August 1997 Issue | Dr. Peter D'Adamo, N.D.

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Welcome to *Functional Medicine Update* for August, 1997. The word *paradigm* has slipped into common usage, largely as a result of the contribution Professor Thomas Kuhn made in his book, *Structure of Scientific Revolutions.* Professor Kuhn died in June, 1996. An influential commentator on the history of science, he popularized the word "paradigm" and brought about a frame shift in how we think about changes in our culture: whether they occur smoothly over time and whether we can predict them, or whether they occur abruptly, as revolutions.

There has been a debate in medicine over changes in medical technology, medical thinking, and the field of health care. Do they occur by a smooth transition of accumulating knowledge, or by a Thomas Kuhn type paradigm shift with rapid, unexpected change of general *zeitgeist*, or thinking.

A recent issue of the *Journal of the Royal Society of Medicine* explored the ideas of Thomas Kuhn and their relationship to medical advances. It is a timely topic, given the state of healthcare delivery today, with managed care, cost efficiency, evidence-based medicine, and the attempts to evaluate the competitive advantages or disadvantages of complementary therapies. These dynamics in our healthcare system reflect a period of great change.

The author of the article points out that according to Dr. Bernard Cohen, in his book, *Revolutions of Science,* L.S. King, M.D., who also co-authored the *Manual of Style* of the American Medical Association, considered Thomas Kuhn's term *paradigm* not valid in medicine, because events in medicine occur by a logical, transitional, evolutionary process that can be predicted through the development of knowledge over time. In this article, however, the author, Dr. C.E. Quin of the Royal Society of Medicine, points out that a paradigm shift applies to medicine just as it does to all other social transformations

As an example, he cites Galen's view of physiology, the thinking that dominated medicine for 1000 years. Doctors studied medicine and subscribed automatically to Galen's view of physiological function and its relationship to anatomy in the way they practiced medicine.

Galen, physician to the Roman Emperor Marcus Aurelius, was a student of Hippocrates who, in turn, was a student of Aristotle. In the Western world, the Hippocratic treatise, *The Nature of Man,* advanced the concept that underlies much of what we are revisiting in medicine today -- that food is a good medicine and nutrition plays a role in health. Galen placed major emphasis on the function of the liver, both anatomically and physiologically, and regarded it as the organ chiefly responsible for the formation of blood and other humours and also the source of veins. This way of thinking remained the dominant

paradigm in medicine.

The liver was like a meta-heart (in our current view of anatomy), and the function of the heart was different from what we know it to have today. According to Galen, nutrients absorbed from the gastrointestinal tract were transformed into humours in the portal vein and liver.

The four humours -- blood, yellow bile, black bile, and phlegm -- were related to four qualities -- hot, cold, moist, and dry. First described in the Hippocratic treatise, these qualities were responsible for the balance associated with health or imbalance associated with disease. According to Galen, the four interacting qualities were responsible for the genesis and destruction of all things. That was the first fundamental paradigm in medicine, and it remained the dominant thought of doctors for nearly 1000 years.

Galen's view of the physiology of respiration and its relationship to the pneuma can be traced back to 280 B.C., when Erasistratus maintained that only air, *pneuma*, was present in arteries. Galen was convinced that they contained blood as well as the vital pneuma, and he wrote a treatise titled, *Whether Blood is Present in the Arteries*, giving his reasons for thinking that blood, arteries, and pneuma were interrelated. This view was once again built upon a presumption in anatomy and physiology that lasted for nearly 1000 years, and it certainly met the criteria, according to Kuhn, of a paradigm.

The decline of Galenism in medicine began about 1500 with Paracelsus, who was the first to criticize Galen openly. Paracelsus rejected the humoural theory of disease and supported the notion of specific causes of disease. That concept was taken up by the Flemish physician Jan Baptist van Helmont, who was heavily influenced by Paracelsus and practiced around 1600.

The most significant contribution to this changing view in anatomy and physiology, blood and vasculature function, was made by Dr. William Harvey, who also practiced around 1600. He studied medicine at Cambridge in Padua and brought Roman and Latin influence into the English system. Dr. Harvey was a very good student of anatomy. He read *The Fabric of the Human Body*, by Vesalius, and was influenced by its logic. He performed extraordinary, exacting work on cadavers, which he acquired at night

Dr. Harvey's work led to a revolution -- another paradigm shift -- in the way we view the heart, its function as a pump, the vasculature that is the origin of the blood system, and the relationship of the heart to the lungs and oxygen transport through the red blood cells. It was at that point that the Galenistic paradigm was undermined, and after nearly 1000 years it was replaced by what Kuhn describes as a paradigm shift.

