Ray Peat's Newsletter

. . . it is easier to bamboozle than to debamboozle. **Norman Angell**

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Immunology, Ideology, Power

In 2005, experiments showed that injecting the spike protein from a corona virus caused lungs to fail (Kuba, et al.), and that antibodies formed to the spike protein damaged the lungs (Lin, et al.). For several decades, it has been common knowledge that autoimmune disease (such as "rheumatic fever") could result from the cross reaction of antibodies with microbial antigens and antigens on the person's tissues. Recent studies are confirming the risk of autoimmune disease from antibodies to the covid spike protein. One cross-reaction with the spike protein is the lung surfactant protein (Vojdania and Kharraian, 2020; Talotta, 2021). Cross-reactive antibodies and autoimmune processes are also involved in cancer and infertility.

With both the spike protein and the antibodies to it producing such deadly effects, using it in a vaccine to protect against the corona virus would have seemed crazy to anyone following immunological and virological research after 2005, and the thought of implanting a nucleic acid to cause the body to produce the spike protein would have seemed like criminal insanity at that time. Just 12 years later, big corporations and their government supporters found it convenient to forget the recent science. For example, in 2017 the chief medical officer of the Moderna corporation gave a talk about what a nifty and simple idea if would be to cause the body to produce its own vaccine. Describing the process, he said "So, here's all the biology you need to know in 30 seconds." For the corporations and the public health officials, that's all the biology they want to know, and all they want the public to know.

In the immunity that results from interactions with pathogenic organisms, and in the immunity produced by a traditional vaccine made from killed or weakened pathogens, the body forms antibodies to many parts of the potentially harmful organism. The result is that we accumulate a great variety of antibodies to multiple pathogens, and in the case of corona viruses, children accumulate additional immunity each time they have a cold. This means that almost all children and adults are immune to a great variety of corona viruses.

At birth, there are natural antibodies, that developed along with the differentiation of tissues. Naturally, they don't inactivate the body's own tissues; they persist through life, but decrease with aging, increasing the susceptibility to infections and to loss of normal functions (Palma, et al., 2018). They apparently serve to protect tissues, recognizing and eliminating deviations from normal (Britschgi, et al., 2009). Their existence has been generally accepted only in recent

decades; their existence creates difficulties for the dominant theory of immunity.

With natural antibodies, the issue of cross-reactive antibodies and autoimmunity doesn't exist, but when the specialized adaptive antibodies are produced, cross-reactivity is always a problem—other organisms vary in their tissue antigens, and antibodies binding to those will have varying degrees of cross-reactive affinity for our own tissues. For example, the lactobacilli that thrive in women during their fertile years have some antigens that resemble human connective tissues, and it's possible that they are a factor in diseases such as lupus and rheumatoid arthritis that are prevalent in women especially during those years. Any infection or vaccination, especially when there's an excess of estrogen or a deficiency of antiinflammatory factors, can permanently damage your health.

The first two people in the U.S. reported to have died from "covid," at the end of February, 2020 were in their 80s and 90s, in an extended care home in the Tacoma, Washington area, and within a few days a third death was also said to have been caused by covid; their deaths were attributed to covid on the basis of a PCR test that, despite not having been validated as tests normally are, had just been authorized for use under a newly adopted Emergency Use Authorization. Secretary of Health and Human Services, Alex Azar, had declared a Public Health Emergency on January 31, 2020. The fact that the WHO recommended, and the CDC ordered, the operation of the test at 40 to 45 cycles, known to produce mostly false positive results was widely noticed**:** as testing increased nationally beginning in March, the incidence of "cases of covid" increased at the same rate as the testing. The "test epidemic" served to create an eagerness to get the inoculation. Exactly a year after the WHO had begun promoting the testing method of Christian Drosten, with instructions to misuse it, the inoculation campaign was underway, and the WHO changed its instructions, reducing the number of cycles—with the obvious intention of creating an impression that the inoculations were lowering the rate of infection, as the number of false positive results was immediately reduced.

