

# How Bloodletting Can Transform Medicine

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Transformation is all about how we see ourselves in the world. We are stuck if we limit that view to the egos we have constructed over the course of our lives. Expanding that model is what all transformation is about. The model is a paradigm in Thomas Kuhn's sense of the word; when it is changed a whole new world opens to us.

The model of medicine that forms the foundation of our current practices is one we inherited from the humoral system of medicine and modified as we learned more from science, but it needs transforming too. In humoral medicine health was seen as a balance and we have kept this view through its modifications. Different symptoms tell us where the body is out of balance and the objective of medicine is to restore the balance.

This mechanical view sees the body as a simple machine and is the foundation of medical research. But we are more than that in many ways, and the paradigm needs to be changed to reflect our complexity. Our current scientific view is at least cognizant of the idea that we adapt; this is a big window that has no role in current practice or mechanical systems. In Kuhn's model it's an anomaly that can shift the paradigm.

In humoral medicine the systems that were out of balance were represented by the blood, phlegm, bile, and black bile. When a person, for example, had a fever, inflammation, pain, swelling, or an increased pulse rate they were diagnosed as having too much blood and bled. The practice was so common that the scalpel and the bleeding pan were the symbol of medicine—what today is the stethoscope.

The practice persisted into the last century and was even used sometimes as a treatment in the flu epidemic that followed the first World War. It likely lasted so long because it did such a good job of reversing the symptoms. When a person is bled enough the body has learned to compensate by shutting off the blood to the arms, legs, and skin to keep it for the vital organs in the core of the body. With less blood the redness goes away, the swelling is reduced, the body cools; you could literally watch the person get better. Today we call this response shock; it is caused precisely by the loss of blood—but in humoral medicine the system was balanced.

We have learned the dangers of blood-letting and the practice died, but in our rapid learning over the past few centuries of how the body works we have retained the model that health is the balance of the symptoms we measure; and health is restored when those symptoms are balanced—and the number of symptoms has blossomed to include even laboratory values. This is the model that needs to be updated and doing so can transform the practice of medicine.

Actually the signs and symptoms of too much blood are the same classic *rubor, dolor, calor and tumor* that define what we now know as the inflammatory response, an evolutionary defense against environmental infections. A fever gives a decided boost to the immune system, makes it harder for invaders to multiply, and the redness reflects the increased blood supply, with all of its defenses, to the area in question. Blocking this defense means more people die. Even cold blooded animals move to the sun to increase their temperatures when they are infected and die more often when prevented from doing so. The bothersome symptoms our ancestors saw as representing an imbalance actually were a new balance needed to cope better with a challenge—they were a defense.

The question for medicine today is how much of our current practice is aimed at balancing other bothersome symptoms that likely represent a shifted balance that is a defense, rather than an imbalance resenting illness. Our defenses are strongest in the areas of our bodies open to the outside. The acid in our stomach is a primary defense; hobbling it with the purple pill leads to problems. Friendly bacteria lining the walls of our digestive system are part of this defense; antibiotics kill them off and often open us to less friendly pathogens. The current epidemic of Clostridial infections is one example of such consequences.

These are the primary defenses; they work 24/7 and we don't even think about them. The nausea, vomiting, and diarrhea that is the back up defense is much more bothersome and current practice jumps to treat it. But seeing it as a defense allows to ask if there is not a connection between the increases in irritable and inflammatory bowel disease that often follow such treatment.

Similarly the primary defenses of the respiratory tract work constantly without our awareness, but the back up defenses of congestion and a runny nose represent an imbalance we rush to treat. A few years ago, however, the FDA removed the drugs used to reverse these symptoms from the pediatric formulary because of complications.

Common practice still doesn't see the problem of treating defenses, they aren't even seen as defenses, but if you want your local football team to win its game you don't hobble the defense; it's the same with all of us as we continue to play out our lives in our contaminated environments. These bothersome symptoms are evolutionary adaptations that have given us a survival advantage through natural selection. There are ways to honor and support them that can help us be stronger. Oral rehydration, called one of the greatest medical advances of the last century, optimizes our GI defenses, and a nasal spray with xylitol optimizes our respiratory defenses. Sharing these ideas, and the idea that we need a change in how we see the body in the practice of medicine, with your doctor and friends, can help this needed transformation come about.