.18	-0.133	<.001	<.001	-0.055	0.05	1.00
Corynebacterium durum	0.94 (0.08)	1.21 (0.16)	0.97 (0.11)	0.43 (0.20)	0.010	1.00	-0.128	<.001	0.002	-0.078	0.007	1.00
TM7_[G-1] HMT 352	-1.15 (0.07)	-0.73 (0.15)	-1.23 (0.09)	-1.52 (0.18)	<.001	0.19	-0.089	0.002	0.50	-0.039	0.18	1.00
Lachnoanaerobaculum orale	-1.33 (0.07)	-1.01 (0.14)	-1.33 (0.09)	-1.80 (0.15)	<.001	0.21	-0.097	<.001	0.20	-0.086	0.003	0.74
Neisseria flavescens	1.24 (0.10)	1.50 (0.19)	1.28 (0.13)	0.70 (0.22)	0.03	1.00	-0.074	0.010	1.00	0.013	0.65	1.00
Actinomyces HMT 169	1.90 (0.09)	2.05 (0.17)	2.03 (0.11)	1.23 (0.22)	0.003	0.78	-0.123	<.001	0.005	-0.062	0.03	1.00
Rothia dentocariosa	4.29 (0.09)	4.41 (0.16)	4.44 (0.11)	3.59 (0.23)	0.001	0.32	-0.138	<.001	<.001	-0.052	0.07	1.00
Bergeyella HMT 322	2.09 (0.07)	2.35 (0.14)	2.15 (0.09)	1.52 (0.15)	<.001	0.09	-0.164	<.001	<.001	-0.077	0.007	1.00
Cardiobacterium valvarum	1.52 (0.09)	1.71 (0.17)	1.61 (0.11)	0.88 (0.20)	0.005	1.00	-0.078	0.007	1.00	-0.081	0.005	1.00
TM7_[G-1] HMT 869	-1.60 (0.09)	-1.21 (0.19)	-1.64 (0.12)	-2.04 (0.21)	0.01	1.00	-0.057	0.05	1.00	-0.070	0.02	1.00
Neisseria oralis	0.33 (0.11)	0.71 (0.21)	0.31 (0.14)	-0.14 (0.25)	0.04	1.00	-0.005	0.86	1.00	-0.066	0.02	1.00
Actinomyces HMT 170	-1.29 (0.08)	-0.89 (0.17)	-1.33 (0.11)	-1.74 (0.20)	0.005	1.00	-0.109	<.001	0.04	-0.076	0.009	1.00
Granulicatella elegans	-1.60 (0.07)	-1.23 (0.16)	-1.62 (0.10)	-2.09 (0.17)	0.001	0.30	-0.007	0.82	1.00	-0.041	0.15	1.00
Streptococcus sanguinis	4.94 (0.07)	5.29 (0.15)	4.94 (0.09)	4.41 (0.19)	<.001	0.20	-0.189	<.001	<.001	-0.110	<.001	0.03
Capnocytophaga gingivalis	3.38 (0.08)	3.67 (0.16)	3.43 (0.10)	2.79 (0.18)	0.001	0.30	-0.165	<.001	<.001	-0.093	0.001	0.34
Abiotrophia defectiva	-0.13 (0.09)	0.35 (0.18)	-0.22 (0.11)	-0.55 (0.21)	0.002	0.51	-0.071	0.01	1.00	-0.055	0.06	1.00
Leptotrichia HMT 219	-1.32 (0.07)	-0.98 (0.15)	-1.31 (0.10)	-1.90 (0.17)	<.001	0.12	-0.115	<.001	0.02	-0.123	<.001	0.005

