# Supplementary information: Correlation between parasite development and host manipulation

I tested if development correlated with host manipulation and could explain some of the differences observed between different parasite populations. To do so, I used only infected copepods that survived until the end of the experiment and for which data on the presence or absence of a cercomer (i.e. development) was available. I build the same models used to analyse host activity but additionally stepwise added whether parasites had a cercomer on day 8 (development) and its interaction with parasite age as additional factor either to a model that contained time and parasite age or time, parasite age, parasite population, the interaction between parasite population and parasite age, the interaction between parasite population and time, host population, the interaction between host population and parasite age and the interaction between host population and time (i.e. the model previously identified as the model that was best at explaining the data) as fixed factors.

There was never any correlation between development and host activity (p>0.1, table S1).

**Table S1: Outcome of likelihood ratio tests on generalized linear models for copepod activity including development as additional fixed factor.** Test statistics and MCMC-estimated p-values are for the comparison with the preceding model.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Initial model with time and parasite age (AIC: -55) | | | | Initial model with time, parasite age, parasite population, parasite population: parasite age, parasite population: time, host population, host population: parasite age and host population: time (AIC: -91) | | | |
| Factors | AIC | DF | Chisq | p | AIC | DF | Chisq | p |
| + development | -55 | 13,1 | 1.40 | 0.24 | -89 | 31,1 | 0.49 | 0.48 |
| + development: parasite age | -51 | 20,7 | 10.11 | 0.18 | -83 | 38,7 | 7.58 | 0.37 |
| 880 observations on 55 copepods infected with 11 parasite families | | | | | | | | |