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An insider guide to reading your radiology report

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The simple truth is that radiology reports can be hard to read, especially for those without a medical background. The combination of advanced medical technology and the wonderful subtle intricacies of the human body often result in a final document that more closely resembles a William Faulkner novel (translation: difficult to understand!) than Dr. Seuss. The goal is to try to cull through the cacophony of medical jargon and get to what you really want to know: Does this test tell me what is wrong with me?

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A Wall Street Journal article, [Radiologists Push for Medical Reports Patients Can Understand](#), gets at the crux of the issue: Radiology reports are written for other medical professionals and not for the general public. This can leave you, the patient, lost, having not taken gross anatomy, having not spent thousands of hours in medical school and residency, and frankly, having little reason to know about complex medical terms and conditions. For most of the population, understanding a radiology report is certainly easier said than done.

And I would take the WSJ article's argument one step further — in many cases, the medical professionals can't even understand the reports! This is sometimes simply because the report deals with a condition outside of the physician's purview. For instance, a mass in the kidney on an MRI of the lumbar spine may not be familiar to an orthopedic surgeon. Other times, this is because the report deals with a complex piece of anatomy (such as the organ of Zuckerkandl, the anterior meniscofemoral ligament, or the inferior colliculus) or a rare or complicated medical condition (like, for instance, pseudopseudohypoparathyroidism — no this is not a typo, Google it!). Or, the report may be difficult to understand because it involves inexact findings that may or may not relate to your symptoms. Finally, to be blunt, sometimes the report is indecipherable because it is just that, poorly written and not as precise/concrete as it might be.

So where does this leave you? Here I am going to try to impart some wisdom (some might not call it *that*, exactly) and try to take you through how to read the report. Armed with this knowledge, it may help answer whether or not you would want to have another radiologist take a look at the images and explain them to you in plain language.

The radiology report is most often organized into 6 sections: type of exam, clinical information, comparison, technique, findings, impression. Let's take these one at a time.

Type of exam. This shouldn't be too much of a challenge. You had a CT scan of the chest. Fine. No big deal.

Clinical information. You definitely want to look at this section and ask yourself, were all of your clinical symptoms communicated to the radiologist? There are many reasons that your exact clinical situation may not have been adequately conveyed to the radiologist reading your exam (I won't go into them here). Often times, the radiologist just has a snippet of your clinical picture. Suppose you had a CT scan of the abdomen and pelvis ordered because of two weeks of right upper quadrant abdominal pain after having run into the kitchen table (hey, it happens!). You read the report and the clinical information section says: abdominal pain. Clearly the radiologist hasn't gotten the whole story. Now radiologists are trained to analyze everything on all of the images, and not to be too biased by the provided clinical history.

But I can tell you from experience that having good precise clinical history definitely helps hone the interpretation. And suppose the CT shows a small hyperdense fluid collection around the liver? Without the full

cancer! With the full history, the report will be much crisper: Small hematoma around the liver. And of course, this could definitely explain right upper quadrant pain after running into a table.

Comparison. Here the radiologist simply denotes which of your imaging exams he/she also looked at as he was analyzing your current study. Take note of this section, it can be very important! “Old gold,” as one of my radiology professors used to say. If you know you’ve had an imaging study in the past, particularly of the same body part, take a mental note of whether or not it has been mentioned. Suppose you had a bone scan that showed a focal area of increased uptake (meaning bone that is metabolically active) at the edge of some lumbar (lower back) vertebral bodies. The major differential diagnosis would include degenerative change and infection. Well, if you had a bone scan 3 years ago, and the picture looks the same, then this would steer things in the direction of degenerative change.

Technique. This is where the radiologist describes the exact way the test was performed, the field of view, whether or not IV contrast material was administered, etc. You can usually skip this section without worrying too much about it.

Findings. In this section, the radiologist reports on the observations about all the parts of the body seen in the exam. This is usually the longest part of the report. The radiologist will discuss each relevant piece of anatomy and make a determination on whether it is normal or abnormal. If abnormal, the report should explain exactly what is abnormal. For instance, the findings section on a chest radiograph performed for cough and fever may read something like this: There is consolidation throughout the right upper lobe abutting the minor fissure. The lungs are otherwise clear. There is no pleural effusion or pneumothorax. The heart and hila are normal. The bones are normal.

As you read the findings section, try to understand each line and how it relates to your own symptoms and personal medical history (because you, after all, know these things better than anyone else). Suppose radiographs of the cervical spine describe a small compression fracture of C6 (sixth cervical vertebra), age indeterminate (meaning, the radiologist cannot tell based on the x-rays alone if it is new or old). Well, if you as the patient know that you suffered a skiing accident in your 20’s and “someone mentioned I had broken a vertebral body,” this can help you and your doctor determine that the fracture is in fact old (your doctor will also probably palpate your spine for focal tenderness at this level). Making this determination can save you the time and effort of undergoing further imaging of the cervical spine (like a CT scan or MRI).

Or take the following case: suppose you have a CT scan of the chest, abdomen and pelvis for unexplained weight loss and the report describes a normal uterus. Well, you as the patient know that you had your uterus removed (a hysterectomy) twenty years ago. This could mean that there is actually a mass in the pelvis, and not a uterus!

Impression. This is where the real magic happens. This is where all of the findings are synthesized into a coherent diagnosis (or, in many cases, more than one diagnosis). In the above example of the chest radiograph showing consolidation, the impression section will simply state: right upper lobe pneumonia. Anything that is important — either answers the clinical question or is an otherwise important entity — will usually appear in the impression. This is not always the case, however. Occasionally the impression will not precisely answer the clinical question. Sometimes this is unavoidable.

For instance, you have pain in your foot and an MRI shows several possible reasons for the pain. In other cases, the findings may not lend themselves to a specific diagnosis. For instance, an area of abnormal uptake in the foot on a bone scan could be from trauma, infection, arthritis, etc. If the report doesn’t answer the clinical question, the radiologist will often indicate in the impression section another test which may be helpful.

When you read your report, go ahead and read the impression first and then try to go through the rest of the report keeping in mind the comments I have made throughout this blog.

At this point you may be thinking, this is some pretty sophisticated stuff and I'm not sure I can really trust myself to go through the report and make sense of everything. The good news is that although it can be helpful for you to think about these issues on your own, it is really your ordering doctor that should be synthesizing what is in the report with his knowledge of your medical history, symptoms, physical exam, etc. When you get the test results from your physician, and you don't quite understand what the results mean, take a look at the report yourself. Ask your doctor questions about certain parts of the report.

If you are still having difficulty, and something seems to be lost in the translation, it may be time to have a radiologist explain the pictures to you directly, so that you can best understand what everything means. It is all about getting the most out of your imaging. There is an art to generating an accurate, concise, clear radiology report, and there is certainly an art to reading the report too.

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