OTU label	Periodontal Disease Category*						Whole Mouth Mean					
	Overall (N = 1206)	None/Mild (n=303)	Moderate (n=703)	Severe (n=200)	p-value		PPD		CAL			
					Mean (SE)	Mean (SE)	Mean (SE)	Mean (SE)	r [†]	p-value	r [†]	p-value
					†	‡	†	‡	†	‡	†	‡
Porphyromonas HMT 275	-2.11 (0.08)	-1.69 (0.16)	-2.15 (0.10)	-2.61 (0.17)	<.001	0.12	-0.111	<.001	0.03	-0.082	0.004	1.00
Kingella oralis	2.68 (0.08)	3.08 (0.16)	2.67 (0.10)	2.14 (0.19)	<.001	0.26	-0.125	<.001	0.003	-0.048	0.09	1.00
Porphyromonas catoniae	-0.91 (0.09)	-0.52 (0.18)	-0.93 (0.11)	-1.47 (0.20)	0.003	0.77	-0.069	0.016	1.00	-0.076	0.009	1.00
Cardiobacterium hominis	2.23 (0.08)	2.44 (0.17)	2.35 (0.10)	1.49 (0.19)	<.001	0.05	-0.126	<.001	0.003	-0.089	0.002	0.52
Porphyromonas HMT 279	1.50 (0.09)	1.78 (0.18)	1.57 (0.12)	0.83 (0.22)	0.003	0.74	-0.097	<.001	0.19	-0.021	0.48	1.00
Bradyrhizobium elkanii	-2.53 (0.08)	-2.11 (0.16)	-2.56 (0.10)	-3.06 (0.18)	<.001	0.13	-0.134	<.001	<.001	-0.054	0.060	1.00
Streptococcus salivarius	3.02 (0.08)	3.44 (0.16)	2.99 (0.11)	2.47 (0.19)	<.001	0.26	-0.123	<.001	0.005	-0.030	0.30	1.00
Capnocytophaga sputigena	2.11 (0.10)	2.35 (0.19)	2.22 (0.12)	1.37 (0.23)	0.002	0.51	-0.133	<.001	<.001	-0.078	0.006	1.00
Aggregatibacter paraphrophilus	-1.82 (0.09)	-1.54 (0.17)	-1.73 (0.12)	-2.56 (0.19)	<.001	0.15	-0.087	0.002	0.64	-0.088	0.002	0.60
Leptotrichia HMT 212	1.46 (0.09)	1.83 (0.19)	1.51 (0.12)	0.72 (0.21)	<.001	0.12	-0.143	<.001	<.001	-0.096	<.001	0.23
Haemophilus HMT 036	-1.02 (0.09)	-0.59 (0.18)	-1.00 (0.12)	-1.71 (0.21)	<.001	0.08	-0.080	0.006	1.00	-0.068	0.02	1.00
Streptococcus intermedius	3.95 (0.10)	4.34 (0.18)	4.00 (0.13)	3.14 (0.24)	<.001	0.08	-0.105	<.001	0.07	-0.099	<.001	0.16

SE, standard error; PD, pocket depth; CAL, clinical attachment level.

*Periodontal disease presence and severity defined by CDC/AAP criteria (Eke et al., 2012).

††Pearson Product-Moment correlation coefficient.

†Uncorrected P-value.

‡Bonferroni corrected P-value.

Appendix Table 2. Prevalence (% present at any abundance) of the 267 identified taxa according to categories of periodontal disease. OTUs rank-sorted from largest to smallest difference in prevalence between Severe and None/Mild.

