

Dr Alexandra Sinclair MBChB, MRCP, PhD

Clinician Scientist

Neurobiology

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About

Dr Sinclair now works as a Clinician Scientist with a role combining clinical neurology with translational research into idiopathic intracranial hypertension and the neuroendocrine aspects of headache.

Qualifications

- PhD, 2010
- Member of the Royal College of Physicians (MRCP), UK, 2003
- MBChB, University of Birmingham, 2000

Biography

Dr Alexandra Sinclair MBChB (Hons) MRCP, PhD graduated from the University of Birmingham School of Medicine in 2000 and attained her MRCP in 2003. She then trained as a Neurology Specialist Registrar in the West Midlands before taking time out of her training to pursue research interests as a Medical Research Council, Clinical Research Training Fellow at the University of Birmingham.

She attained her PhD in 2010 along with a number of prizes for her research: Steven Whittaker Prize, West Midlands Physicians Association (November 2009), Pushpa Chopra Prize, runner-up, Medical Research Society, UK (February 2009), Individual Speciality Award, Medical Research Society, UK (February 2008), Michael Jefferson Prize, Midlands Neurology Society (November 2007) and a poster prize, Society for Endocrinology (March 2007).

Teaching

Current teaching includes:

- SP1 student selected teaching module (2nd year MBChB) on "New Treatments in Neurology"
- Neurology Demonstration Programme (3rd year MBChB)

Research

Working collaboratively between the Academic Unit of Ophthalmology, School of Immunity and Infection and the Centre for Diabetes, Endocrinology and Metabolism, School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, Alex Sinclair worked as an MRC Clinical Research Training Fellow (2005 – 2010). She sought to define 1) an evidence base for treatment and 2) the pathogenesis, of idiopathic intracranial hypertension (IIH).

During the fellowship she conducted a study which provided the first evidence that weight loss is effective at reducing not only headaches and papilloedema, but also intracranial pressure (ICP) in IIH (BMJ 2010;341:c2701). *In-vitro* and *ex-vivo* studies addressed the role of obesity and 11 β hydroxysteroid dehydrogenase (11 β HSD1) a regulator of local cortisol availability, in the regulation of ICP and IIH. She demonstrated expression and activity of 11 β HSD1 in the choroid plexus, the cerebrospinal secreting tissue and showed that therapeutic weight loss in IIH was associated with a reduction in global 11 β -HSD1 activity, and additionally that the reduction in 11 β -HSD1 correlated with weight loss. These studies suggest that elevated 11 β -HSD1 may represent a pathogenic mechanism in IIH and inhibition of 11 β -HSD1 may have therapeutic potential in IIH.

Alex' current funded research projects include:

- Sustained treatment of Idiopathic Intracranial Hypertension (IIH) through weight loss induced by bariatric surgery NIHR Clinician Scientist Fellowship.
- Assessing the therapeutic efficacy of an 11 β -hydroxysteroid dehydrogenase type 1 inhibitor (AZD4017) in idiopathic intracranial hypertension (IIH) MRC Mechanisms of Disease grant
- UK Idiopathic Intracranial Hypertension Clinical Database (GF 010). Healthcare Quality Improvement Partnership (HQIP).
- Establishing in vitro choroid plexus and arachnoid granulation cell functional model systems of CSF secretion and drainage to further understanding into the pathogenesis of Idiopathic intracranial hypertension. Midland Neuroscience Teaching & Research Fund

Other activities

Membership of professional bodies

- General Medical Council (4703369)
- Member of the Royal College of Physicians (MRCP) UK (since 2003)

- British Medical Association
- Association of British Neurologists (ABN)
- British Association for the Study of Headache (BASH)

