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23 August 2016

## UCT doctoral research tackles infant respiratory diseases

**“We were able to develop reference lung function data for African infants for the first time, which will be key for ongoing research in this area.”**

A University of Cape Town (UCT) Faculty of Health graduate’s thesis has identified antenatal and early life factors that impact on infants’ lung function and growth in a bid to prevent acute and chronic respiratory diseases. The study will enable medical professionals and practitioners to better understand respiratory diseases in order to create better public health interventions.

In a thesis titled: *Early determinants of lung function in African infants*, Dr Diane Gray discovered that “maternal smoking, alcohol intake during pregnancy and indoor air pollution” impact on infants’ lung function and growth. The study also found that being exposed to household smoke in the first year of life was associated with lower lung function at age one.

The thesis found that smoke and alcohol were not the only threats to optimal lung function in infants.

“An important finding was that, independent from the effects of infant size and tobacco smoke exposure, early-life pneumonia nearly doubled an infant’s chance of having lower lung function at one year of age,” said Dr Gray. “This was true for even non-severe pneumonia and an effect that was stronger if infections were recurrent or required hospitalisation.”

Dr Gray, a paediatrician at the Red Cross Children’s Hospital, said that it is important to understand what determines respiratory health in early life in order to devise appropriate measures to prevent and manage it since most lung diseases have their origins in early life and even before birth.

“Research from high-income countries has shown that lung disease in early life is associated with later lung disease, but despite the high incidence of lung disease in low-middle income countries this has not been assessed in these areas,” she said.

Although similar studies have been done in affluent countries this was a first of its kind in the African continent.

“Although these lung function measures are now commonly used in some high income countries, they have not been used before in Africa, and not commonly used in large community cohorts such as this anywhere in the world,” said Dr Gray. “We were able to develop reference lung function data for African infants for the first time, which will be key for ongoing research in this area.”

The Drakenstein cohort, which includes 1000 infants born in Paarl, a city 60km from Cape Town in the Western Cape, South Africa, have been followed from birth, with annual lung functions planned until 6 years of age. Infants also have lung function measured at time of and 1 month after a pneumonia episode. Researchers will continue to monitor these infants through their childhood.

“What we hope is that we can continue to follow these children through childhood to clarify the relevance of these findings particularly with regards the risk of developing chronic respiratory symptoms,” said Dr Gray. “This will improve our understanding of the most important targets in reducing respiratory disease in South African children and help us manage children with lung disease in a way that maximizes their long-term respiratory health.”

Monitoring these children as they grow will help in tackling this global health priority.

Although respiratory diseases are the leading cause of death in young children, there are measures that can be put in place to prevent respiratory and chronic respiratory diseases.

“A number of factors have already been identified as important areas to target for all children,” said Dr Gray. “These include optimizing maternal health, strengthening pneumonia prevention strategies in young children; reducing tobacco smoke exposure during pregnancy and early life and reducing exposure to indoor air pollution.”

***ENDS***

***Issued by: UCT Communication and Marketing Department***

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