

Figure S1. Participants involved in the trial from the assessment for eligibility through follow-up. T-CD, symptom-free celiac patients; HC, healthy children.

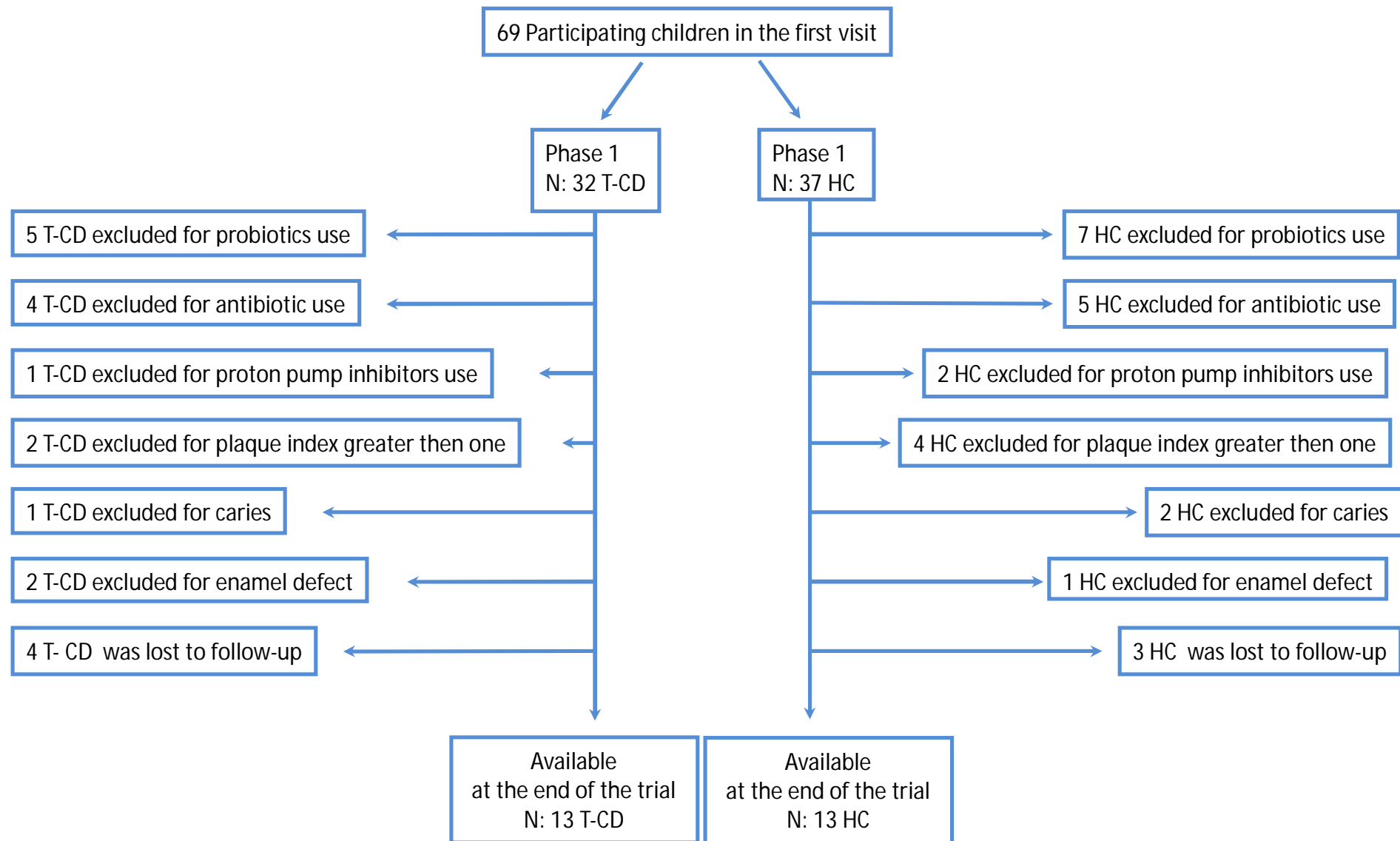


Table S1. Relative proportions of predominant bacterial taxa which were found in salivary samples of children under gluten-free diet (T-CD) and healthy controls (HC).

