



Professor Jane Black

Head, Cardiovascular and Renal Developmental Programming Laboratory



Monash Biomedicine Discovery Institute
Development and Stem Cells Program

OTHER PROGRAM AFFILIATIONS



Cardiovascular Disease

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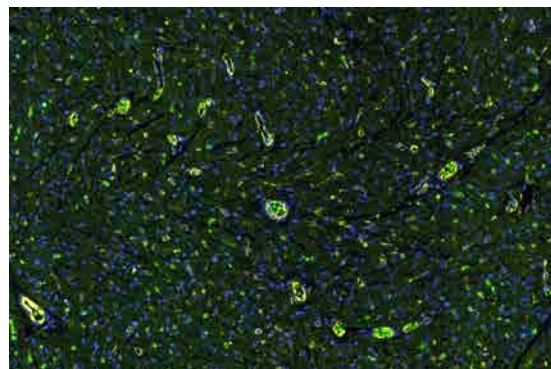
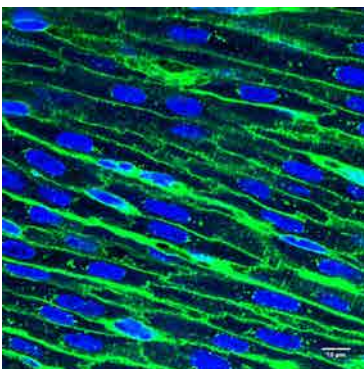
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WEB med.monash.edu/anatomy/research/cardiovascular-renal-dev-programming.html

We study how factors such as malnutrition, maternal alcohol consumption and vitamin D deficiency influence the growth of the baby whilst in the mother's 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. We also investigate the effects of premature birth on the development of the heart and kidney, and the consequences to postnatal renal and cardiovascular health. It is important to understand how these early developmental insults affect heart and kidney development, since the functional units of these organs (the cardiomyocytes and nephrons, respectively) are only formed in early development. A reduced complement of these functional units at birth is likely to adversely impact on cardiac and renal health.

Research Projects

1. Intrauterine growth restriction and the development of the fetal heart
2. Placental restriction in utero followed by induction of diabetes after birth: effects on the growth of the heart in early adulthood
3. The impact of preterm birth on the renal vasculature
4. The effect of preterm birth on the growth of podocytes



Selected significant publications:

1. Gubhaju L, Sutherland MR, Horne RSC, Medhurst A, Kent AL, Ramsden A, Moore L, Singh G, Hoy WE, **Black MJ**. 2014. Assessment of renal functional maturation and injury in preterm neonates during the first month of life. *Am J Physiol Renal Physiol*. 307, F149-F158.
2. Sutherland MR, Yoder BA, McCurnin D, Seidner S, Gubhaju L, Clyman RI, **Black MJ**. 2012. Effects of Ibuprofen treatment on the developing preterm baboon kidney. *Am J Physiol Renal Physiol*. 302, F1286-1292.
3. Sutherland MR, Gubhaju L, Moore L, Kent AL, Dahlstrom JE, Horne RS, Hoy WE, Bertram JF, **Black MJ**. 2011. Accelerated maturation and abnormal morphology in the preterm neonatal kidney. *J Am Soc Nephrol*. 22, 1365-1374.
4. Campbell DJ, Somaratne JB, Jenkins AJ, Prior DL, Yui M, Kenny JF, Newcomb AE, Kelly DJ, **Black MJ**. 2011. Differences in myocardial structure and coronary microvasculature between men and women with coronary artery disease. *Hypertension* 57, 186-192.
5. Bensley J, Stacy V, DeMatteo R, Harding R, **Black MJ**. 2010. Maladaptive cardiac remodeling following preterm birth: implications for long-term cardiovascular disease. *Eur Heart J*. 31, 2058-2066.