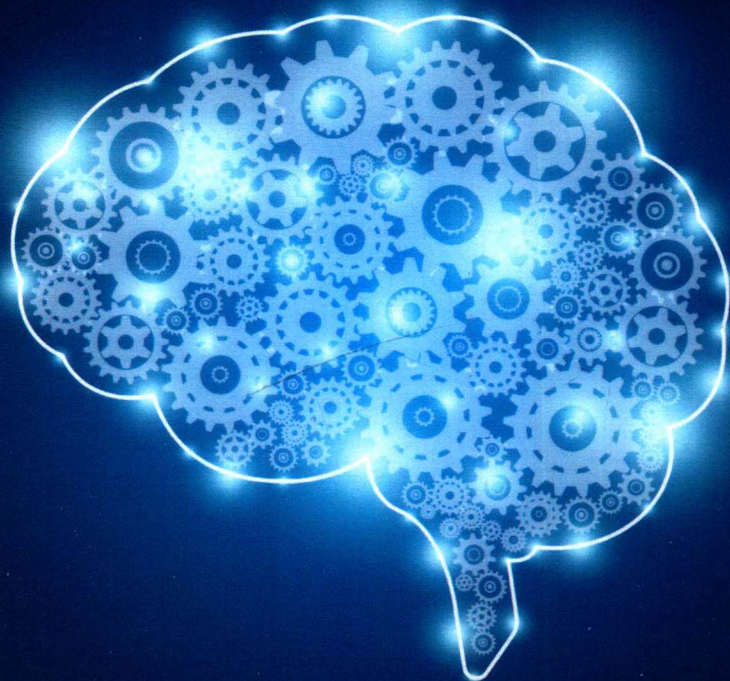


# Foundations for Clinical Neurology



ROBERT LAURENO

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# Foundations for Clinical Neurology

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## **Advance Praise for**

### ***Foundations for Clinical Neurology***

*Foundations for Clinical Neurology* is an erudite and informative book filled with the anecdotes and wisdoms of a keenly observant neurologist of vast clinical experience. It touches on many subjects of interest to the clinical neuroscientist. Dr. Laurenno is widely read and has an inquisitive mind. He muses over how the ontology and phylogeny of the nervous system produces the wraparound course of the radial and peroneal nerves, how notochord remnants relate to degenerative disc disease, how bipedalism leads to meralgia paresthetica, why we hiccup and why alligators don't get dizzy. The book is filled with the clinical wisdom and aphorisms of such luminaries as Maurice Victor, Asa Wilborn, Jerome Posner, Joseph Foley, James Corbett, David Zee, Miller Fisher and Raymond Adams. I wish that Dr. Laurenno had written this book years ago; I would have been a better neurologist for reading it."

—William W. Campbell, MD  
Department of Neurology  
Uniformed Services University  
Bethesda, MD

"Neurologists like pearls and this book is a necklace. Each chapter is filled with helpful hints and historical notes gleaned from mentors, friends and experiences over a thoughtful career. It is both a fun and educational read."

—Mark Hallett, MD  
Human Motor Control Section  
National Institute of Neurological Disorders and Stroke  
Bethesda, MD

*"Foundations for Clinical Neurology* is a satisfying immersion into the neurology culture. Laurenó astutely considers the practiced approach to the patient (and flustered family) at the bedside, the subjectivity of examination, the benefits of organization, the fading eponym, the insufficient rating scales and ever changing terminology down to the single protein. Symmetry and asymmetry, disproportionality, all those crossed fibers, causality, problems in localization and how MRI has changed everything are discussed with verve. Readers will find a great exposure of the stigmata of neurology. Laurenó does not shy away from iatrogenic neurology as a result of doing too much or too little. There are many remembrances of times past with omnipresent mentor musings—will we still have those tomorrow? An engaging, good-natured work that takes us beyond the traditional textbook and invites us to rethink what we do."

—Eelco F.M. Wijdicks, MD, PhD  
Professor of Neurology  
Mayo Clinic  
Rochester, MN

*For Enzo, Sophie, Feynman*

*and*

*DIS • MANIBUS*  
*Skippy*

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## INTRODUCTION

This book does not follow one of the usual formats. It is not a textbook of general neurology. It is neither a summary of neurological therapeutics nor an outline of the neurological examination. Instead, this volume discusses many topics that are not directly approached in standard texts. I hope that the student, the resident, and, perhaps, the experienced neurologist will find here something of value.

