What Every Parent Should Know About Infant and Childhood Vaccinations

Jym Moon, PhD, FACN, CNS

There are now **ten mandatory infant and childhood vaccines**, and each of these will have been administered in various combinations four or five times to each child by the time a child enters school at age 4 to 6. This article, the first in a series, will present general information regarding the early history of vaccination, how the human immune system functions, and the two most hazardous infant and childhood vaccines currently in use, **hepatitis B and polio**.

Subsequent articles will deal with:

1. Infant and childhood vaccinations as a cause of autism, asthma, immune dysfunction, autoimmune diseases, nervous system dysfunction (with or without seizures), and juvenile diabetes.
2. The DTaP (combined diphtheria, tetanus, pertussis) vaccine.
3. The MMR (combined measles, mumps, rubella), chicken pox (varicella), and Hib (*haemophilus influenzae* type B) vaccines.
4. Genetically engineered vaccines in use, and in the making.

Adult vaccinations are different from

those given to infants and children. The side effects are generally different, and not nearly as severe. The current series of articles is not intended to deal with adult vaccinations, except in so far as infant and childhood vaccinations impact adults.

Statement of Purpose

All vaccination programs are accompanied by some risk. In some cases, particularly in regard to adult vaccinations, the risk may be minimal and the benefit great. However, **some of the mandatory childhood vaccines are probably more dangerous than they are beneficial**.

The purposes of the present article are:

1. To provide background information regarding the history of vaccination and how the immune system functions.
2. To explain why newborns should not be vaccinated unless it is absolutely necessary.
3. To discuss two of the most hazardous infant and childhood vaccines, polio and hepatitis B.

This article is not intended to give definitive recommendations regarding any vaccine or vaccination program. It is intended to give readers an awareness that **one of the most important responsibilities of parenting is to make informed decisions regarding their child's vaccination program**. Your child's health depends upon you, the parents, making the right decisions!

Vaccination programs are controlled differently in different states in the United States, as well as in different countries. Although the vaccination programs in the United States

are 'mandatory,' most states allow parents to refuse vaccines based on religious, medical, or philosophical objections. Informed parents should be aware of the regulations in their state or country. A medical information sheet is available for every vaccine. These sheets list possible adverse reactions to the vaccine.

Introduction

At the conclusion of each French Meadows Camp, I begin thinking about a good topic for *next year's* camp. At the conclusion of camp 2003, I crushed my wrist while roller blading on the last day of camp, so I had lots of 'free' time to contemplate what we might discuss in 2004. Even with all that free time, I didn't come up with a good topic until a few weeks before camp.

Each year, I receive a number of letters and e-mails from people with various health problems or concerns. One e-mail, in particular, did not stand out at first. In fact I categorically wrote it off as *not* being very significant. The e-mail was from Nancy (Indica) Loggins. Indica has a daughter that has had various health problems that Indica thought might be related to her daughter's infant or childhood vaccinations. She referred me to a website devoted to harmful effects attributed to infant and childhood vaccinations.

After looking over the website, I thought it was melodramatic and not very accurate. It seemed the authors were attributing all kinds of illnesses to vaccinations. These include juvenile diabetes, autism, asthma, autoimmune diseases, mercury poisoning, immune system dysfunction, encephalitis, subacute sclerosing panencephalitis, Guillain-Barre syndrome, febrile and afebrile seizures, ataxia, anaphylaxis, dizziness, headache, the illness that the vaccination is supposed to prevent, and even death.

I pride myself on being both a 'scientist' and a toxicologist. I have taught courses in microbiology, immunology, and toxicology for many years, and in these courses I have covered the many details of how vaccinations work. My teaching came directly from textbooks, which never discuss the side effects of vaccination. Due to this textbook bias, I was not at all convinced by the assertion that vaccinations can be so harmful. When I responded to Indica's e-mail, I indicated my bias, namely that I thought the website was greatly exaggerating the problems associated with childhood vaccinations. **I further supported the current programs of childhood vaccination by citing the triumph of world-wide vaccination over smallpox**. The last recorded natural occurrence of smallpox was in 1977. Prior to 1977, smallpox had probably been responsible for more human suffering and death than any other single disease.

". . . some of the mandatory childhood vaccines are probably more dangerous than they are beneficial."

Indica responded to my e-mail with a one-liner. She wrote, "And I thought you were a toxicologist."

That was it. My ego was crushed! I was offended and irritated by her abrupt e-mail so I determined to investigate in order to determine the facts. If Indica had not been so persistent, I would probably have continued to **ignorantly support vaccinations** (of all kinds) to be important public health measures. Some vaccines are very valuable, whereas others are primarily of a damaging nature – not at all in line with improving the health of a population. Even those vaccines that are valuable can be misused and thereby cause untold human suffering.

Inappropriate vaccination programs have caused unimaginable damage. Indeed, illnesses from diabetes to immune dysfunction and death, including all of the previously mentioned illnesses and many others have been documented to result from inappropriate use of vaccines. An even greater danger looms in the very near future. Some of the newer techniques for preparing anti-viral vaccines involve the process of genetic engineering – inserting pieces of DNA or RNA from a harmful virus into an innocuous virus. The possibility now exists to irreversibly change human heredity by introducing new genetic information into vast numbers of people using genetically engineered virus vaccines.

After reviewing much of the published literature and reading several books on the current status of infant and childhood vaccinations, I am convinced that no topic is of greater importance to human health. With this newfound conviction, I selected the two topics for camp 2004: 1) **Immunology** and 2) **Infant & Childhood Vaccination**.

Dedication

This article is dedicated to Indica and her daughter, to parents who must make a choice regarding their child's vaccination program, and to all people who have been harmed by inappropriate vaccination programs.

Early History of Vaccination

Vaccination is a term whose origin is intimately associated with smallpox. **Smallpox** is a **deadly illness** that is caused by a **virus**. All of the illnesses for which vaccines are available are caused either by **viruses** or by **other microorganisms such as bacteria, rickettsias, and mycoplasmas** (there are not yet any useful vaccines against chlamydias, fungi, protozoa, or helminths, although

work is proceeding). An important feature of viruses that separates them from other microorganisms is that they are not able to reproduce outside of their living host – for this reason some scientists do not regard viruses as living organisms. The significance of the way viruses reproduce will be discussed in the final article in this series, on genetically engineered viral vaccines.

Smallpox epidemics have been a major threat to humans throughout recorded history

Smallpox epidemics have occurred periodically throughout the world for most of recorded history. Since smallpox is such a deadly disease, epidemics have changed human history on many occasions. The virus has been used in germ warfare. Smallpox virus-contaminated objects have been thrust into enemy encampments, always with disastrous results for those so contaminated. Smallpox epidemics, both intentional and unintentional, were responsible for killing 80 to 90 percent of Native North American Indians, as well as the Incas.

'Sowing the Pox' and 'Variolation' – early approaches to smallpox

The earliest recorded attempt to control smallpox by introducing the virus into uninfected individuals was practiced in ancient China. The dried pustules from people who had smallpox (and recovered) were introduced into the nasal passages of uninfected people. The procedure was referred to as 'sowing the pox' and was practiced in Europe in the late 1700s when Edward Jenner developed a procedure using cowpox to prevent smallpox. The practice of 'sowing the pox' was based on the observation that individuals who survived smallpox did not develop smallpox on subsequent exposure, i.e. surviving smallpox conferred permanent immunity. There was also a process referred to as 'variolation' that was practiced in Greece, England, and most of Europe during the 1700s. Another name for smallpox was variola – today we refer to the virus that causes smallpox as the variola virus. Scrapings from smallpox pustules were scratched onto arm. One problem with 'variolation' was the high incidence of disease leading to death. Smallpox is an illness a person can develop **only once in a lifetime – the result is either death, or immunity.**

1796 – Edward Jenner used cowpox to prevent smallpox

Edward Jenner, a young British physician of the late 18th century, was aware of a common rumor of the time that once a milkmaid had developed cowpox she was immune to smallpox. Since cowpox is a fairly innocuous illness seldom causing death, Jenner thought that if he would purposely cause cowpox in a person he might thereby produce immunity to smallpox. He decided to put it to the test and, on May 4, 1796, he injected cowpox into a healthy 8-year-old male volunteer. Jenner scratched the boy's arm with a needle contaminated by scrapings from cowpox blisters. This caused a raised bump on the arm, and a mild illness. After the boy recovered, Jenner once again scratched the boy's arm, this time with a needle contaminated by smallpox. The boy was not affected by the smallpox scratched into his arm, and apparently remained immune to smallpox for the rest of his life.

"However, as we now know there is no vaccine that confers permanent immunity. . . ."

Years later, Louis Pasteur conferred the name, "vaccination" (vacca means cow in Latin), on the process developed by Jenner. Pasteur developed several vaccines based on inactivated (avirulent) viruses (even though viruses had not yet been discovered).

The procedure employed by Jenner is very similar to the 'vaccination' that many millions of us have had (I still have a scar from my smallpox vaccination, which took place many years ago when I was in elementary school). However, as we now know there is **no vaccine that confers permanent immunity**, and it is likely that many of us who have been vaccinated would succumb to the smallpox virus if it were re-introduced into the human environment.

