

## How to study Pathology?

(Compiled by Dr. B. R. Krishnanand)



### INTRODUCTION

To learn, you need a source. A teacher enters the scene. His/Her role is to facilitate your learning experience and enhance your learning skills. Teacher has to be very practical and productive in a 15 week program.

One can learn without a teacher but with great limitations. This explains why even good and established medical schools all over the world boast of having 'good teachers' with them, despite having enormous learning resources (books, journals, electronic sources etc.,)

“Good teaching is as much about passion as it is about reason. It's about not only motivating students to learn, but teaching them how to learn, and doing so in a manner that is relevant, meaningful, and memorable. It's about caring for your craft, having a passion for it, and conveying that passion to everyone, most importantly to your students” – *Richard Leblanc*

The process of 'Learning' begins very early in life. At the professional level it gets tougher. To keep up with the competition, a student or a teacher is expected to have considerable depth in a chosen field and this is to be complemented with professional excellence.

It is customary for students to seek answers to questions. A question that keeps coming up regularly while teaching Pathology is “How do I study Pathology”? I ask them “how did they study Anatomy, Physiology or Biochemistry”? Students tell me “I worked hard”

Well then you surely know how to study Pathology. Simply Work hard – in your own inimitable style. After this, I go on to remind students that we all are made differently. Therefore, the method that **I use** to study may or may not be suitable to **you**. But then where there is a will, there is a way! But to put things in order, I need to comment on the following issues and then provide you a few additional references.

Remember your generation is fortunate enough to have access to the Internet from where one can draw a wealth of information and this is in most cases, is free of cost.

### **Common Resources of Learning**

1. Didactic Lectures – They can range from being ‘interesting’ to completely boring sessions and can be totally ‘monotonous’ – The irony is many teachers do not realize this!
2. PowerPoint slides – They are great. Knowledge does not have boundaries but PowerPoint slides do! Again, most teachers believe these slides they are comprehensive and will help a student to realize the final goal. The truth is different. Knowledge gets updated but slides become obsolete. In any case most slides are poorly compiled and language used is not easy on a students mind.
3. Visuals or Pictures – One picture is equal to thousand words. How true! It is a good habit to study the picture first and then the text. Try this method and you will never regret that decision

4. Books – Use a textbook optimally. They are meant to be used optimally. Initially this may appear difficult but over a period of time the habit catches on. Remember that now you are grown up and drive your car and so on? Some day in future you will not have access to PowerPoint slides. You need to study and learn all by yourself. Therefore cultivate leaning by reading a recommended textbook. This exercise (Reading from the book) builds up your level of confidence and avoids “dependency”. That explains why medical books are published and marketed.
5. CDs/DVDs etc – They are great again. But do you have the motivation and time to put these gadgets to good use in a 15 week program?

### **Lectures**

I believe in the benefits of good listening skills. Stay quiet and absorb as much as possible. Most teachers also highlight important points and repeat them a couple of times. This is a great beginning.

### **Visuals**

Pathology has a quite an amount of visuals. It is good to align your thoughts and senses with that of your teacher.

(The examples given below are selected from Chapter -1 from your textbook of Robbins – 7<sup>th</sup> edition)

Example 1:

On page 9 of Robbins, you find two pictures of Brain.

Study these pictures for 2 minutes.

The picture on the left is “atrophic” and the other picture depicts a “normal brain”

**RELEVANCE of Learning:** Here is what you need to do now

- a. Keep looking at the normal brain and figure out how it differs from the atrophic brain. Three key words (that help you gain complete control) are;
  1. Atrophy
  2. Gyri and
  3. Sulci
- b. Next step is to identify
  - (i) loss of brain substance
  - (ii) narrowing of gyri and widening of sulci

Example 2:

Now compare and learn the 'relevance' of two pictures that you find on page 21. One deals with a normal myocardium and the other visual shows changes seen in coagulation necrosis.

Now you understand how to interpret visuals. This is just the beginning though.

Learning is further enhanced by writing, reading and indulging in small group discussions. Try this out.

**Will I be able to achieve this in a 15 week program?**

Well it is going to be a challenging task to achieve this. This is because students register for three or more courses and you need to give time and importance to all the subjects that you have selected to study.

1. Pathology can be taught in a variety of ways: lectures, demonstrations, practical classes, seminars, small group discussion, case/clinical vignette study etc. There is really no end for creative ways of absorbing knowledge. Do you have it in you?

2. In addition, an increasing number of computer based programs of instructions are available. Whatever teaching methods are employed, there are some basic principles that should be adhered to. Students learn best when they are interested, when they see the relevance of what they are learning, and are intrinsically motivated.

3. They need feedback on how they are doing and often need guidance about the level they are expected to reach. As teachers we need to be enthusiastic and well organized.

4. Introducing elements of discussion and interaction, especially through the use of clinical examples or problem solving practical, will maintain interest and arousal. The use of visual aids, computer based programs, knowledge checking, and summarizing will enhance student learning and understanding. Ritual humiliation, although memorable, does not enhance student learning.

