

13 Beaches Tables

Table 1: Participant Characteristics by Age Category

	All Ages			Age 0 to 4 Years			Age 5 to 10 Years			Age >10 Years		
	N	%	Median (IQR)	N	%	Median (IQR)	N	%	Median (IQR)	N	%	Median (IQR)
Number of Participants	88,083			6,990			11,446			68,428		
Gastrointestinal illness at enrollment	2,025	2.3		196	2.8		195	1.7		1,620	2.4	
Individuals at risk for gastrointestinal illness	86,058			6,794			11,251			66,808		
Incident diarrhea within 3 days	2,357	1.9		248	2.8		350	1.9		1,732	1.8	
Incident diarrhea within 10 days	3,409	4.0		398	5.9		393	3.5		2,585	3.9	
Age in years			28 (12,43)			2 (1,3)			8 (6,9)			35 (22,46)
Female	47,204	53.6		3,413	48.8		5,655	49.4		37,566	54.9	
Race												
White	48,829	55.4		3,429	49.1		5,843	51.0		39,026	57.0	
Non-White, Hispanic	26,014	29.5		2,109	30.2		3,340	29.2		20,146	29.4	
White, Hispanic	1,262	1.4		170	2.4		238	2.1		846	1.2	
African American	2,600	3.0		204	2.9		386	3.4		1,960	2.9	
Asian	2,018	2.3		173	2.5		257	2.2		1,564	2.3	
American Indian	240	0.3		13	0.2		23	0.2		202	0.3	
Multiple Races	1,753	2.0		315	4.5		492	4.3		924	1.4	
Other	1,008	1.1		115	1.6		149	1.3		717	1.0	
Missing	4,359	4.9		462	6.6		718	6.3		3,043	4.4	
No water contact	27,460	31.2		1,711	24.5		1,104	9.6		24,325	35.5	
Any water contact	60,623	68.8		5,279	75.5		10,342	90.4		44,103	64.5	
Body immersion	48,573	55.1		4,044	57.9		9,147	79.9		34,656	50.6	
Head immersion	37,999	43.1		2,901	41.5		7,988	69.8		26,515	38.7	
Swallowed water	11,208	12.7		1,679	24.0		3,166	27.7		6,209	9.1	
Hours spent in the water			1.0 (0.5,2.0)			1.0 (0.5,2.0)			2.0 (1.0,3.0)			1.0 (0.5,2.0)
Hours spent in the water (cat)												
0 – 1	26,776	54.4		2,316	55.7		3,544	38.1		20,532	58.6	
1.1 – 2	11,642	23.6		1,002	24.1		2,704	29.0		7,740	22.1	
2.1 – 3	5,724	11.6		436	10.5		1,562	16.8		3,663	10.5	
3.1 – 4	3,113	6.3		249	6.0		868	9.3		1,960	5.6	
4.1 – 5	922	1.9		66	1.6		308	3.3		528	1.5	
>5	711	1.4		45	1.1		226	2.4		419	1.2	
Missing	362	0.7		44	1.1		98	1.1		207	0.6	

Table 2: Population Attributable Risk Among Beachgoers Due to Body Immersion Swimming.

	N Events	N At Risk	Predicted Incidence ^a per 1000		Population Attributable Risk ^b (95% CI)		Population Attributable Fraction ^c (95% CI)	
			Observed Exposure	No Swim Exposure				
Diarrhea, episodes								
All Ages	3,409	86,058	40	31	8.3	(6.3, 10.2)	21%	(16%, 26%)
Age Stratified								
Ages 0 to 4	398	6,794	59	45	13.5	(3.1, 22.8)	23%	(5%, 39%)
Ages 5 to 10	393	11,251	35	19	15.8	(6.7, 24.0)	45%	(20%, 67%)
Ages >10	2,585	66,808	39	32	6.6	(4.7, 8.5)	17%	(12%, 22%)
Gastrointestinal illness ^d , episodes								
All Ages	5,024	86,058	58	50	8.8	(6.4, 11.3)	15%	(11%, 19%)
Age Stratified								
Ages 0 to 4	562	6,794	83	62	20.8	(9.2, 31.9)	25%	(11%, 39%)
Ages 5 to 10	697	11,251	62	51	10.7	(-2.8, 23.4)	17%	(-5%, 37%)
Ages >10	3,716	66,808	56	48	7.6	(5.4, 9.8)	14%	(10%, 18%)
Missed Daily Activities ^e , days								
All Ages	4,551	86,058	53	48	4.7	(0.1, 8.9)	9%	(0%, 17%)
Age Stratified								
Ages 0 to 4	445	6,794	68	42	26.7	(8.8, 42.7)	40%	(14%, 63%)
Ages 5 to 10	691	11,251	61	54	7.9	(-17.1, 28.5)	13%	(-27%, 47%)
Ages >10	3,377	66,808	51	46	4.1	(0.3, 8.2)	8%	(1%, 17%)
Missed Paid Work ^f , days								
All Ages ^h	1,051	86,058	12	13	-0.7	(-2.5, 1.2)	na	
Medical Visits ^g , events								
All Ages ^h	915	86,058	11	10	0.4	(-1.2, 1.9)	4%	(-11%, 18%)

a Predicted incidence per 1000 among all beachgoers under the empirical distribution of swim exposure (observed) and under a counterfactual scenario where nobody entered the water. Estimates are from a multivariable regression model adjusted for a range of potential confounders and beach level fixed-effects (see text for details).

b Population Attributable Risk is the number of events per 1000 beachgoers that would be prevented if swimming exposure were removed from the population. The proportion exposed to body immersion swimming was: all ages (55%), ages 0-4 (58%), ages 5-10 (80%), ages >10 (51%). Supplement File 1 Appendix 2 includes additional details.

c Population Attributable Fraction is the percentage of events among beachgoers attributable to body immersion swimming.

d Gastrointestinal illness was defined as (i) diarrhea or (ii) vomiting or (iii) stomach cramps and missed daily activities or (iv) nausea and missed daily activities.

e Includes days of school, work, or vacation missed because of gastrointestinal illness.

f Includes work days missed because of gastrointestinal illness.

g Includes phone consultations, outpatient visits, and emergency room visits due to gastrointestinal illness.

h Outcome incidence was too rare to calculate age-stratified estimates.