

# RESEARCH DIRECTIONS

## Hypertensive disorders of pregnancy

**Dr Joanne Lind and Professor Annemarie Hennessy from the School of Medicine are investigating the retinal vascular changes in hypertensive disorders of pregnancy. This research is funded through the Bonnie Babes Foundation.**

'Hypertensive disorders of pregnancy account for 16% of neonatal intensive care admissions in Australia and are the leading cause of maternal and perinatal death,' says Dr Lind. 'Preeclampsia is one such disorder and it is the leading known cause of preterm birth. The causes of disease are not well understood and determining in which pregnancies disease will develop is difficult. There are currently no tests available that can identify which women will develop preeclampsia, prior to the onset of symptoms. Within a non-pregnant population, changes in the arrangement of blood vessels in the eye can predict the onset of a number of cardiovascular conditions, including hypertension. At present there are no studies that have investigated changes to the arrangement of eye blood vessels in normal and hypertensive pregnancies.'

The team will use non-invasive imaging of the eye to measure changes to the blood vessels during normal and hypertensive pregnancies, to determine if the two groups of women are distinguishable based on measurements of the eye's blood vessels. They will also measure known biomarkers of hypertensive disorders of pregnancy and associate these with changes in the arrangement of blood vessels in the eye. Using retinal imaging in combination with biochemical markers in routine antenatal care is a novel approach to screening hypertensive disorders of pregnancy. If retinal imaging can be used to identify which women will develop hypertensive disorders of pregnancy, these pregnancies could be monitored more closely to reduce the poor outcomes associated with disease.



The results may be the first step in determining the feasibility of retinal imaging as a screening tool for hypertensive disorders of pregnancy. This work should determine the critical time points and variables that need to be assessed, to diagnose hypertensive disorders of pregnancy, by use of retinal imaging.

**Project Title:** Measurement of retinal vascular changes in hypertensive disorders of pregnancy

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