1970 – Worldwide smallpox vaccination eliminated smallpox

In the 1970s the World Health Organization launched a worldwide vaccination effort that culminated in the apparent elimination of smallpox. The last victim of a natural case of smallpox is believed to be a Somalian who survived the illness in 1977. Smallpox viruses are still maintained in laboratories in the United States and Russia. Dates for destroying the virus have been set, and postponed repeatedly. What appears to be a great success – elimination of smallpox epidemics – could turn out to be a very great disaster should the virus ever be released.

How do vaccines confer temporary resistance to a disease?

In order to understand the scientific basis for vaccination, it is necessary to have some understanding of the human immune system. **The white blood cells are responsible for protecting a person from invad-**

ing microbes and foreign objects. There are many kinds of white blood cells; all function as part of the immune system. White blood cells circulate throughout the body in blood and lymph, and are concentrated in the organs of the immune system such as the spleen, thymus gland, tonsils, and lymph nodes (under the arm pits, in the neck and groin areas, and all over the surface of the small intestine). Some white blood cells secrete obnoxious chemicals that can destroy microbes. Some white blood cells are very large and are able to engulf invading microorganisms, punch holes in them, and consume them. Another group of white blood cells secrete proteins known as immunoglobins or antibodies; these are capable of being 'programmed' to exactly identify an invading organism. There are also white blood cells that secrete substances that will attract additional white blood cells to help destroy invading microbes.

The various methods white blood cells use to destroy microbes are classified as: **1) Non-specific responses**, because these white blood cells will respond to any threat, even tissue injury. **2) Specific responses**, **because the response is to one very specific microbe.** Specific responses are of two general kinds: **Antibody-mediated response**, and **T-cell-mediated response.** These immune responses are discussed briefly below.

Non-specific responses of the immune system

When a person encounters a potentially dangerous virus, bacterium, or other pathogen, the immune system is stimulated and certain white blood cells begin employing all kinds of defenses in order to destroy the pathogen. Even a wound or injury will elicit some of the effects of the non-specific defense system. Because a wide variety of pathogens and/or tissue damage can cause these effects, they are referred to as non-specific. The actions of non-specific immune functions include the generation of a number of chemicals that can be damaging to biological structures such as **histamine, prostaglandins, thromboxanes, and leukotrienes**.

These are potentially very obnoxious chemicals, both to the person who makes them, and to the microorganisms that are invading that individual. People are probably most familiar with **histamine,** since people throughout the world take tons of **anti-histamines** every year to block the nasty effects of having histamine generated in the nasal passages and tear ducts.

Aspirin and most of the so-called non-steroidal anti-inflammatory drugs (NSAIDS) exert much on their action by blocking prostaglandin synthesis, which is an immediate cause of pain. Thromboxanes and leukotrienes are just as obnoxious as histamine and prostaglandins, causing headaches, nausea, pain, and even anaphylactic shock.

". . . thousands of infants have been irreversibly harmed by early vaccinations."

The object that causes the generation of these noxious chemicals is referred to as an **antigen**. An **antigen** may be as complex as a virus, bacterium, or other pathogen, or it may be as simple as a protein, high molecular weight carbohydrate, or a particle of dust. For pathogens such as viruses and bacteria, the antigen is usually a protein or glycoprotein on the surface of the organism. These are referred to as cell-surface markers (**antigenic markers**).

Specific responses of the immune system: B-cells and antibody-mediated immunity

The antibody-producing cells are referred to as B-cells. B-cells originate in the red bone marrow from undifferentiated precursor cells. If the antigen is a virus, bacterium, or other pathogen, the B-cells begin making proteins that can specifically identify the pathogen. Every pathogen has distinctive proteins and glycoproteins on its surface that identify it. These proteins and glycoproteins are referred to as **antigens.** B-cells produce **antibodies** that specifically recognize the **antigenic markers** on the pathogen.

Antibodies have been examined in great detail, and much is known about their structure and mechanism of action. Antibodies are referred to as 'globular' proteins, i.e., immunoglobins, because their superficial appearance under a microscope is similar to small bubbles (globes, globules).

A closer examination of antibodies reveals that each antibody looks somewhat like a '**Y.**' The lower straight portion of the Y is the same in all antibodies, but the upper V-like portion is highly variable. In fact, **the upper V-like portion is made to bind in a very specific way to surface markers on each pathogen**. Every time we come into contact with a new pathogen or allergen (antigen), our body makes new antibodies that can specifically identify that antigen. In every person **there are hundreds, perhaps thousands, of variations in the variable region of antibodies. There is a different antibody for each pathogen or allergen a person comes into contact with.**

There are millions of exact copies of each antibody-producing cell (plasma cell). Each plasma cell can make only one specific antibody, but it can make thousands of identical copies of that **antibody**. At the peak of an infection, a plasma cell may produce and secrete two thousand

(2,000) antibody molecules per second. These antibody-producing cells are committed to one purpose only – making antibodies. Plasma cells can be recognized under a microscope since they have a huge Golgi apparatus (the Golgi apparatus acts as a shuttle to carry antibodies made within a B-cell to the surface of the cell where it is secreted into the surrounding fluid). They also have a superabundance of ribosomes – RNA that acts as a template for synthesis of the antibodies.

After the first encounter with an antigen, many plasma cells and their newly-synthesized antibodies will fight to destroy the antigen. Some of the B-cells will become **memory cells** and lodge in lymph nodes and lymph vessels throughout the body. If a person is successful in defeating the invading organism, the next time contact is made, **memory cells** undergo a process known as '**clonal expansion,'** whereby millions of exact copies (clones) of the memory cell are elaborated. These become plasma cells devoted to making antibodies for destroying the invading microbe.

Specific responses of the immune system: T-cells and cell-mediated immunity

In addition to B-cell antibody production, the human immune system contains many **T-cells**, which are differentiated in the **thymus gland**. The function of the thymus gland is to program T-cells to identify the vast assortment of foreign objects that might enter a person's body. The thymus gland is very large during childhood when most of the antigens are being identified, and shrinks to become very small in older individuals who are presumably no longer coming into contact with large numbers of unidentified antigens. Once T-cells have been 'programmed' (a process referred to as terminal differentiation) they leave the thymus to circulate in blood and lymph.

Jym Moon Lecturing at French Meadows Camp 2004

Some will lodge in lymphatic organs. T-cells can have a very long life of many years duration, and can reproduce identical replicates to provide, in some cases, life-long immunity.

Most T-cells require assistance from other white blood cells called macrophages. The macrophages participate with T-cells by digesting foreign microbes, and presenting antigenic portions to the T-cells for identification. These macrophages are referred to as antigen-presenting cells (APCs).

There are various kinds of T-cells. Some are very large cells that are coded to identify a particular virus, bacterium, or other antigen and destroy it; these are **killer T-cells**. Some T-cells secrete substances that activate other T-cells; these are **helper T cells**. Some **memory T-cells** can live for many years in lymphoid tissue, and can rapidly reproduce to produce many more T-cells that can specifically identify the same antigen.

Helper T-cells that have a specific protein marker on their surface, known as **CD4 T-cells**, are the immune system cells that are attacked by **HIV / SIV**.

What is the difference between natural immunity, and artificial immunity conferred by vaccination?

Due to the power of the immune system, having a number of illnesses (and surviving, of course) provides life-long immunity to a reccurrence of that disease. Smallpox, measles, mumps, and rubella are examples of infectious diseases that most people can have only once in a lifetime. Apparently the natural occurrence of the disease causes a large enough reserve of memory B-cells and T-cells to prevent the disease from every occurring again.

There is no currently known vaccine that confers lifelong immunity. Consequently, for any particular vaccination to be effective, it must be used repeatedly, whenever body defenses (memory B-cells and T-cells) are depleted. So far no explanation has been given for the difference between natural immunity and artificially acquired immunity.

Why is it Hazardous to Vaccinate an Infant?

The antibodies are better referred to as immunoglobins for the present discussion. Although the two terms

are equivalent, it is generally easier to refer to antibodies as antibodies when discussing the antigen/antibody reaction, and as immunoglobins when discussing the classification system.

The immunoglobins can be separated into five groups (the abbreviation Ig is used for immunoglobin): IgG, IgE, IgA, IgM, and IgD. IgA and IgE are found in secretions from tear ducts of the eyes, and in other mucous secretions of the body. IgA is part of the non-specific response system, as it will attack most microbes, and is not specific to any single microbe. IgE mediates the allergic reaction. IgE is secreted as a result of antigens such as proteins and high molecular weight carbohydrates, and air-born antigens like dust particles, pet dander, and pollen. IgE stimulates a part of the non-specific immune system known as complement, and also causes release of histamine, prostaglandins, thromboxanes, and leukotrienes. IgD and IgM are surface markers on many lymphocytes.