Publications

Mollan SP, Markey KA, Benzmira JD, Jacks A, Matthews TD, Burdon MA and Sinclair AJ (2014) **[A Practical approach to, Diagnosis, Assessment and Management of Idiopathic Intracranial Hypertension](http://www.ncbi.nlm.nih.gov/pubmed/?term=A+Practical+approach+to%2C+Diagnosis%2C+Assessment+and+Management+of+Idiopathic+Intracranial+Hypertension)** (<http://www.ncbi.nlm.nih.gov/pubmed/?term=A+Practical+approach+to%2C+Diagnosis%2C+Assessment+and+Management+of+Idiopathic+Intracranial+Hypertension>). *Practical Neurology* doi:

10.1136/practneurol-2014-000821 [Epub ahead of print]

Mollan S, Woolley R and Sinclair A (2014) Comment on the Idiopathic Intracranial Hypertension Treatment Trial. *JAMA* Letter to the Editor accepted 26.6.14

Lai JTF, Dereix JDC, Ganepola RP, Nightingale PG, Markey KA, Aveyard PA and Sinclair AJ (2014) **[Should we educate about the risks of medication overuse headache?](http://www.ncbi.nlm.nih.gov/pubmed/24524380)** (<http://www.ncbi.nlm.nih.gov/pubmed/24524380>) *J Headache Pain* 13;15:10

Batra R and Sinclair A (2014) **[Idiopathic intracranial hypertension: research progress and emerging themes](http://www.ncbi.nlm.nih.gov/pubmed/?term=Idiopathic+intracranial+hypertension%3B+research+progress+and+emerging+themes)** (<http://www.ncbi.nlm.nih.gov/pubmed/?term=Idiopathic+intracranial+hypertension%3B+research+progress+and+emerging+themes>). *J Neurol* 261(3):451-60

Gathercole LL, Lavery GG, Morgan SA, Cooper MS, Sinclair AJ, Tomlinson JW and Stewart PM (2013) **[11 \$\beta\$ -Hydroxysteroid Dehydrogenase 1: Translational and Therapeutic Aspects](http://www.ncbi.nlm.nih.gov/pubmed/?term=11%CE%B2-Hydroxysteroid+Dehydrogenase+1%3A+Translational+and+Therapeutic+Aspects)** (<http://www.ncbi.nlm.nih.gov/pubmed/?term=11%CE%B2-Hydroxysteroid+Dehydrogenase+1%3A+Translational+and+Therapeutic+Aspects>). *Endocr Rev* 34(4):525-55

Hassan-Smith G, Wallace G, Douglas MR and Sinclair AJ (2012) **[The Role of Metabolomics in Neurological Disease](http://www.ncbi.nlm.nih.gov/pubmed/22341863)** (<http://www.ncbi.nlm.nih.gov/pubmed/22341863>). *J Neurol* 248(1-2):48-52

Wright BLC, Lai JTF and Sinclair AJ (2012) **[Cerebrospinal Fluid and Lumbar puncture: a practical review](http://www.ncbi.nlm.nih.gov/pubmed/22278331)** (<http://www.ncbi.nlm.nih.gov/pubmed/22278331>). *J Neurol* 259(8):1530-45

Sinclair AJ, Burdon AJ, Nightingale PG, Matthews TD, Jacks A, Lawden M, Sivaguru A, Gaskin BJ, Rauz S, Clarke CE and Ball AK (2012) **[Rating Papilloedema: An evaluation of the Frisen classification in Idiopathic Intracranial Hypertension](http://www.ncbi.nlm.nih.gov/pubmed/?term=Rating+Papilloedema%3A+An+evaluation+of+the+Frisen+classification+in+Idiopathic+Intracranial+Hypertension)** (<http://www.ncbi.nlm.nih.gov/pubmed/?term=Rating+Papilloedema%3A+An+evaluation+of+the+Frisen+classification+in+Idiopathic+Intracranial+Hypertension>). *J Neurol* 259(7):1406-12

For a full list of Dr Sinclair's publications, click [here](http://www.ncbi.nlm.nih.gov/pubmed/?term=sinclair+aj+%5Bau%5D) (<http://www.ncbi.nlm.nih.gov/pubmed/?term=sinclair+aj+%5Bau%5D>).

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