



## Dr Belinda Henry

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Our laboratory focuses on understanding how body weight is regulated. We have a particular interest in understanding how energy expenditure occurs within mammals. Our work primarily focuses on thermogenesis, which is a specialised process where the body expends energy in the form of heat. Our work aims to understand how the brain regulates thermogenesis. We have a number of unique and novel models that allow us to characterise the control of body weight, food intake and energy expenditure. The metabolic neuroendocrine group has a particular interest in understanding how the following impact on energy homeostasis and weight control:

- Gender differences and the effects of sex steroids.
- Stress and the stress hormone cortisol.
- Exercise.

### Research Projects

1. Sex differences in the control of thermogenesis
2. Stress, weight loss and predisposition to obesity
3. Using mitochondrial DNA to predict propensity to obesity

### Selected significant publications:

1. Hewagalamulage SD, Clarke IJ, Young IR, Rao A, **Henry BA**. 2015. High cortisol response to adrenocorticotrophic hormone identifies ewes with reduced melanocortin signalling and increased propensity to obesity. *J Neuroendocrinol* 27(1):44-56.
2. Lee TK, Lee C, Bischof R, Lambert GW, Clarke IJ and **Henry BA**. 2014. Stress-induced behavioural and metabolic adaptations lead to an obesity prone phenotype in ewes with high cortisol responses. *Psychoneuroendocrinology* 47: 166-77.
3. Lee TK, Clarke IJ, StJohn J, Young IR, Leury BJ, Rao A, Andrews ZB and **Henry BA**. 2014. High cortisol responses identify propensity to obesity that is linked to thermogenesis in skeletal muscle. *Faseb J* 28: 35-44
4. **Henry BA**, Andrews ZB, Rao A and Clarke IJ. 2011. Central leptin activates mitochondrial function and increases heat production in skeletal muscle. *Endocrinology* 152: 2609-18.
5. **Henry BA**, Dunshea FR, Gould M and Clarke IJ. 2008. Profiling post-prandial thermogenesis in muscle and fat of sheep and the central effect of leptin administration. *Endocrinology* 149(4):2019-26.