IgG is the most important group of immunoglobins in discussing immunity. IgG is the group of immunoglobins that are effective in conferring immunity against microorganisms (bacteria, viruses, and toxins). It is the IgG fraction of immunoglobins that is programmed to identify specific microbes. When an infant is born, its immune system is poorly developed, largely because it has been carried in a microbe-free environment in the womb. Therefore the IgG fraction is virtually unprogrammed in a newborn. It takes around two to three months or more for an infant's immune system to become completely functional. During this period of early infancy the infant is able to absorb IgG and IgA directly from its mother's milk. The IgG absorbed from mother's milk provides temporary immunity for the infant against the illnesses for which the mother is making antibodies. This is referred to as passive immunity.

One of the reasons young infants develop allergies to certain foods such as cow milk, yeasts, and wheat is because the proteins from these sources may be absorbed intact (just as antibodies are). The baby's immune system recognizes these proteins as foreign and mounts an immune response to them. This, of course causes activation of IgE and secretion of histamine, prostaglandins, thromboxanes, and leukotrienes – lifelong allergy may result. During this period, the injection of foreign organisms as is practiced in vaccination is an insult to the immature immune system. Early vaccination is held responsible for many of the adverse effects of various vaccines. There can be little question that thousands of infants have been irreversibly harmed by early vaccinations.

"So far no explanation has been given for the difference between natural immunity and artificially acquired immunity."

There are various ways to define infancy. An immunologically relevant definition should indicate infancy as that time during which a baby is able to absorb intact protein and continues to depend on IgE from mother's milk. For some infants this period may be as short as two months, and for others as long as six months.

Infancy might alternately be defined as that period during which a baby is unable to mount an appropriate immune response. There is little information on this. However, vaccines should be **carefully avoided during the first eight to twelve weeks of extra-uterine life** unless there is a very important reason for their use. I am inclined to believe that no vaccination should be given during the first 3 to 6 months of extra uterine life. Due to individual variation, good judgment would dictate that no mass vaccination program should be initiated during the critical period of at least 12 weeks of extra uterine life, and even then, great caution should be exercised.

Why Should Hepatitis B Vaccination Not Be Given To Infants (unless the mother is a carrier of the virus)?

Hepatitis B is the first vaccine to be administered to an infant – given in the hospital shortly after birth! Do you wonder why it is so important to give this vaccine so quickly? The reason is simple, the Centers for Disease Control (CDC) has mandated it. In surveys in the 1990s, 87 percent of the pediatricians and family doctors surveyed said they did not believe the vaccine to be necessary. Refer to Neil Z. Miller, *Vaccines, Are They Really Safe & Effective?* New Atlantean Press, Santa Fe, New Mexico, 2003.

Stephanie Cave, in her book, *What Your Doctor May Not Tell You About Children's Vaccinations* (Warner Books, New York and Boston, 2001) provides the following discussion.

"Every day in the United States, a majority of newborn infants are injected with a vaccine that was created for intravenous drug users, sexually promiscuous men and women, and mothers infected with hepatitis B. None of these infants fall into the first two categories, and less than 1 percent are born to those who fall into the third. Yet the practice of giving hepatitis B vaccine, a compound that often contains toxic substances such as aluminum and allergens like baker's yeast, to infants within hours of their birth continues. (p. 107) . . .

"Of all the vaccines on the market, the one that seems to be the most controversial is hepatitis B, for several reasons:

- It is the first vaccine most children receive, often on the first day of life.
- It is for a disease very few infants are exposed to unless they are born to mothers who are infected with hepatitis B.
- It is the first genetically engineered vaccine.
- Tens of thousands of adverse effects, some of them very serious, including death, have been reported by parents." (page 108)

Dr. Cave's book contains an entire chapter devoted to the hepatitis B vaccine. It is detailed in regard to adverse effects of the hepatitis B vaccine, and is well-documented. In order to decide whether an infant should be given the hepatitis B vaccine or not, pregnant mothers should have themselves tested to determine if they are carriers of the hepatitis B virus. **If an expecting mother is not a hepatitis B carrier, this vaccination should not be given to the infant**.

Polio Vaccines – Boon or Hazard?

The amount of harm done by ill-conceived vaccination programs, unfortunately, probably far outweighs any benefit that might have been gained. Let us consider the polio vaccine as an example. Although widespread vaccination during a polio epidemic may help control the epidemic, the polio vaccine has **caused unimaginable harm by introducing deadly monkey viruses into countless millions of unsuspecting victims**. It is well-documented that polio vaccines contaminated with **simian immunodeficiency virus (SIV)** introduced this virus into humans. Once within humans the virus underwent changes that resulted in the **human immunodeficiency virus (HIV)**: some strains of HIV are indistinguishable from SIV found in polio vaccines. Thus it seems very possible that contaminated polio vaccines actually **initiated the worldwide AIDS epidemic (pandemic)**. Refer to Hooper, E., *The River: A Journey to the Source of HIV and AIDS*. Little Brown and Co., Boston, New York, London, 2000.

In addition, polio vaccines have introduced a monkey virus (simian virus-40; SV-40) that causes cancer in humans and is transmitted by sexual contact, as well as from mother to offspring. SV-40 is now found in countless millions of people, and is found in a very large number of various kinds of cancer. **It is very possible that SV-40 is, or will soon become, the most common cause of human cancer!**

"After reviewing . . . infant and childhood vaccinations, I am convinced that no topic is of greater importance to human health."

As well, polio vaccines are actually documented to be the **primary cause of polio in countries where polio is uncommon**. One of the reasons that the polio vaccine developed by Jonas Salk in the 1950s was replaced by the oral Sabine vaccine during the 1960s is because the Salk vaccine was causing polio in a certain number of vaccinated people. Then, again, in the year 2000, the injectable (Salk) polio vaccine replaced the oral form, for the same reason! The oral form is especially dangerous in spreading polio because the live polio virus is used, and the virus can remain in the throat for one or two weeks, and in the feces for up to two months. Thus, people who take the oral live-virus Sabine vaccine may become vectors for spread of the disease.

In 1976, Dr. Jonas Salk testified that the live-virus oral polio vaccine was the principal if not the sole cause of all reported polio cases in the United States since 1961. In 1992, the Centers for Disease Control and Prevention (CDC) published an admission that the live-virus vaccine had become the dominant cause of polio in the United States, and recommended returning to the injectable dead-virus Salk vaccine.

Both vaccines are grown in monkey kidneys in the United States, and batches of both vaccines have been demonstrated to be contaminated with several monkey viruses, including SIV and SV-40. The injectable vaccine is more likely to introduce monkey viruses like SIV into humans because SIV, like HIV, is destroyed by oral and gastric secretions.

In Canada, the polio vaccine is produced in human fetal tissue, so the problem of contamination with monkey viruses does not exist in the Canadian-produced vaccine. Still, it would probably be wise for everyone to refuse any variation of the polio vaccine unless there is a polio epidemic.

A discussion of the pertussis (whooping cough) vaccine as a cause of illness will be presented in the next installment of this series.

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What Every Parent Should Know About Infant and Childhood Vaccinations

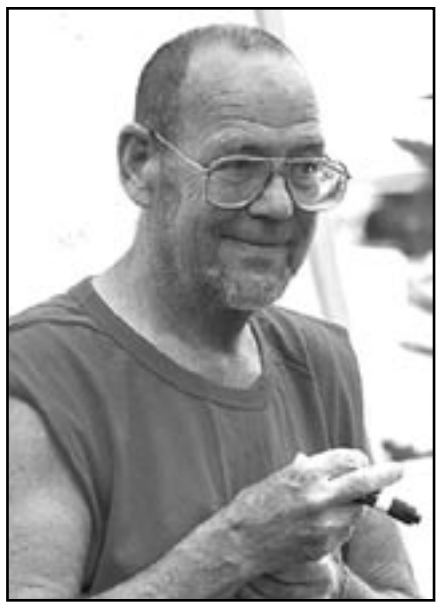
Part 2: Some Side Effects of Vaccination Procedures

Jym Moon, PhD, FACN, CNS

Introduction

The first article in this series (*Macrobiotics Today*, January/February 2005) provided background information regarding the history of vaccination and how the immune system functions. It was suggested that, due to multiple hazardous side effects, newborns should not be vaccinated, except under rare circumstances such as when the mother is hepatitis B positive, in which case the hepatitis B vaccine is indicated. The two most hazardous infant and childhood vaccines, hepatitis B vaccine (HPV) and oral polio vaccine (OPV), were discussed. An error appeared regarding the two polio vaccines: It is believed to be the oral polio vaccine (live-virus vaccine) that has been associated with transmittance of the simian immunodeficiency virus (SIV) to humans.

The present article will discuss childhood vaccination schedules, different kinds of bacterial and viral vaccines, and side effects of vaccination procedures. The third and final article will deal with the illnesses vaccines are intended to prevent and current trends in vaccination procedures. Perhaps the best online



vaccine information source is the National Vaccination Information Center, *http://www.909shot.com*. Virtually all information necessary for making a decision regarding childhood vaccinations can be found at that site. Another important online source is *http://www.thinktwice.com*.

