

# Brain and Body

## Theme leads



### **Professor Hugo Critchley**

Consultant Psychiatrist, Sussex Partnership NHS Foundation Trust. Lead for the Neurobehavioural Clinic (His specialist clinical service evaluates neurodevelopmental conditions in adults)  
Co-Director of the Sackler Centre for Consciousness Science; Brighton and Sussex Medical School (BSMS)  
Head of the Department of Neuroscience, BSMS



### **Dr Alessandro Colasanti**

Lead for the Immunopsychiatry Clinic  
Senior Lecturer in Psychiatry, Brighton and Sussex Medical School

## Areas of interest

The Brain and Body research them explores the links between physical and mental health such as:

- The relationship between hypermobility and mental health, particularly anxiety
- Applying insights from immunopsychiatry to better understand ME and chronic fatigue syndrome
- Looking at why the insular system is hyperactive in people with Tourette's
- Interoceptive awareness (consciousness of internal bodily state)
- Role of brain mitochondrial function and oxygen metabolism in the pathophysiology of mood disorders
- Imaging of neuroinflammation and Immunopsychiatry research
- PET studies on brain endogenous opioids.

The theme is a working collaboration with University of Sussex and Brighton and Sussex Medical School.

## Theme objectives

Researchers within the Brain and Body theme are working on a range of studies exploring the way mind and body are dynamically linked and hope that by understanding these relationships, better, targeted and personalised treatments can be developed.

The theme seeks to explore new advances in neuropharmacology and the treatment of neurobehavioural problems such as Attention Deficit Hyperactivity Disorder and autism. By seeking to understand the causes of severe and disabling brain disorders they aim to improve clinical care by developing new and better ways to treat them.

## Research

**ADIE - Breaking the link between autism and anxiety.** ADIE is a £1m-funded study by MQ. Researchers led by Prof Critchley are looking at if a new psychological therapy could reduce the number of people with high-functioning autism from going on to develop an anxiety disorder.

**ADAPT-** looking at a new therapeutic intervention for anxiety in hypermobility.

**Cap-Mem** - exploring the cause and prevalence of memory problems

### Role of interoception in Multiple Sclerosis fatigue

**LQD** - comparing the clinical and cost-effectiveness of Lithium and Quetiapine for treatment-resistant depression.

**OxyBipolar** - combining pharmacology and novel neuroimaging techniques in patients with treatment-resistant bipolar disorder, this study aims to investigate the effects of Methylene Blue (an antioxidant drug with neuroprotective properties) on brain biogenetics and brain oxygen metabolism.

Immune cells in the brain (microglia) are known to be overactive in some people with depression. Using PET scans, we are **measuring how microglial cells respond when they are triggered by an immune response in the body.**

## Associated weblinks

<https://www.bsms.ac.uk/about/contact-us/staff/professor-hugo-d-critchley.aspx>

[Sackler Centre for Consciousness Science](#)

[Neurobehavioural Clinic](#)

[Immunopsychiatry Clinic](#)

## Key publications

Discrepancies between dimensions of interoception in Autism: Implications for emotion and anxiety. Garfinkel SN, Tilly C, O’Keeffe S, Harrison NA, Seth AK, Critchley HD. Biological Psychology 2016 114:117-26.

Threat and the body: how the heart supports fear processing. Garfinkel SN, Critchley HD. Trends in Cognitive Sciences 2016 20:34-46.

Knowing your own heart: Distinguishing interoceptive accuracy from interoceptive awareness. Garfinkel SN, Seth AK, Barrett AB, Suzuki K Critchley HD Biological Psychology 2015; 104:65-74.

Visceral influences on brain and behavior. Critchley HD Harrison NA. Neuron 2013 77:624-38.

Inflammation causes mood change through alterations in subgenual cingulate activity and mesolimbic connectivity. Harrison NA, Brydon L, Walker C, Gray MA, Steptoe A, Critchley HD. Biol. Psychiatry 2009 66:407-14.

Neuroinflammation and its relationship to changes in brain volume and whitematter lesions in multiple sclerosis.

Datta G, Colasanti A, Rabiner EA, Gunn RN, Malik O, Ciccarelli O, Nicholas R, Van Vlierberghe E, Van Hecke W, Searle G, Santos-Ribeiro A, Matthews PM. Brain. 2017 Nov 1;140(11):2927-2938.

Carving depression at its joints? Young AH, Colasanti A. World Psychiatry.2016 Oct;15(3):239-241.

Hippocampal Neuroinflammation, FunctionalConnectivity, and Depressive Symptoms in Multiple Sclerosis. Colasanti A, Guo Q, Giannetti P, Wall MB, Newbould RD, Bishop C, Onega M,Nicholas R, Ciccarelli O, Muraro PA, Malik O, Owen DR, Young AH, Gunn RN, PicciniP, Matthews PM, Rabiner EA. Biol Psychiatry.2016 Jul 1;80(1):62-72.

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