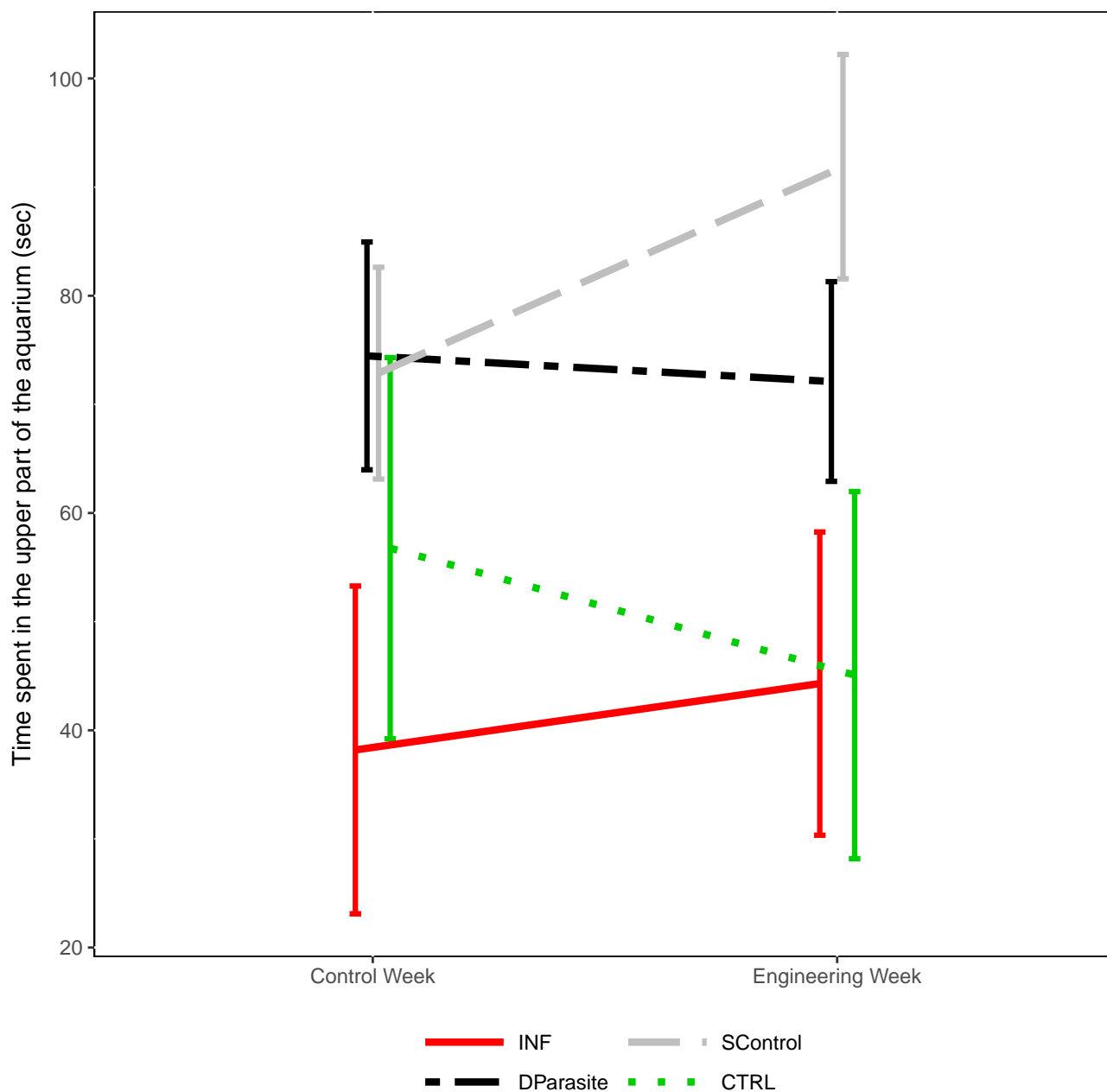
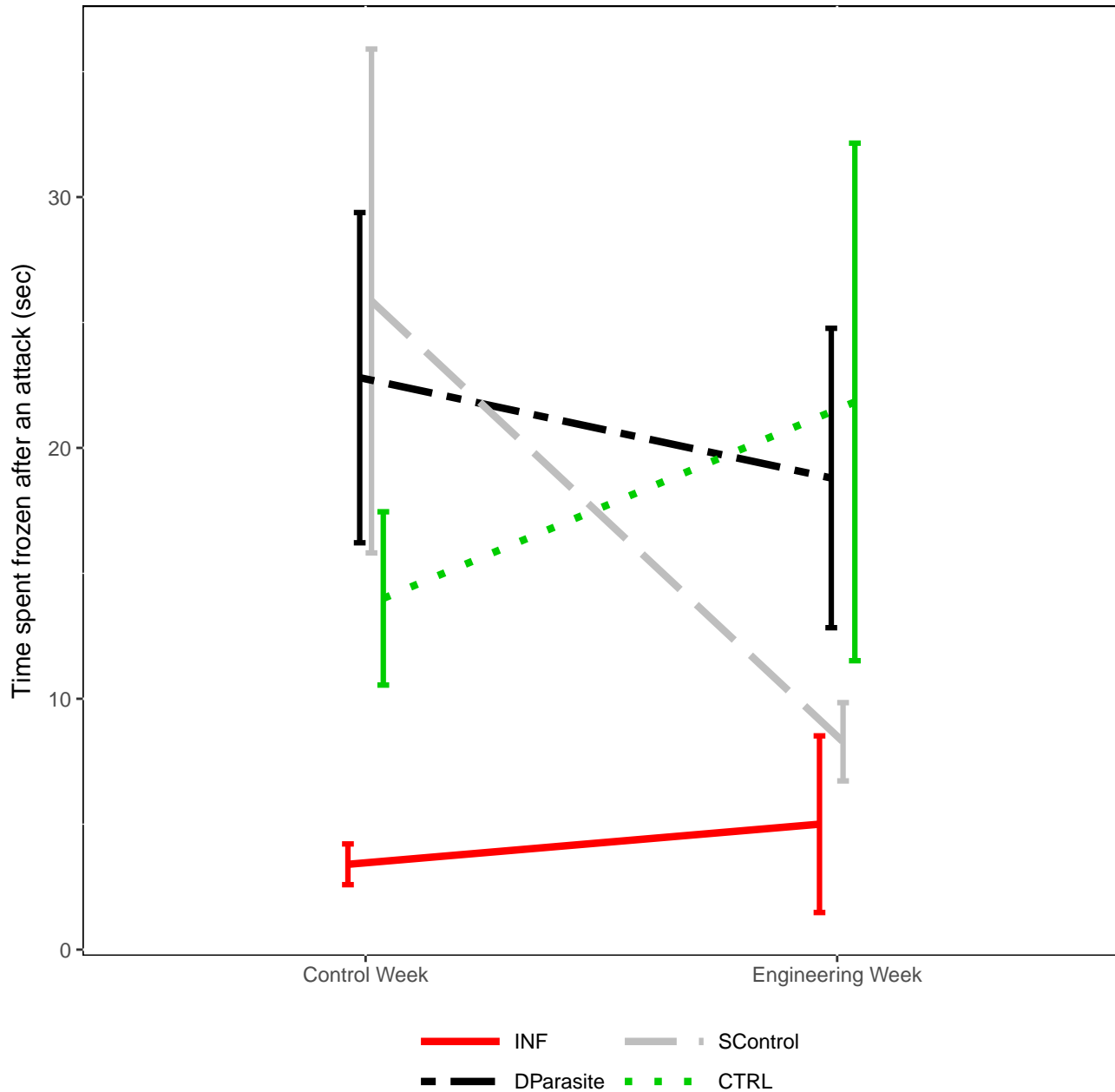


