



Transcript of podcast interview with Dr. Jerome Groopman, author of *How Doctors Think*

Your book is titled, *How Doctors Think*, so tell us a little about how you think. How would you approach a new patient to begin forming a diagnosis?

I think that what I learned from writing the book is that about 80 to 85 percent of the time, an experienced clinician will make the correct diagnosis rather quickly, using thinking shortcuts based on quickly drawing information from the history or the physical exam, the laboratory tests or imaging studies. About 15 to 20 percent of the time we're wrong. And given that I learned through writing this book why we make mistakes, when I would have that initial working diagnosis in my mind, I would ask myself a series of questions to try to protect myself from pitfalls.

What are some of those pitfalls that you discovered?

There are three major thinking errors that clinicians make. It's easy to remember them because each one starts with an "A," so I think of them as the three A's.

The first one is called anchoring. This is a cognitive or thinking shortcut which we all use, and that is we tend to anchor onto the very first bit of clinical data, whether it's in the history or the physical exam, or the laboratory tests. Then we take that initial bit of information and we think in a linear way. So if a patient tells you they're having chest discomfort, we immediately move down the thinking pathway of chest discomfort, although it may turn out that that's not really the clue to what's wrong.

The second one is called availability. That means that either clinical cases that you saw, which were particularly dramatic, made a deep impression, and are easily retrieved from memory, or you're in the middle of seeing many, many similar cases, like during flu season. So what's most available in your mind is what pops into your thinking and can bias your diagnosis.

The third is called attribution. This involves social stereotypes largely, in that we attribute certain diagnoses to certain kinds of people, for example, if someone looks a little disheveled and hasn't shaved, and tells you that he has one drink a day, you may think he's not telling you the truth and immediately you're going to attribute things to alcohol. Or, if a woman comes who's having a tough time in menopause, and she starts giving you very vague kinds of complaints, you may immediately attribute it to menopause. That attribution could be completely wrong, but would heavily bias your thinking.

You say that up to 15 percent of diagnoses may be inaccurate. These are diagnoses made by professionals who have been through extensive training. Is it the training itself that is the root of these errors, and are there skills and ways of thinking that medical students are not learning that they should be?

There are two dimensions to that. The first is, we're all susceptible to these kinds of pitfalls, because this is the way the human mind is wired to think, and these kinds of pitfalls are not unique to medicine. They exist in every field of thinking: economics, politics, all sorts of other allied fields where cognitive processes are applied.

What is missing is that medical students and residents and senior physicians are not taught about cognition. They're not taught the vocabulary of cognitive psychology. They're not taught about these pitfalls and how to protect themselves. So I think that is an opportunity for all of us to enlarge our education and improve our clinical performance.

You also discuss the importance of uncertainty in allowing a doctor to remain flexible enough to avoid some of these errors. Why do you think doctors are so hesitant to admit uncertainty?

I think there's enormous time pressure in today's medical world. The way medicine is practiced today involves tremendous time pressure, so that we're asked to see more and more patients under 12-minute visits, 15-minute visits. There's an amplification of reliance on these thinking shortcuts that can be pitfalls. What we do is we try to ignore uncertainty to come to a conclusion within a short period of time.

There has been in the past, which I think is unfortunate, the tendency to try to pose some kind of omniscience, as though you know everything, and that's not a healthy posture for a physician to assume. On one hand, you want to transmit to the patient that you have experience and knowledge, and so on, but the idea that "not always right, but never in doubt" is not a good kind of imperative. You can express uncertainty to a patient while at the same time, demonstrating that you're putting serious thought and marshalling considerable experience and so on to hopefully solve the clinical mystery, without denying uncertainty. I think most patients actually appreciate when a physician allows room for uncertainty, and within your own mind, it helps you think better, because it will restrain you from immediately anchoring onto a diagnosis which will give the appearance of certainty when uncertainty is warranted.