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
233	Anaerolineae_[G-1] HMT 439	16.2	29.0	56.5	<.001
209	Peptostreptococcaceae_[XI][G-6] [Eubacterium]_noda	24.8	35.8	60.0	<.001
253	Fretibacterium HMT 361	9.2	17.4	36.5	<.001
177	Desulfobulbus HMT 041	37.6	49.5	72.5	<.001
169	Fretibacterium HMT 362	41.3	52.9	73.5	<.001
195	Pseudoramibacter alactolyticus	27.7	41.3	59.0	<.001
256	Johnsonella HMT 166	7.9	16.4	31.0	<.001
248	Prevotella HMT 526	12.9	19.5	37.5	<.001
225	Bacteroidaceae_[G-1] HMT 272	22.4	33.0	51.0	<.001
251	Fretibacterium HMT 358	11.6	18.1	34.5	<.001
223	Lachnospiraceae_[G-8] HMT 500	23.4	35.3	50.5	<.001
221	Veillonellaceae_[G-1] HMT 145	29.0	32.4	54.0	<.001
82	Actinomyces israelii	71.6	82.9	92.5	<.001
237	Peptostreptococcaceae_[XI][G-5] [Eubacterium]_saph	20.5	27.3	44.0	<.001
117	Dialister pneumosintes	61.4	70.6	84.5	<.001
203	Prevotella dentalis	29.7	39.0	53.5	<.001
185	Mycoplasma salivarium	37.6	44.2	61.0	<.001
135	Prevotella oralis	55.8	64.3	78.5	<.001
226	Prevotella baroniae	26.1	31.7	47.5	<.001
247	Prevotella HMT 376	15.5	20.3	34.0	<.001
144	Treponema maltophilum	51.5	61.3	73.5	<.001
107	Streptococcus constellatus	64.7	73.5	84.5	<.001
238	Treponema HMT 237	22.4	25.0	40.5	<.001
267	Pyramidobacter piscolens	2.3	3.1	10.0	<.001
118	Fretibacterium HMT 359	63.7	70.1	82.5	<.001
190	Prevotella intermedia	36.6	41.4	56.5	<.001
217	Selenomonas HMT 442	30.7	34.3	49.5	<.001
211	Bacteroidetes_[G-5] HMT 511	31.0	35.4	50.0	<.001
84	Oribacterium HMT 078	73.6	82.5	88.5	<.001
76	Tannerella forsythia	77.6	82.4	92.5	<.001
163	Porphyromonas gingivalis	46.2	56.3	65.5	<.001

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
109	Selenomonas HMT 134	66.3	72.3	83.5	<.001
234	Selenomonas HMT 133	22.1	31.0	39.5	<.001
159	Treponema denticola	48.2	55.9	67.0	<.001
91	Veillonellaceae_[G-1] HMT 150	74.6	79.4	89.5	<.001
255	Treponema medium	11.9	18.3	26.0	<.001
130	Actinomyces HMT 178	58.1	66.6	75.0	<.001
196	Veillonellaceae_[G-1] HMT 129	35.3	39.7	52.5	<.001
60	Anaeroglobus geminatus	82.2	88.1	93.5	<.001
228	Selenomonas diana	25.7	33.1	42.0	<.001
132	Stomatobaculum longum	60.4	64.9	76.5	<.001
261	Aggregatibacter actinomycetemcomitans	7.9	12.1	19.0	<.001
126	Olsenella HMT 807	60.1	66.9	76.0	0.001
157	Alloprevotella rava	49.2	56.3	65.5	0.001
259	Butyrivibrio HMT 080	8.9	15.1	20.0	0.002
258	Prevotella multiformis	10.9	15.2	22.5	0.002
95	Fretibacterium fastidiosum	74.6	78.8	87.5	0.002
143	Selenomonas HMT 126	57.8	60.6	72.5	0.002
184	Campylobacter curvus	39.3	46.9	55.0	0.002
246	Treponema vincentii	15.8	22.3	28.5	0.003
79	Prevotella maculosa	78.2	81.9	90.0	0.003
78	Prevotella HMT 300	76.9	83.1	88.5	0.003
183	Filifactor alocis	44.2	44.5	57.5	0.003
52	Treponema socranskii	84.8	88.9	94.5	0.003
106	Atopobium rimae	68.0	73.1	81.5	0.004
127	Actinobaculum HMT 848	58.4	68.3	70.5	0.004
189	Tannerella HMT 808	38.9	41.5	53.0	0.005
153	Selenomonas HMT 936	48.8	59.3	60.0	0.005
155	Prevotella buccae	52.8	55.0	66.5	0.005
114	TM7_[G-5] HMT 356	69.0	69.3	80.5	0.006
218	Selenomonas HMT 478	28.1	38.3	38.0	0.006
212	Capnocytophaga HMT 323	35.0	34.6	46.5	0.007
168	Prevotella HMT 292	48.2	53.8	62.5	0.007
160	Peptostreptococcus stomatis	51.2	55.0	65.0	0.008
23	Parvimonas micra	94.7	97.2	99.5	0.008
200	Bifidobacterium dentium	36.0	39.7	49.5	0.009
49	Fretibacterium HMT 360	86.1	90.2	94.5	0.009
149	Streptococcus australis	52.5	62.7	61.0	0.009