Kuhn would agree that social and emotional factors contribute to the rejection of an old paradigm and the acceptance of a new one. He also believed, however, that inertia in the social milieu exerts strong resistance to change. Fear of change and reticence to look at something from a new vantage point, he felt, ultimately increases the weight on the dam until finally it breaks under the pressure of increasing strength of knowledge. The paradigm shift then occurs very rapidly. This happens in medicine, according to Kuhn, as well as in social, political, and cultural areas of society.

Supporters of rival paradigms are unable to accept new ideas, according to Kuhn, because they see the

alternatives only from the standpoint of their own paradigm. Each group lives in a different world and speaks a different language, so its paradigm must be right and others must be wrong by definition. They can't understand how an alternative paradigm can coexist harmoniously with their own. The alternatives are not measured by the same standards. Anything that looks different must be wrong by definition, according to Kuhn's analysis.

Nor is there neutral ground on which appropriate tests may be conducted, because data are interpreted as though rival paradigms were untrue. Why bother to test them if you already know they are wrong? There is a failure of communication, according to this model.

O'Hear, editor of *Philosophy*, the prestigious journal of the Royal Institute of Philosophy, has pointed out that Kuhn himself sometimes writes on rival paradigms as if there were, in fact, neutral ground; neither paradigm assumed to be true. Kuhn also argues convincingly that the sensory apparatus we inherit provides common ground for communication among us for our survival. Therefore, we have the ability to communicate about different paradigms if we open our minds to opportunities for knowledge.

INTERVIEW TRANSCRIPT

Clinician of the Month:
Dr. Peter D'Adamo, N.D.

Speaking of paradigm shifts, which seem to be the theme of this month's *FMU*, our Clinician of the Month, Dr. Peter D'Adamo, will give us a remarkable opportunity to think "out of the box," to use the vernacular

JB: In our tradition of having as our Clinicians of the Month innovative and forward-looking individuals, we are pleased once again to have as our guest Dr. Peter D'Adamo, a naturopathic physician practicing in Connecticut. Dr. D'Adamo's book, *4 Blood Types, 4 Diets, Eat Right 4 Your Type: The Individualized Diet Solution to Staying Healthy, Living Longer, and Achieving Your Ideal Weight*, is now on the Best Seller List. He is a Bastyr University alumnus, successful naturopathic physician, and now a best-selling author.
A number of years ago we talked with Dr. D'Adamo about the work he was doing with his father, a naturopathic physician from Canada whom I also had the pleasure of knowing. They were looking at blood typing and its relationship to food response, allergy, and food type. Welcome to *Functional Medicine Update*, Peter.

PD: It's always a pleasure to chat with you.

B: For listeners who might not have heard our first interview, I'd like you to tell us how you got into this blood typing connection to food and nutrition, and the education you got from your father, who was certainly an innovator and ahead of his time.

PD: The first chapter in the book, "The Work of Two Generations," is an apt description of what happened with the whole blood type discovery. It is something that I could say I inherited from my dad,

who had a lot of instinctual qualities as a clinician. He was an old-style naturopath who took the information he was given from his teachers and put the 20th century scientific backbone to it.

One concept he kept constantly close to him, which I was taught as a student, was to treat people and not diseases. I remember his telling me about a time when he was a young man working in a lab. He looked through a microscope, and it occurred to him that maybe that explained why a lot of people didn't do well on the Bircher-Benner diets he was utilizing at the time. He thought maybe some aspect of blood type controlled how nutrients or oxygen were delivered to the tissues. That's what started him on a long process of looking at blood types. Over the next 15 or 20 years, he typed his patients' blood and proceeded to see which ones came back and indicated that various meal plans he recommended either worked or didn't work. For one to glean this information is no mean feat. Many of these older naturopaths have this quality in abundance, I think, and we should go back and reinvestigate how a lot of these old-timers were able to get their facts, strictly through empirical observation.

In essence, that was my inheritance. In 1980 he wrote a book, titled *One Man's Food is Someone Else's Poison,* but unfortunately his publisher went out of business a month after his book came out, so it didn't go very far. There was not a lot of science behind it, so it didn't do very well in the stores, but the book is still on the shelves of a lot of practitioners of alternative medicine. In his book, he stated two simple facts. Type O does better, in general, on high-protein, low-carbohydrate diets. If you're Type A, you do better on the opposite -- a high-carbohydrate, low-animal-protein diet.

JB: I was impressed by the Afterword in your book, titled "A Medical Breakthrough for the Ages," by Dr. Joseph Pizzorno, President of Bastyr University. He pointed out that you brought scientific research and evaluation to this hypothesis, having worked with students, colleagues, and post-doctoral students at Bastyr University for more than a decade, culling nearly 1000 papers. How did you go about that process, and what did you learn by digging through the science from divergent fields?

