

Abstract: This article supports the importance of using the patient history and physical as a basis for selecting relevant diagnostic testing, which leads to a timely and accurate diagnosis. This process protects patients from the risks of unnecessary testing and is cost-effective.

The importance of the history and physical in diagnosis

By Jill C. Muhrer, MSN, FNP-C

As patient volume increases and encounter times become shorter, it is critical for clinicians to establish a working diagnosis in a timely manner. With the advent of advanced technological equipment and rising healthcare costs, it is even more important to be selective about the use of these tools and to base testing decisions on the specific findings noted in the patient's clinical evaluation. Therefore, the clinical history and physical exam are critical to the diagnostic process and often provide more information than can be gained by broad testing strategies. An old adage claims that if you listen to patients, they will eventually tell you what is wrong. However, most patients come in for appointments with multiple concerns, which can make it even more challenging to focus the encounter without losing important information regarding the patient's healthcare issues. For instance, a recent study showed that 40% of patients bring more than one concern to primary care urgent visits, and most patients will address an average of three complaints per visit.¹ If the key to the patient's diagnosis lies within the history, which will in turn determine the type of physical exam, then refining the art of history taking is the first step to an accurate diagnosis.

■ Dizzy: The key to diagnosis is in the history

The key to figuring out what the patient means by "dizzy" is the silence and the waiting. According to Dr. Martin Samuels, professor of neurology at Harvard Medical School, the most important clue to diagnosing the cause of a patient's dizziness lies in the

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history.² In a related article on the dizzy patient, Dr. Michael Ruckenstein also notes that the patient's description of symptoms is the most critical component of the workup. He concludes that "for more than 90% of my dizzy patients, I know the diagnosis by the history."^{3,4} The most critical task for the clinician, therefore, is to ask the patient this key question: "What do you mean dizzy?"² The challenge is to wait for the response no matter how long it takes. Avoid asking, "does the room spin"; "Do you feel faint"; or "Are you anxious or scared?"⁴ Given the opportunity, most patients will answer yes to the majority of these questions.²



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This often leads to a vicious cycle of specialist visits (neurologist, otolaryngologist, cardiologist, psychiatrist), which can ultimately obscure the cause of the problem. However, when left alone to describe "dizzy," most patients will define the cause of their symptoms. For instance, a sensation of motion often reflects a vestibular disorder, while lightheadedness suggests a cardiovascular cause, disequilibrium often signifies a neurological etiology, and ill-defined feelings of giddiness usually correlate with anxiety.² Listening to the patient will offer the best hope for a simple, efficient workup and treatment.

■ History-taking: Relative importance, obstacles, and techniques

Eliciting a full patient history through open-ended questioning and active listening will ultimately save time while offering critical clues to the diagnosis.⁵ In one classic study, researchers evaluated the relative importance of the medical history, the physical exam, and diagnostic studies.⁶ Physicians were asked to predict their diagnosis after taking just the history, and then again after performing the history with the physical exam.⁶ In 66 of the 80 patients studied, an accurate diagnosis was predicted based solely on the medical history.⁶ It is now estimated that between 70% to 90% of medical diagnoses can be determined by the history alone; in addition to being one of the oldest diagnostic tools, a comprehensive history is one of the most reliable.⁵

Despite the importance of the patient history, clinicians frequently interrupt their patients before they can fully describe their symptoms. A study by Beckman and Frankel showed that 75% of the time, physicians interrupted their patients after they expressed only one concern within 18 sec-

onds.⁷ Once interrupted, less than 2% of the patients went back to completing their initial statements.⁷ The end result is not only incomplete information but often a disagreement between patients' and providers' views of the illness and the purpose of the visit.⁵

When providers interrupt patients, they not only lose key information about the diagnosis but also risk having the encounter end with an "oh by the way" concern, also known as "the hidden agenda."^{7,8} While these last-minute issues may not surface until the end of the visit, the root of this problem often stems from rushing through the history during the beginning of the visit when unmet concerns are not addressed.⁸ Furthermore, some experts note that contrary to common opinion, most patients do not communicate their primary concern first, and therefore, their most worrisome symptoms are often left until the end of the appointment or not addressed at all.⁸ This reinforces the need to obtain a patient's entire agenda of concerns at the beginning of the office visit, which will not only facilitate an accurate diagnosis and treatment, but also improve time management.¹

One approach to eliciting patients' concerns is to ask an open-ended question, such as "Is there something else you want to address in the visit today?"¹

In a study utilizing this specific question, researchers noted that this intervention eliminated 78% of unmet concerns and reduced last-minute "oh by the way" complaints. Interestingly, researchers also found that asking this question did not increase the length of the visit.¹ Experts recommend using open-ended questions to elicit the patient's full list of concerns at the beginning of the encounter and then using this list to construct an appointment agenda.⁸ Clinicians can discuss appointment length in addition to their own concerns regarding the patient's health issues and then together, the patient and provider can prioritize the concerns and agree on a plan.⁸ This approach should ultimately improve both patient and provider satisfaction as well as diagnostic accuracy.

