

Immunity protein at birth reduces likelihood of childhood malaria

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Newborn babies who were born with high levels of an immune-related protein in their blood cells were less likely to develop malaria throughout their early childhood, new research led by Curtin University has found.

The research, published in *Scientific Reports*, screened a number of immunity proteins, known as cytokines, at birth and investigated whether these small proteins provided protection against [malaria](#) for newborn babies.

Lead author Dr. Yong Song, from the School of Public Health at Curtin University, said childhood malaria remains one of the leading causes of morbidity and mortality resulting in 500,000 deaths annually, and with more than 90 per cent of malaria infections occurring in sub-Saharan Africa.

"We found that newborn babies born with a high level of a certain type of cytokine, known as IL-12, in their umbilical cord blood had a higher resistance to the development of malaria in the first two years of their life," Dr. Song said.

"Our research also investigated how newborn babies develop high levels of IL-12 in the cord blood. We found that the inbred quantity of these small proteins was not only influenced by children and mother's genetic variation, but was also dependent on the immune system conditions of the mother during pregnancy."

Co-author Associate Professor Brad Zhang, also from Curtin's School of Public Health, said the research examined 349 Mozambican pregnant women and their newborn babies up to two years of age.

"The study could have significant implications for future vaccine design techniques that could assist with the prevention of malaria in high-risk countries such as Mozambique," Associate Professor Zhang said.

"Further research is needed to investigate how IL-12 could protect infants from childhood malaria, but the findings suggest that there is a strong link between levels of this particular [protein](#) obtained from the

[umbilical cord blood](#) and the development of malaria in [early childhood](#)
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More information: Yong Song et al. Cord Blood IL-12 Confers Protection to Clinical Malaria in Early Childhood Life, *Scientific Reports* (2018). [DOI: 10.1038/s41598-018-29179-y](https://doi.org/10.1038/s41598-018-29179-y)

Provided by Curtin University

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