

Physical examination: bewitched, bothered and bewildered

Next to nothing is known about physical findings' impact on patient care

Young physicians today seem confused about physical examination. In the United States, many of them do not know how to do it and do not see why they should. Asymptomatic patients do not seem to need it; the US Preventive Services Task Force found insufficient evidence to recommend periodic physical examination of the breast, prostate, heart or anything else. Sick patients do not seem to benefit much from it either, most of them tested to death regardless of their physical findings. It is hard to say which is the chicken or the egg here, but physical diagnosis instruction in many US medical schools now is either out of date (emeritus faculty members teaching useless arcana like percussion of Traube's space), out of touch (junior faculty members making rounds in a conference room, not at the bedside), or both.

Young physicians trained outside the US are bewildered about this, too. Many of them, meticulously trained in physical examination, are appalled upon first encountering the "hands off" culture of US medicine. But they learn quickly, in the process often unlearning much of what they had learned before. The pace and clinical impact of this remarkable phenomenon is unknown because no one has studied it, a bewildering thing in itself.

Many medical professionals claim to be bothered by this trend, but you would not know it from reading the medical literature. Although laudable research has clarified the accuracy (likelihood ratios) and reliability (kappa statistics) of particular physical findings,¹ next to nothing is known about physical findings' impact on patient care.² In fact, you can count on one hand the number of studies ever published about this issue, not one of them large, controlled or externally funded.²⁻⁶ This inattention by researchers to medicine's core clinical skills seems especially striking in this era of evidence-based medicine, in sharp contrast to the glut of acronymic mega-trials funded by "Big Pharma" to achieve statistically significant (but often clinically trivial) results. Some say not to worry about the lack of published evidence, the clinical value of physical examination is *self-evident*. To these true believers, we recommend a brief visit to any US teaching hospital today. The National Board of Medical Examiners, not so sanguine, plans to test the bedside skill of US medical students as a new requirement for graduation. This is a wise plan — in part because it has worked well in other countries — but not worth the bother if it ends there.

What more can we do? In addition to evaluating how well our physicians learn the basics,⁷ we must continuously question what we teach them and why. For example, which physical findings have clinical utility in which clinical contexts? Palpating the carotid artery is essential in a patient with angina and a systolic murmur,¹ less important in a patient with neck pain. Which physical findings, when shared with radiologists or pathologists, improve interpretation of diagnostic images or biopsies? Contrary to popular belief, the sensitivity and specificity of technological diagnostic tests may not be independent of patients' clinical findings, knowledge of which may improve test performance.⁸ Conversely, which aspects of physical examination are useless (inaccurate, unreliable, redundant) or cost-inefficient when compared with technological testing?

Thus, the real dilemma today is uncertainty about the "value added" by particular aspects of physical examination to the quality of patient care. If more attention were paid to this issue, more effort could be devoted to maintaining and improving particular bedside skills throughout physicians' professional careers. Instead, the strongest praise many observers can offer is their feeling that the "laying on of hands" improves communication and trust between doctors and patients, somehow "connecting" them better, not just physically but otherwise. Despite its New Age vibrations, this feeling rings true to us, at least in the sense that careful physical examination focuses the physician, intently and singularly, on *this patient now*. (As one expert examiner put it, "The stethoscope allows you to connect not only your ears, but also your mind, to the patient."⁹) This phenomenon is notable, and deserves further study, but it is not enough to convince the bewildered or sceptical among us about the value of physical examination.

Proving scientifically physical examination's clinical utility is difficult because this requires strict control of potential confounders. But to "isolate" the contribution of physical examination to diagnosis or prognosis — controlling methodologically and analytically for the patient's history, test results and other confounders — makes little sense clinically. Physical findings add value precisely because they interact with and complement these other sources of information.³⁻⁶ For this reason, clinical epidemiologists commonly describe physical findings as "tests" whose result, when combined with a pre-test probability (based on prevalence, the clinical history or both), generates a post-test probability.¹ This Bayesian approach makes it easier to describe the accuracy of physical findings, but there is scant evidence that physicians use this kind of reasoning when making clinical decisions. More promising, in our view, are clinical decision rules which, based on multivariate analysis of all potential clinical predictors (including physical findings), quantify the predictive power of the few key determinants of the outcome of interest.¹⁰ When impact analysis of such decision rules demonstrates that particular physical findings help to improve patient outcomes (for example, in the management of suspected pulmonary embolism or acute cardiac ischaemia),^{11,12} sceptics best take heed: these are things we all need to know. Much more research is needed in this area.

In the end, we find ourselves bewildered by the need to say these things, bothered by the medical profession's reticence about them. Together with the history, physical examination is the doctor's best kept secret — powerful, portable, fast, cheap, durable, reproducible and fun — but it must be allowed out of the closet. We admit we are biased about this, perhaps even bewitched. How could we not be? Like other experienced clinicians, we cannot forget those memorable moments when a careful physical examination yielded magical results: neck veins that resurrected a young mother, moribund from pericardial constriction; a tender temple that rejuvenated an octogenarian, wasted by months of fever; a Babinski reflex that saved an Olympian, his brain tumor too early to see. And more, many more. Such anecdotes prove nothing, of course, but they are . . . bewitching.

EDITORIALS

Modern medicine — bewitched by technology, bothered by its cost, bewildered by those who need it but cannot afford it — would do well to step back, re-examine itself. We recommend a thorough check-up. Preferably by a doctor who takes the time to look, listen, even touch. This should not be difficult to arrange. There are many such doctors out there. Good ones. For now, anyway.

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