Table S2. Occurrence and molecular diversity of parasitic intestinal protists in human populations, Ecuador, 2002-2022.

Population	Province	Detection method	Samples (*n*)	Parasite species	Infection rate (%)	Genotype (*n*)	References
Symptomatic children	Azuay	CM	42	*Giardia duodenalis*	33.3	ND	[1]
				Cryptosporidium spp.	14.3	ND	
Symptomatic and asymptomatic children	Esmeraldas	ELISA, PCR-RLFP	592	*Giardia duodenalis*	26.0	AI (3), AII (19), BIII (26), BIV (16), AII+BIII (5)	[2]
HIV+ patients with diarrhoea	Guayas	CM, DFA, SEM	89	Microsporidia	25.0	ND	[3]
Asymptomatic children	Chimborazo	CM	203	*Entamoeba* complex[a]	57.1	ND	[4]
				Entamoeba coli	34.0	ND	
				Giardia duodenalis	21.1	ND	
				Cryptosporidium spp.	8.9	ND	
				Chilomastix mesnili	1.7	ND	
Asymptomatic children	Esmeraldas	CM, qPCR	400	*Giardia duodenalis*	31.5	ND	[5]
				Cryptosporidium spp.	5.3	ND	
				Entamoeba. histolytica	1.0	ND	
Asymptomatic children	Esmeraldas	ELISA	39	*Giardia duodenalis*	28.2	ND	[6]
Asymptomatic children	Manabí	CM	112	*Entamoeba coli*	36.0	ND	[7]
				Entamoeba complex[a]	34.4	ND	
				Giardia duodenalis	16.4	ND	
Asymptomatic children	Pichincha	CM	244	*Giardia duodenalis*	39.7	ND	[8]
				Entamoeba complex[a]	18.5	ND	
Asymptomatic children	Pichincha	ELISA	64	*Giardia duodenalis*	34.4	ND	[9]
				Cryptosporidium spp.	3.1	ND	
Asymptomatic children	Pichincha	ELISA, PCR	316	*Giardia duodenalis*	20.0	A (6), B (2), C (2)	[10]
Asymptomatic (all age groups)	Azuay	CM	335	NS[b]	46.2	ND	[11]
Asymptomatic (all age groups)	Esmeraldas, Manabí	PCR-SSCP	55	*Blastocystis sp.*	81.5	ST1 (21), ST2 (10), ST3 (12), ST1+ST3 (1), ST1+ST2 (2)	[12]
Asymptomatic (all age groups)		CM	586	*Entamoeba coli*	27.5	ND	[13]
				Blastocystis sp.	19.6		

	St. Domingo de los Tsáchilas			*Entamoeba* complex[a]	12.5	ND	
				Entamoeba hartmanni	10.8		
				Endolimax nana	4.9		
				Giardia duodenalis	3.9	ND	
				Iodamoeba butschlii	3.6		
				Chilomastix mesnili	1.4	ND	
Asymptomatic (all age groups)	St. Domingo de los Tsáchilas	ELISA	306	*Giardia duodenalis*	20.3	ND	[14]
				Cryptosporidium spp.	4.3	ND	
Rural dwellers	Loja	CM, PCR-RLHB[c]	674	*Endolimax nana*	47.0		[15]
				Entamoeba coli	28.0	ND	
				Entamoeba complex[a]	16.2	ND	
				Chilomastix mesnili	<4.3	ND	
				Giardia duodenalis	<4.3	ND	
				Iodamoeba bütschlii	<4.3	ND	
Rural and urban dwellers	Esmeraldas, Pichincha	CM, PCR[d]	106	*Entamoeba dispar*	69.8	ND	[16]
				Entamoeba coli	60.4	ND	
				Giardia duodenalis	10.4	ND	
				Blastocystis sp.	6.6	ND	
				Enbadomonas duodenalis	6.6	ND	
				Enteromonas duodenalis	5.6	ND	
				Iodamoeba butschlii	5.6	ND	
				Endolimax nana	3.8	ND	
				Entamoeba histolytica	2.8	ND	

CM: Conventional microscopy; DFA: Direct Fluorescent Antibody assay; ELISA: Enzyme-Linked Immunosorbent Assay; ND: Not Determined; NS: Not Specified; PCR: Polymerase Chain Reaction; PCR-RFLP: Polymerase Chain Reaction-restriction Fragment Length Polymorphism; PCR-SSCP: Polymerase Chain Reaction-Single Strand Conformation Polymorphism, PCR-RLHB: Polymerase Chain Reaction-Reverse Line Hybridization Blot; SEM: Scanning Electron Microscopy.

[a] *Entamoeba* complex: *Entamoeba histolytica*/*Entamoeba dispar*/*Entamoeba moshkovskii*/ *E. bangladeshi*

[b] Study reporting general infection rates by any intestinal parasite.

[c] Only for the differential detection of members of the *Entamoeba* complex.

[d] Only for the differential detection of *E. histolytica* and *E. dispar*.