■ Not noticing

While the patient's history may provide clues to an underlying diagnosis, a thorough physical exam can offer key evidence for pruning the cause list, which narrows the diagnostic workup and can ultimately lead to an accurate diagnosis within a shorter time span.⁵ In an observational study regarding the impact of the physical exam on diagnosis and subsequent treatment, Reilly noted that in 26% of patients, a skilled physical exam provided a pivotal finding

that changed the patient's diagnosis and treatment.⁹ Furthermore, in almost half of these patients, the diagnosis would not have been determined through common diagnostic practices.⁹ Therefore, the physical exam findings were critical to making and confirming an accurate diagnosis quickly.

The role of the physical in limiting unnecessary diagnostic testing is also important because it protects patients from extensive and often unnecessary testing that might eventually provide the answer but at a greater cost to both patient and clinician.^{5,10} In fact, ordering too many tests can lead to added stress for both providers and patients by generating red herrings or unexpected positive findings that cannot be ignored; these findings often have nothing to do with the original problem. Trying to evaluate incidental findings can be both time-consuming and nonproductive while lending nothing to determining the real cause of a patient's symptoms. This problem is further complicated by the large medical bills generated that create more stress for patients.¹⁰

Basing the choice of diagnostic studies on the results of a solid history and physical is a reliable way to limit unnecessary testing. In a recent study, researchers determined that the physical exam doubled the diagnostic power of the history by 19.5% to 39%, while the addition of basic diagnostic studies increased diagnostic accuracy by another 33%.¹¹ In this particular study, 90% of accurate diagnoses were determined through the history, physical exam, and selective studies either alone or in combination.¹¹ Therefore, by basing the diagnostic workup on the specific information generated through the history and physical exam, clinicians can choose the studies most likely to support or refute a potential diagnosis, and thereby determine the real problem in an efficient and cost-effective manner.^{5,9,11}

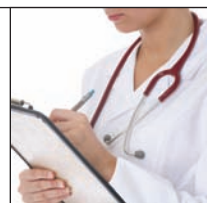
Despite this rationale for a skilled physical, there has been a move away from the physical exam due in part to advanced imaging techniques, such as ultrasounds, echocardiograms, CT, and MRI scanning.^{12,13} Since the development of these imaging studies, many providers have relied on scans rather than on their exam skills to make a diagnosis, which has led to an overall decline in exam proficiency.¹³ The movement toward shorter office visits has also contributed to this loss of skills due to the pressure of a higher volume of patients as well as the introduction of electronic medical records.¹³ Practitioners often feel that they do not have sufficient time to perform a full exam, especially if a diagnostic study could render the same information.¹³

Relying primarily on broad imaging studies can lead to serious mistakes when clinicians do not consider physical

findings. Certain pivotal signs, such as rebound tenderness, tremors, or clubbing, that are not detectable on scans and only apparent through a skilled exam can signal a serious underlying disorder.^{14,15} Utilizing these findings as a basis for selective diagnostic testing can save both time and lives. In one poignant example of the consequences of dismissing a key physical exam finding, Dr. Jauhar recounts, in his article, "The Demise of the Physical Exam," that as a medical student, he did not report his inability to detect a patient's BP in one arm because he attributed it to poor technique.¹² When this same finding was detected by another physician, he ordered an emergency CT scan, which revealed an aortic dissection.¹² Prior to this, it was assumed that the patient, who had significant cardiac risk factors, was experiencing acute coronary syndrome.¹² Dr. Jauhar felt that if he had reported this physical finding earlier on, the patient might have survived.¹² In this case, it was the more experienced clinician's attention to the physical exam findings that led to the selection of the key diagnostic study that could have saved the patient's life had it been ordered sooner.

In an effort to prevent these types of errors and to revive the physical exam as a form of medical literacy, Dr. Abraham Verghese, a professor of medicine at the Stanford University School of Medicine, developed a list of 25 essential physical exam skills called the Stanford 25 in 2007.^{13,15} This list includes techniques such as the fundoscopic and thyroid exam, the analysis of jugular venous pressure and heart sounds as well as methods to evaluate tremors, and the Achilles tendon reflex.¹³⁻¹⁵ These exam skills provide invaluable information about patients' health, and abnormal findings can indicate underlying diseases. For instance, even a