In the late 19th century Paul Ehrlich, working with the German dye industry, noticed that different bacteria and tissues varied in their affinities for coal tar dyes. He reasoned that the ability of some dyes to kill certain pathogenic organisms was analogous to specific immunity, such as demonstrated by vaccination. He extended his dye-binding theory to the use of arsphenamine (Salvarsan, Compound 606) to treat trypanosomiasis and syphilis. His Nobel lecture (1908) was a detailed description of a theory in which tissue and chemical side chains were similarly responsible for the therapeutic effects of drugs and the protective effects of antibodies. His theory made the "magic bullet" idea of drug therapy popular, reinforcing the idea that each disease has its specific drug remedy.

The power of the drug industry was able to make that idea central to medicine, and it shaped thinking about vaccines for the next century.

Metchnikov's 1908 Nobel lecture wasn't just about phagocytosis, it was an alternative view of immunity as a pervasive multi-level process, involving learning and tissue maintenance as well as specific elimination of pathogens. It was either ignored or disparaged by medical researchers until the end of the 20th century. He said that at the present time, he knew of only one substance that could assist the innate immune system, and that was quinine. Recent studies relating to a single kind of cell sensor, the Toll-Like Receptors (TLRs), have found that quinine reduces their activation of cytokines and antibodies. Angiotensin, the covid virus (Sarius and Perlman, 2021), endotoxin, estrogen, and ionizing

radiation have opposite effects, activating TLRs and increasing cytokine and antibody production.

In Metchnikov's time, chloroquine and hydroxychloroquine hadn't been synthesized yet. Those drugs weren't introduced because they were in some way superior to quinine. In the 1930s, Germany and the US wanted new drugs to treat malaria, to get around Dutch control of the world quinine supply, and produced several synthetic variations of quinine, including chloroquine. In 1950, hydroxychloroquine was produced to avoid the retinal toxicity of chloroquine. Recently, because of reports that hydroxychloroquine could be helpful for treating the corona virus infection, some researchers compared the effects *in vitro* of quinine and the two synthetics on human cells (Grosse, et al., 2021). They found that natural quinine, like the synthetics, effectively blocked the infection of human cells by the corona virus, but was safer. The more toxic chloroquine had previously been found to have antiviral effect against SARS coronavirus (Vincent, et al., 2005).

Metchnikov's developmental, multilevel, cellular view of immunity was incompatible with "modern medicine." The American Medical Association was founded in 1847 to promote "scientific" allopathic medicine, and to suppress the practice of homeopathy, empirical medicine, herbalism, etc. It opposed the use of "crude" herbal preparations, and considered it necessary to find a pure chemical substance to specifically treat each condition, such as a microbial infection, a parasite, or, later, a genetic defect. This theory of medicine is a perfect match for the pharmaceutical industry, and for Ehrlich's analogy of "magic bullet" chemotherapy to the function of antibodies.

It was only a little more than 20 years ago that Jamie Cunliffe's "morphostasis" and "damage theory" and Polly Matzinger's "danger theory" broke away from the dominant antibody theory of immunity, which was based on Macfarlane Burnet's mechanistic, neodarwinian "clonal deletion" theory. These new theories were, in effect, extensions of Metchnikov's developmental approach in which immunity is a process of generating and maintaining the organism. When a cell is damaged, it releases internal components including DNA, RNA, and ATP, and these are recognized by cells that promote repair of the damage, under the guidance of systemic interactions. Unfamiliar antigens will be eliminated along with the damaged tissue, by a combination of many factors, from phagocytes to antibodies.

A few people had been recognizing the failure of the clonal deletion theory for a long time. At an international meeting of immunologists in 1969 at the University of Oregon, a young teacher had demonstrated that the deleted clones could be restored, giving the original repertoire of antibodies, if the immune cells were simply cultured at a higher density than Burnet and Nossal had used, allowing the cells to interact with each other, forming a network that was able to detect, and repair, the deletions.

Although his lecture was attended by only a few people, and the main speakers acted as though it hadn't happened, Niels Jerne apparently noticed it, because he later presented an alternative to clonal deletion based on his idea of an "idiotype-antiidiotype network" (Jerne, 1974). By itself, it wasn't an adequate theory, but it moved in the right direction. The damage and danger theories have provided a way to discard the various Nobel Prize winning theories of antibodies and their functions, and to begin seeing immunity and resistance as holistic processes of the organism.