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
125	<i>Centipeda periodontii</i>	61.7	67.9	74.5	0.011
89	<i>Prevotella oulorum</i>	74.3	81.4	84.0	0.011
63	<i>Alloprevotella tannerae</i>	84.8	86.5	93.5	0.011
85	<i>Prevotella salivae</i>	75.6	81.9	85.5	0.012
167	Peptostreptococcaceae_[XI][G-1] [Eubacterium]_infi	49.8	53.3	63.0	0.013
65	<i>Catonella morbi</i>	82.8	86.5	92.0	0.013
166	<i>Johnsonella ignava</i>	50.8	53.2	63.5	0.013
68	<i>Selenomonas infelix</i>	81.2	85.8	90.5	0.014
232	<i>Prevotella</i> HMT 314	30.4	28.7	39.0	0.021
39	TM7_[G-1] HMT 349	87.8	92.3	94.0	0.023
257	<i>Streptococcus sobrinus</i>	10.9	17.6	16.0	0.026
136	<i>Streptococcus sinensis</i>	58.1	66.9	62.5	0.026
205	<i>Capnocytophaga</i> HMT 412	34.7	38.5	46.5	0.027
121	<i>Lachnoanaerobaculum umeaense</i>	64.0	72.1	67.0	0.029
141	<i>Porphyromonas endodontalis</i>	59.1	62.6	70.5	0.032
188	<i>Treponema</i> HMT 231	38.6	43.8	50.0	0.041
266	<i>Treponema</i> HMT 247	2.6	5.0	7.5	0.042
67	<i>Prevotella denticola</i>	82.5	85.2	90.5	0.044
64	<i>Fusobacterium nucleatum</i> _subsp._ <i>nucleatum</i>	82.8	87.5	90.0	0.045
244	<i>Megasphaera</i> HMT 123	21.8	23.6	31.0	0.048
108	<i>Tannerella</i> HMT 286	67.3	74.3	75.5	0.048
31	<i>Prevotella nigrescens</i>	92.4	94.0	97.5	0.055
105	Lachnospiraceae_[G-3] HMT 100	70.6	72.8	80.0	0.056
110	<i>Leptotrichia buccalis</i>	67.3	73.1	76.5	0.057
56	TM7_[G-1] HMT 952	89.4	86.6	92.5	0.058
230	<i>Prevotella micans</i>	29.4	30.3	38.5	0.059
69	<i>Prevotella</i> HMT 317	83.2	84.6	90.5	0.060
9	<i>Rothia dentocariosa</i>	98.3	99.7	99.0	0.063
242	<i>Capnocytophaga</i> HMT 332	20.1	27.0	25.0	0.068
129	<i>Leptotrichia hofstadii</i>	60.7	67.3	69.5	0.068
139	<i>Prevotella pallens</i>	61.1	62.4	70.5	0.069
147	Peptostreptococcaceae_[XI][G-7] [Eubacterium]_yuri	54.8	62.4	60.5	0.074
142	<i>Prevotella saccharolytica</i>	61.4	61.6	70.0	0.077
152	Ruminococcaceae_[G-1] HMT 075	55.1	55.5	64.0	0.079
210	<i>Selenomonas</i> HMT 937	31.7	38.7	39.5	0.079

