

CURRICULUM VITAE

Matthew Charles Walker
DoB: 5th January 1965



CURRENT POST: Professor of Neurology and Honorary Consultant Neurologist in Department of Clinical and Experimental Epilepsy at UCL Queen Square Institute of Neurology and National Hospital of Neurology and Neurosurgery, London, UK

PREVIOUS POSTS

<i>Institution</i>	<i>Position Held</i>	<i>Dates</i>
UCL Institute of Neurology	Head of Epilepsy Department	01/2012 – 12/2018
UCL Institute of Neurology	Professor of Neurology	10/2007 - Present
UCL Institute of Neurology,	Senior Lecturer	07/2002 - 09/2007
UCL Institute of Neurology	Advanced Wellcome Fellowship	02/1999 - 01/2003
Guy's Hospital	Specialist Registrar In Neurology	02/1998 - 01/1999
St Thomas's Hospital	Specialist Registrar in Neurology	11/1996 - 01/1998
Institute of Neurology	Wellcome Training Fellowship	11/1993 -10/1996
National Hospital for Neurology & Neurosurgery	Research Registrar in Neurology	11/1992 -10/1993

EDUCATIONAL QUALIFICATIONS

<i>Type</i>	<i>Class</i>	<i>Subject</i>	<i>Awarding body</i>	<i>Year</i>
PhD		Medicine	University College London	1998
MRCP		Medicine	Royal College of Physicians	1992
MB BChir		Medicine	Cambridge University	1989
BA	First	Physiology	Cambridge University	1986

PROFESSIONAL BODIES

- President of British Branch of International League Against Epilepsy
- Fellow of Royal College of Physicians
- Fellow of European Academy of Neurology
- Member of Physiological Society
- Member of British Neuroscience Association
- Member of Association of British Neurologists

COMMISSIONS AND TASK FORCES OF INTERNATIONAL LEAGUE AGAINST EPILEPSY

- Secretary of ILAE-Europe
- Co-Chair of ILAE Task Force on Translational Research
- Member of ILAE Commission on Neurobiology of Disease
- Member of Working Group on Recommendations for Preclinical Epilepsy Drug Discovery (2013)
- Member of the Surgical Task Force, ILAE Commission on Therapeutics (2010-2013)

OTHER CHARITABLE BODIES, PANELS AND WORKING GROUPS

- Chair of Trustees of Epilepsy Research UK
- Scientific advisor to Epilepsy Action
- Guarantor of Brain
- NC3Rs Epilepsy working group for refining animal models of epilepsy
- Chair of Executive of Joint Epilepsy Council of United Kingdom and Ireland (2013-2016)
- Executive Board of UCL Institute of Neurology (2012-2018)

EDITORSHIPS

- Associate Editor of Brain (from 2014)
- Associate Editor of Epilepsia (2008-2013)
- Associate Editor of Therapeutic Advances in Neurological Disorders
- Associate Editor Frontiers in Neural Circuits

PRIZES AND HONOURS

- 2013 ILAE Ambassador of Epilepsy
- 2000 European Young Investigator award, UK Chapter of ILAE
- 1986 Rashbass Prize for physiology, Trinity College, Cambridge University

GRANTS HELD IN LAST 5 YEARS

As Principal Investigator/coordinator

- **Epilepsy Research UK** Preventing seizure induced cell death by NADPH oxidase inhibition and Nrf2 induction. £132,000 2013-2016
- **EU Horizon2020** ITN Extracellular Matrix in epilepsy (ECMED) €3 million 2014-2018
- **MRC** Role of the GABA transporter, GAT-3, in regulating network excitability in the hippocampus £480,000 2017-2020
- **Epilepsy Research UK** The Incidence of Hospital Admissions with Prolonged Seizures and Status Epilepticus in England 1990-2015. £11,275 2017-2019
- **NIHR UCLH Biomedical Research Centre**. Epilepsy and Cognition. £395,000 2017-2020
- **NIHR UCLH Biomedical Research Centre**. Epilepsy and Cognition. £195,000 2020-2022
- **Epilepsy Research UK** Volatile Non-Invasive Biomarkers of Epileptic Seizures (VIBES) study £188,000 2020-2023

As Co-investigator

- **MRC** Gene therapy for refractory epilepsy £2.5 million 2014-2019
- **EU FP7** Targets and biomarkers for antiepileptogenesis €1.1 million 2014-2019
- **MRC** DPFS Engineered Potassium Channel gene therapy for epilepsy £2 million 2019-2023
- **Epilepsy Research UK** The use of portable magnetoencephalography (MEG) in epilepsy £84,000 2019-2022
- **MRC** Magnetoencephalographic telemetry in epilepsy using OP-MEG sensors £190,000 2020-2023

PATENT INVENTOR

- EP3116508A1 - Combined use of a vector encoding a modified receptor and its exogenous agonist in the treatment of seizures (2017)
- WO2018229254A1 - Expression vectors comprising engineered genes (2018)
- WO2019002435A1 - Combination comprising decanoic acid for the treatment of epilepsy (2018)
- WO2018189113A1 - Composition for use in the treatment of epilepsy (2018)
- US20170305859A1 - An Anticonvulsant Compound (2017)
- EP2737901A1 – Therapeutic Use of Compounds (2014)

PUBLICATIONS

Books: 9

Book Chapters: 54

Peer-reviewed publications: 236

Citations: 14760

H factor: 69

SELECTED PUBLICATIONS (*Joint corresponding author)