Side Effects of Infant and Childhood Vaccinations

The major debilitating side effects observed for infant and childhood vaccinations include juvenile onset diabetes, autism, asthma, immune system dysfunction, seizures, encephalitis/encephalopathy, and death. As well, many less severe reactions such as developing the illness which the vaccine is supposed to prevent, head ache, inflammation, uncontrollable crying bouts, and fever are well known. Unfortunately, due to incomplete reporting to the Vaccine Adverse Effects Reporting System (VAERS), as well as control and censorship exercised by the medical-industrial complex, it is not currently possible to accurately estimate the frequency of occurrence any of these side effects.

As indicated in Part I, there are currently ten mandatory infant and childhood vaccines, each of which will be administered in various combinations several times to each child by the time the child is 4 to 6 years old. These vaccines are: hepatitis B, polio, diphtheria, tetanus, pertussis (whooping cough), measles, mumps, rubella (German measles), chicken pox (varicella-zoster), and Hib (*Haemophilus influenzae* b). Generally, diphtheria, tetanus and pertussis (DPT), and measles, mumps and

Table 1. Approximate Schedule of Childhood Immunizations. *

Vaccine	birth	2 mo	4 mo	6 mo	12 mo	4-6 yr
HBV (Hepatitis B)	X	X		X		
DPT (diphtheria, tetanus, pertussis)		X	X	X	X	X
Chicken pox (varicella zoster)					X	
OPV (oral polio vaccine)		X	X	X		
MMR (measles, mumps, rubella)					X	X
Hib-conjugate vaccine (Haemophilus influenzae b)		X	X	X		

*Taken from *Microbiology. An Introduction*. Tortora, G.J., Funke, B.R. and Case, C.L., Addison Wesley Longman, Inc., Sixth Edition, 1998, p. 487.

rubella (MMR) are given as combination vaccines, as indicated in Table 1, which provides a sample of the approximate scheduling of these vaccinations. Scheduling may vary from state to state and country to country, and for different individual situations. The oral polio vaccine has generally been replaced in the United States by the injected vaccine, but the schedule is still similar.

What Kinds of Microbes are Vaccines Produced to Protect Against?

Before we discuss the major side effects of the various vaccines, it is valuable to review some of the information regarding the kinds of vaccines that are produced.

There are two major classes of microbes for which vaccines are produced: 1. bacteria and 2. viruses. Among the vaccines listed in the table above, anti-bacterial vaccines include diphtheria, pertussis (whooping cough), tetanus, and *Haemophilus influenzae* type b (which causes meningitis and other symptoms, not influenza, as the name implies. Influenza is caused by a virus). Anti-viral vaccines include measles, mumps, rubella (German measles), chicken pox, polio, and hepatitis B.

In order to appreciate some of the various side effects of the vaccines that are produced to act against these two types of microbes, it is valuable to have some information regarding how these microbes produce disease. This will also help in understanding why anti-viral vaccines are able to cause childhood onset diabetes (Type 1 diabetes).

How do Bacteria Produce Disease?

In general bacteria do not directly produce disease. Instead, some bacteria secrete toxins which cause the disease symptoms; these are referred to as gram positive bacteria, due to certain staining characteristics. Other bacteria are killed by the body's defense system which causes them to release a toxin from the cell membrane that causes the disease symptoms; these are referred to as gram negative bacteria.

Vaccines used against gram positive bacteria (those that produce a toxin that causes the disease symptoms) use the purified toxin. In this case our bodies produce antibodies that recognize the toxin produced by the bacterium. (Anti-gram positive vaccines may also use inactivated bacteria, but none of the vaccines we are discussing fall in this category. Inactivated bacterial vaccines include those for pneumococcal pneumonia and cholera.)

Vaccines used against gram negative bacteria employ fragments of the bacterium, usually polysaccharide fragments of the cell wall. In this case, our bodies produce antibodies that recognize the bacterium itself (actually the cell wall of the bacterium).

How do Viruses Produce Disease?

Viruses are unable to reproduce outside a living host. For this reason there is some question as to whether viruses are living organisms or not. Some scientists think they are and others think they are not. Viruses are composed of either DNA or RNA, and may have a protein or glycoprotein coating. Viruses must enter cells in the body, and once within the cell they commandeer the cell's reproductive machinery to begin to reproduce.

DNA is mandatory for replication of a virus, as it is for any living cell. Therefore, if the virus is an RNA virus, the invaded cell first makes viral DNA from the RNA and this allows the virus to replicate. If the virus is a DNA virus, it can be directly replicated upon entry into a cell. In this regard, viruses can be quite dangerous since portions of the viral DNA can attach to the host cell DNA causing a DNA adduct. This has the effect of altering the host cell's hereditary structure.

Some of the newer anti-viral vaccines that are produced by genetic engineering could become very

dangerous in this regard – they could result in a DNA adduct that would change the very nature of humans. Viral DNA adducts are known that cause cancer. However, my assertion that a genetically engineered viral vaccine that causes a DNA adduct could change the physical constitution of humans is presently hypothetical.

However, the assertion is supported by observations regarding genetically engineered corn, soybeans, and other crop plants. "Roundup-Ready" corn is produced by inserting a gene into corn DNA that will allow the corn to metabolize the herbicide, Roundup. Thus Roundup can be used to kill all of the plants in an area while the Roundup-ready corn will grow because it can detoxify the Roundup. Since the introduction of Roundup-ready corn in North America, this genetically modified corn has spread and is found throughout the world, including remote places where Roundup-ready corn has never been grown.

A similar phenomenon could happen with human DNA that has a viral DNA adduct. Reproduction could result in transmission of the mutant DNA. Think of the consequences of a world-wide campaign to vaccinate everyone with a genetically engineered viral vaccine that produces a DNA adduct that causes mental retardation. Sounds like science fiction, but science fiction has a way of becoming science fact. The reason I mention this here is in order to emphasize how very important it is to avoid allowing your child to become a victim of any new experimental genetically engineered viral vaccine. **Be aware and do not allow any new viral vaccine to be used on your child.**

How Many Types of Anti-viral Vaccines are There?

Anti-viral vaccines are of three major types:

1. **Attenuated whole-virus vaccines**. Viruses tend to become less virulent if they are grown in culture for a long period of time or if they are passed through several generations of growth cycle. The oral (Sabine) polio vaccine is an example of an attenuated virus vaccine. Since the virus is not "killed", and since it is grown in monkey kidney, the oral polio vaccine has been held responsible for conveying to humans the SV-40 virus that causes cancer and the SIV virus that has mutated to give rise to the HIV virus that causes AIDS.

2. **Inactivated or "killed" virus vaccines.** The quotation marks here are used to indicate that viruses may not even be living organisms, so how can we refer to them as being "killed"? These are vaccines made from viruses that have been treated by a chemical that causes them to be unable to penetrate a cell, and unable to reproduce if they should enter a cell. Formalin and phenol are two chemicals that are used to produce "killed"-virus vaccines. The Saulk polio vaccine, which is injected rather than taken orally, is an example of a "killed" viral vaccine. It is generally assumed (but not proven) that any extraneous monkey virus that may be present in the vaccine is also "killed" by treating with the chemical used to kill the vaccine virus.

". . . due to imcomplete reporting . . . as well as control and censorship . . . it is not currently possible to accurately estimate the frequency of occurrence of any of these side effects."

3. **Subunit vaccines.** An antigenic fragment of the virus is used. The various subunit vaccines are primarily genetically engineered vaccines, and will be discussed at greater length in the final section of the next article.

What is the Mechanism by which Anti-viral Vaccines Cause Type 1 Diabetes?

One reason for providing this rather technical discussion of the differences between anti-bacterial and anti-viral vaccines at this point is because one potential side-effect of anti-viral vaccines is Type 1 diabetes (juvenile-onset diabetes). This may be a side effect of any anti-viral vaccine, even "killed" virus vaccines.

Viral infections often are associated with the onset of Type 1 diabetes. In particular, the mumps virus, Coxsackie virus, and hepatitis C virus may lodge in the insulin-producing cells of the pancreas (beta-cells) where they stimulate the autoimmune destruction of the beta cells. The body recognizes something foreign in the beta-cells, and makes antibodies against the beta-cells in an effort to destroy the foreign organism lodged there. This results in destruction of the beta-cells. Observations on the development of Type 1 diabetes subsequent to vaccination with anti-viral vaccines indicate that these vaccines may behave similarly. The triple virus vaccine, MMR (measles, mumps, rubella) may be especially obnoxious in this regard. There is no cure for Type 1 diabetes. For additional information regarding viral vaccines as a cause of diabetes refer to the internet site, *www.909shot.com/Diseases/Diabetes.*

Type 1 diabetes may also be induced by the Hib (*Haemophilus influenzae* b) vaccine, which is a bacterial vaccine. Although this information is not conclusive the vaccine has been demonstrated to induce

autoantibodies to pancreatic beta cells, and to stimulate production of autoantibodies in individuals who are already autoantibody positive [*J. Pediatr Endocrinol Metab* 2003, Apr-May; 16(4): 495-508].

Can Infant Vaccination Result in Autism?