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
197	<i>Bergeyella</i> HMT 907	35.6	43.1	39.5	0.082
94	<i>Veillonellaceae</i> _[G-1] HMT 155	77.2	78.7	85.0	0.085
222	<i>Atopobium</i> HMT 199	32.3	34.1	41.5	0.087
124	<i>Actinomyces meyeri</i>	63.0	68.1	72.0	0.094
150	TM7_[G-1] HMT 348	57.4	59.0	66.5	0.099
75	<i>Peptostreptococcaceae</i> _[XI][G-9] [<i>Eubacterium</i>] _{brac}	81.2	82.1	88.0	0.100
103	<i>Atopobium parvulum</i>	73.3	76.2	81.5	0.103
201	<i>Prevotella</i> HMT 306	38.0	38.7	46.5	0.103
18	<i>Corynebacterium matruchotii</i>	97.7	96.9	99.5	0.106
40	<i>Campylobacter showae</i>	88.4	91.7	93.5	0.108
16	<i>Fusobacterium naviforme</i>	98.3	97.9	100.0	0.114
12	<i>Streptococcus gordonii</i>	98.0	99.4	99.0	0.118
231	<i>Porphyromonas</i> HMT 278	29.0	30.0	37.0	0.121
36	<i>Actinomyces</i> HMT 180	93.1	90.9	95.0	0.128
173	TM7_[G-3] HMT 351	47.2	52.3	56.0	0.131
204	<i>Shuttleworthia satelles</i>	35.6	39.0	44.5	0.137
140	<i>Aggregatibacter</i> HMT 458	58.4	65.0	63.5	0.138
99	<i>Selenomonas</i> HMT 919	73.9	77.4	81.5	0.138
87	<i>Streptococcus parasanguinis</i> _I	77.2	81.4	84.0	0.139
154	<i>Leptotrichia</i> HMT 225	52.1	57.5	60.5	0.142
54	<i>Streptococcus mutans</i>	87.8	87.6	92.5	0.148
38	<i>Prevotella melaninogenica</i>	91.4	90.8	95.0	0.159
186	<i>Capnocytophaga</i> HMT 338	42.9	44.1	51.0	0.159
25	<i>Rothia mucilaginosa</i>	94.7	97.2	96.0	0.161
236	<i>Treponema lecithinolyticum</i>	25.7	29.9	33.5	0.162
151	TM7_[G-1] HMT 488	53.1	58.9	60.5	0.162
22	<i>Haemophilus parainfluenzae</i>	95.7	97.7	96.0	0.166
194	<i>Prevotella veroralis</i>	37.6	41.8	46.0	0.168
178	<i>Capnocytophaga</i> HMT 864	44.9	49.9	53.0	0.168
30	TM7_[G-1] HMT 346	94.7	94.2	97.5	0.169
181	<i>Leptotrichia</i> HMT 498	43.2	48.9	50.5	0.176
7	<i>Fusobacterium nucleatum</i> _subsp._ <i>animalis</i>	98.7	99.4	100.0	0.181
120	<i>Solobacterium moorei</i>	67.3	70.1	75.0	0.183
193	<i>Mitsuokella</i> HMT 131	37.6	43.2	44.5	0.188
11	<i>Selenomonas noxia</i>	98.3	99.0	100.0	0.189
86	<i>Megasphaera micronuciformis</i>	78.2	80.9	84.5	0.214

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
174	Fusobacterium HMT 370	46.9	51.9	54.0	0.220
21	Streptococcus salivarius	97.7	96.4	98.5	0.242
123	Leptotrichia shahii	65.7	67.1	72.5	0.250
187	Capnocytophaga HMT 902	40.6	46.2	44.5	0.256
58	Leptotrichia wadei	86.1	87.6	91.0	0.257
51	Streptococcus HMT 074	86.8	90.0	90.5	0.260
156	Prevotella pleuritidis	53.8	56.0	61.0	0.274
10	Campylobacter gracilis	98.3	99.3	99.5	0.284
59	Streptococcus parasanguinis_II	85.8	87.5	90.5	0.295
254	Prevotella HMT 475	15.5	18.9	20.5	0.301
104	Capnocytophaga HMT 336	72.9	75.0	79.0	0.302
122	Parvimonas HMT 393	66.0	69.8	72.0	0.313
73	Gemella sanguinis	81.5	82.8	86.5	0.327
202	Veillonella HMT 780	37.0	38.8	43.5	0.329
80	Selenomonas flueggei	80.9	81.4	85.5	0.349
216	Alloprevotella HMT 473	32.7	37.4	36.0	0.356
199	TM7_[G-1] HMT 869	39.3	39.7	45.0	0.357
19	Actinomyces oris	96.4	97.3	98.5	0.357
29	Capnocytophaga gingivalis	93.7	95.2	96.5	0.363
224	TM7_[G-2] HMT 350	32.3	34.6	38.5	0.364
26	Veillonella atypica	96.4	95.9	98.0	0.368
131	Prevotella histicola	66.3	64.3	69.5	0.377
90	Veillonella rogosae	77.2	80.7	81.5	0.384
145	Lachnoanaerobaculum orale	57.4	61.9	62.0	0.385
72	Neisseria sicca	81.8	83.6	86.5	0.385
8	Streptococcus sanguinis	99.0	99.3	100.0	0.396
81	Selenomonas HMT 892	81.8	80.8	85.0	0.397
27	Dialister invisus	94.1	95.9	96.0	0.411
116	Prevotella HMT 472	67.7	71.6	72.0	0.415
214	Selenomonas HMT 149	35.3	35.7	40.5	0.416
97	Actinobaculum HMT 183	76.9	77.7	81.5	0.431
128	Neisseria oralis	64.0	66.1	69.5	0.446
92	Leptotrichia HMT 417	77.2	80.7	79.0	0.457
100	Selenomonas HMT 137	74.6	78.1	76.0	0.457
53	Leptotrichia hongkongensis	87.5	88.6	91.0	0.466
66	Corynebacterium durum	84.2	86.8	84.5	0.477
88	Cardiobacterium valvarum	78.5	81.7	79.5	0.483
37	Eikenella corrodens	91.1	92.0	94.0	0.490