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PART ONE

# Practicing Neurology



## At the Bedside

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DOCTOR: "Do you drink alcohol?"

PATIENT: "No, I only drink beer."

### TALKING TO PATIENTS

Patients can use a word to mean something very different from what it means to the neurologist. Once a patient told me that he had been seeing framed pictures on the wall "inverted." On a subsequent visit, I referred to his seeing things upside down. He strongly corrected me: the pictures appeared to be on the floor but they were not upside down. I had taken the word "inverted" to mean something other than what he had intended.

Communication difficulties abound. Persons of lower intelligence or lesser education may use the word "headache" for any symptom involving the head. It is common for a patient to complain of "dizziness." Only further questioning will reveal that there is no abnormal head sensation, that the real problem is imbalance. Sometimes using the patient's word can facilitate communication. The patient may say, "I feel wonky." The doctor can reply, "Tell me about the wonkiness," rather than try to translate the patient's word into a standard term.

An unsophisticated family member may use a puzzling metaphor. "She gets those dinosaur arms." Only the physician's probing reveals this image to be a reference to the small arms of *Tyrannosaurus rex*. Once we know which dinosaur she has in mind, we can understand her description of her daughter's flexed-arm ictus.

A general question about the timing of a symptom may yield little information. "Does the headache tend to occur at certain times of day?" may elicit a

negative response. However, one may specifically ask whether the symptom occurs at 6 AM–9 AM, 9 AM–Noon, Noon–3 PM, 3 PM–6 PM, and so on. This questioning will occasionally bring forth positive answers for some time interval but not for others (Neil Raskin, MD, in conversation c. 1990). The elicited timing pattern may be meaningful.

Likewise, a general question about chronology may fail to elicit the critical data. If a patient states that he stopped taking a medicine shortly before a neurological event that occurred on Saturday, the neurologist will naturally ask when he stopped it. The answer may be vague. One may get different information if one asks day by day. “Did you take it on Thursday?” “No.” “Did you take it on Wednesday?” “No.” “Did you take it on Tuesday?” “Maybe.” If one asks whether a patient smokes, she may say, “No.” However, if one asks if she ever smoked, she may answer in the affirmative. When asked exactly when she stopped, the answer is occasionally, “Yesterday.” The more specific questioning puts her initial answer in a different light.

General questions may not be adequate when one inquires about past medical history. A resident was called to the emergency room to consider using a thrombolytic medication on a patient with acute ischemic stroke. In the first week of his residency, he was very thorough in questioning the patient about contraindications to the drug. When she denied having a bleeding disorder, he asked whether she had hemophilia. “No.” “Von Willebrand’s disease?” “Yes.” Again, the more specific question brought out important information when the more general question did not.

On the other hand, there are cases where the more general question brings out the critical information. A patient may not specifically remember that she has had myelitis. If one asks whether she has had “anything like a stroke” or whether she has ever had to see a neurologist, information may flow forth. It is a challenge for the examiner to sense when he should use the general question, the specific question, or both.

Distinguishing right from left is difficult for many people. The alarm of watching a stroke or a seizure does not help. A patient with old right hemiparesis may come to the hospital for a “witnessed” episode of leg shaking. Sometimes better information can come from questions that avoid the words “right” and “left.” It may be helpful to ask whether the shaking occurred on the paretic side or the good side.

The doctor can be misled when patients make assumptions about their problems. One woman suffered facial ecchymosis and traumatic subarachnoid hemorrhage due to falling, which occurred when she rose from bed. “I always trip on the dog,” she reported. Her husband, however, stated that the dog was not in the room at the time of the fall! Severe orthostatic hypotension was the cause of her syncope.

Families can also make assumptions. My colleague reported to me that her fiancé had high-altitude headaches whenever he went to the Himalayas on business. She wondered whether she should prescribe acetazolamide. It was eventually learned that the headaches in the Himalayas developed only in his hotel room and only in the morning when he showered before going out on business. All of the windows in the hotel's bathrooms had been sealed to keep out the cold. In each bathroom, there had been installed a small petroleum heater to produce hot water. The meaningful connection between the Himalayas and the headaches turned out to be carbon monoxide, not thin air.

