

1 **BSP abstract**

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3 **Title:** The Enemy of My Enemy is Perhaps My Friend: Intestinal schistosomiasis is  
4 associated with reduced malaria intensity in preschool children in Uganda.

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7 **Abstract:**

8 In sub-Saharan Africa, preschool – aged children (<6 years), typically bear the  
9 brunt of the malaria burden, constituting the largest number of child deaths. In  
10 addition, recent epidemiological surveys in Uganda show that intestinal  
11 schistosomiasis can be highly prevalent in this age group and cause significant  
12 morbidities. In the context of co-infection, either antagonistic or synergistic, it is  
13 essential that we better understand how these parasites interact within these  
14 young children. Furthermore, this age group offers a unique opportunity to gain a  
15 clearer insight into the interactions between *Schistosoma mansoni* and  
16 *Plasmodium falciparum*, as we follow an individual child's infection dynamics and  
17 history with these two parasites through time.

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19 Using a mixed modelling approach, applied to previous longitudinal cohort data  
20 from the Schistosomiasis In Mothers and Infants (SIMI) study, we assessed the  
21 relationship between *S. mansoni* and *P. falciparum* infections in these young  
22 children, in the face of regular antiparasitic treatments. Despite the regular  
23 treatment in this study, of the 1211 preschool children in the cohort, the  
24 prevalence of infection for *P. falciparum*, *S. mansoni* and co-infected individuals  
25 remained constant over the study period. A single *P. falciparum* infection was by  
26 far the most prevalent and remained constant from the baseline survey to the 12  
27 month survey (36.2% - 36.8%). Similarly, the prevalence of a single *S. mansoni*  
28 infection remained constant (13.7% - 13.4%) whereas the prevalence of co-  
29 infected individuals slightly decreased (36.8% - 31.6%).

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31 We conclude, from the mixed models, that infection with *S. mansoni* is associated  
32 with a lower intensity of *P. falciparum* infection; however, this relationship  
33 becomes more complicated by host infection history, increasing age and the  
34 intensity of the *S. mansoni* infection. Looking ahead as treatment of young children  
35 with praziquantel is to be up scaled, understanding co-infection interactions in  
36 more detail is essential for the success of future public health initiatives to reduce  
37 the burden of intestinal schistosomiasis and malaria.