The nature of protective reactions has been obscured by thinking in terms of "the immune system," as something distinct from metabolic and adaptive processes. The various

"-phylaxes," starting with skeptophylaxis (lightning or quick protection), have made it clear that the endocrine system and metabolic systems are deeply involved in the adaptive protections.

Although mast cells and basophils are usually the main sources of histamine, experiments have shown that under the most extreme conditions, all of the cells studied produced histamine. Energy deprivation activates the formation of histamine, which activates many "immune" functions, including increasing the TLRs, and production of cytokines and antibodies. Histamine should probably be thought of as one of the signals of danger or damage. It seems to correspond to the catabolic phase of an infection.

Although inflammation can occur without infection, its presence is generally thought to indicate infection. The corona virus infections inactivate the ACE2 enzyme, whose functions include destroying angiotensin II, a basic promoter of inflammation, so, more than other kinds of infection, it is a disease of inflammation. Since inflammation activates the clotting system, it is a disease of inflammation and coagulation. Before the WHO declared the pandemic, China was treating covid infections with antiinflammatories and anticoagulants. Outside of China, governments have ordered doctors not to treat early cases of covid, until their symptoms were serious enough to require hospitalization and oxygen treatment. On October 22, 2020, the FDA approved the use of remdesivir in covid patients, but remdesivir is neither antiinflammatory nor anticoagulant; inflammation is one of its side effects.

Histamine helps to rouse the immune functions, and promotes inflammation and coagulation.

In a prolonged excess, it tends to calcify soft tissues, reducing their functions. Like serotonin, it activates carbonic anhydrase, and is activated by estrogen and a reducing environment. While histamine is a basic organizing factor in immunity, its effects have to be blocked for completion of the immune processes. Increased oxidative metabolism lowers histamine and inflammation systemically, for example by lowering the ratio of estrogen to progesterone.

Although anaphylaxis is usually thought of as something separate from the immune response, I think it just represents a quick entry into the high-histamine state, because of low energy reserves and slow mobilization of the hormones of homeostasis. In the 1960s, V. W. Adamkiewicz showed that reducing blood glucose with insulin greatly intensified allergic reactions, while increasing blood glucose prevented deadly anaphylaxis, but weakened resistance to infection. Energy metabolism governs the effectiveness of the immune process, including the avoidance of autoimmunity (Gaber, et al., 2017).

Metabolic energy is involved in every aspect of the covid infection, but that has been denied or ignored because of a traditional, ideological understanding of immunity. Denial of obvious facts isn't a rare thing in the history of science, but the recent world-wide reactions to the corona virus epidemics, including criminalization of the traditional medical practice of treating symptoms, are unique and completely outside any scientific, medical, or legal standards.

Moderna had been working on RNA vaccines for years when the "novel" corona virus was identified, and they had been testing it as a vaccine for corona virus in mice, so when they received the genetic code by telephone from China, it took them only a few hours to produce the vaccine. As they rushed through the preliminary trials, it supposedly didn't occur to anyone that the vaccine might spread throughout the body, or that it would infect the lining of blood vessels with the spike protein, or that the infected endothelial cells would cause systemic clotting and inflammation, or that if the spike protein

reached the lungs it would severely damage them, or that anti-spike antibodies would be toxic to the lungs, or that anti-antispike antibodies would contain an antigen similar to the spike antigen. They, like Pfizer, were undoubtedly aware of the risks of the shedding phenomenon. These facts would imply either that no one in the vaccine business had studied physiology or immunology with any attention, or that their plan—to inoculate everyone in the world with a highly toxic genetic material—wasn't intended to improve public health.

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For many years immunologists have been well served by the viewpoint that the immune system's primary goal is to discriminate between self and non-self. I believe that it is time to change viewpoints and, in this essay, I discuss the possibility that the immune system does not care about self and non-self, that its primary driving force is the need to detect and protect against danger, and that it does not do the job alone, but receives positive and negative communications from an extended network of other bodily tissues.

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