Phylum	Family	Specie	Avg (%) T-CD	Avg (%) HC	p-Val T-CD vs HC	
Firmicutes	Aerococcaceae	<i>Abiotrophia defectiva</i>	0.325	0.146	0.201	
	Carnobacteriaceae	<i>Granulicatella adiacens</i>	2.550	4.254	0.014	
	Carnobacteriaceae	<i>Granulicatella elegans</i>	0.733	0.238	0.170	
	Gemellaceae	<i>Gemella</i> sp.	0.400	0.162	0.025	
		<i>Gemella sanguinis</i>	0.317	0.408	0.367	
	Streptococcaceae	<i>Streptococcus</i> sp.	12.367	11.769	0.717	
		<i>Streptococcus anginosus</i>	0.008	0.023	0.336	
		<i>Streptococcus gordonii</i>	0.033	0.000	0.077	
		<i>Streptococcus infantis</i>	0.183	0.215	0.611	
		<i>Streptococcus mutans</i>	0.000	0.062	0.088	
		<i>Streptococcus pneumoniae</i>	0.417	0.346	0.551	
		<i>Streptococcus pseudopneumoniae</i>	0.042	0.085	0.057	
		<i>Streptococcus sanguinis</i>	0.142	0.023	0.042	
		<i>Streptococcus thermophilus</i>	2.650	6.331	0.018	
		ClostridialesFamilyXI.IncertaeSedis	<i>Parvimonas micra</i>	0.492	0.200	0.190
			<i>Eubacterium</i> sp.	0.233	0.215	0.732
			<i>Mogibacterium</i> sp.	0.217	0.446	0.035
		Eubacteriaceae	<i>Eubacterium yurii</i>	0.033	0.000	0.077
		Lachnospiraceae	<i>Catonella</i> sp.	0.042	0.015	0.233
			<i>Moryella</i> sp.	0.250	0.138	0.287
			<i>Oribacterium</i> sp.	0.292	0.269	0.774
			Other	0.658	0.285	0.044
		Peptostreptococcaceae	<i>Filifactor</i> sp.	0.025	0.000	0.160
		<i>Peptostreptococcus</i> sp.	0.475	0.454	0.907	
	Veillonellaceae	<i>Dialister invisus</i>	0.008	0.008	0.955	
		<i>Selenomonas</i> sp.	0.142	0.438	0.047	
		<i>Selenomonas sputigena</i>	0.000	0.038	0.140	
		<i>Veillonella</i> sp.	4.983	4.462	0.575	