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
71	Porphyromonas HMT 279	83.2	84.4	87.0	0.503
46	Bacteroidales_[G-2] HMT 274	90.1	89.8	92.5	0.508
13	Fusobacterium nucleatum_subsp._polymorphum	98.0	98.9	99.0	0.511
43	Selenomonas HMT 136	89.4	90.6	92.5	0.514
112	Selenomonas HMT 146	70.6	71.3	75.0	0.519
137	Porphyromonas HMT 284	61.1	64.6	63.5	0.567
158	Aggregatibacter aphrophilus	53.8	56.2	58.5	0.573
55	Cardiobacterium hominis	86.8	88.8	89.5	0.582
57	Actinomyces gerencseriae	86.5	88.1	89.5	0.583
249	Aggregatibacter HMT 513	18.2	20.6	21.5	0.583
42	Capnocytophaga granulosa	91.1	90.2	92.5	0.594
260	GN02_[G-2] HMT 873	12.2	14.2	15.0	0.611
146	Veillonella denticariosi	58.4	61.5	59.0	0.613
176	Prevotella HMT 313	49.5	49.9	53.5	0.629
113	Leptotrichia HMT 392	69.3	71.7	73.0	0.630
172	Aggregatibacter segnis	50.2	52.9	53.5	0.678
175	Prevotella loescheii	48.5	51.1	52.0	0.689
138	Alloprevotella HMT 308	61.4	64.2	64.0	0.693
83	Lachnoanaerobaculum saburreum	79.9	81.9	81.0	0.739
20	Prevotella oris	97.4	97.0	98.0	0.747
240	Leptotrichia HMT 879	24.1	25.3	27.0	0.763
48	Gemella morbillorum	90.4	89.5	91.0	0.780
33	Bergeyella HMT 322	92.7	92.6	94.0	0.791
207	Scardovia wiggsiae	37.6	38.3	40.5	0.798
165	Porphyromonas catoniae	53.1	55.2	53.5	0.803
101	Kingella denitrificans	75.6	76.5	78.0	0.821
245	Capnocytophaga HMT 380	21.1	22.8	23.0	0.828
32	Kingella oralis	93.4	92.9	94.0	0.848
206	Neisseria subflava	38.6	38.4	40.5	0.863
182	Granulicatella elegans	46.9	46.9	49.0	0.865
134	Capnocytophaga HMT 326	64.7	65.4	67.0	0.865
111	Leptotrichia HMT 215	71.0	71.7	73.0	0.883
219	Neisseria bacilliformis	35.0	35.4	37.0	0.891
93	Streptococcus anginosus	79.9	79.1	80.5	0.896
77	Neisseria elongata	81.8	82.8	82.0	0.924
227	Capnocytophaga HMT 903	32.7	32.6	34.0	0.929
264	Sphingomonas HMT 006	6.9	7.1	7.5	0.971