References

1. Palacios Ordóñez TE. Prevalencia de *Cryptosporidium* spp. y *Giardia* spp. en terneros, y su presencia en agua y en niños con problemas digestivos en el cantón San Fernando, Ecuador. MASKANA. 2017; 8(1): 111–119. https://doi.org/10.18537/mskn.08.01.10 111
2. Atherton R, Bhavnani D, Calvopiña M, Vicuña Y, Cevallos W, Eisenberg J. Molecular identification of *Giardia duodenalis* in Ecuador by polymerase chain reaction-restriction fragment length polymorphism. Mem Inst Oswaldo Cruz. 2013; 108(4):512–515. doi: 10.1590/S0074-02762013000400019 PMID: 23827993.
3. Pazmiño B, Rodas E, Rodas J, Zambrano R, Dávila A, Martini L, Pazmiño CA, Día L. Microsporidium spp. en pacientes VIH positivos con síndrome diarreico. REVISTA. 2014; 17(2): 14–21.
4. Jacobsen KH, Ribeiro PS, Quist BK, Rydbeck BV. Prevalence of intestinal parasites in young Quichua children in the highlands of rural Ecuador. J Health Popul Nutr. 2007; 25(4): 399–405 PMID: 18402182.
5. Mejia R, Vicuña Y, Broncano N, Sandoval C, Vaca M, Chico M, et al. A novel, multi-parallel, real-time polymerase chain reaction approach for eight gastrointestinal parasites provides improved diagnostic capabilities to resource-limited at-risk populations. Am J Trop Med Hyg. 2013; 88(6): 1041–1047. doi: 10.4269/ajtmh.12-0726 PMID: 23509117.
6. Weatherhead J, Cortés AA, Sandoval C, Vaca M, Chico M, Loor S, et al. Comparison of cytokine responses in Ecuadorian children infected with Giardia, Ascaris, or both parasites. Am J Trop Med Hyg. 2017; 96(6): 1394–1399. doi: 10.4269/ajtmh.16-0580 PMID: 28719267.
7. Abad-Sojos G, Gómez-Barreno L, Inga-Salazar G, Simbaña-Pilataxi D, Flores-Enríquez J, Martínez-Cornejo I, et al. Presencia de parasitosis intestinal en una comunidad escolar urbano marginal del Ecuador. CIMEL 2017; 22(2): 52. doi: https://doi.org/10.23961/cimel.v22i2.953.
8. Sackey ME, Weigel MM, Armijos RX. Predictors and nutritional consequences of intestinal parasitic infections in rural Ecuadorian children. J Trop Pediatr. 2003; 49(1): 17–23. doi: 10.1093/tropej/49.1.17 PMID: 12630715.
9. Vasco K, Graham JP, Trueba G. Detection of zoonotic enteropathogens in children and domestic animals in a semirural community in Ecuador. Appl Environ Microbiol. 2016; 82(14): 4218–4224. doi: 10.1128/AEM.00795-16 PMID: 27208122.
10. Sarzosa M, Graham JP, Salinas L, Trueba G. Potential zoonotic transmission of *Giardia duodenalis* in semi-rural communities near Quito, Ecuador. Intern J Appl Res Vet Med. 2018; 16(1):1–6.
11. Cajamarca A, Criollo D, Solano R, Sacoto A, Mosquera L. Estudio experimental: prevención de parasitosis en escolares de una zona rural. Azuay, Ecuador. 2013– 2014. Rev Med HJCA. 2017; 9(2): 139–143. doi: 10.14410/2017.9.2.ao.23.
12. Helenbrook WD, Shields WM, Whipps CM. Characterization of *Blastocystis* species infection in humans and mantled howler monkeys, *Alouatta palliata aequatorialis*, living in close proximity to one another. Parasitol Res. 2015; 114(7): 2517–2525. doi: 10.1007/s00436-015-4451-x PMID: 25859926.
13. Calvopina M, Atherton R, Romero-Álvarez D, Castaneda B, Valverde-Muñoz G, Cevallos W, et al. Identification of intestinal parasite infections and associated risk factors in indigenous Tsáchilas communities of Ecuador. Int J Acad Med. 2019; 5(3): 171–179.
14. Lowenstein C, Vasco K, Sarzosa S, Salinas L, Torres A, Perry MJ, et al. Determinants of childhood zoonotic enteric infections in a semirural community of Quito, Ecuador. Am J Trop Med Hyg. 2020; 102(6): 1269–1278. doi: 10.4269/ajtmh.19-0690 PMID: 32228797.

15. Levecke B, Dreesen L, Barrionuevo-Samaniego M, Ortiz WB, Praet N, Brandt J, et al. Molecular differentiation of Entamoeba spp. in a rural community of Loja province, South Ecuador. Trans R Soc Trop Med Hyg. 2011; 105(12): 737–739. doi: 10.1016/j.trstmh.2011.08.010 PMID: 21981992.
16. Guevara Á, Vicuña Y, Costales D, Vivero S, Anselmi M, Bisoffi Z, et al. Use of real-time polymerase chain reaction to differentiate between pathogenic Entamoeba histolytica and the nonpathogenic Entamoeba dispar in Ecuador. Am J Trop Med Hyg. 2019; 100(1): 81–82. doi: 10.4269/ajtmh.17-1022 PMID: 30398142.