		<i>Veillonella parvula</i>	0.275	0.562	0.002
Firmicutes	Bacilli	Other	0.092	0.185	0.035
Bacteroidetes	Porphyromonadaceae	<i>Porphyromonas</i> sp.	12.792	8.292	0.022
		<i>Porphyromonas endodontalis</i>	0.092	0.015	0.050
		<i>Porphyromonas gingivalis</i>	0.025	0.000	0.308
		<i>Tannerella</i> sp.	0.117	0.100	0.784
		<i>Tannerella forsythia</i>	0.008	0.008	0.955
	Prevotellaceae	<i>Prevotella</i>	2.283	1.585	0.191
		<i>Prevotella intermedia</i>	0.017	0.000	0.308
		<i>Prevotella melaninogenica</i>	14.900	12.585	0.226
		<i>Prevotella nanceiensis</i>	1.225	0.654	0.049
		<i>Prevotella nigrescens</i>	0.008	0.031	0.271
		<i>Prevotella oris</i>	0.017	0.054	0.056
		<i>Prevotella oulorum</i>	0.108	0.069	0.441
		<i>Prevotella pallens</i>	1.850	2.231	0.566
		<i>Prevotella tanneriae</i>	0.383	0.177	0.359
		<i>Prevotella veroralis</i>	2.442	3.500	0.450
	Flavobacteriaceae	<i>Capnocytophaga</i> sp.	0.508	0.492	0.944
		<i>Capnocytophaga sputigena</i>	0.375	0.115	0.172
Actinobacteria	Actinomycetaceae	<i>Actinomyces odontolyticus</i>	2.125	2.662	0.314
		<i>Actinomyces oris</i>	0.008	0.115	0.001
		<i>Mobiluncus curtisii</i>	0.000	0.023	0.196
		<i>Actinomyces</i> sp.	0.233	0.431	0.040
	Coriobacteriaceae	<i>Atopobium</i> sp.	0.467	1.462	0.023
	Corynebacteriaceae	<i>Corynebacterium argentoratense</i>	0.000	0.254	0.121
		<i>Corynebacterium durum</i>	0.117	0.315	0.050
		<i>Corynebacterium matruchotii</i>	0.017	0.038	0.243
	Micrococcaceae	<i>Rothia aeria</i>	0.075	0.031	0.457
		<i>Rothia mucilaginosa</i>	0.358	0.123	0.050
	Propionibacteriaceae	<i>Propionibacterium</i> sp.	0.000	0.008	0.347
Proteobacteria	Burkholderiaceae	<i>Lautropia</i> sp.	0.100	0.054	0.170
	Neisseriaceae	<i>Eikenella corrodens</i>	0.008	0.031	0.271
		<i>Kingella kingae</i>	0.008	0.000	0.308
Proteobacteria	Neisseriaceae	<i>Kingella oralis</i>	0.008	0.031	0.271

Proteobacteria	Neisseriaceae	<i>Neisseria</i> sp.	2.725	1.800	0.290
	Campylobacteraceae	<i>Campylobacter concisus</i>	0.225	0.092	0.257
Proteobacteria	Campylobacteraceae	<i>Campylobacter rectus</i>	0.008	0.000	0.308
	Cardiobacteriaceae	<i>Cardiobacterium hominis</i>	0.000	0.015	0.170
	Moraxellaceae	<i>Moraxella</i> sp.	0.042	0.000	0.308
	Pasteurellaceae	<i>Actinobacillus</i> sp.	0.133	0.192	0.547
		<i>Aggregatibacter segnis</i>	0.008	0.000	0.308
		<i>Haemophilus</i> sp.	0.000	0.015	0.347
		<i>Haemophilus parainfluenzae</i>	5.283	7.685	0.152
Fusobacteria	Fusobacteriaceae	<i>Fusobacterium</i> sp.	1.500	1.285	0.557
		<i>Leptotrichia</i> sp.	5.125	6.469	0.333
		<i>Streptobacillus</i> sp.	0.017	0.085	0.358
SR1			0.842	0.154	0.050

Table S2. Concentration (ppm) of volatile organic compounds (VOCs) showing significant ($P<0.05$) differences between saliva samples of celiac (T-CD) and healthy (HC) children.

