

LIFELINE



Adnan Al-Araji

Adnan Al-Araji graduated from the University of Baghdad's College of Medicine, in 1977. His postgraduate training was in general medicine and then neurology in Baghdad and the UK. He is currently associate professor of neurology at the College of Medicine, University of Baghdad, a consultant neurologist at Baghdad Teaching Hospital, director of Baghdad MS Clinic, and Editor-in-chief of the Iraqi Medical Journal.

Who was your most influential teacher, and why?

My professor of surgery, Khalid Najji, who used to remind his students "Don't forget to ask yourself why".

What would be your advice to a newly qualified doctor?

Try always to remember that you are lucky to be part of one of the most respected professions.

What is the best piece of advice you have received, and from whom?

"It is attention to details that differentiates excellence from lack of excellence in medicine", from the preface to a medical book that I read a long time ago.

How do you relax?

Swimming, reading my favourite sociology books, and especially looking at people's behaviour in different societies.

What is your greatest regret?

Living in my country and watching it changing for the worst over decades without being able to do much about it.

What apart from your partner is the passion of your life?

My two daughters, both are medical students. They keep reminding me how hard it is to be a doctor.

What is your favourite book and why?

A study of the modern Iraqi society by professor Ali Al-Wardi. It helped me a lot in understanding the social background of my patients.

What are you currently reading?

The Myth of the Framework: In Defence of Science and Rationality, by Karl Popper.

What is your favourite country?

Iraq; where else could you find a country that has been engaged in three successive major wars in two decades!

What do you think is the greatest danger to the medical profession?

Politicians; I wonder if it is possible to convince all societies to get rid of all politicians.

What part of your work gives you the most pleasure?

Listening to a thankful patient.

JABS JIBES

Let's waste our time!



It seems unlikely that Pythagoras had any potential application in mind when he was busy adding the squares of the sides of right-angle triangles. Likewise, it is hard to envisage Galileo considering the possible material profits of his studies on the fall of objects from the Pisa tower. And were those investigators who discovered oxygen interested in its medical uses or in the powering of rockets?

Getting closer to our times, James Clerk Maxwell's calculations in the field of magnetism and electricity, and the work of Heinrich Hertz on electromagnetic waves, were not done with the purpose of inventing radio. On the other hand, did those who worked with deuterium in the early 1930s have in mind its use in the workings of atom bombs or in nuclear fusion? And, did you know that the patent lawyers at Bell Laboratories did not want to incur the cost of patenting the laser? They thought that it did not seem relevant to telecommunication!

Well, your interest is in medicine and biology. Perhaps you would call it a waste of time to study the curious phenomenon of the effects of antihistamines in the guineapig. Since the early 1940s, it was known that these drugs inhibit all the effects of histamine, except the increase of gastric-acid secretion that they regularly produce. Obviously James Black did not think that he was wasting his time, and his work led to the development of cimetidine and other histamine-2 (H₂) receptor antagonists that changed the lives of patients with peptic ulcer.

Have you ever heard of *Rhizopus chinensis*? It is a fungus that produces an acid protease that clots milk and activates trypsinogen. This enzyme seems hardly worth studying, but one investigator isolated it in 1971 and later on other researchers

undertook its crystallographic analysis. This work might not sound exciting, but your reaction may change if you consider that this aspartic proteinase is quite similar to renin and to the HIV-1 protease. Study of X-ray crystallographic structures of inhibitor complexes, much aided by the previous work with *R. chinensis*, made possible the synthesis of renin inhibitors and also, later on, of inhibitors of HIV-1 protease, now a basic element in the treatment of HIV-1 infection.

We tend to deem useful the study of bugs that bother us, be it *Salmonella typhi* or *Mycobacterium tuberculosis*, but many would shrug at the dedication of time or money to the study of microbes that do not seem to pose an imminent threat. Imagine the size of their shrug if they were told that the research microbe in question is a peculiar creature that thrives in the most surprising of surroundings, being a thermophilic bacterium (*Thermus aquaticus*) that lives in extremely hot water in areas of geothermal activity such as geysers. Fortunately enough, some individuals were interested in the bug, and their work led to the discovery of Taq polymerase, which is a very thermostable DNA polymerase.

Still confused about the virtues of their effort? Then remember that in order to separate the two strands of DNA from each other, by heating a DNA solution until the hydrogen bonds between the base pairs are broken, it is necessary to use a temperature between 75 and 100°C. Taq polymerase made it possible to develop PCR technology, which led to the explosive growth of molecular biology. In view of all these innovations, please ask yourself: is there not usefulness in useless knowledge after all?

Sergio Erill