You spoke about the enormous time pressure that physicians are under now to make these diagnoses. What has led to this increased time pressure?

I think that unfortunately, the way the medical system has evolved with regard to reimbursement is potentially very destructive. So that physicians who spend time thinking, meaning talking to a patient, expanding on their narrative, their history, doing a more detailed physical exam, reviewing with the patient various laboratory tests and so on, the reimbursement for that is very, very meager.

On the other hand, the reimbursement for procedures is extremely lucrative, so that physicians are being pressured, whether they're in private practice or in managed care practices or in academic practices, to see more and more patients in a shorter period of time to keep up with the financial imperatives of the hospital or practice plan. . . . And you can't think well in haste. Or what you do is instead of really doing a physical exam, or really trying to pinpoint what's wrong with the history, you say go get an MRI or go get a CAT scan, or go see the surgeon and have a procedure. The system actually favors that because the imaging is very lucrative and the procedure is very lucrative.

In your book you talk about how this has shifted a lot of doctors from primary care to specialists.

Absolutely. I think the primary care physician is the most beleaguered doctor, meaning the family medicine physician, the primary care doc, the internist, the pediatrician. The amount of time that they can give to patients and sustain a reasonable work day and a reasonable salary is diminishing. The time that they have available is very limited so there's a tendency to just quickly send people off to specialists. And that can often lead to what amounts to a wild goose chase in terms of diagnosis.

Do specialists think about patients differently from primary care doctors?

The specialist who's a really good physician will think holistically, will think outside of his or her own specialty. But many specialists, and I've been certainly guilty of this, will tend to see things through the lens of their own discipline. It's kind of like the story of the blind man and the elephant.

Someone comes to me because of a blood problem, I'll focus on their blood. Someone goes to an orthopedist because of a bone problem, he'll focus on their bone. Someone goes to a rheumatologist because of pain in the joint, it's pain in the joint. And in fact, the first patient that I describe in the book, who's a woman who saw over 30 doctors, including many of the top specialists in Massachusetts, each one weighed in on his or her own specialty, but did not step back and see the big picture, and so her diagnosis was missed for 15 years.

One other issue then, based on something you talk about in the book, is the increased use of technology and testing. How has this also played into changes in the way that doctors think about patients?

The error rate, even with sophisticated imaging like MRI and CAT scans and so on is really quite high. It can be as high as 25 percent, based on a review done at Duke Medical Center. There's a tendency to think, "I'm not sure what's going on, I'll just send them off for a scan." The problem with that is, first of all, for the radiologist to be better equipped to make the correct diagnosis, he or she needs a lot of clinical information. This has been shown in numerous studies. If you just send off for a blind scan with some general diagnosis like "abdominal pain," well, the abdomen is awfully big,

and there are a lot of structures in it. If you say something like “right upper quadrant pain in a diabetic who’s had previous gallstones, on and on and on, and you localize and you give the history and so on, that is tremendously beneficial in having the person focus. I think that we tend to delude ourselves thinking that if we can’t immediately jump to a diagnosis in the 12 minutes afforded in a clinic visit, then just send them off for a scan and that will give us the answer.

The other major trend that you talk about is the role of drug companies on doctors’ thinking.

With regard to diagnosis, there are a number of conditions, particularly pain conditions, that don’t have an objective test, like fibromyalgia. There are people who do suffer terrible body pains, but now that there’s an FDA-approved drug for fibromyalgia, if you see the direct-to-consumer advertising, in magazines or on television, it’s “Do you have pain in your muscles, are you not sleeping well, there’s now a drug for fibromyalgia, ask your doctor.” If you come in with a filtered or winnowed mindset as a patient, where you’ve already cherry picked those symptoms because of the prompting of the advertisement, and fit them into the box of fibromyalgia, that’s how you’re going to tell your story to the doctor. He or she will be at a disadvantage to come to an accurate diagnosis, and more likely than not, will go with the bias, which was established through the marketing.

