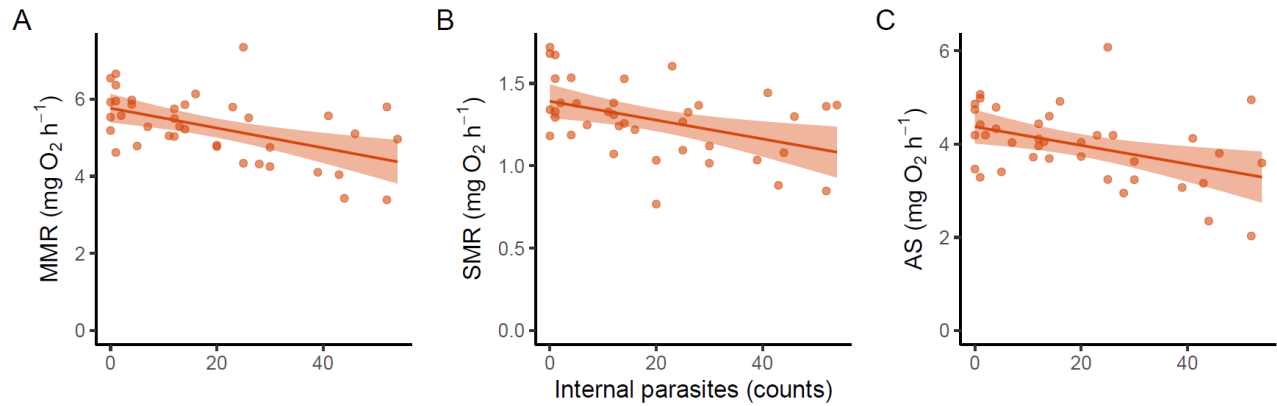


**Fig. S1. Total internal parasite load versus the total number of black spots on the left side of pumpkinseed sunfish (*Lepomis gibbosus*) collected from Lake Cromwell (n=86).** Representing all the fish sampled during the same period for this study and for preliminary tests.

There was no significant correlation between the number of black spots and number of internal parasites in fish collected from Lake Cromwell (N= 86, Pearson's correlation  $r = 0.12$ ,  $P=0.23$ ) (Fig. S1). This sample includes 86 fish dissected for a separate project and not analyzed here.



**Fig. S2. Effect of parasites on metabolic traits without one heavily infected individual.** Mass-adjusted metabolic rates (MMR, SMR, AS) as a function of parasite load for internal parasites without the heavily infected individual. (A) Influence of internal parasites on MMR. (B) Influence of internal parasites on SMR. (C) Influence of internal parasites on AS (n= 38).

**Table S1.** Test statistics obtained from linear regression models of MMR, SMR and AS as a function of black spot, internal parasites (Internal), fish body mass (Mass), and interactions between black spot number and mass (BS\*mass), and internal parasites and mass (Int\*mass) in sunfish from Lake Cromwell without the one individual with 153 internal parasites. (n= 38). Statistically significant results are in **bold**. See Table S3 for model estimates without interactions.

Response	Predictors	DF	F-value	P-value	R <sup>2</sup>
<b>MMR</b> (mgO <sub>2</sub> h <sup>-1</sup> )	Black spot	1, 32	0.18	0.68	0.69
	Internal	1, 32	13.16	<b>0.001</b>	
	Mass	1, 32	72.67	<b>&lt;0.001</b>	
	Black spot * mass	1, 32	3.2	0.083	
	Internal * mass	1, 32	0.024	0.88	
<b>SMR</b> (mgO <sub>2</sub> h <sup>-1</sup> )	Black spot	1, 32	0.21	0.65	0.28
	Internal	1, 32	6.93	<b>0.013</b>	
	Mass	1, 32	13.18	<b>0.001</b>	
	Black spot * mass	1, 32	0.42	0.52	
	Internal * mass	1, 32	0.37	0.55	
<b>AS</b> (mgO <sub>2</sub> h <sup>-1</sup> )	Black spot	1, 32	0.08	0.78	0.62
	Internal	1, 32	8.01	<b>0.0079</b>	
	Mass	1, 32	55.70	<b>&lt;0.001</b>	
	Black spot * mass	1, 32	2.56	0.12	
	Internal * mass	1, 32	0.12	<u>0.73</u>	

**Table S2. Model estimates from fixed factors obtained using the summary function in R from models (Table S1) without interactions of pumpkinseed sunfish (*Lepomis gibbosus*) without the one individual with 153 internal parasites (n=38). ( $R^2_a$ : adjusted  $R^2$ )**

	SMR		MMR		AS	
	Estimates	$R^2_a$	Estimates	$R^2_a$	Estimates	$R^2_a$
Intercept	0.81	0.31	1.38	0.68	0.57	0.61
Internal	-0.024		-0.092		-0.068	
Mass	-0.15		-0.69		-0.54	
Black spot	0.62		4.62		4.0	

**Table S3. Model estimates from fixed factors obtained using the summary function in R from models (Table 1) without interactions (n=39).**

	SMR		MMR		AS	
	Estimates	$R^2_a$	Estimates	$R^2_a$	Estimates	$R^2_a$
Intercept	0.80	0.31	1.30	0.61	0.50	0.55
Internal	-0.04		-0.18		-0.14	
Mass	-0.14		-0.40		-0.27	
Black spot	0.60		4.50		3.90	

**Table S4.** Summary statistics of the variable observed during the fast-start experiment. Mean for all individuals, maximum, minimum performance for the variable observed for all fish, standard deviation (SD) and standard error (SE) for response latency (Latency), escape distance ( $D_{esc}$ ), maximum speed ( $U_{max}$ ), and maximum acceleration ( $A_{max}$ ).

	Mean	Max	Min	SD	SE
Latency	0.05	0.15	0.02	0.03	0.005
$D_{esc}$	2.63	4.75	0.35	1.11	0.18
$U_{max}$	16.93	26.38	6.37	4.99	0.84
$A_{max}$	318.21	688.64	118.42	145.0	24.51