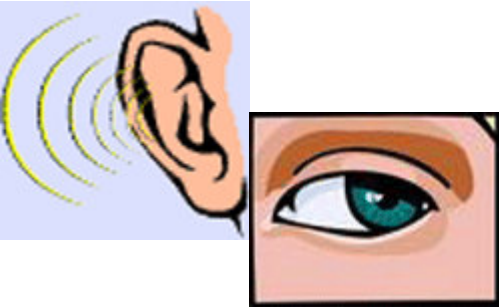
**5. Pathology is a subject with a vast and ever expanding knowledge base.** It is more important than ever that the pathology learnt in the undergraduate curriculum is basic and relevant, emphasizing the understanding of mechanisms and principles rather than detailed facts. As students continue their medical education into postgraduate trainee years, more detailed systemic pathology will become more relevant and more appropriately learnt at that time.

In education theory, the acquisition of new knowledge depends on activation of prior knowledge and its reorganization and elaboration, allowing it to be applied to different situations.

6. How often do our clinical colleagues tell us that students do not know any pathology when they are quizzed on the wards? We as teachers can help our students to retrieve information when they need it by using **clinical examples** or a problem based approach.

7. **Problem based learning** produces deep levels of learning and understanding and an ability to apply basic knowledge in the clinical setting.

8. Assessments have a powerful effect on the way students learn, therefore, pathology assessments should test understanding and problem solving abilities rather than factual recall.



Any learning style is a way of learning. YOUR preferred learning style is the way in which YOU learn best. Three learning styles that are often identified in students are the Auditory Learning Style, the Visual Learning Style, and the Tactile/Kinesthetic Learning Style. Read about each of these learning styles to identify YOUR preferred learning style.

► Are you an Auditory Learner?

Auditory Learners learn best when information is presented in an auditory language format. Do you seem to learn best in classes that emphasize teacher lectures and class discussions? Does listening to audio tapes help you learn better? Do you find yourself reading aloud or talking things out to gain better understanding? If YES, you are probably an Auditory Learner.

► Are you a Visual Learner?

Visual Learners learn best when information is presented in a written language format or in another visual format such as pictures or diagrams. Do you do best in classes in which teachers do a lot of writing at the chalkboard, provide clear handouts, and make extensive use of an overhead projector? Do you try to remember information by creating pictures in your mind? Do you take detailed written notes from your textbooks and in class? If YES, you are probably a Visual Learner.



► Are you a Tactile/Kinesthetic Learner?

Tactile/Kinesthetic Learners learn best in hands-on learning settings in which they can physically manipulate something in order to learn about it. Do you learn best when you can move about and handle things? Do you do well in classes in which there is a lab component? Do you learn better when you have an actual object in your hands rather than a picture of the object or a verbal or written description of it? If YES, you are probably a Tactile/Kinesthetic Learner.

Your learning style is your strength. Go with it whenever you can. When you can choose a class, try to choose one that draws heaviest on your learning style.

When you can choose a teacher, try to choose one who's teaching method best matches your learning style. When you choose a major and future career, keep your learning style firmly in mind.



**Good Listening In Class**

It is important for you to be a good listener in class. Much of what you will have to learn will be presented verbally by your teachers. Just hearing what your teachers say is not the same as listening to what they say. Listening is a cognitive act that requires you to pay attention and think about and mentally process what you hear.

Here are some things you should do to be a good listener in class.

► Be Cognitively Ready to Listen When You Come to Class. Make sure you complete all assigned work and readings. Review your notes from previous class sessions. Think about what you know about the topic that will be covered in class that day.



▶ Be Emotionally Ready to Listen When You Come to Class. Your **attitude** is important. Make a conscious choice to find the topic useful and interesting. Be committed to learning all that you can.

▶ Listen with a Purpose. Identify what you expect and hope to learn from the class session. Listen for these things as your teacher talks.

▶ Listen with an Open Mind. Be receptive to what your teacher says. It is good to question what is said as long as you remain open to points of view other than your own.

▶ Be Attentive. Focus on what your teacher is saying. Try not to daydream and let your mind wander to other things. It helps to sit in the front and center of the class, and to maintain eye contact with your teacher.

▶ Be an Active Listener. You can think faster than your teacher can speak. Use this to your advantage by evaluating what is being said and trying to anticipate what will be said next. Take good written notes about what your teacher says. While you can think faster than your teacher can speak, you cannot write faster than your teacher can speak. Taking notes requires you to make decisions about what to write, and you have to be an active listener to do this.

▶ Meet the Challenge. Don't give up and stop listening when you find the information being presented difficult to understand. Listen even more carefully at these times and work hard to understand what is being said. Don't be reluctant to ask questions.

▶ Triumph over the environment: The classroom may be too noisy, too hot, too cold, too bright, or too dark. Don't give in to these inconveniences. Stay focused on the big picture - LEARNING.



Your path for most effective learning is through knowing

- yourself
- your capacity to learn
- the process you have successfully used in the past
- your interest in, and knowledge of, the subject you wish to learn

It may be easy for you to learn physics but difficult to learn tennis, or vice versa.

All learning, however, is a process which settles into certain steps.

1. How interested am I in this?
2. How much time do I want to spend learning this?
3. What competes for my attention?
4. Are the circumstances right for success?
5. What can I control, and what is outside my control?
6. Can I change these conditions for success?
7. What affects my dedication to learning this?
8. Do I have a plan? Does my plan consider my past experience and learning style?

Now enough is enough. Happy studying and keep working hard!



### **Web sources and References:**

1. [www.how-to-study.com/LearningStyles.htm](http://www.how-to-study.com/LearningStyles.htm)
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*Note: My deep apologies to the original contributors if I have not acknowledged them while compiling this article – Dr. BRK*