

Hypothalamic Pituitary Adrenal (HPA) Axis Research Group

Research overview

We all experience various challenges and stressors in life. They can range in magnitude from simply being in an unfamiliar environment, to having to speak in public before a large and potentially critical audience. The hypothalamic-pituitary-adrenal or HPA axis is the body's major system that both responds to stress and helps you cope with stress. The HPA axis also has key roles in the body's other systems including reproduction, cognition, metabolism and the immune system.

In the Raine study, the HPA axis has been assessed at three stages. As part of the 14 year cohort review, response to a physiological challenge - inhalation of carbon dioxide - was assessed. At the 17 year review, unstressed or basal measurements of the HPA axis were collected soon after waking. Finally, the 'Challenge Me' study looked at responses to psychological stress utilising the gold-standard Trier Social Stress Test (TSST). The Raine Study TSST is the largest of its kind to evaluate the biologic effects of stress in young adults.

Research highlights

The Challenge Me Study, conducted in the Raine Cohort, is the world's largest stress test of its kind, and investigates the biochemical responses to social stressors via public speaking and mental maths challenges. The Challenge Me study was conducted at the Women and Infants Research Foundation and included 1237 members of the Raine Cohort.

Research achievements

Identification of the critical role of the HPA axis in the relationship between growth patterns in early life and obesity during young adulthood have recently been identified by the HPA research group. These findings have been presented at the Society of Gynecologic Investigation in Florence, Italy in March 2014, at the Perinatal Society of Australia and New Zealand in Perth in April 2014, and at the Society of Gynecologic Investigation in San Francisco in March 2015.

Congratulations to Carly Herbison, who is currently completing her PhD with the Raine HPA Group. Carly has recently been awarded competitive scholarships, enabling her to present her research at an international level and visit collaborators in Germany and Canada.

THE TEAM

Research Group Leader

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