Chemical class	T-CD		HC	
	Median	Range	Median	Range
Alcohols and phenols				
Propyl alcohol (1-propanol)	0.37 ^a	0.09-2.44	0.24 ^b	0.06-1.08
2-Hexanol	0.01 ^b	0.00-0.04	0.02 ^a	0.00-0.08
2-Ethyl-1-hexanol	0.43 ^b	0.21-1.68	1.20 ^a	0.40-1.44
Ethyl alcohol	0.62 ^b	0.18-1.67	1.21 ^a	0.02-2.10
2,5-Bis(1,1-dimethylethyl)-phenol	0.11 ^b	0.03-0.38	0.21 ^a	0.04-0.27
4-(1,1,3,3-Tertamethylbutyl)-phenol	0.54 ^b	0.24-1.60	1.44 ^a	0.45-3.24
4-(1,1-Dimethylpropyl)-phenol	0.13 ^b	0.08-0.24	0.30 ^a	0.10-0.42
Phenyl alcohol (Phenol)	0.43 ^a	0.05-0.83	0.19 ^b	0.03-1.16
4-Methoxybenzhydrol	0.01 ^b	0.00-0.03	0.02 ^a	0.01-0.03
Aldehydes				
Nonanal	1.66 ^a	1.30-4.70	0.68 ^b	0.61-1.34
Octanal	0.28 ^b	0.07-0.94	0.64 ^a	0.12-0.85
Esters				
Butanoic acid, 2-methyloctyl ester	0.00 ^b	0.00-0.05	0.03 ^a	0.00-0.06
Acetic acid ethyl ester	1.86 ^a	0.23-2.90	0.70 ^b	0.18-1.43
Aromatic heterocyclic				
1(3H)-isobenzofuranone (γ -lactone)	0.01 ^b	0.00-0.08	0.05 ^a	0.01-0.07
2-Pentyl furan	0.42 ^a	0.16-0.79	0.22 ^b	0.02-9.41
Hydrocarbons				
1,2,3-Trimethyl-benzene	0.18 ^b	0.01-1.95	0.45 ^a	0.30-0.52
1,3-Bis(1,1-dimethylethyl)-benzene	0.23 ^a	0.14-0.59	0.17 ^b	0.06-0.58
1-Chloro decane	0.60 ^a	0.52-1.01	0.16 ^b	0.12-0.44
1-Methyl-2-(1-methylethyl)-benzene	0.04 ^b	0.00-0.47	0.16 ^a	0.04-2.78
1-Octadecene	0.26 ^b	0.03-2.22	1.47 ^a	0.32-2.00
4-Methyl-1-pentene	0.01 ^b	0.00-0.05	0.02 ^a	0.00-0.06
Benzene	0.24 ^a	0.10-0.25	0.13 ^b	0.00-0.24

Benzene (octyloxy)	0.01 ^b	0.00-0.03	0.03 ^a	0.00-0.04
Hexadecane	0.00 ^b	0.00-0.05	0.02 ^a	0.00-0.03
Nonadecane	0.00 ^b	0.00-0.04	0.01 ^a	0.00-0.24
Pentadecane	0.01 ^b	0.00-0.06	0.02 ^a	0.00-0.03
Tetradecane	0.19 ^a	0.06-1.87	0.10 ^b	0.08-1.25
Toluene	0.50 ^a	0.00-1.00	0.25 ^b	0.10-0.41
Trichloromethane	0.22 ^a	0.00-0.30	0.12 ^b	0.09-0.18
Caryophyllene	0.00 ^b	0.00-0.02	0.02 ^a	0.01-0.04
Menthol	0.01 ^b	0.00-0.04	0.03 ^a	0.01-0.12
Ketones				
2,6-Dimethyl-4-heptanone	0.00 ^b	0.00-0.23	0.15 ^a	0.00-0.31
2-Butanone	0.11 ^a	0.00-0.16	0.01 ^b	0.00-0.04
4-Methyl-2-hexanone	0.00 ^b	0.00-0.05	0.03 ^a	0.01-0.07
4-Methyl-3-penten-2-one	0.30 ^b	0.16-0.79	0.64 ^a	0.27-1.06
Methyl isobutyl ketone	0.03 ^b	0.00-0.09	0.09 ^a	0.07-0.11
Sulfur compounds				
Carbon disulfide	3.88 ^a	1.83-7.23	3.18 ^b	2.37-4.87
Terpenes				
Caryophyllene	0.00 ^a	0.00-0.02	0.02 ^b	0.01-0.04
Menthol	0.01 ^a	0.00-0.04	0.03 ^b	0.01-0.12
Thiophenes				
2-Pentyl-thiophene	2.47 ^b	1.19-9.04	6.20 ^a	2.54-8.08
Ions				
n.d.3 (ion 97)	0.53 ^b	0.23-2.36	1.68 ^a	0.48-2.08
n.d.4 (ion 102)	0.49 ^b	0.25-1.12	1.78 ^a	0.49-2.25

Data are the means of three independent experiments (n = 3) for each children. ^{a-b}Values within a row with different superscript letters are significantly different ($P < 0.05$).