

## Investigation

# 3.15: Looking Deeper

Introduction:

The basic structure of medical investigation this workbook has introduced to you involves putting the information surrounding a patient's complaint into a specific format called the **History and Physical**. We then add information from other tests and evaluations in order to separate out the correct diagnosis from a list we have called the **Differential Diagnosis**, all the possible causes for the symptoms the patient exhibits. Do doctors actually go through that process all day long with every patient they see? You probably have realized by now based on your own experiences, they do not.

Physicians see patients day after day who have very similar problems. Since physicians specialize in particular areas of the body, the spectrum of problems that come to them has shrunk through the efforts of emergency room or general practice physicians who tend to make referrals to more specialized physicians. Over time physicians tend to use their **experience** to jump quickly to the right diagnosis without formally working through a differential diagnosis list.

It is important to remember the practice of medicine is as much 'art' as it is science. Physicians must merge their scientific knowledge of anatomy, physiology, and pathology with all of the information their examinations and testing have accumulated about this specific patient's medical problem. Doctors find themselves asking why again and again in the course of solving each medical investigation. Why does the patient show these particular symptoms? What could cause this abnormal test result? Getting to the correct answer often requires deep, probing thought; yet we have also seen that physicians do not always reach the correct diagnosis.

We created this workbook to introduce you to the world of healthcare and perhaps to invite you to consider such a career for yourself. Also we want you to benefit from a better understanding of how people go about solving real-life problems. You can use the structure of the medical history and physical and the differential diagnosis as a template for thinking about problems in other areas of your life. People in many fields make decisions by writing down what they know about a problem in a formal way and then writing down possible actions or explanations that they can then test in order to make the best decision.

Seeing that the medical decision process we outlined above fails from time to time, we might also profit by expecting that our initial decisions in life can go wrong and need re-evaluation. This sort of real world experience can prove valuable no matter what path we choose for our life.

Tom Brokaw's name may not sound familiar to you, but probably would to your parents. Brokaw visited millions of American homes every evening to deliver the news of the day on network television. Doing that made him almost a member of the family in many homes. Brokaw retired from television to a ranch in Montana. He stayed active on the ranch with occasional television appearances until he began to experience persistent back pain. As a famous American he had access to great doctors and saw a couple renowned orthopedic surgeons who set about to treat his back pain. Brokaw wrote about this in a book he titled, A Lucky Life, Interrupted. The renowned physicians did not consider all the possible causes of back pain before jumping to a diagnosis and treatment plan, and in fact Brokaw's primary care physician ultimately stepping in to get him the right diagnosis and the right treatment by looking deeper. Brokaw needed a totally different set of physicians to solve his real problem.

You have done a lesson in this workbook about a patient who has chest pain. Working from the initial symptoms a number of possible causes could explain the patient's pain, but then the next day that patient developed a rash along one of his ribs that made the diagnosis of shingles quite obvious. Having the diagnosis we treated him for shingles. But did we ask, why did he have shingles? We did not stop to ask ourselves what caused his immune system to suddenly allow the chickenpox virus to again attack his body. We failed to "think deeper."

Some have called **Sakichi Toyoda** (1867 – 1930) the "King of Japanese inventors." He founded the Japanese company Toyota, still a company well known as a powerhouse of innovation today in motor vehicles. We credit Sakichi Toyoda with the creation of a trick for thinking deeper called "**5 Whys**." He believed in order to find creative solutions to problems one must dig down to the root of the problem, and not be content with the superficial cause of an issue. In the 5 Whys method one asks why, and then subjects the answer to that question to another level of asking why. You try to do this process five times. We do not know exactly why he picked the number five, because frequently one cannot readily dig that deeply. Instead focus your attention on asking why repeatedly as many times as you can to force yourself to think deeper and deeper into a problem you face.

**Let's try an example:**

1. Why is the sky blue? Sunlight is white so when we look at the sky something must have removed the red end of the color spectrum leaving the blue light behind.
2. Why would the blue light separate out? At sunset sometimes the sun looks red, so in that case the blue light has been subtracted along the direct path from my eye to the sun.
3. Why would the blue light not stay with the red? I looked that up and it seems dust in the atmosphere scatters out the lower frequency light more easily than the higher frequencies.
4. Why would dust act this way on light? We have asked why only four times and now find ourselves asking a question appropriate for a college physics class.

Maybe Sakichi Toyoda really had a great idea. We would probably have been better physicians if we asked ourselves why our patient with shingles got shingles. The answer to that question may have opened doors into early treatment of problems that had not yet created symptoms for our patient.

We are going to leave you to try out the “**5-Whys.**” The question can be anything you want to think about from, “Why does my brother yell at me?” to “Why do I need a belt to hold up my pants?” You pick the question and see what happens as you ask why of each answer, trying to repeat this process five times, taking you deeper and deeper into the question. Sakichi Toyoda left us a great tool for deep thinking.

**Review:**

1. What is a ‘Differential Diagnosis’? \_\_\_\_\_  
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2. What is the ‘History and Physical’? \_\_\_\_\_  
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3. What are the ‘5 Whys’? \_\_\_\_\_  
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