What can patients do then to convey their symptoms to the doctors, but also help them create the correct diagnosis in a productive way?

I think of medicine and the relationship between a physician and a patient as a partnership. If the patient is thinking about the diagnosis because of an ad or something they should say “I saw this on television.” A well informed patient will realize the risks of selectively winnowing their story to conform to the advertising pitch.

Physicians also need to be aware that the best kind of questioning is open-ended. If a patient comes with a pre-fixed idea, that’s fine. That can be communicated to the doctor and should be. But then the doctor should say, “Let’s step back, let’s put that to the side, let’s go to the beginning. Tell me exactly what happened and tell me everything that happened.” That kind of open-ended dialogue will hopefully extract the person from the bias of marketing, and it also will help the physician keep an open mind to everything that’s going on, and not fall into one of these thinking traps of anchoring or availability or attribution.

Are there questions that patients should be asking their doctors?

There are three primary questions that I wrote in the book. . . . Doctors should welcome these kinds of questions because they’re the questions that we as physicians certainly should be asking ourselves and these are the kinds of questions that we ask students and residents on rounds.

The first question is a very simple one: “What else can it be?” In other words, let’s say your working diagnosis is wrong. Now obviously, if you have a sore throat and you have a positive strep test and you’re getting better with an antibiotic, this is not really relevant. These kinds of questions are relevant when the diagnosis is obscure, or the treatment which was empirical for a presumed diagnosis is not working, or only partially alleviates the problem, and there is a reason to believe that you may be wrong. “What else can it be” causes you to go back and perhaps delve deeper into the history or repeat some directed aspect of the physical exam, or order other blood tests and so on. It protects against all three of the anchoring, availability, and attribution.

The second question is: “Can two things be going on at the same time?” We tend to think according to Occam’s Razor to try to make everything fit into a single, unifying diagnosis, but people are complicated, and medicine is more complicated than Occam’s Razor, and there may be several things going on simultaneously.

The third question is: “Is there anything in my history of physical exam or laboratory evaluation which doesn’t fit with the working diagnosis?” because all of us tend to subconsciously discount data that contradict our presumptions. This is called “confirmation bias” in cognitive psychology. We tend to confirm in our own minds what we initially believe. So this again causes the doctor to go back and examine the database, the information, and see whether he or she may have inadvertently pushed something to the side which really deserves focus.

Massachusetts enacted some major health care reforms recently. Has this helped doctors to spend the time with patients that you talk about and possibly give more thought to primary care. Have the reforms gone far enough?

I think that there needs to be a major overhaul in the system, and that overhaul really should be driven by government, by insurers, and by the medical profession. Certainly patients express a high level of dissatisfaction and frustration in the current system because they feel they’re not afforded time. I think we would be well served to

examine the issue of reimbursement and to incentivize physicians to think . . . because, first the human cost of misdiagnosis and of these errors is enormous. Studies have shown that of that 15 to 20 percent of misdiagnoses, in half of those cases, there's serious harm to the patient, even death.

Then there's the financial impact. When you don't come to the correct diagnosis, it's much more costly. It's most costly for the person's health and welfare, but it's also costly for the insurers and for all of us who contribute premiums and so on in the current system. I think that it's nice to know that attention is being paid to this, but I have yet to see real fundamental change in terms particularly of primary care doctors, and I've spoken to a number recently about this. They still feel extremely pressured to see patients in short periods of time.

What advice would you give those like President Obama who will be looking at reshaping our health care system to help them keep in mind some of these physician practices that you talk about and the way that doctors think?

One is that we need to expand our education. . . . I think we really need to incorporate cognitive science into medical education. That's number one.

Number two is I think that when Medicare and Medicaid look at reimbursement, that's what the government's responsible for, and the insurers usually follow, that they need to restructure the reimbursements so that thinking medicine is rewarded and not given short shrift.