Autism is a type of neurological damage that results in a type of mental retardation frequently characterized by unresponsiveness and inability of expression. Frequently autistic children speak with a very limited vocabulary if they speak at all. First described in 1943, by the 1950s and 1960s hundreds of cases were known, and by the late 1980s over 4500 new cases were occurring each year in the U.S. alone. The first cases of autism were described when the pertussis (whooping cough) vaccine was becoming increasingly available. One characteristic of the pertussis vaccine is its affinity for the brain and central nervous system. Pertussis bacteria have been used in a variety of experiments to provoke brain inflammation (encephalitis) and brain deterioration (encephalopathy) in experimental animals. Brain deterioration has been documented following pertussis vaccination in some children. For an early review see *A Shot in the Dark*, Coulter, H.L. and Fisher, B.L., Avery Press, 1991.

We will return to the roles of the pertussis vaccine and mercury in vaccines in the next section, but let us first follow the interesting historical developments that have resulted in numerous epidemiological studies that have denied any relationship between the MMR vaccine and autism.

In 1963 a vaccine for measles was licensed; in 1968 the mumps vaccine was developed; in 1969 the rubella (German measles) vaccine was licensed. Finally, in 1979 the combined MMR (measles, mumps, rubella) vaccine was added to routine childhood vaccination schedules. Within a few years after that there was a sharp increase in autism, and several papers appeared linking the MMR vaccine to autism.

Unfortunately, these reports linking MMR to autism resulted in a huge effort to disprove this relationship – and the true link between pertussis vaccine and mercury in vaccines as causes of brain damage and autism were lost. This also overshadowed the other hazards of the MMR vaccine, which include arthritis, meningitis, encephalitis, polyneuritis, anaphylaxis, and death.

In 2002 a now famous epidemiological study involving more than half a million Danish children concluded: "This study provides strong evidence against the hypothesis that MMR vaccination causes autism." [*N. Engl. J. Med*. 2002, Nov 7; 347(19): 62]. Another much cited study, "MMR vaccination and pervasive developmental disorders: a case-control study" concluded: "Our findings suggest that MMR vaccination is not associated with an increased risk of pervasive developmental disorders." [*Lancet* 2004, Sep 11; 364(9438): 963-9]. And a comprehensive literature search conducted by researchers at the University of Michigan Health System concluded: "Based upon the current literature, it appears that there is no relationship between MMR vaccination and the development of autism." *[Ann Pharmacother*. 2004, Jul-Aug; 38(7-8): 1297-300].

". . . avoid allowing your child to become a victim of any new experimental genetically engineered viral vaccine."

So there you have it. MMR vaccination is not related, according to the best epidemiological studies to date, to the increase in autism that has occurred since the 1980s when MMR was added to the childhood vaccination schedule. Why have these studies failed to find a relationship if one does exist? We cannot currently answer that question, but we should ask why these studies have focused so intently on MMR when it is the **pertussis vaccine and mercury in vaccines that have caused most of the brain damage and autism resulting from vaccination programs?** Perhaps the combined effect of MMR with pertussis (actually with DPT) should have been examined. This is a very complicated issue, and it becomes increasingly complex as more and more vaccines are discovered and may be added to childhood vaccination schedules. None of the cited studies demonstrate safety of the MMR vaccine; they have, in fact, avoided any attempt to show that the MMR vaccine is safe for children.

As stated earlier, MMR vaccination is believed to induce autoanitbodies to the beta-cells of the pancreas, causing the irreversible destruction of these cells resulting in Type 1 diabetes. The epidemiological studies cited above would be more useful if they had attempted to study the association of MMR with the whole gamut of disease conditions that MMR is suspected of causing! But such is the limited nature of epidemiology.

Additional information in this regard can be found at *www.thinktwice.com* and *www.909shot.com*.

What is the Evidence that Thimerosal (Mercury) in Vaccines Causes Serious Neurological Disorders, Including Autism?

Mercury is a cumulative neurological poison**.** Once mercury has entered the brain it is very difficult

to remove it. In fact, as far as can be told at present, virtually all of the mercury that enters the brain will remain there indefinitely. And yet, some vaccines continue to contain thimerosal (an ethyl mercury compound). Why? Because health authorities that direct vaccination programs, in particular the Centers for Disease Control and Prevention (CDC) deny that mercury in vaccines is a problem. A CDC fact sheet on vaccines states, "there is no evidence that children have been harmed by the amount of mercury found in vaccines that contain thimerosal," and "mercury exposure from vaccines containing thimerosal is within the guidelines established by Federal agencies."

"Unfortunately, these reports linking MMR to autism resulted in a huge effort to disprove this relationship – and the true link between pertussis vaccine and mercury in vaccines as causes of brain damage and autism were lost. "

Let me refer to a recent study, "A comparative evaluation of the effects of MMR immunization and mercury dose from thimerosal-containing vaccines on the population prevalence of autism." [Geier, DA and Geier MR. *Med Sci Monit*. 2004, Mar; 10(3): PI33-9]. Conclusions: "These studies have shown that there is biological plausibility and epidemiological evidence showing a direct relationship between increasing doses of mercury from thimerosal-containing vaccines and neurological disorders, and measles-containing vaccines and serious neurological disorders. It is recommended that thimerosal be removed from all vaccines, and additional research be undertaken to produce a MMR vaccine with an improved safety profile."

The FDA Modernization Act of 1997 made it necessary for mercury content of all drugs to be stated. More current efforts by the FDA have been directed toward elimination of mercury from all vaccines, but that still has not been accomplished. Mercury content of some of the vaccines licensed in the US can be found at *www.immunize.org*.

The Pertussis (Whooping Cough) Vaccine Causes Autism and SIDS

The pertussis vaccine was the first vaccine to come under fire with the publication of the book, "*A Shot in the Dark: Why the P in the DPT Vaccination may be Hazardous to Your Child's Health*." by Harris L. Coulter and Barbara Loe Fisher (Avery Publishing, 1991). In addition to having written this very important book, Barbara Loe Fisher maintains the web site previously mentioned, *www.909shot.com*. The book lists some of the numerous "side-effects" of the pertussis vaccine which include: fever as high as 106 degrees, pain, swelling, diarrhea, projectile vomiting, excessive sleeplessness, high pitched screaming, inconsolable crying bouts, seizures, convulsions, collapse, shock, breathing problems, brain damage including autism, and sudden infant death syndrome (SIDS). Babies die of SIDS at a rate seven times greater than normal within three days after getting a pertussis shot. Refer to *Vaccines. Are They Really Safe & Effective?* by Neil Z. Miller, New Atlantean Press, 2003, for a more complete discussion.

The purpose of the present article is to update information contained in the source books that are somewhat out of date. The information in those books is still valid, but updating is necessary. For this purpose I have chosen a recent article to update the pertussis vaccine issue: "An evaluation of serious neurological disorders following immunization: a comparison of whole-cell pertussis and acellular pertussis vaccines." [Geier, DA and Geier MR, *Brain Dev*. 2004, Aug; 26(5): 296-300]. This article is important because it compares the two pertussis vaccines available today.

Background: Briefly, in 1981, Japan developed a new pertussis vaccine that used only a portion of the cell wall of the bacterium that causes whooping cough. This vaccine is referred to as acellular pertussis vaccine, and it is claimed to be less toxic than the whole-cell vaccine. Up to 1981, a "killed" whole-cell bacterium was universally used. The whole-cell bacterium is still in use in the United States and elsewhere, although attempts have been made in the United States to change to the acellular vaccine. Deaths and other side effects occur with the acellular vaccine as well as with the whole-cell type. However, as this article indicates, the acellular vaccine does have fewer side effects. Side effects of the acellular vaccine are documented at *www.thinktwice.com*.

"Babies die of SIDS at a rate seven times greater than normal within three days after getting a pertussis shot."

Geier and Geier analyzed the data maintained by the Vaccine Adverse Events Reporting System (VAERS).

They examined emergency department visits, life-threatening reactions, hospitalizations, disabilities, deaths, seizures, infantile spasms, encephalitis/encephalopathy, autism, sudden infant death syndrome (SIDS), and speech disorders reported with an initial onset of symptoms within 3 days following whole-cell pertussis and acellular pertussis vaccines among those residing in the United States from 1997 to 1999. Statistical increases were observed for all events examined following whole-cell pertussis vaccination in comparison to acellular pertussis vaccination, excepting cerebellar ataxia. It is pointed out that the whole-cell pertussis vaccines contain 3000 different proteins, including several known neurotoxins.

Evidently a switch to the acellular pertussis vaccine is indicated, and presently only a small percentage of whole-cell pertussis vaccines are in use in the United States. However, it must be acknowledged that even that switch has not resulted in a safe vaccine. We will discuss the pertussis vaccine at greater length in the third and final article of this series.