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
45	Capnocytophaga leadbetteri	90.1	90.5	90.5	0.982
119	Abiotrophia defectiva	70.0	70.6	70.5	0.982
74	Neisseria flavescens	82.8	83.1	83.0	0.996
229	Leptotrichia goodfellowii	35.3	33.4	24.0	0.019
162	Pseudomonas fluorescens	62.0	53.3	52.5	0.026
96	Lautropia mirabilis	83.2	77.4	73.5	0.027
115	Streptococcus HMT 056	68.0	73.7	65.5	0.035
102	Streptococcus lactarius	75.2	78.5	71.5	0.098
164	Haemophilus HMT 036	58.7	54.8	49.5	0.124
50	Rothia aeria	90.1	90.0	85.5	0.163
24	Streptococcus intermedius	98.0	96.9	95.0	0.165
61	Actinomyces HMT 171	86.1	88.6	84.5	0.236
14	Streptococcus cristatus	98.0	99.0	98.0	0.354
265	Porphyrobacter tepidarius	7.6	7.1	4.5	0.354
198	Aggregatibacter paraphrophilus	42.6	40.8	36.5	0.387
41	Actinomyces johnsonii	90.1	92.0	89.5	0.413
44	Actinomyces massiliensis	89.1	91.3	89.0	0.423
62	Capnocytophaga sputigena	87.8	87.9	84.5	0.424
5	Fusobacterium nucleatum_subsp._vincentii	100.0	99.4	99.5	0.427
47	Selenomonas artemidis	90.4	90.9	88.0	0.473
148	Sphingomonas echinoides	62.7	59.3	58.0	0.498
220	Capnocytophaga HMT 324	38.0	34.4	34.0	0.517
6	Granulicatella adiacens	99.7	99.6	99.0	0.532
213	SR1_[G-1] HMT 874	38.9	35.3	37.0	0.534
179	Ottowia HMT 894	51.2	47.5	49.0	0.567
252	Mitsuokella HMT 521	20.1	18.5	16.5	0.589
250	Lactobacillus gasseri	19.8	20.8	17.5	0.592
15	Fusobacterium HMT 203	99.0	98.2	98.5	0.602
17	Actinomyces naeslundii	98.7	97.7	98.0	0.609
70	Leptotrichia HMT 212	84.2	85.6	83.0	0.613
4	Selenomonas sputigena	99.7	99.9	99.5	0.634
215	Porphyromonas HMT 275	38.3	35.3	35.5	0.649
235	Haemophilus parahaemolyticus	31.0	30.4	27.5	0.669
133	TM7_[G-1] HMT 352	67.3	65.4	63.5	0.670
208	Leptotrichia HMT 223	39.6	37.0	39.0	0.696
161	Actinomyces HMT 170	56.4	55.6	53.0	0.737
262	Leptothrix HMT 025	11.9	10.4	11.5	0.755

Rank	OTU Label	Periodontal Disease Category*			P-Value
		None/Mild (n=303) (%)	Moderate (N=703) (%)	Severe (n=200) (%)	
241	<i>Brevundimonas diminuta</i>	26.4	25.0	23.5	0.761
171	<i>Leptotrichia</i> HMT 219	54.1	51.9	53.5	0.791
243	<i>Bradyrhizobium elkanii</i>	26.1	24.8	23.5	0.802
191	TM7_[G-6] HMT 870	41.9	43.1	41.0	0.848
28	<i>Campylobacter concisus</i>	95.0	95.4	94.5	0.851
35	<i>Actinomyces</i> HMT 169	92.7	92.3	91.5	0.877
239	<i>Neisseria pharyngis</i>	27.1	25.7	26.0	0.909
263	<i>Atopobium</i> HMT 416	8.6	9.0	8.0	0.910
170	TM7_[G-1] HMT 347	52.8	53.9	52.5	0.913
98	<i>Fusobacterium periodonticum</i>	78.5	77.4	77.5	0.918
180	<i>Microbacterium flavescens</i>	47.9	48.2	47.0	0.954
192	<i>Haemophilus haemolyticus</i>	42.6	41.7	42.5	0.956
34	<i>Gemella haemolysans</i>	92.4	92.6	92.0	0.960
1	<i>Streptococcus oralis</i>	100.0	100.0	100.0	-
2	<i>Veillonella dispar</i>	100.0	100.0	100.0	-
3	<i>Veillonella parvula</i>	100.0	100.0	100.0	-

*Periodontal disease presence and severity defined by CDC/AAP criteria (Eke et al., 2012).

†P-value is uncorrected. Grey shading indicates those that remain statistically significant after Bonferroni correction.