PD: One of the simplest things I wanted to do was to see if what my father was saying could be supported by information in the literature. I didn't have many places to start, because I was faced with the same dilemma that clinicians face to this day with regard to polymorphisms. There is no distinct classification in the medical information hierarchy that says these are systems that split people up. The entire medical information hierarchy is reductionist. It's reducing people. As my father said, this is a discovery that needed to be made by a naturopath, because it's the only philosophical school of medicine that teaches you to treat the patient, not the disease. A naturopath is comfortable with ideas of individualization. Naturopathy is perhaps the profession best suited to tease out the information basis to it all.

I started with a simple assumption: Let's look to see who gets sick from what. I thought there might be some evidence that some blood types might get more sick from this than that. I had some help from people who would suggest, for example, that Type O was known to have a higher rate of ulcers. We began by looking at original research on ulcers and Type O blood.

At the same time, we discovered that hypochlorhydria, pernicious anemia, stomach cancer, and atrophic gastritis all had preferences for Type A. Even then, in 1982, I thought that was interesting, because it implied that if you look at the other factors associated with Type O, such as the high rates of trypsin and some of the other things like intestinal alkaline phosphatase, these two blood types went in completely divergent directions. You definitely had one that was skewed for a low hydrochloric acid level, acid

hydrolysis environment, and another that was skewed for the opposite, high acid hydrolysis environment, which obviously implied a set of secretory machinery that was engineered for protein.

In 1982 I produced a report that indicated what the blood types get sick with. We noticed, for instance, that some studies suggest certain cancers are more common in Type A and, on the other hand, certain blood-thinning disorders are more common in Type O. And that was it.

I went into private practice for a couple of years and used the blood typing system more or less as my father gave it to me. My interest was rekindled in the late 1980s when I first came across information on secretory differences with regard to salivatory components, immunoglobulins -- IgA, for instance -- which I found in oral pathology journals. I knew there was a whole secretory machinery that had to do with whether or not ABOs, or actually ABHs, were secretors or non-secretors. But I hadn't really looked at it.

Now I'm beginning to look at variations in secretory differences and immunological characteristics and opening that can of worms having to do with cancer. I started using interns that Dr. Pizzorno nominated. I had an open-door policy. I set them up in the library and gave them broad guidelines to find information on blood type.

They dug through forensic medicine journals from the 1920s, and a lot of obscure anthropology stuff. We actually unearthed the work of one anthropologist, Frank Livingstone, who had done a lot of work on blood types, and through him investigated the work of William Boyd and A.E. Morant. These two men were sort of paleoserologists of the 1940s and 1950s. They had tremendous characteristics that had been developed with regard to the distribution of blood type and the introduction of blood type with regard to an evolutionary or paleological introduction schedule that went O, A, B, AB.

If one was looking at it from blood type as an antigenic function, one could see gradual accretives, starting out with a very simple antigenic structure in Type O. The other blood types were essentially constructed or synthesized by building their own antigens on top of that. I thought it was interesting, for instance, that here was an introductory cycle that seemed to correlate in terms of developmental aspects of the human diet. Type A was reaching large numbers at around the Neolithic time, for example, and inhabiting the areas known to be intensely Neolithic, or agricultural. A lot of native populations around the world, or ancient populations that hadn't been intensely intermingled with people, still maintained this very high percentage of Type O.

So I began to realize that blood type may not be as completely Lamarckian as one may have thought, in terms of its anthropological connections. It may actually be that much of the expression of blood type is a far more recent phenomenon than one could explain in terms of a Darwinian time scale.

JB: On page 6 in your book, I was very impressed with the title line, in which you talk about the various periods during which blood types may have emerged. These are very recent times, even going back to Type A, at 40,000 B.C.

PD: That's right. The notion that blood type is only a transfusion complication is the same notion that paralyzes further interest in blood type. The expression of blood type is largely a function of glycosylation in terms of antigen expression, and a lot of these glycosyl systems are very labile. It is

possible that a lot of these systems can change quite a bit. We still have what they call "wild types" of blood that apparently are still changing. So the whole world of antigenic function with regard to blood type is probably a much more lively type of thing than we might think with regard to something that is more or less frozen in place, like eye color or hair color.

JB: It's a fascinating concept. What you are really talking about is a functional characteristic of the individual that may be much more plastic and variable and have a greater range of implication than we have previously acknowledged.

PD: It could be done in a single person's life span, because we do have recorded instances of blood type changes in people. In these circumstances, they always fall within one basic characteristic. It's always at the end stage of malignancy. And it almost always seems to be A trying to change to B.