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Silence

Though words have their time and their place
Our silence should be what we most revere
There are times when what's said should be erased
Much better if those words disappeared

The calm that's ere created by our silence
A strength for all to build upon and grow
All our idle chatter we needn't dispense
For silence is God's voice here below

Those who always chatter waste God's energy
Through their ignorance all that Light is lost
Silence is the keynote to all harmony
Tapping vistas of Light, yet uncrossed

Too many spoken words limit power
Let points be made with meager words or less
Silence helps attunement to then flower
Touching hearts with Heaven's sweet caress

As the space that silence creates grows fatter
If attention is not centered on our God
It opens the floodgates to all carnal chatter
Over delicate Light rays it runs roughshod

Ask the pearl shell what creates its content
What pray tell does make you so disposed?
The response received is truly heaven sent
It's silence you see, for years my lips were closed

Multi-Instrumentalist and macrobiotic enthusiast Todd Green performs concerts and clinics around the United States and Canada on over 30 instruments, along with recording CDs, writing poetry, and creating music for film. Visit him at www.toddgreen.com.

What Every Parent Should Know About Infant and Childhood Vacinations

Part 3: A Close Look at Selected Vaccines
Part 4: Herd Immunity and Utilitarian Vaccines
Part 5: Current Trends in Vaccines and Vaccination Procedures

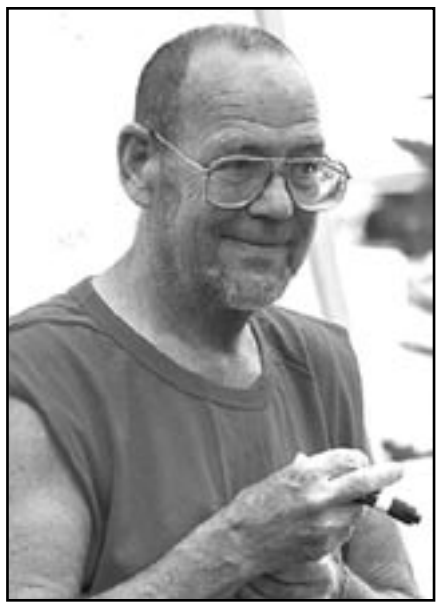
Jym Moon, PhD, FACN, CNS

Introduction

The first article in this series (*Macrobiotics Today,* January/February 2005) provided background information regarding the history of vaccination and how the immune system functions. Part 2 *(Macrobiotics Today,* May/June 2005) dealt with the most serious side effects of vaccines in general. The present article contains Parts 3, 4, 5, and Conclusions.

Part 3 will examine in greater detail some of the vaccines routinely used during infancy and childhood. The two major questions to be answered are: 1.What disease is the vaccine intended to prevent? 2. What is the evidence that the vaccine actually prevents this disease?

The following three vaccines are discussed: 1. Pertussis (whooping cough). 2. Varicella (chicken pox). 3. Hib (*Haemophilus influenzae* type B). The pertussis vaccine will be discussed because the whole-cell pertussis vaccine is the most dangerous of the remaining mandatory childhood vaccines. The varicella and Hib vaccines are discussed since they are given as individual vaccines, not in combination with other vaccines (although they may be given at the same time that other vaccines are given).



Jym Moon, PhD

Part 4 will discuss the mumps and rubella vaccines, two of the three vaccines that are given to protect people other than the person who receives the vaccine. The third vaccine in this category is the hepatitis B vaccine, which was discussed in Part 1, and will be discussed further in Part 5 as the only recombinant antigen vaccine currently used in the mandatory childhood vaccine schedule.

The remaining three mandatory childhood vaccines, measles, diphtheria, and tetanus are complicated by ordinarily being delivered in combination (as MMR and DPT), and therefore require more discussion than can be provided in this brief article.

Refer to the following books and web sites for detailed discussions of the two triple vaccines, MMR and DTP:

1) *Vaccines. Are They Really Safe and Effective,* Miller, NZ, New Atlantean Press, 2003.
2) *What Your Doctor May Not Tell You About Children's Vaccinations,* Cave, S, MD, FAAFP, with Mitchell, D, Warner Books, 2001.
3) *Immunizations: History, Ethics, Law and Health,* Diodati, CJM, Ontario, Canada: Integral Aspects, 1999.
4) *www.909shot.com*
5) *www.thinktwice.com*

Part 5 will discuss the newer combination vaccines, and the hepatitis B vaccine, which is currently the only mandatory childhood vaccine

produced by genetic engineering.

Part 3: A Close Look at Selected Vaccines

We now examine the pertussis, varicella, and Hib vaccines, and the diseases they are intended to prevent.

A. The Pertussis (P) and Acellular Pertussis (aP) Vaccines

Pertussis is another name for whooping cough. Whooping cough is a highly contagious disease caused by a bacterium, *Bordetella pertussis*, from which the name of the vaccine is derived. The bacterium is found in the nose, throat, and mouth of infected individuals and is transferred to others through coughing, speaking, and sneezing. Natural contraction of the disease usually confers permanent immunity although some individuals can develop the illness in milder form a second time. Vaccinated immunity wears off in later years so individuals who have been vaccinated can develop the disease after several years duration.

The disease gets its name from the high-pitched "whooping" noise made when a victim tries to catch his breath after severe coughing attacks. The illness lasts for several months and goes through successive stages during its development. There is usually no fever, runny nose, or sore throat along with the cough, so parents often think it is an allergic reaction. Children up to one year of age are at highest risk from the disease because they have narrow air passages that are easily blocked by mucus. Hospitalization of infants is frequently indicated. Treatment with erythromycin or other antibiotic may help to eliminate the infection, but treatment is not always effective. Children need to be watched very carefully for secondary infections such as pneumonia, ear infections, and bronchitis. Whooping cough is a cyclical disease and naturally increases in countries around the world every three or four years.

The whole-cell pertussis vaccine was developed in 1906; the diphtheria vaccine in the 1920s; and the tetanus vaccine in 1933. In 1946 DTP (diphtheria, tetanus, pertussis), became the first combination vaccine to be used. The acellular pertussis vaccine was developed in 1981, and circa 1996 DTaP (diphtheria, tetanus, acellular pertussis) was recommended to replace DTP in the United States due to the many well-documented toxic reactions to the cellular form of the pertussis vaccine.

It is an unfortunate fact that the number of pertussis cases in the United States is currently increasing in spite of the fact that a greater number of children are being vaccinated. The following discussion is taken from *What Your Doctor May Not Tell You About Children's Vaccinations*. (Cave, S, MD, FAAFP with Mitchell, D., Warner Books, 2001, p. 140):

"It is an unfortunate fact that the number of pertussis cases in the United States is currently increasing in spite of the fact that a greater number of children are being vaccinated ."

"From a high of 265,269 cases of whooping cough reported in the United States in 1934, the figure dropped to an all-time low of 1,010 cases in 1970. But since the early 1980s the number of reported cases has been increasing steadily. In 1993, for example, 6,586 cases were reported, more than in any year since 1976, and 6,279 cases were reported in 1998. Some experts dispute these figures, however, saying that only 10 to 20 percent of all cases are being reported. Regardless of the accuracy of the total number of cases, the largest increase appears to be in people five years of age and older, but infants still have the highest risk for the disease."

How effective is the pertussis vaccine? A study published in the *Journal of Pediatrics* indicates that the pertussis vaccine may be only 40 to 45 percent effective. (Halpern, et al. "Persistence of Pertussis in an Immunized Population: Results of the Nova Scotia Enhanced Pertussis Surveillance Program," *J Pediat*, Nov. 1989, 686-693.) In a pertussis outbreak in Ohio in 1993, 82 percent of the younger children who developed the disease had received regular doses of the vaccine. (Christie, DC, et al., "The 1993 epidemic of pertussis in Cincinnati: resurgence of disease in a highly immunized population of children," *N Engl J Med*, July 7, 1994, 16-20.)

At this time, we can only wonder if the limited scope of immunity conferred by the pertussis vaccine (in both cellular and acellular forms) is worth the hazard of its many side effects?

B. The Varicella (Chicken Pox) Vaccine

Varicella, also known as chicken pox, is a common childhood disease caused by the varicella-zoster virus, a member of the herpes family of viruses. Most authorities agree that chicken pox is a relatively innocuous childhood disease. The virus is spread from person to person through airborne droplets sprayed into the air by coughing, sneezing, speaking, or by contact with the fluid contained in the blisters that appear on the skin as part of the disease. Symptoms include skin blisters, fever, runny nose, and sore throat.

About 50 percent of all chicken pox cases occur in children between ages five and nine, with fewer cases

in younger children. Most children who develop chicken pox recover completely in a week or two and are permanently immune to the disease. Children with weakened immune systems such as those with leukemia or cancer are more sensitive to chicken pox, and may develop complications including brain inflammation and death. Chicken pox can be more dangerous to adults than to children, even causing death. Pregnant women who get chicken pox during their first or early second trimester risk giving birth to a child with birth defects.

Once in the body, the virus retreats into nerve cells near the base of the spine, and can erupt in later life causing a condition known as shingles, or herpes zoster. Americans have one chance in five of getting shingles, making shingles a fairly common disease. Prior to widespread use of varicella vaccine shingles was confined to people over fifty years old, but since the introduction of the vaccine, shingles has been reported in children.