Making emotional contact with a patient can help elicit information. Simmons Lessell recalled his days as a medical student at Cornell University Medical College. Aware that his supervising neurology professor was a perfectionist who was interested in psychosomatic medicine, he took an exhaustive history. The answers to his questions were not helpful. Finally, he presented the patient to Harold Woolf, the neurologist. Woolf entered the patient's room. After preliminary inquiries about her headache, its severity, duration, and location, Woolf put his arm around the lady's shoulder to sympathize, "Things aren't going too well, are they?" Whereupon she broke into tears, explaining that her son had died, that her boyfriend had run off, that she had lost her job, and that she could not pay the rent. Empathic physical contact brought an eruption of information that meticulous questioning had failed to unearth (Simmons Lessell, MD, in conversation c. 1990).

It is important to watch for patient gestures, which often provide more information than verbal responses. A patient may talk about "lightheadedness" while spinning a vertically extended index finger near his head. The gesture clearly indicates the vertiginous nature of the symptom. The same type of gesture may accompany a spoken complaint of "headache," indicating that the symptom is truly vertigo, which the patient has poorly described. A patient may report "passing out." When asked for clarification, with raised arms, he may sway side to side at the waist. It is this movement that tells the doctor that there was a vertiginous component to the episode. One patient reported that he had felt like he might faint. The examiner said, "Tell me more." The patient placed the spread fingers of a hand in front of his eyes and waved them right and left. "Why are you moving your hand?" Only then does the patient say that he had forgotten to mention that his eyes had been moving involuntarily during the episode. A patient with transient monocular visual impairment may lower his hand in front of his eye to indicate the shade-lowering visual loss of amaurosis fugax. A patient may report seeing "floaters," while his index finger draws a jagged line in the air, indicating migraine. Another, whose verbal description of a vision problem is unclear, may flutter the fingertips in front of an eye also indicating the flickering light of migraine.



For certain symptoms, it is helpful to ask a patient to demonstrate the problem. Shaking of one arm during clear consciousness may be mimicked by the patient. Sometimes the demonstration indicates more clearly that the episode was convulsive than does the patient's verbal description of "trembling." A patient may associate a symptom with a specific activity. "When I get out of bed in the morning, I step outside to smoke a cigarette and I get tingling in my legs and feet." If he is asked to demonstrate smoking, he bends his head forward and inhales as he faces the ground. The demonstration makes it clear that the symptom is that of Lhermitte. A Lhermitte symptom can also be associated with a man urinating, again because he bends his head forward to observe the process. One patient reported a funny feeling in the neck and back when she rubbed a spot on her sternum. When she was asked to demonstrate, she bent her neck to look down at her hand while rubbing her chest. The Lhermitte symptom was due to the neck flexion and had no direct relationship to her rubbing. A patient may report having headaches only when she is in the shower. She may not have noticed whether this headache occurs on bending her head forward into or backward away from the spray. When she is asked to pretend that she is showering, a head movement may become obvious.

A witness to an event may also be better able to demonstrate an episode than to describe it. When asked to "show me what it was like," a relative, friend, or co-worker may extend her arms in front of her and show fine tremors. Another might show her arms extended to her sides at 90 degrees, with large-amplitude flapping motions. Another observer may demonstrate side-to-side head shaking. Such episodes, when demonstrated, would indicate that the episode is not electrocerebral in origin. A witness, when asked about an episode she had observed, may place her finger tips at the side of the mandible and pull down that side of the face, or she may drop her arm limply, thereby indicating the nature and side of the event.

When the wife's words fail to help me distinguish a convulsion from convulsive syncope, I may ask her to demonstrate how she tried to break her husband's fall. As I go limp, mimicking the husband, she wraps her arms around me through my armpits and holds me upright. Thus I learn that the episode could have been syncopal initially. Due to the wife maintaining the patient in the upright position, the prolonged ischemia could have then led to the seizure, a convulsive component of the syncope.

For episodic phenomena, it is helpful to ask the family to make a video recording of an episode. The neurologist can then observe the event, the patient's behavior during it, and even the social setting of the event. Any of these aspects of an episode may help the physician.