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# Vaccines, Gene Splicing & Beyond:

What's *Really* at Stake?

**By Howard Woodwind Morningstar, MD**

## **Vaccine history and technology**

Vaccines are substances that are intentionally introduced into the body in order to alter its immune identity and hence, its resistance to disease. One of our dominant cultural beliefs is that vaccines improve the health of individuals and society. The effectiveness of some vaccination programs is seen as proof of their benefit. Proponents of government mandated vaccines argue that they can be effective only if everyone participates, generating what is called “herd immunity”.

Opponents of mandatory vaccination laws see these laws as unwelcome intrusions into their personal family choices. Some consider vaccination laws to be publicly funded experiments that enrich pharmaceutical corporations at the expense of our balance with Mother Nature. Others wonder if vaccines harm children by disrupting natural immunity and contributing to a variety of autoimmune and neurological disorders.

Modern vaccine technology was born in response to the smallpox epidemics that ravaged industrial England in the 18 th century. Well before the germ theory of disease or the discovery of the immune system, physicians simply observed that individuals exposed to cowpox, a mild illness, became immune to the dread disease smallpox. They then determined that individuals inoculated with cowpox-infected serum were also protected against smallpox. Millions were inoculated, the epidemic was controlled, and eventually smallpox was eradicated.

In the mid 20 th century humanity faced another public health crisis as polio epidemics killed thousands and crippled millions. Scientists, now aware of the existence of microbes, learned to chemically weaken and preserve wild polioviruses, creating the first modern vaccine. When they found that individuals inoculated with the polio vaccine developed immunity to the disease, millions were inoculated and the epidemic was controlled.

The late 20 th century found our civilization busily unraveling the secrets of life, discovering and translating the genetic code encrypted in the DNA double helix. As the intricate mysteries of the immune system were uncovered, a rapid succession of vaccines against a variety of common illnesses including diphtheria, pertussis, tetanus, measles, mumps, rubella (German measles), hemophilus influenza B, hepatitis B and chicken pox were created and just as rapidly, became

mandatory for all children attending school.

By the 1980s we had learned to create vaccines using recombinant DNA gene-splicing. This technology allows scientists to splice the DNA code for a desired viral protein into harmless host bacteria. The genetically modified host bacteria then activate the foreign viral gene, replicate its encoded immunogenic protein, which is harvested, purified, preserved and then injected as a vaccine.

The same knowledge used today to create genetically modified corn that's resistant to toxic herbicides is also being tapped to create gene-splicing vaccines to prevent human illness. Thousands of projects are currently underway in molecular biology labs at universities and biotech corporations around the world. For example, Yale biologists are preparing genetically modified tropical kissing bugs with an added gene that renders them immune to the intestinal parasite through which they spread Chaga's disease. An American biotechnology company will soon be marketing hypoallergenic housecats (expected to retail for around \$7500 each) that have been genetically altered so they no longer produce common human allergens.

The widespread availability of gene-spliced products that will alter future generations' genetic code is inevitable. Imagine the economic value of a patented gene-splicing vaccine that would protect newborn girls from breast cancer which strikes one in nine American women.

We're now on the verge of a brave new world in which recombinant DNA technology will be routinely used to create new human vaccines that will actually modify the genetic code of inoculated individuals and their descendants. If the pattern of the past continues, new mandatory vaccine legislation to "protect" our children will predictably follow. We can expect laws requiring gene-splicing vaccines against a multitude of maladies that could include the common cold, diabetes, HIV, and even carcinogenic environmental pollutants.

## **Who Decides?**

In the last 50 years we've been lulled into complacency, convinced that mandatory vaccines are business as usual, rather than drastic responses to public health crises. Certainly chicken pox, the latest disease to have earned a mandatory vaccine, is a far cry from the smallpox and polio epidemics of the past, and is no public health emergency. But it seems that whenever a pharmaceutical company invents and wins FDA approval for a vaccine, all of us are soon required by law to purchase that vaccine (or receive it at taxpayer's expense) and have it injected into our infants and children.

Along with the proliferation of government-mandated vaccines, we've witnessed increasingly insidious government intrusions into every aspect of our personal health. From reproductive rights to choice of health care provider, from public water fluoridation to medicalized childbirth, laws and regulations limit our freedom to choose. We've already begun to accept the government's invasion of our most intimate bodily functions in the name of protecting the public's

health. Even “Big Brother” in George Orwell’s totalitarian nightmare 1984 didn’t perform random urine drug testing to see which citizens were unfit to work!

I’m not “anti vaccine”. There are legitimate clinical indications for every vaccine available today. As a physician I daily help people understand their risk factors for vaccine preventable diseases so they can make intelligent decisions about vaccinating their children. Over the years, I have been personally responsible for vaccinating thousands of children. But I wonder: can we really trust the government to make such a fundamental decision about our children’s immune competence, genetic identity and our relationship with the environment?

The Food & Drug Administration is responsible for approving all medical innovations in the United States. It has permanently banned the sale of the amino acid tryptophan, a safe and effective natural sleep aid, because a single manufacturer produced and sold a tainted batch. Yet at the same time, the FDA endorses the use of prescription drugs that kill thousands of patients a year even when used appropriately. Is this because corporate interests profit from patented pharmaceuticals, but not from natural medicines like tryptophan?