The varicella vaccine was developed in Japan in 1972 from an attenuated virus. Merk Laboratories purchased rites to the vaccine, and in 1993 submitted results of its safety and efficacy tests to the FDA, which licensed it in 1995. It appears that a major factor resulting in addition of the varicella vaccine to the "mandatory" list in many states has been one of economics, not health. It was calculated that large amounts of money would be "saved" by preventing chicken pox since mothers and fathers were prone to stay at home to care for children with chicken pox.

Children who are vaccinated with the varicella vaccine are capable of spreading the virus to close contacts. About one in ten vaccinated children develop "breakthrough disease" following exposure to chicken pox. As with people who develop chicken pox naturally, the vaccine virus lodges in nerve cells and can cause shingles in later life.

The FDA and CDC reported that between March 1995 and July 1998, a total of 6,574 adverse events related to the vaccine had been reported to the Vaccine Adverse Events Reporting System (VAERS) (*JAMA* 284:10, Sept.13, 2000: 1271-79). This represented 67.5 adverse reaction reports per 100,000 doses of the vaccine. Since it is believed that only around 10 percent of all adverse reactions are reported, the total number of adverse reactions was probably far in excess of the number reported. Adverse reactions included neurological disorders, immune system damage, blood disorders, brain inflammation, seizures, and death.

"Since it is believed that only around 10 percent of all adverse reactions are reported, the total number of adverse reactions was probably far in excess of the number reported."

In his discussion of adverse reactions to the varicella vaccine, Neil Z. Miller analyzed the data presented by the FDA and CDC (*Vaccines. Are they Really Safe & Effective?* New Atlantean Press, 2003, p 54):

"If we take the FDA analysis at face value, serious reactions to the chickenpox vaccine struck at a rate of four percent. This included victims in all age groups. However, children up to four years old had serious reactions at a rate of 6.3 percent; children up to two years old had serious reactions at a rate of 9.2 percent; and children vaccinated (by mistake) between birth and their first year of life had serious reactions at an astonishing rate of 14 percent!"

C. The Hib (*Haemophilus influenzae* B) Vaccine

The *Haemophilus influenzae* type B bacterium was initially isolated from victims of an influenza epidemic in 1892. It was at that time erroneously believed to be the causative agent of the influenza, and thus the designation, "influenzae." As we know now, influenza is caused by a virus (or a variety of viruses). After the mistake was recognized it was decided to let the name remain. The term *Haemophilus* refers to the fact that the microorganism requires factors in blood (haem) in order to grow. *Haemophilus influenzae* is medically referred to as Hib.

Hib is a gram-negative bacterium that is a common member of normal throat microbiota. It causes meningitis, pneumonia, epiglottitis (inflammation of the epiglottis), and otitis media (earaches). Hib-caused meningitis occurs mostly in children under age 4, especially at about 6 months when antibody protection provided by the mother weakens. Historically, Hib meningitis accounted for most of the cases of reported bacterial meningitis (45 percent), with a mortality of about 6 percent. Hib-induced epiglottis is a rapidly developing disease that can result in death within hours.

The first Hib vaccine reached the market around 1983, but that vaccine was ineffective in children younger than eighteen months. In 1987 a new form of the vaccine was developed that used a part of the polysaccharide from the cell wall of the microbe to which a protein was attached. This is known as a "conjugated vaccine," and Hib-conjugate was the first of the conjugated vaccines.

During the 1970s and 1980s there were an estimated 16,000 to 20,000 Hib infections per year in the United States. Meningitis occurred in about half of the cases; around 25 percent of Hib infections caused hearing loss, neurological problems, or pneumonia. Epiglottis occurred in around

15 percent of cases. The mortality rate was around four percent. After introduction of the Hib-conjugate vaccine the incidence of the disease among children 4 years and younger has declined by more than 98 percent. Currently, around 300 cases of the disease occur in the United States each year, most of them in children that have not been vaccinated. Vaccination is estimated to be more than 95 percent effective and only occasionally do vaccinated children develop the disease. In less developed countries, Hib infection remains a serious concern.

The CDC reports that up to 25 percent of children who get the Hib vaccine experience minor pain, redness, or swelling at the injection site. About 5 percent develop fever or irritability within a few hours of receiving the vaccination. Moderate to severe reactions are rare, but include high fever, behavioral changes, and serious allergic reactions. There is some evidence that Hib vaccination may cause Type 1 diabetes, but this cannot be confirmed at the present time.

The Hib vaccine seems to be relatively free from side effects whereas Hib infection can have very serious consequences. A parent must consider the circumstances and think carefully before rejecting this vaccine. A child should definitely receive the Hib vaccine if there have been any cases of Hib-induced meningitis in the area of residence.

Part 4. Herd Immunity and Utilitarian Vaccines

There are three vaccines that are given to prevent diseases in people other than the children who receive the vaccine. These are mumps, rubella, and hepatitis B vaccines. In the present section we will discuss mumps and rubella; hepatitis B is discussed in the section dealing with recombinant antigen vaccines.

The principle underlying the practice of vaccinating large numbers of people to prevent disease in a small number of at risk people is referred to as "herd immunity." The vaccines used in this fashion have been referred to by Catherine Diodati as "utilitarian vaccines." (*Immunization: History, Ethics, Law, and Health*, Ontario, Canada: Integral Aspects, 1999, pp 17, 108-10.)

Herd immunity is a well-known principle in immunology – if most of a population is immune to a particular disease, outbreaks of the disease will be limited to sporadic cases because there are not enough susceptible individuals to support the spread of epidemics. Thus, by vaccinating most of a population, including those who are not susceptible to a disease, the whole population (including those most susceptible) will be protected. From this, it should be clear why the term, "utilitarian vaccines" is appropriate nomenclature for these vaccines.

"The Hib vaccine seems to be relatively free from side effects . . . A parent must consider the circumstances and think carefully before rejecting this vaccine."

A. The Mumps Vaccine

Mumps is a contagious viral disease that usually occurs in childhood and early adolescence. It is spread through the air on droplets released from infected people when they sneeze, talk, or cough. The mumps virus can cause inflammation in various parts of the body, with the salivary glands in the mouth being most obvious. The pancreas, ovaries, and testes also may be affected.

In about 25 percent of males who get mumps, the virus affects one or both of the testis, causing a condition known as orchitis. In rare cases, the inflammation of the testis can damage the sperm and cause sterility.

The mumps vaccine currently available in the United States is a live-virus vaccine that is grown in aborted fetal tissue. The vaccine is available alone, in the MMR vaccine, and in a rubella-mumps combination. Each form contains the live attenuated virus plus human albumin, neomycin, and the stabilizers, sorbitol or gelatin. Children who are allergic to neomycin, albumin, or gelatin can suffer severe allergic reactions.

The mumps vaccine was developed to protect adult males in order to avoid the rare possibility that they might become sterile. The risk of sterility is very low among males who get mumps since the virus does not commonly affect the testis, and when it does, it usually affects only one testicle.

Since the mumps vaccine is designed to protect males, you may wonder why females are also vaccinated. The answer, of course, is that vaccinating girls reduces the chances that they will expose the males. The mumps vaccine is commonly administered in the MMR combination, so it is not possible to determine side effects of the mumps vaccine alone.

B. The Rubella Vaccine

Rubella is also known as German measles. Rubella is a viral disease that is spread, like mumps, through air on droplets released from infected people when they sneeze, talk, or cough. Although rubella is generally a mild disease for most people, it can be fatal or very damaging to a fetus. In a rubella outbreak in 1964-1965, 12.5 million Americans had the disease. About 11,000 pregnant women had spontaneous or therapeutic abortions and another 20,000 infants were born with disabilities, including mental retardation, deafness, heart

disease, cataracts, glaucoma, and blindness. When an infant is affected by its mother's rubella, the condition is known as congenital rubella syndrome (CRS).

CRS is most common among women who get rubella during their first twenty weeks of pregnancy. Various estimates indicate that from 20 percent to 25 percent to as high as 85 percent of infants born to mothers infected during the first twenty weeks of pregnancy get CRS.

Since rubella is a benign disease during childhood, why did the CDC target young children in the mass vaccination program that was initiated in 1969 and continues today? Characteristic of CDC thinking, the reason was to interrupt the spread of the virus and eliminate the risk of exposing pregnant women! Unfortunately, what happened as a result of this vaccination program is that there has been a shift in the age of people who get rubella, from young children to older children and adults.

Young children made up more than 75 percent of cases before 1969, by 1975 through 1977, people age fifteen years and older made up 62 percent of those with the disease. By shifting the disease from young children to older children and young adults, the vaccination program has apparently increased the risk for young pregnant women to develop rubella with possible CRS complications.

Part 5. Current Trends in Vaccines and Vaccination Procedures

This section will deal with two areas: 1) Combination vaccines, and 2) Recombinant antigen vaccines (one class of "genetically-engineered vaccines").

There will be no discussion of the new vaccines that are being developed, such as for anthrax, hepatitis A, pneumococcal disease, and meningococcal disease. Although these are important, this article is confined to vaccines currently mandated during infancy and childhood.

A. Combination Vaccines

Diphtheria, tetanus, whole-cell pertussis (DPT) was the first combination vaccine.

