

## SUPPORTING INFORMATION

Table S1. Classification of participants				
Geographical area	Participating centers	Overall (n/%)	Cases (N/%)	Controls (N/%)
Center				
	H.U. Guadalajara (Guadalajara)	35 (12.24)	18 (6.29)	17 (5.94)
	F.H. Alcorcón (Madrid)	20 (6.99)	12 (4.2)	8 (2.8)
	H.U. Fuenlabrada (Madrid)	30 (10.49)	15 (5.24)	15 (5.24)
	H. Plasencia (Cáceres)	27 (9.44)	12 (4.2)	15 (5.24)
	H. Doce de Octubre (Madrid)	16 (5.59)	8 (2.8)	8 (2.8)
	H. Zarzuela (Madrid)	10 (3.5)	7 (2.45)	3 (1.05)
Mediterranean				
	H. Marina Baixa (Alicante)	9 (3.15)	6 (2.1)	3 (1.05)
	H. Vega Baja (Alicante)	4 (1.4)	1 (0.35)	3 (1.05)
	H. Clinic Barcelona (Barcelona)	24 (8.39)	13 (4.55)	11 (3.85)
	H. Vall d'Hebron (Barcelona)	16 (5.59)	9 (3.15)	7 (2.45)
Northern				
	H.U. Central de Asturias (Asturias)	31 (10.84)	16 (5.59)	15 (5.24)
	C.H. Navarra (Pamplona)	31 (10.84)	16 (5.59)	15 (5.24)
	H. Basurto (Vizcaya)	14 (4.9)	14 (4.9)	0 (0)
	H.U. Lucus Augusti (Lugo)	19 (6.64)	13 (4.55)	6 (2.1)

Table S2. Data by recruitment area						
Recruitment area			Northern	Mediterranean	Center	
	Place of residence #	Urban	45 (47.37%)	41 (77.36%)	105 (76.09%)	
		Semi-urban	12 (12.63%)	10 (18.87%)	4 (2.9%)	P<0.001
		Rural	38 (40%)	2 (3.77%)	29 (21.01%)	
	Blood type ‡	O	24 (48%)	10 (47.62%)	17 (50%)	
		AB	1 (2%)	1 (4.76%)	3 (8.82%)	
		A	20 (40%)	7 (33.33%)	11 (32.35%)	ns
		B	5 (10%)	3 (14.29%)	3 (8.82%)	
	Tick bites ¥	Yes	46 (48.42%)	5 (9.43%)	8 (5.84%)	P<0.001
		No/Not known	49 (51.58%)	48 (90.57%)	129 (94.16%)	
	Outdoor activities ¤	Yes	54 (63.53%)	14 (26.42%)	36 (26.09%)	P <0.001
		No	31 (36.47%)	39 (73.58%)	102 (73.91%)	
	Pet ownership §	Yes	40 (45.98%)	13 (24.53%)	61 (44.2%)	P<0.03
		No	47 (54.02%)	40 (75.47%)	77 (55.8%)	
# N286 Center 138 Mediterranean 53 Northern 95 ‡ N 105 Center 34 Mediterranean 21 Northern 50 ¥ N 285 Center 137 Mediterranean 53 Northern 95 ¤ N 276 Center 138 Mediterranean 53 Northern 85 § N278 Center 138 Mediterranean 53 Northern 87						

Table S3. Data by sex				
		Male	Female	
Recruitment area	Northern	61 (64.21%)*	34 (35.79%)*	
	Mediterranean	26 (49.06%)*	27 (50.94%)*	P<0.03
	Center	57 (41.3%)*	81 (58.7%)*	
Tick bites N285	Yes	41 (28.47%)**	18 (12.77%)**	P<0.01
	No/Not known	103 (71.53%)**	123 (87.23%)**	
Outdoor activities ¶	Yes	70 (50.72%)**	34 (24.64%)**	P<0.001
	No	68 (49.28%)**	104 (75.36%)**	
Pet ownership §	Yes	57 (41.30%)**	57 (40.71%)**	NS
	No	81 (58.70%)**	83 (59.29%)**	
*Refers to total by area **refers to total by sex ¶ N 276 138 women 138 men § N 278 140 women 138 men				

Table S4. Qualitative results of sIgE to $\alpha$ -gal, Anisakis and Ascaris				
	sIgE Ascaris positive N(%)	sIgE Ascaris negative N (%)	sIgE Anisakis positive N (%)	sIgE Anisakis negative N (%)
sIgE $\alpha$ -gal positive	14 (5.76%)	18 (7.41%)	12 (4.67%)	18 (7%)
sIgE $\alpha$ -gal negative	22 (9.05%)	189 (77.78%)	48 (18.68%)	179 (69.65%)
sIgE Ascaris available data N243 sIgE Anisakis available data N 257				

Accepted Article