

Symposium 36: Early life Stress: Consequences for neurodevelopment and behaviour

Sponsored by the British Society for Neuroendocrinology

Theme: Neuroendocrine and autonomic nervous systems

Thursday 13th April, 9:00 – 10:40

It is widely accepted that the physiological and behavioural traits of an individual are determined by complex interactions between their genes ('nature') and their experiences/environment ('nurture'). The perinatal period, infancy, childhood and puberty are periods of increased neuroplasticity and therefore the brain is particularly sensitive to 'programming' by environmental factors at these times. Exposure to stress or adversity in early life can programme persistent neural and behavioural changes. Often this programming is maladaptive, increasing the susceptibility of an individual to mood disorders (e.g. anxiety, depression), behavioural disorders (e.g. attention deficit/ hyperactivity disorder, conduct disorder) and cognitive impairments.

This session will focus on the detrimental consequences of adversity during the prenatal period, infancy and the peri-pubertal period on the brain and behaviour based on studies in rodents and humans. What is currently known about the different mechanisms underlying this early life programming, including altered developmental neuroplasticity, central gene expression and neuronal signalling, as well as epigenetic changes will be discussed. Whether this programming can be prevented or reversed is of critical importance, thus potential interventions will also be considered.

Co-Chairs: Dr Paula Brunton (University of Edinburgh) and Dr Chris Murgatroyd (Manchester Metropolitan University)

Speaker 1: Professor Vivette Glover (Imperial College London)

'The influence of prenatal maternal stress, anxiety and depression on child neurodevelopment and the biological mechanisms involved'

Speaker 2: Dr Paula Brunton (Edinburgh)

'Can the adverse effects of prenatal stress on the offspring's brain and behaviour be prevented by targeting the placenta?'

Speaker 3: Dr Chris Murgatroyd (Manchester Met)

'Epigenetic effects of pre- and postnatal maternal depression from animal models to human studies'

Speaker 4: Dr Stamatina Tzanoulinou (University of Geneva, Switzerland)

'Programming effects of peripubertal stress on brain and behaviour'