



# STUN – A Survey of the Teaching of Undergraduate Neuroanatomy

## Team Members

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## Summary

Neurology, and specifically neuroanatomy, have traditionally been seen as challenging subjects by undergraduate students, with evidence that the subjects are taught in a variety of ways across the country. Given NANSIG's potential to provide support and supplement neuroanatomy teaching, it is important to establish the current educational framework for this challenging topic area. The survey thus seeks to establish the timing, methods, materials, assessment and subject scope of the teaching of undergraduate neuroanatomy in the United Kingdom.

## Background

The UK undergraduate medical curriculum has undergone significant changes following the recommendation of Tomorrow's doctors, a report by the UK's General Medical Council (GMC). Although it did not define a national core curriculum, it allowed medical schools to define their own curriculum on the general guidance given. It is widely believed that a consequence of these modifications has been a change in anatomy teaching time (1, 2).

Reviews published on the way anatomy is taught amongst UK medical schools have shown that there is great variability in the delivery of content (1, 3). They also suggest that different medical schools have different ideas as to what constitutes a core anatomy curriculum (1, 3).

To our knowledge, the way undergraduate neuroanatomy is taught in medical schools in the UK has not been previously reviewed. However, literature on new teaching methods suggest that there is great variability in how neuroanatomy is delivered, both in terms of amount of time dedicated to neuroanatomy teaching (4) and methods of delivering this teaching(5).

Given that students often perceive neurology to be a much more difficult speciality than others, with neuroanatomy being the biggest contributing factor (6, 7), NANSIG might have a role to play to complement the overall teaching by offering a range of courses, workshops and developing online platforms to enhance the learning experience. This idea has been recently referred to as 'neurophobia' - a term that describes the perceived difficulties medical students and junior doctors have with neurology and clinical neurosciences. (7-10). Given our national recognition as a group, we may be well placed to attempt to tackle 'neurophobia' and the perceived difficulty of neuroanatomy, if we are able to better understand the needs of the students.

We aim to review the way neuroanatomy is taught amongst medical schools in the UK aiming to supplement teaching to the best of our ability.



## Methods

### Design

The STUN is a multicentre survey, collecting data relating to the teaching methods, length, timing, staff involved, topics covered, and assessment.

### Inclusion criteria

All medical schools providing undergraduate teaching for medical students in neuroanatomy.

### Data Collection

The staff member with overall responsibility for delivering the neuroanatomy curriculum will be identified at each medical school. A structured questionnaire (Appendix 1) will be sent by the NANSIG university representative at each medical school and completed either remotely or in person.

### Information Governance

No patient or student identifiable information will be collected. Information on the medical school staff member responsible for the neuroanatomy curriculum will be collected but no individual medical school data will be published with the exception of case studies with permission from the medical school. Data will be collected using a structured standard questionnaire.

### Funding

There will be no costs to participating centres.

## Execution

### Analysis plan

Data will be collected over a 3-week period at the beginning of the 2019/20 academic year, with information collected specifically related to the 2019/20 curriculum design. Information on future curriculum design will also be collected. Data will be analysed on a national basis with variance between medical schools analysed without identification of the medical schools specifically. Case studies will be requested and submitted for publication with medical schools identified.

### Authorship Policy

All university representatives will be given PubMed-citable collaborator-status authorship if any manuscripts are to be published. The survey leads, NANSIG members, trainees and consultants in the project team will be given full authorship pending qualification based on International Committee of Medical Journal Editors (ICMJE) authorship criteria.

### Dissemination

The survey findings will be disseminated in national and international conferences, and peer-reviewed publications.

### Project Timeline

<i>Week Commencing</i>	14/10	21/10	28/10	4/11	11/11	18/11	25/11	2/12	9/12	16/12
Recruitment										
Data collection										
Data analysis										
Presentation and publication										

## Conclusion

The Survey of Undergraduate Teaching in Neuroanatomy will establish the methods, length, timing, staff involved, topics covered, and assessment of neuroanatomy in the United Kingdom.



## References

1. Heylings DJ. Anatomy 1999-2000: the curriculum, who teaches it and how? *Med Educ.* 2002;36(8):702-10.
2. Turney BW. Anatomy in a modern medical curriculum. *Ann R Coll Surg Engl.* 2007;89(2):104-7.
3. Gogalniceanu PFOC, E Raftery, A. Undergraduate Anatomy Teaching in the UK. *Ann R Coll Surg Engl.* 2009;91:102-6.
4. Hall S, Lewis M, Border S, Powell M. Near-peer teaching in clinical neuroanatomy. *Clin Teach.* 2013;10(4):230-5.
5. Svirko E, Mellanby J. Attitudes to e-learning, learning style and achievement in learning neuroanatomy by medical students. *Med Teach.* 2008;30(9-10):e219-27.
6. Geoghegan K, Payne DR, Myers MA, Hall S, Elmansouri A, Parton WJC, et al. The National Undergraduate Neuroanatomy Competition: Lessons Learned from Partnering with Students to Innovate Undergraduate Neuroanatomy Education. *Neuroscientist.* 2019;25(3):271-80.
7. Pakpoor J, Handel AE, Disanto G, Davenport RJ, Giovannoni G, Ramagopalan SV, et al. National survey of UK medical students on the perception of neurology. *BMC Med Educ.* 2014;14:225.
8. Jozefowicz RF. Neurophobia: the fear of neurology among medical students. *Arch Neurol.* 1994;51(4):328-9.
9. Solorzano GE, Józefowicz RF. Neurophobia: a chronic disease of medical students. *Neurology.* 2015;85(2):116-7.
10. Tarolli CG, Józefowicz RF. Managing Neurophobia: How Can We Meet the Current and Future Needs of Our Students? *Semin Neurol.* 2018;38(4):407-12.



## Appendix 1 – STUN Questionnaire

### Online link:

[https://docs.google.com/forms/d/1Ho24ZnCBTKrf2ZJTxC9NXqfTAIwBhQHNY0ek\\_TOhPU/viewform?ts=5d988f9b&edit\\_request\\_ed=true](https://docs.google.com/forms/d/1Ho24ZnCBTKrf2ZJTxC9NXqfTAIwBhQHNY0ek_TOhPU/viewform?ts=5d988f9b&edit_request_ed=true)

**Pdf link:** [https://docs.google.com/forms/d/1Ho24ZnCBTKrf2ZJTxC9NXqfTAIwBhQHNY0ek\\_TOhPU/printform](https://docs.google.com/forms/d/1Ho24ZnCBTKrf2ZJTxC9NXqfTAIwBhQHNY0ek_TOhPU/printform)