The FDA has also banned the gentle tonic herb sassafras, traditionally used in root beer, ever since a single experiment showed that when caged rats are force fed extraordinary amounts of one of its distilled components, their cancer risk is increased. Amazingly, while the FDA is busy protecting us from the dangers of sassafras, it allows the tobacco industry to flourish as it aggressively markets an herb that kills millions! Whose best interests are being served here?

### **What’s *Really* at Stake?**

There’s no doubt that in the short run vaccines reduce the incidence of specific infectious diseases. It’s also clear that, while they occasionally cause serious and even catastrophic allergic reactions, they are well tolerated by most children. But there are so many unanswered questions about the subtle effects of vaccines that we don’t really know if they will ultimately benefit or harm our children.

Some theorize that injecting vaccines into infants deranges their immune system’s development, and is responsible for our current epidemics of autoimmune diseases such as lupus, asthma and chronic fatigue syndrome. Some believe that vaccines increase children’s risk of autism and other neurological disorders. Many are concerned that vaccines’ mercury and formaldehyde preservatives are harmful to children. Others wonder if chicken pox and other ubiquitous childhood illnesses actually benefit children by stimulating normal immune system maturation.

Speculation aside, it’s apparent that epidemics are warnings to civilization that our overall relationship with nature is out of balance. When we heed epidemics’ messages, we adapt our behavior so that our lives once again flow harmoniously with Mother Nature’s rhythms.

Smallpox could have been perceived by newly industrialized and increasingly polluted England in

the 18 th century as a wake up call to improve nutrition and hygiene. Instead, the ruling powers suppressed the epidemic using vaccine technology to overpower nature. This shortsighted strategy may work for a while. But inevitably, when one simply suppresses symptoms of imbalance without dealing with their underlying causes, nature confronts us once again, often more seriously and profoundly.

Pathogenic bacteria, viruses, fungi and other microbes are predators of the human species. In balanced natural systems, predator and prey co-evolve symbiotically, each benefiting the other. But as we attack our predators with an arms race of antibiotics and vaccines, we vastly accelerate the forces of natural selection that stimulate their evolution. In response, they predictably adapt and become much more potent adversaries. The ingenious discoverers of penicillin could not have begun to imagine the resistant “super bugs” that 60 years of the antibiotic era have spawned, any more than the inventors of the internal combustion engine could have anticipated the consequences of global warming.

As we enter the 21 st century, a full generation into our declared “war on cancer”, half of us can expect to face this modern plague in our lifetimes. The medical-industrial complex, supported by the FDA and other government health agencies, has been gearing up to profit from this appalling state of affairs by developing and marketing increasingly expensive chemotherapeutic drugs and recombinant DNA vaccines as weapons to combat a whole range of biological, chemical and even radioactive enemies. These so called solutions primarily serve to enrich their corporate sponsors, as they inevitably increase humanity’s dependence on ever more potent and desperate medical interventions.

Instead of waging war on cancer and microbes with quick technological fixes that just scratch the surface, it would be far better to examine and correct the root causes of these modern epidemics. Cancer is a failure of internal immune competence that manifests when the body’s defenses are overwhelmed by toxic effects of pollution, radiation, poor nutrition and chronic unresolved stress.

Unless we solve the crisis of human overpopulation and the injustice of poverty and malnutrition we will certainly face increasingly widespread and virulent disease. Until we make peace with Mother Earth and change behaviors that cause global pollution and habitat destruction we will make little progress in our “war on cancer”, no matter what sophisticated and clever technologies we devise.

The history of Western medicine teaches us that each era’s accepted beliefs generate treatment standards that are often later found to be ineffective, harmful or both. The very first medical school lecture I attended was given by a Nobel laureate cell biologist. He began, gravely addressing the hall full of eager future physicians: “Ladies and gentlemen: Half of what we will teach you here is wrong, and will be known to be wrong before you ever enter clinical practice. I wish I knew which half, so we can concentrate on teaching you the rest.”

We can look back at past errors with clear hindsight and wonder how we could have been ignorant enough to let physicians bleed patients to death until the 19 th century or treat young

people's acne with carcinogenic X-rays until the mid-20 th century. While previous medical blunders have caused tragic suffering to those involved, the damage has always been limited to the current generation. But when we tinker with genetic codes that have evolved over millions of generations, we risk altering the destiny of all future generations.

What's really at stake is whether or not we will learn to reenter into harmonious and sustainable relationships with the natural cycles of life upon which we utterly depend, or whether we will continue to arrogantly presume that we can successfully subdue and outsmart our lovely planet's innate wisdom.

Should we trust the same paradigm that has brought us global warming, clear cuts, nuclear waste and the mass extinction of thousands of sister species to decide for us? Or would it be better for us to freely choose for ourselves how to determine our children's immune and genetic identity? Let's empower ourselves to make courageous and informed decisions that will renew our balance with the earth and secure sustainable health for our children and for future generations yet unborn.

As always, this overview is presented for educational purposes only. For advice regarding specific health conditions please consult a qualified health care professional.

This article originally appeared in ***Sentient Times***.

Howard W. Morningstar MD, board-certified family physician, is a graduate of Yale University School of Medicine and the California School of Herbal Studies. He and his wife Sue Morningstar CNM, women's health nurse practitioner, share a family medicine practice in Ashland, Oregon. They can be reached at (541) 482-2032.