It's interesting to look at, because the basic premise of the book in the chapter on cancer is that many common malignancies manifest A-like characteristics which would tend to put group A in a higher risk category because of the concept of something called "horror autotoxicus." That means your immune system is not terribly likely to attack things that are trying very hard to look like you. But ultimately, in all the observed blood type changes that have occurred as a result of end stage malignancy -- most of these involve cancer of the large bowel -- they always involve people with Type A all of a sudden manifesting something called pseudo-B. People never understood this; it was just an observable phenomenon. It's been known for 30 or 40 years.

When a person who is Type A is faced with a malignancy that is striving to mimic his own blood type, it could be almost the equivalent of calling down artillery on his own position as a last resort to actually attempt to distance himself from this A-like organism by actually changing his blood type antigen to some other non-A-like antigen. If it could be done as an end stage, admittedly a drastic solution to a problem in a single human life span, it could probably be done according to a whole variety of other non-Darwinian-types of things.

JB: When you reviewed more than 1000 papers, did you come up with a proposed mechanism by which intracellular signaling, or signal communication, could be influenced by diet and be related to this blood type?

PD: Great question. A large amount of work could certainly be done in this area with a chance of yielding tremendous rewards. Some of the things I touched on in the book simply represent observed occurrences from my own small practice. A simple observation, for instance, that the conventional pneumonia vaccine, or the pneumococcal polycapsular antigen, is a distinctly A-like vaccine, has prompted me to propose that perhaps people who are dealing with malignancies that have as part of their expression A-like characteristics, usually tertiary characteristics involved with the expression of an acetylated glycosamine, could benefit by getting the pneumonia vaccine. The notion is that by stimulating the person with an A-like bacterial antigen, one could produce some A-like response which could, indeed, carry over and attack the malignancy's same A-like characteristics. In a way, it is like utilizing the transfusion rejection mechanism as part of an anti-cancer strategy.

JB: Your book made me think of an experience I had in the 1970s when one of the physicians at the clinic where I was lab director was using BCG vaccination for general immunological activation and not

seeing reproducible results in all patients. I'm wondering if we were looking at different haptotypes related to blood type reactions.

PD: We are going to see some interesting studies undertaken by other people coming out of the book. If the book has done anything with regard to the concept, apparently it has stimulated the imagination of some very conventional researchers.

For instance, the Long Island Breast Cancer Study, and a separate breast cancer study in upstate New York, are now adding ABO blood type to their questionnaire. We also have inklings of a beginning of a longitudinal 10-year study looking at people who use the Blood Type Diet to see whether or not this produces appreciable differences in terms of how much health care they require, and the general level of fitness versus mortality. This study may very well be undertaken by the group that was part of the discovery that linked PSA to prostate cancer, which was another very long-term study.

It is a surprising set of outcomes that this book has stimulated interest from some very conventional sources who would be willing to see whether or not it has the effect I feel it does. I will be quite frank and say that the book is largely a series of accumulated clues. Nowhere in this book are you going to find a double-blind, crossover study of 10,000 people. What you will find are the effects of using this system in the best controlled environment that I could engineer as part of my own clinic, and the results I got. I was as objective about that as I could be. Where possible, I used research and the references to support a notion, if it was not mine.

If it was a theory or something I was putting forward, I readily identified it as my opinion and nothing else. I merely accumulated a book on everything you need to know about blood type. I spoke with a fellow who read the book while he was in a medical doctor's program in Allentown, Pennsylvania. He said that if you read from front to back of this book, you'll know more about blood type than 90 percent of the hematologists in the world. It's probably true. There are probably 150,000 American people with no medical background whatsoever who know more about the greater expression of blood type than their own hematologist, if they have one.

JB: I certainly found that was true when I read the book. It is a good description of some of the things that are buried in our learning that we pass over quickly and don't re-explore from a different construct. One thing you talked about as an example of your learning curve, which a lot of our listeners will find interesting, is the connection with *H. pylori* infection, gastritis, and Type O. Could you tell us what you learned about those relationships?

PD: It is a study that was released in the journal, *Cell*, if I remember correctly, from a group at the Washington University School of Medicine. They had speculated that perhaps the known connection between blood Type O and stomach ulcers might be related to the fact that much of the antigenic structure of *H. pylori* is rich in terminal fucose residues. They thought it might lead to a greater ability to colonize the digestive tract of people who were Type O, because the actual antigenic end point of the H antigen, or the O antigen is defucose so they thought here was an instance of a bacteria configuring itself to look like a blood type in such a way as to get around the major surveillance mechanisms.

Apparently, they were looking at basically utilizing a therapeutic intervention that involved using free fucose to flood the attachment receptors. The trick was that the organism manifested free fucose and yet it

had lectins on its surface that were also specific for fucose. So this thing could actually slide around or attach, almost at will, as long as there was fucose on the digestive tract lining which will be there if you are Type O. The idea would be to flood the receptors and make this organism go "ice-skating" off your stomach lining, so to speak.

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