# Five-year-old children are as likely to suffer from bilharzia as their mothers

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Children of women harboring the bilharzia (schistosomiasis) worm during pregnancy are more likely to suffer the infection by the age of five years, a new study publishing October 17th, 2013 in the journal *PLOS Neglected Tropical Diseases* has found.

The study was conducted by a team of researchers from the Uganda Virus Research Institute (UVRI), Makerere University, University of Cambridge and London School of Hygiene and Tropical Medicine (LSHTM) around the Entebbe peninsula of Lake Victoria in Uganda between 2005 and 2012.

Bilharzia is a disease caused by infection of blood flukes which enter through the skin – in Uganda the culprit is mainly *Schistosoma mansoni*, which lives in the blood vessels of the intestines and lays eggs that pass out in faeces. When it rains, the eggs are swept into the lake where they hatch into young worms. The young worms enter snails, where they mature before being released back into the lake water where they seek out hosts to infect.

"The children are often infected when they accompany their mothers to the lake to collect water for domestic use," says Dr. Robert Tweyongyere, one of the lead researchers, working with Makerere University. The researchers examined expectant mothers for possible effects of *Schistosoma mansoni* and its treatment during pregnancy. Their results attribute the infection in the five-year-olds to their frequent access to the lake water and not the mothers' infection during pregnancy,

as would be expected.

Currently, children five-years-old and younger are neglected during campaigns against bilharzia including distribution of medicines.

The fight against bilharzia, mainly through distribution of medicine (praziquantel) among affected communities, had largely ignored pregnant and breast-feeding women until 2002 when a World Health Organization team of experts recommended that treatment for bilharzia during pregnancy should be carried out. This recommendation has allowed women of childbearing age to be included in bilharzia control programmes. However, there is still limited information on the effects of bilharzia or its treatment during pregnancy on pregnant women and their offspring.

The researchers recommend that bilharzia control programs should also seriously consider including the children five-years-old and younger living in the communities at risk of bilharzia infection.

Maternal bilharzia or its treatment during pregnancy may have an influence on regulation of the body's immune responses to bilharzia worms. "This may have some effect on the progress of disease manifestations," says Dr. Robert Tweyongyere.

The study discovered that the number of children with and without bilharzia was not much different between those whose mothers were treated for bilharzia during pregnancy and those who were not.

"Provision of clean water, which may indirectly reduce mothers accessing the lake, would have a direct impact in reducing bilharzia infection in the children," says Prof. Alison Elliott of LSHTM working with UVRI. The researchers further recommend inclusion of sanitation and hygiene to help break the cycle by preventing eggs in faeces from

getting to the lake by encouraging the affected communities to use latrines properly.

The researchers noted that more studies are needed to document and put to light any other outcomes that may be associated with bilharzia and its treatment during pregnancy on the offspring.

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