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simple handshake can signify a problem when moist and sweaty palms may be due to anxiety or thyrotoxicosis, and difficulty letting go may be a sign of myotonia.¹⁵ Similarly, a beefy red tongue can be caused by vitamin B12 deficiency, while a hairy tongue with leukoplakia may point to HIV disease, and the new onset of macroglossia can be associated with amyloidosis.¹⁵ Furthermore, when clinicians are confronted with an imaging study such as a chest X-ray that demonstrates an ambiguous finding of fluid in the lungs, the key to differentiating between heart failure and pneumonia is based on the physical exam.¹³ The patient with heart failure is more likely to demonstrate weight gain,

edema, jugular venous distention, and an extra heart sound as opposed to the patient with pneumonia who demonstrates primarily pulmonary findings.¹³

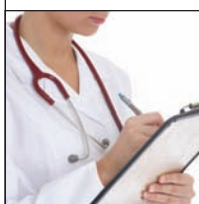
While mastering these types of exam skills is extremely valuable, it is just as important to learn that not all exam techniques are useful. In fact, with the advent of evidence-based practice, many studies have demonstrated that certain physical signs are not reliable and should be eliminated.¹⁴ Furthermore, even the tradition of the annual physical exam has come under scrutiny because many screening and health maintenance interventions have not been shown to

conclude that not adhering to the recommendation to avoid imaging patients with low back pain within the first 6 weeks (unless red flags are present) caused adverse patient outcomes, such as patient labeling, radiation exposure, and unnecessary surgery.¹⁸ In addition, the data did not support improved outcomes with earlier imaging.¹⁸ Following the Choosing Wisely recommendation regarding acute back care would improve care, reduce risks, and decrease cost.¹⁸

While the Choosing Wisely initiative primarily deals with the Top 5 lists of procedures to avoid, they also support the selection of tests or procedures that are evidence-based,

and free from harm.^{17,19} They recommend choosing tests that are truly necessary based on each individual's specific health profile and, finally, tests that do not replicate other procedures.¹⁹ In addition, as healthcare reform promotes more patient-centered care, they highly recommend engaging patients in

the process of evaluating the relative risks and benefits of healthcare interventions through sharing information with patients during patient encounters.¹⁹ Consumer Reports, an independent nonprofit consumer organization, is also collaborating with these professional organizations to provide information directly to patients.¹⁹



NPs are experts at taking a thorough patient history that evaluates medical, socioeconomic, and cultural factors.

be effective in preventing and/or detecting diseases.¹⁰ While Verghese and Horwitz believe that this information must be taken into account, they also argue that “clinicians who are skilled at the bedside exam make better use of diagnostic tests and order fewer unnecessary tests.”¹⁴ Therefore, being selective about specific exam techniques and taking the individual patient's risk profile and interests into account represents the most reasonable approach to the physical exam, which in turn will lead to the appropriate selection of diagnostic tests.

■ Diagnostic testing: Choosing wisely

This emphasis on the selective use of diagnostic studies has been further supported by a campaign organized by the American Board of Internal Medicine Foundation called Choosing Wisely, which discourages the overuse of profitable and unnecessary procedures that are not beneficial to patients and that could potentially cause harm.^{16,17} Currently, 17 medical specialty organizations have published a list of 5 tests or services to avoid called the Top 5 list in addition to recommendations “where changes in practice could lead to higher-quality healthcare and better use of finite clinical resources.”^{16,17} For instance, they discourage the routine use of ECGs, imaging for acute back pain and minor head injuries, and dual energy X-ray absorptiometry scans unless indicated by certain risk factors and/or abnormal signs and symptoms.¹⁶ As an example, screening asymptomatic adult patients for carotid artery disease could lead to surgery that not only would be unnecessary but could also result in serious harm, such as myocardial infarction, stroke, or even death.¹⁷ Similarly, in a recent literature review regarding the evaluation of acute back pain, the authors

■ The role of nurse practitioners

As the healthcare field continues to evolve, it is critical to include patients as active participants in their own healthcare, which begins by listening closely to their concerns through eliciting a comprehensive patient history. The data collected during the history will in turn lead to a focused and skilled physical exam, which will ultimately form the basis for selective testing and an improved diagnostic process. The selection of procedures should also take the top 5 recommendations of the 17 professional organizations into account, and patients should be informed participants in evaluating the relevancy of recommended interventions.

In terms of including patients in the process of the diagnostic workup and healthcare decision-making process, nurse practitioners (NPs) are in a unique position to provide this type of quality care, since they are already known for spending more time with their patients in addition to providing more counseling and education.²⁰ Furthermore, NPs are experts at taking a thorough patient history that evaluates medical, socioeconomic, and cultural factors along with patients' values. In one landmark study, researchers noted that NPs were more likely than physicians to take a full history and were less likely to empirically prescribe medical therapy unless it was indicated through a relevant history.²¹ NPs also perform skilled, focused physical exams. Clearly,

NPs will continue to play an important role in refining and promoting the history and physical as a basis for the judicious selection of testing procedures, which will ultimately improve the diagnostic process. The end result will be to offer evidence-based and cost-effective care to patients within a reasonable time frame while also including patients as active participants in their own care. **NP**

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