**Figure S1. The artificial parasite and *S. solidus* worms have similar densities.** Relationship between mass (mg) and volume (ml) of the silicone-made dummy parasite (dash-dotted black line) and the parasite *S. solidus* (solid red line).



**Figure S2. Geotaxis did not differ significantly between treatments.** Time spent in the upper section of the aquarium (average and standard error) for each experimental treatment (artificial parasite, infected fish, silicone control, and control fish) and week of treatment (control week and engineering week). DP: dummy parasite (dash-dotted black line, n=15), INF: infected (solid red line, n=5), SC: silicone control (dashed grey line, n=14), and CTRL: non-infected (dotted green line, n=6).



**Figure S3. Freezing response to a predator presence did not differ significantly between treatments.** Time spent frozen after an attack (average and standard error) for each experimental treatment (artificial parasite, infected fish, silicone control, and control fish) and week of treatment (control week and engineering week). DP: dummy parasite (dash-dotted black line, n=15), INF: infected (solid red line, n=5), SC: silicone control (dashed grey line, n=14), and CTRL: non-infected (dotted green line, n=6).

Table S1. Statistical parameters of ANOVAS testing the effect of treatment, week of measurement and their interaction on a given behaviour.

Behaviour	Results ANOVA			
	Factor	F	Df	P-value
Latency to enter the center	Treatment	3.24	3	0.03
	Week	1.59	1	0.21
	Treatment*week	0.80	3	0.50
Time in the center	Treatment	5.24	3	0.0042
	Week	1.22	1	0.28
	Treatment*week	2.17	3	0.11
Time spent near the surface	Treatment	2.99	3	0.44
	Week	0.41	1	0.53
	Treatment*week	1.14	3	0.34
Latency to feed	Treatment	3.20	3	0.035
	Week	0.60	1	0.44
	Treatment*week	0.19	3	0.90
Latency to freeze	Treatment	6.49	3	0.001
	Week	0.45	1	0.50
	Treatment*week	0.14	3	0.93
Time spent frozen	Treatment	2.48	3	0.076
	Week	3.86	1	0.057
	Treatment*week	0.87	3	0.46

Table S2. Statistically significant comparisons between two treatments for a given behaviour test. INF: infected. DP: artificial worm. SC: silicone control.

Behaviour	Results post hoc tests			
	Comparisons	Estimate	Std. Error	p-value
Latency to enter the center	INF - DP	-22.3	8.62	0.0554
Time in the center	INF - DP	25.53	7.77	0.0084
	INF - SC	28.38	7.84	0.003
Time spent near the surface	INF- SC	-24.67	9.63	0.0601
Latency to feed	INF- DP	-24.8	8.41	0.0218
	INF - SC	-23.9	8.48	0.0306
Latency to freeze	INF- DP	-36.3	8.36	0.0003
	INF - SC	-27.8	8.43	0.0082

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