

Immune susceptibility to RSV during early life

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A PhD project is currently available within the immunology team of the Pneumococcal Research Group at MCRI to investigate the immunological basis of susceptibility to severe RSV disease during infancy. Student(s) should be in receipt of an APA/MRS scholarship or equivalent.

Respiratory syncytial virus (RSV) is the leading cause of lower respiratory infections among hospitalised children. This is particularly true for preterm infants, who have RSV hospitalisation rates 3 times higher than term infants, and are more likely to present with severe clinical features requiring admission to intensive care. Currently, there is no RSV vaccine (infant or maternal) available to protect these infants, despite a number of potential candidates in development. We are interested in the immunological basis of the increased susceptibility to severe RSV among preterm infants as they are especially vulnerable to infection and are the least likely to benefit from maternal vaccination strategies. This PhD project will involve the investigation of key immune susceptibility signatures associated with severe RSV disease in the first months of life as part of a birth cohort study design. As part of this project, the role of possible risk factors including vitamin D status and co-infections *Streptococcus pneumoniae* on inflammatory responses and development of severe disease will also be examined. We will take advantage of high-throughput technologies in immunology and molecular biology to examine clinical data and ex-vivo immunological data using techniques such as cell culture, flow cytometry, next-generation sequencing and functional assays.