# Cytokine profiles of School-Aged Children Infected with Schistosomiasis before and after Praziquantel treatment

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**Statement of problem**: Schistosomiasis is a parasitic disease that affects millions of people in 78 countries globally. Children under the age of 14, who have the chronic disease may suffer from anemia and malnutrition that contribute to lost days at school and pervasive learning disabilities. The infection is prevalent in Kenya, especially in endemic areas, contributing to significant morbidity. The cellular response pattern is associated with both the acute and chronic phases of the disease, in which cytokines play a critical role. The objective of this study was to evaluate the cytokine profiles of IL-4, IL-2, IL-10, IL-5, IFN-α, and TNF in serum samples of infected school-aged children by using flow cytometry before and after treatment.

**Findings**: The analysis indicated a shift in the expression of the cytokines after treatment with all the cytokines being downregulated, except TNF. There was a general trend of decrease in the expression of the cytokines at six and twelve weeks after treatment as compared to the pretreatment levels. There were statistically significant differences in the expression in IL-2 (P= 0.001**), IL-4 (P= 0.033*), IL-10 (P=0.001***), IFN-α (P= 0.023*), and IL-5 (P= 0.0001***), except in TNF (P= 0.095).

**Conclusion and Significance**: The reduction in the cytokine levels can be directly related to the influence of the drug praziquantel, modulating the cytokine response by elimination of adult worms, decline in parasitic load, and reduction of morbidity. Therefore, cytokine response is directly related with the influence of treatment in the variation of the immune response.

## Biography

Edward Okonjo is a Lecturer at the Department of Applied and Technical Biology at the Technical University of Kenya. He has a PhD in Parasitology from Technical University of Kenya. Dr Okonjo's research interest is in the immunology of parasitic organisms with an emphasis on Schistosomiasis and Soil Transmitted Helminthes (STHs). More specifically on understanding cellular responses and how these responses influence transmission dynamics. Dr Okonjo is a member of the Kenya Society of Immunology (KSI).

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