

# Homeostasis vs. Allostasis

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The foundation of our current medical thinking is the homeostatic model. This model says that our body is basically in balance. There is a lot of truth in that idea; we do have systems in place that balance many elements in our bodies, like hormone levels and blood levels of its many elements. But it has been carried too far.

In their book, *Why We Get Sick*, George Williams and Randy Nesse introduce the idea that many of our symptoms—seen in this model as indicating imbalances that need to be addressed with drugs—are in fact defenses that we have acquired over millennia in order to survive better. They put a fever in this category. A fever accompanies all significant infections and is of great help since it both ramps up our immune responses to fight off the infection and handicaps the bacteria. But they stopped there. From a historian's perspective there is a far better example in our close to 3000 year old practice of blood letting.

This practice was written about in ancient Egyptian records and was well known in ancient Greece. The model of medicine used in that day is called the humoral model. In it certain symptoms indicated an excess or shortage of one of the body's humors. Blood, of course, was one of those humors and the signs of too much blood were a fever, and redness or swelling, and the pain that often accompanies inflammation or injury. The excess was treated by cutting the patient's arm and letting it bleed into a bowl. When this happens the body responds by shutting down the circulation to the extremities and skin, and most of the time that is where the redness, swelling, or injury is, so the signs all disappear as the bleeding progresses. You can literally watch your patient get better. No wonder the practice lasted so long.

It lasted until the mid 19th Century when French physicians looked at what happened when patients with pneumonia were bled. They died. When patients with swelling from an injury were bled they lost out on the benefit of the splinting the swelling provided, but that was minor compared to the loss of the immune defenses of those with a serious infection. The practice of blood letting shows us clearly what happens when you hobble a major defense like the inflammatory reaction.

The French research led to the demise of the humoral system, but the underlying thinking did not disappear. It just shifted to a more scientific classification of the elements. We no longer had to balance bile, blood, and phlegm, we had at first temperature, bowel and bladder function, and with more technical advances, blood pressure, glucose levels, and all of the numbers that seem so important now. What Williams and Nesse point out that is overlooked is that many of the symptoms we still treat are defenses that help us survive—just like the inflammatory defense.

Our defenses are strongest where we are most vulnerable: at the openings of our bodies. There are primary defenses here that work all the time and don't cause any problems. Secondary defense are bothersome. Gastroenteritis is the back-up washing defense of an irritated GI tract. Rhinorrhea is the similar back-up defense of the upper respiratory tract. Both of these defenses are bothersome and we have many drugs that cope with them in the attempt to rebalance the body. But these drugs have also been associated with increases in both inflammatory and infectious bowel disease, as well as increases in nasal related problems like allergies and asthma, and infections in the ears, sinuses, and lungs.

The model that Williams and Nesse introduced is called the allostatic model. It is founded on evolutionary principles and looks much deeper into what symptoms represent before deciding whether to treat them or not.

This is a far better model and we need to shift to that model.

You can read more about how to honor and support these defenses [here](#).