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# Clinical Neurology

**Berend E Westerhof***

This paper argues that even with the tremendous advances in diagnostic neuro-imaging that the clinical skills involved in clinical neurology (ie, history, examination, localization and differential diagnosis) remain key. Yet a number of recent audits suggest that large numbers of patients are failing to be assessed properly with a risk of patient harm, costly, unnecessary or inappropriate investigations, or delayed diagnosis. We review some of the reasons why patients are not being assessed properly neurologically, in part as many doctors have limited neurological exposure and are hence neurophobic. We propose that a solution to these issues centers on ensuring that a core set of basic neurological skills is taught at an undergraduate level, whereas higher level skills, such as the use of heuristics, are taught at postgraduate level.

The nervous system is almost entirely inaccessible to direct examination. The exceptions to this are trifling. The termination of one nerve, the optic can be seen within the eye. So stated, William Gowers in 1888 in his introduction to general symptomatology of neurological diseases.

Clearly investigations were largely non-existent in the late 19th century, which is why contemporary descriptions from Gowers and other founders of neurology, such as Charcot, focused on the importance of history and examination. Yet in one recent UK study, it was estimated that 33% of inpatients referred to neurologists from physicians could not recollect being examined with a tendon hammer and 48% said that they had not been examined with an ophthalmoscope (compared with only 4% who could not recall being examined with a stethoscope) prior to referral to neurology. Although this might make Gowers roll in his grave at the state of UK neurology, a US study was even worse. Of 350 patients in an emergency department, whose symptoms would necessitate ophthalmoscopy (predominantly headache); only 14% of patients were examined with an opthalmoscope. possible.

With this background, this review argues that even in the 21st century we need to remind ourselves of the importance of such principles of clinical reasoning and examination, the so-called ‘méthod anatamo-clinique’ of Charcot, for a number of reasons:

- safe patient care and rapid diagnosis
- ensuring appropriate timely investigations are requested
- health economics
- medicolegal concerns

Finally, having outlined the problems that arise as a result of inadequate neurological examination, we set out some solutions - all of which centre around improvements in neurological training - both by teaching an agreed core set of neurological examination skills, and we propose that subspecialty neurological associations develop basic standards of examination skills via consensus.

History taking is an art. Medical students are taught that by taking an appropriate history the patient’s diagnosis will be revealed. In practice, the art of history-taking takes years to perfect using a variety of techniques to allow the patient to tell their story. There is no uniform definition of what time is required for a neurologist, compared with a physician or a general practitioner, to develop such skills - the seminal paper by Ericsson (popularised by Malcolm Gladwell in his book Outliers) suggests an average of 10,000 h deliberate practice to become expert might give some guidance from other fields.

Studies from 20–30 years ago performed in the general medical outpatient setting in ambulatory patients noted that the history alone provided the diagnosis in 76–82% of cases. More recently, Paley et al assessed the value of basic clinical methods in diagnosing patients requiring admission to general medicine through the emergency department. They found that history was the key element in formulating a diagnosis either alone (approximately 20% of all diagnoses) or in combination with physical examination (additional 40% approximately). Ultimately, 90% of patients were correctly diagnosed at presentation through a combination of history, examination and basic tests.

**Author Affiliation** Top

*Division of Neurosurgery A, Department of neurology and Psychiatry, Sapienza University of Rome, Italy*



***Corresponding author:** Howard M. Eisenberg, Department of Neurosurgery, University of Maryland School of Sciences, USA, Tel: +1 410-328-0937; Email: berendew@hmail.umaryland.edu

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