Basic Neurobiology

- Boddum K, Jensen TP, Magloire V, Kristiansen U, Rusakov DA*, Pavlov I*, **Walker MC***. Astrocytic GABA transporter activity modulates excitatory neurotransmission. *NAT COMMUN* 2016;7:13572
- Pavlov I, Scimemi A, Savtchenko L, Kullmann DM, **Walker MC**. I(h)-mediated depolarization enhances the temporal precision of neuronal integration. *NAT COMMUN* 2011;2:199
- Pavlov I, Savtchenko LP, Kullmann DM, Semyanov A, **Walker MC**. Outwardly rectifying tonically active GABA(A) receptors in pyramidal cells modulate neuronal offset, not gain. *J NEUROSCI* 2009;29(48):15341-50.
- Scimemi A, Semyanov A, Sperk G, Kullmann DM, **Walker MC**. Multiple and plastic receptors mediate tonic GABAA receptor currents in the hippocampus. *J NEUROSCI* 2005;25:10016-24
- Chandler K, Princivalle AP, Fabian-Fine R, Bowery NG, Kullmann DM, **Walker MC**. Plasticity of GABAB receptor-mediated heterosynaptic interactions at mossy fibers following status epilepticus. *J NEUROSCI* 2003;23(36):11382-91.
- Semyanov A, **Walker MC**, Kullmann DM. GABA uptake regulates cortical excitability via cell type-specific tonic inhibition. *NAT NEUROSCI* 2003;6(5):484-90

Translational Neuroscience

- Chang P, Bush D, Schorge S, Good M, Canonica T, Shing N, Noy S, Wiseman FK, Burgess N, Tybulewicz VLJ*, **Walker MC***, Fisher EMC*. Altered Hippocampal-Prefrontal Neural Dynamics in Mouse Models of Down Syndrome. *CELL REP.* 2020;30(4):1152-1163.e4
- Snowball A, Chabrol E, Wykes RC, Shekh-Ahmad T, Cornford JH, Lieb A, Hughes MP, Massaro G, Rahim AA, Hashemi KS, Kullmann DM*, **Walker MC***, Schorge S*. Epilepsy Gene Therapy Using an Engineered Potassium Channel. *J NEUROSCI.* 2019 Apr 17;39(16):3159-3169
- Lieb A, Qiu Y, Dixon CL, Heller JP, **Walker MC**, Schorge S, Kullmann DM. Biochemical autoregulatory gene therapy for focal epilepsy. *NAT MED.* 2018;24(9):1324-1329
- Shekh-Ahmad T, Eckel R, Dayalan Naidu S, Higgins M, Yamamoto M, Dinkova-Kostova AT, Kovac S, Abramov AY*, **Walker MC***. KEAP1 inhibition is neuroprotective and suppresses the development of epilepsy. *BRAIN.* 2018 May 1;141(5):1390-1403
- Chang P, Terbach N, Plant N, Chen PE, **Walker MC***, Williams RS*. Seizure control by ketogenic diet-associated medium chain fatty acids. *NEUROPHARMACOLOGY* 2013;69:105-14.
- Chang P, Augustin K, Boddum K, Williams S, Sun M, Terschak JA, Hardege JD, Chen PE, **Walker MC***, Williams RS*. Seizure control by decanoic acid through direct AMPA receptor inhibition. *BRAIN.* 2016 139(Pt 2):431-43
- Kätzel D, Nicholson E, Schorge S, **Walker MC**, Kullmann DM. Chemical-genetic attenuation of focal neocortical seizures. *NAT COMMUN* 2014;5:3847
- Wykes RC, Heeroma JH, Mantoan L, Zheng K, Macdonald DC, Deisseroth K, Hashemi KS, **Walker MC***, Schorge S*, Kullmann DM*. Optogenetic and potassium channel gene therapy in a rodent model of focal neocortical epilepsy. *SCIENCE TRANS MED* 2012;4(161):161ra152

Clinical

- Vivekananda U, Mellor S, Tierney TM, Holmes N, Boto E, Leggett J, Roberts G, Hill RM, Litvak V, Brookes MJ, Bowtell R, Barnes GR*, **Walker MC***. Optically pumped magnetoencephalography in epilepsy. *ANN CLIN TRANSL NEUROL.* 2020;7(3):397-401
- Neligan A, Noyce AJ, Gosavi TD, Shorvon SD, Köhler S, **Walker MC**. Change in Mortality of Generalized Convulsive Status Epilepticus in High-Income Countries Over Time: A Systematic Review and Meta-analysis. *JAMA NEUROL.* 2019 76(8):897-905
- Vivekananda U, Bush D, Bisby JA, Diehl B, Jha A, Nachev P, Rodionov R, Burgess N, **Walker MC**. Spatial and episodic memory tasks promote temporal lobe interictal spikes. *ANN NEUROL.* 2019;86(2):304-309
- Reuber M, Chen M, Jamnadas-Khoda J, Broadhurst M, Wall M, Grünewald RA, Howell SJ, Koeppe M, Parry S, Sisodiya S, **Walker M**, Hesdorffer D. Value of patient-reported symptoms in the diagnosis of transient loss of consciousness. *NEUROLOGY* 2016;87(6):625-33
- Surges R, Scott C, **Walker MC**. Enhanced QT shortening and persistent tachycardia after generalized seizures. *NEUROLOGY* 2010;74(5):421-6