We study how factors such as maternal malnutrition, maternal infection, placental insufficiency and antenatal corticosteroids affect the growth of the baby whilst in the womb. We are also interested in determining how exposure to these factors in pregnancy influences the long-term renal and cardiovascular health of the individual. Additionally, we study the effects of preterm birth, as well as its antecedents and factors associated with neonatal care, on the development of the heart, kidneys and vasculature. We also investigate the consequences of preterm birth on postnatal renal and cardiovascular health in the short-term and long-term. Our research involves studies in human infants, including Indigenous and non-Indigenous infants, as well as studies in animal models.

It is important to determine how these early life insults affect the developing heart, kidneys and blood vessels given that the early life developmental period establishes the lifelong structural architecture (and thus function) of these organs.

Research Projects

These are numerous and directly relate to our research directions described above. Some of our current projects are:

1. The effect of intrauterine growth restriction on the heart and kidneys
2. Effects of antenatal and postnatal steroids on the developing heart and kidneys
3. Preterm birth and/or intrauterine inflammation in the early induction of atherosclerosis
4. Effect of preterm birth on renal and cardiovascular function in Indigenous and non-Indigenous infants and children

Selected significant publications:


