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Academic neurology in the UK

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1 OPINION

2 **Academic neurology in the UK: a plea to turn away from the** 3 **precipice**

4 We should be celebrating. As clinical academic neurologists, the neurological landscape has never
5 looked so promising. The role of clinical academics is to marry clinical experience with basic
6 science research—taking research from the bench through the translational pathway into patient-
7 focussed clinical trials. The premise is fantastic: as scientists we experience the joy of curiosity
8 driven work, a degree of autonomy, and rare but pivotal moments of scientific discovery; as
9 clinicians we have the privilege of helping patients through deep expertise.

10
11 Over recent years ground-breaking basic science discoveries have led to life-changing
12 improvements in the clinical care we can offer patients in our clinics. From the translational
13 potential of multi-omics work untangling the role of CD40L in the pathogenesis of multiple
14 sclerosis¹; through use of antisense oligonucleotides which has allowed children with spinal
15 muscular atrophy to walk²; to targeting CGRP receptors in the treatment of migraine³ and the first
16 disease modifying treatments for Alzheimer’s disease.⁴ We are in a golden age of neurological
17 innovation.

18
19 And yet, we hear academic neurology in the UK is in crisis. Professor Sir Paul Nurse’s independent
20 review of 2023 highlighted the critical need to support clinical academics working in the NHS as
21 a key component of the UK’s research landscape “...*the Review heard major concerns expressed*
22 *by clinical researchers that the demands of their clinical training and health care duties were in*
23 *conflict with their research training, and for the time needed to carry out research. They argued*
24 *that research activities are being squeezed out and are on a downward trajectory, weakening the*
25 *ability of the UK to carry out the research needed to make the NHS more effective and efficient,*
26 *and missing opportunities to boost the economy. The Government needs to tackle this increasingly*
27 *damaging problem with urgency, to ensure that those clinically trained individuals with the talent*
28 *to carry out research are able to do so”⁵. In 2023, the House of Lords Science and Technology*

29 Committee conducted an inquiry into the plight of clinical academics and concluded in a letter

1 from Baroness Brown to the Secretary of State that “*the clinical research environment in the the*
2 *NHS is on a dangerous precipice and without urgent action we risk losing out on [the benefits of*
3 *research]*” and the UK’s clinical research capacity could be permanently diminished.⁶

4
5 Focussing on neurology academia, ten years ago, 32% of academic neurologists in the UK were
6 under 35: today that number is 16% (Figure 1).⁷ Young neurologists are choosing not to, or are
7 unable to, follow an academic career. The number of academic neurologists has fallen as a
8 proportion of the total number of neurologists on the specialist register despite an uptick in absolute
9 numbers. Neurology is not alone. The 2023 clinical academic survey produced by the medical
10 school council reveals an ageing workforce with ethnic and gender imbalances across clinical
11 academia.⁷

12
13 Why is this happening? We are training fewer clinical academics as a proportion of total clinicians,
14 there are longstanding issues with a leaky pipeline with artificial bottlenecks in training. The steady
15 trickle of loss of talent is becoming a torrent. Major changes in clinical neurology training have
16 recently been introduced in the UK which will only exacerbate these issues by squeezing the time
17 available to make it as an academic. Here we will describe and discuss these changes and what
18 might be done to remedy the situation.

19
20 There are several pathways to Certificate of Completion of Training, necessary to work as a
21 consultant academic neurologist in the UK. There is a traditional clinical route, comprised of three
22 stages (foundation, internal medicine, specialty training), as well as academic equivalents of each
23 stage that incorporate research time known as Integrated Academic Training. Trainees can cross
24 between these two pathways at each stage. The UK Foundation Programme is a two-year
25 postgraduate training programme in which doctors rotate through a variety of specialties in hospital
26 and community settings every four months. The Specialised Foundation Programme is an
27 alternative to the UKFP and incorporates research into foundation training, often with a specialty
28 theme. There are around 450 SFP posts in the UK each year. In the past, these have been awarded
29 through a national recruitment process scored according to evidence of academic achievement
30 such as presenting at conferences or publishing in scientific journals. In 2025, the SFP will move
31 to a Preference Informed Allocation in line with the UKFP, despite the concerns of senior academic
32 clinicians.⁸ Research achievements will no longer count towards an application and students will

1 simply rank geographical regions in order of preference and be randomly assigned a ranking and
2 to SFP posts, regardless of whether they have demonstrated any interest in research or the specialty
3 theme of the post. This will surely disincentivise aspirant academics taking intercalated science
4 degrees that are often the first opportunity to catch the research bug.

5
6 Following completion of foundation training, prospective academic neurologists must complete
7 Internal Medicine Training, a three-year training programme, followed by specialty training in
8 Neurology. The Shape of Training reforms to the Neurology curriculum, fully introduced in 2022,
9 have the aim of increasing generalism, and will undoubtedly have a major impact on both clinical
10 and academic training. In addition to a five-year duration of specialist Neurology training, trainees
11 are required to acquire ‘capabilities in practice’ (CiPs) during internal medicine blocks amounting
12 to one year. These are usually taken at the start and end of training, with additional dedicated
13 periods of exposure to the acute medical take throughout training, to obtain a triple CCT. The
14 prospect of attempting to ‘triple train’ in Neurology, Internal Medicine, gain a subspeciality CCT
15 in Stroke Medicine and on-the-side become a world-class researcher is daunting. The net result of
16 this is that trainees see academic training as infeasible alongside the requirements of clinical
17 training, risking long further extensions for adequate exposure and competency, and concerns
18 around lack of mastery of core curriculum components (Figure 2).

19
20 Financial implications are an unavoidable consequence of delays in CCT. Variable approaches to
21 competency vs. time-based training means that academic/research time frequently does not count
22 towards progression. Those who are training less than full time for caring or other reasons have
23 further extensions to training; the cumulative impact of training extensions mean that CCT can be
24 substantially delayed for some clinical academics (Figure 2). The financial end result of these
25 delays are lifelong. This is compounded by the lack of growth in junior doctor salaries and career
26 average pensions on the 2015 scheme, meaning that those who spend the longest in training have
27 the lowest career average salary, and therefore lower pensions.

28
29 As with academic careers outside of medicine, a leaky pipeline disproportionately impacts female
30 trainees; returning to clinical training following time out for parental leave is challenging, but the
31 additional challenge of regaining academic momentum at this time can be overwhelming,
32 particularly when compounded by childcare or other responsibilities and potentially inability to

1 travel to take up opportunities. The number of female neurology academics has declined as a
2 proportion from 34% to 29% of all genders, over the last ten years (Figure 1) when it should be
3 increasing. Ultimately, all of these considerations selectively disadvantage certain groups including
4 less than full-time trainees, those with a caring role, and those who do not have the luxury of relying
5 on generational wealth to supplement loss of earnings. The net result of this is inequitable access
6 to opportunities and a lack of diversity which is a chronic issue in clinical academia. However,
7 diversity is crucial to the success of clinical academia, in terms of research approaches, techniques
8 and consideration of patient populations.

9
10 To widen access to research training and support careers in clinical academic neurology will need
11 urgent and comprehensive interventions at each stage of medical training, and we welcome several
12 aspects of the Government's response to the House of Lords report. However, there are some
13 specific issues that only we as neurologists can address. The inflexible requirement for generalist
14 training for all neurologists is almost impossible to reconcile with the needs of academic
15 neurology. We propose that committed academic neurology trainees should have the opportunity
16 to opt out of internal medicine dual training and use the time saved to pursue research excellence.
17 For those academics who decide later on not to, or are not able to, pursue a clinical academic
18 career, post-CCT credentialing in internal medicine could mitigate job concerns. A comprehensive
19 strategy must also include measures to mitigate existing bottlenecks, such as expanding the number
20 of dedicated intermediate and senior fellowships for clinical academics as well as combating EDI
21 inequality with mechanisms to make academia more accessible to minority and under-represented
22 groups and the inclusion of centres away from the "golden triangle" within cross-site
23 collaborations. We are disappointed in the withdrawal of specialised calls for clinical academic
24 training posts by some funders. We further propose that inclusion of training aspects for
25 early/emerging clinical researchers should be a strong element of funding decisions in all new
26 academic initiatives in neurology. Even with positive changes to recruit and retain academic
27 neurologists, effective mentorship is invaluable in nurturing this group with a role for professional
28 groups such as the Association of British Neurologists.

29
30 Clinical academics have a vital role in the future of the NHS: bringing innovation from basic
31 science, involving patients in clinical trials, supporting the workforce and training the next

1 generation. Research should not be seen as a nice optional extra. It is associated with improved
2 hospital performance and outcomes and ultimately drives improvements in the health and wealth
3 of the nation. However, neurology academia in the UK is in crisis: we are aging and less diverse
4 than we should be, there are fewer young clinical academics being trained as a proportion of the
5 workforce, and there is a leaky pipeline with catastrophic loss of talent at key points due to
6 unnecessary and artificial hurdles and penalties. Importantly the neurology speciality needs to
7 reconsider the mandatory training requirement for generalism: our collective strength should be in
8 a diversity of talents and roles.

9

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28

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5 **Running title:** Academic neurology in the UK

6

7 Helen Devine is a clinical Newcastle University Academic Track Fellow and leads the academic strand for MBBS at
8 Newcastle University. She completed her PhD and academic clinical lectureship part-time.

9 Edwin Jabbari is a Neurology registrar at the National Hospital for Neurology and Neurosurgery, and post-doctoral
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11 James Scott is an aspiring academic neurologist. He completed an academic foundation programme in Neurology, is
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13 Arpan Mehta is a clinician-scientist, who completed his academic neurology training in February 2024 and is presently
14 initiating a research programme at MRC Protein Phosphorylation & Ubiquitylation Unit, University of Dundee.

15 Ruth Dobson is a Professor of clinical neurology and Centre Lead at the Centre for Preventive Neurology.

16 Simon Mead is a Professor of neurology and clinical academic with a specialist interest in prion diseases who leads
17 the NIHR's Integrated Academic Training Programme in neurology at UCL and The National Hospital for Neurology
18 and Neurosurgery, Queen Square.

19

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22

23 **Competing interests**

24 The authors report no competing interests.

25

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1 **Figure legends**

2 **Figure 1 Changes in the age profiles of academic neurologists over time.** Data were obtained
3 from both the Clinical academic survey (medschools.ac.uk) and the GMC [https://gde.gmc-](https://gde.gmc-uk.org/the-register/register-summary/register-data-over-time-by-specialty)
4 [uk.org/the-register/register-summary/register-data-over-time-by-specialty](https://gde.gmc-uk.org/the-register/register-summary/register-data-over-time-by-specialty). Data for 2013 were
5 anomalous and therefore excluded for clarity.

6
7 **Figure 2 Flowcharts describing possible neurology academic career paths** These are based on
8 when two of the authors trained (RD and SM, (A)) compared with those expected for current
9 trainees (JS, EJ, (B)). The main changes are the addition of training in internal medicine and stroke
10 medicine to the neurology curriculum, and additional general and foundation training prior to
11 neurology specialist training. The consequence is longer training overall for a broader set of
12 competencies but constrained neurology experience. The changes make it much harder to acquire
13 academic skills and progression whilst still achieving CCT prior to age 40. This challenge becomes
14 impossible if one considers the additional impact of parental leave and LTFT training (HD (C)).

15

Age categories of Neurology Academics over time

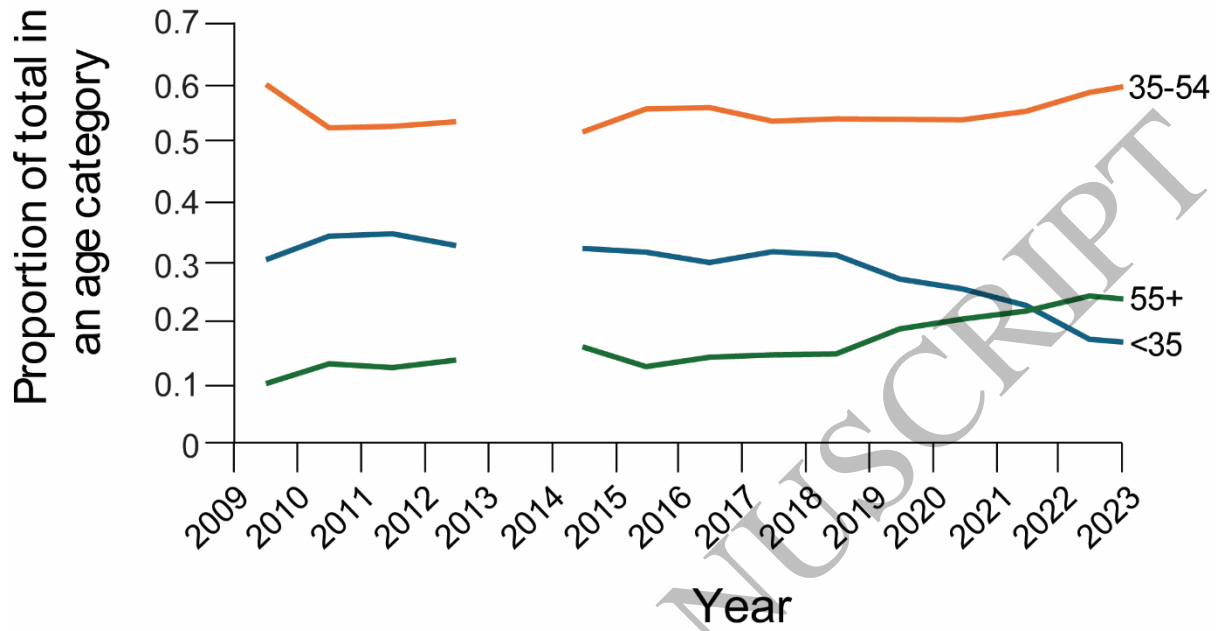


Figure 1
159x94 mm (x DPI)

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2
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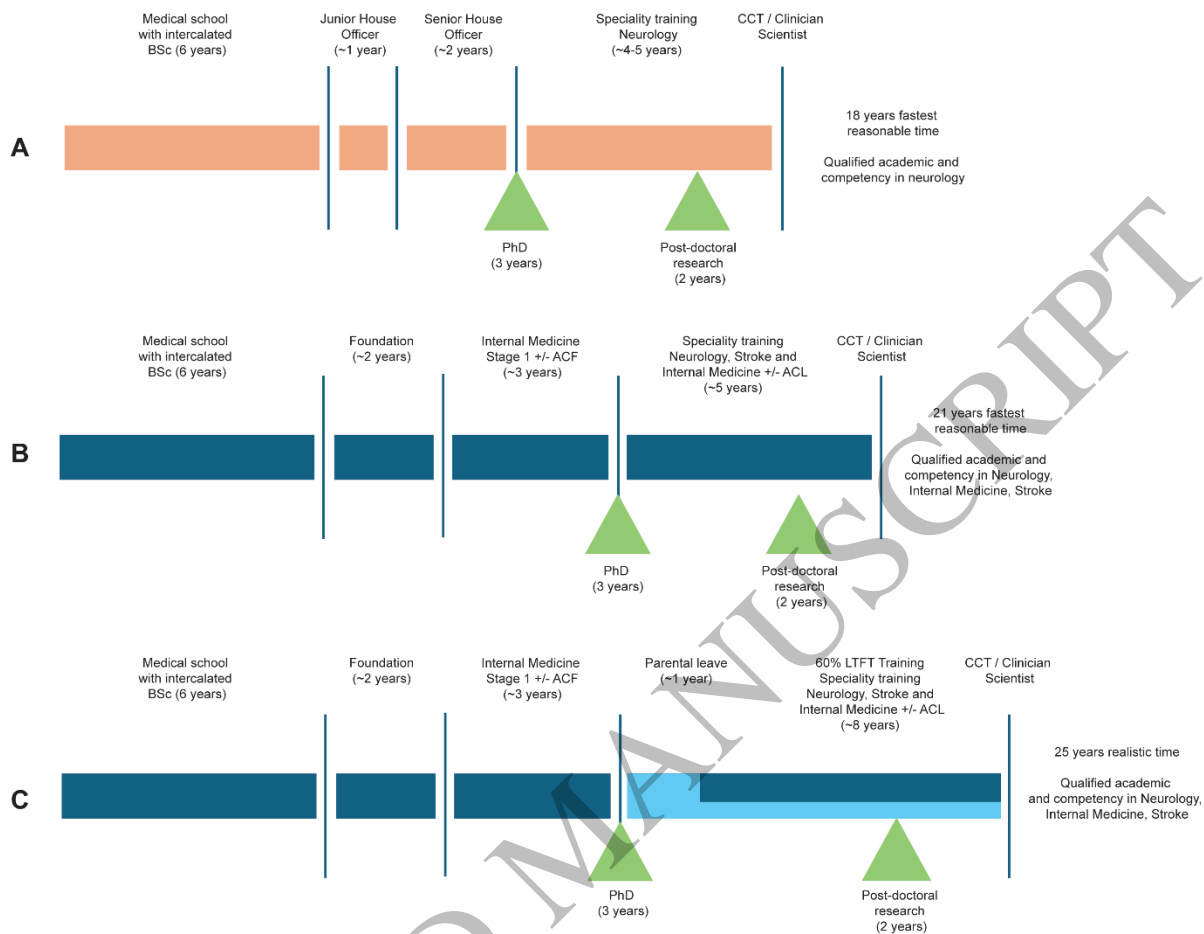


Figure 2
159x122 mm (x DPI)

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