During the 1940s work was begun on a vaccine that was to contain vaccines for three separate vaccines for three bacterial diseases: diphtheria, tetanus, and pertussis. In 1946 the vaccine became available for general use. Some of the tragic consequences of that vaccine are now well-known. Eventually two of the three components of that vaccine had to be changed to less toxic forms. The whole-cell pertussis had to be exchanged for the acellular form, and the tetanus portion had to be exchanged for the newer tetanus toxoid. This triple combination continues being used in its modified form, although a complete change to the acellular pertussis still has not been completed, so some vaccines still contain the more toxic whole-cell form.

"Although rubella is generally a mild disease for most people, it can be fatal or very damaging to a fetus."

The controversial measles, mumps, rubella vaccine (MMR) was added in 1979.

The combined viral vaccine, measles, mumps, and rubella (MMR), was added to routine childhood vaccination schedules in 1979. MMR has been an extremely controversial vaccine, as thousands of mild to severe reactions, including autism and death, are believed to have resulted from its use. The official position of the CDC, the organization that regulates all vaccines, has been that MMR does not cause autism. CDC has not made a clear statement on the increased death rate among MMR-vaccinated infants.

Haemophilus influenzae type b, hepatitis B, measles, mumps, rubella, and varicella combination vaccine is on the waiting list.

With these two great "successes" in combined vaccines (DTP and MMR), the logical next step is to extend the combinations. Who knows, maybe it will soon be possible to prevent all infectious diseases of childhood with a single injection? With this grand goal in mind workers at Merck Research Laboratories have taken the next bold step: "Concomitant administration of a bivalent Haemophilus influenzae type b-hepatitis B vaccine, measles-mumps-rubella vaccine and varicella vaccine: safety, tolerability and immunogenicity," Hesley, TM, et al., Pediatr Infect Dis J. 2004, Mar; 23(3):240-5. The study involved 822 healthy 12- to 15-month-old children separated into two randomized groups, one of which received the combination and the other received the same vaccines, but with a 6 weeks time interval between receiving one set of vaccines and then another set. Their conclusion: "Concomitant administration of Comvax, M-M-RII, and VARIVAX at the 12- and 15-month clinic visit is one satisfactory way of delivering some of the multiple vaccines indicated during the second year of life."

It is difficult to imagine a more poorly conducted study to assess safety of this procedure – the authors used a huge 411 children in each group! That is not enough to draw any conclusion, but it would not be surprising if the CDC accepts that study and implements this new six-

vaccines-in-one vaccination regime.

<u>Hexavac</u> is already in use in France.

Here's a good one: "A liquid hexavalent combined vaccine against diphtheria, tetanus, pertussis, poliomyelitis, Haemophilus influenzae type B and hepatitis B: review of immunogenicity and safety." Mallet, E., et al., Vaccine. 2004 Mar 29; 22(11-12): 1343-57. The authors state, "To reduce the number of injections needed to comply with paediatric vaccination requirements, a liquid, hexavalent vaccine (DTaP-IPV-PRP-T-HBs; Hexavac; Aventis Pasteur MSD) has been developed for primary and booster vaccination of infants and toddlers… Hexavac provided immunity against six important childhood diseases with a single injection at each visit."

Two hexavalent vaccines are in use in Germany, with possible dire consequences.

The article I now cite is so recent that only the abstract is available – it appeared in Epub ahead of print, so page numbers are not available. "Sudden and unexpected deaths after the administration of hexavalent vaccines (diphtheria, tetanus, pertussis, poliomyelitis, hepatitis B, Haemophilus influenzae type b): is there a signal?" von Kries, R. et al. Eur J Pediatr. 2004, Dec 16; [Epub ahead of print]. "Deaths in temporal association with vaccination of hexavalent vaccines have been recently reported. The objective of this paper is to assess whether these temporal associations can be attributed to chance. . . . Conclusion: These findings based on spontaneous reporting do not prove a causal relationship between vaccination and sudden unexpected deaths. However, they constitute a signal for one of the two hexavalent vaccines which should prompt intensified surveillance for unexpected deaths after vaccination."

Enough said on combination vaccines. Others are on the way!

B. Recombinant Antigen Vaccines

In order to produce a recombinant antigen vaccine, a gene that produces an antigen first must be isolated from the pathogenic organism. (See Part I for description of antigens and pathogens). Once this gene has been isolated, it is cloned in bacterial cells, yeast, or mammalian cells using recombinant DNA technology.

The first recombinant antigen vaccine approved for human use was the hepatitis B vaccine. This vaccine was developed by cloning the gene for the major surface antigen of hepatitis B virus in yeast cells. The recombinant yeast cells are grown in large fermenters and the antigen to the hepatitis B virus accumulates intracellularly in the yeast cells. The yeast cells are then harvested and disrupted by high pressure causing the release of the hepatitis B virus antigen. This antigen, when injected into humans induces the production of antibodies that are supposed to protect against hepatitis B infection.

"MMR has been an extremely controversial vaccine, as thousands of mild to sever reactions, including autism and death, are believed to have resulted from its use."

There is currently a world-wide effort to vaccinate every infant with the hepatitis B vaccine. Here is an interesting article that is representative of this effort: "An ethical argument in favour of routine hepatitis B vaccination in very low-incidence countries," Dawson AJ, Lancet Infect Dis. 2005 Feb;5(2):120-5. Here is the "ethical" argument:

"Hepatitis B is a potentially life-threatening viral infection that can be prevented through safe vaccination. This article argues that, firstly, there are important reasons to question the common policy of focusing on at-risk populations, and secondly, that there are positive reasons for very low-incidence countries such as the UK to consider implementing a programme of routine vaccination for hepatitis B. These conclusions can be supported by the strong ethical presumption that where a potentially devastating disease is easily preventable, those at potential risk should be protected. Even in very low-incidence countries such as the UK a policy based on routine vaccination for hepatitis B may be an efficient and ethical way to reduce the burden of this disease.

Such is the "thinking" of the establishment."

On March 1, 1999, Philip Incao, MD, in testimony before the Ohio House of Representatives stated that between July 1990 and the end of 1998, a total of 17,497 cases of injuries, hospitalizations, and deaths related to the hepatitis B vaccine had been reported to the Vaccine Adverse Events Reporting System (VAERS). That figure included seventy-three deaths in children younger than fourteen years old and 146 deaths in people who had received the hepatitis B vaccine alone, without other vaccines.

According to Dr. Incao's testimony, the total number of hepatitis B cases in children younger than fourteen in 1996 was 279, while there were 872 serious adverse episodes and forty-eight deaths among children in the same age group who had received the hepatitis B vaccine. In spite of this testimony, in August 1999, Ohio mandated hepatitis B vaccine for admission to day care and kindergarten children.

Enough said on that subject!

Through the Heart

With our brain there's many faults to see

Through the heart a purer vision held

We're the ones who control our joy or misery

All contrary thoughts should be dispelled

Intellect and eye discern distinction

The ear and heart tend to unify

Every soul's a slight variation

Though really not enough to qualify

Unity can be found below the surface

More agrees than tends to meet the eye

Using the heart it's less hit or miss

Wholeness is what it tends to magnify

If we base our vision through the heart

We'll tend to see the whole and not the part

Multi-Instrumentalist and macrobiotic enthusiast Todd Green perfoms concerts and clinics around the United Staes and Canda on over 30 instruments, along with recording CDs, writing poetry, and creating music for film. Visit him at www.toddgreen.com.

Conclusions

I have attempted to arrive at some general conclusions that will help parents make sound decisions regarding vaccination of their children. These suggestions are based on my own consideration of this very complicated area, and do not constitute the "last word" on the topic.

1. Any vaccine that contains **thimerosal** (ethyl mercury) should be **carefully avoided**.

2. The **whole-cell pertussis vaccine** should be avoided.

3. Expectant mothers should determine if they are **hepatitis B-positive**. If so, the hepatitis B vaccine should be given to the infant; if not, the vaccine should be avoided.

"Do not, under any circumstance, allow your child to be vaccinated with any new experimental vaccine."

4. Women who intend to get pregnant should determine if they have **antibodies to rubella**; if not they should be vaccinated before getting pregnant.

5. The oral (live-virus) polio vaccine should be carefully avoided; the killed-virus vaccine is preferred. Perhaps neither should be used unless there is real and present danger.

6. The **MMR (measles, mumps, rubella) vaccine should be avoided**. A separate vaccine is available for each of these diseases, and parents should carefully decide which, if any, should be given.

7. Girls should probably not receive the mumps vaccine whereas parents should make a considered decision whether or not to vaccinate boys.

8. The vaccination schedule for Hib should probably be followed, especially if any case of Hib-induced meningitis has occurred in the area of residence.

9. Since the major reason for the varicella (chicken pox) vaccine is economic, parents who don't mind missing a few days work should allow their child to develop immunity naturally, i.e., let the kid get the disease – it is far safer than having the shot, and immunity is permanent.

10. Do not allow hexavalent vaccines (six vaccines-in-one) or heptavalent vaccines (seven vaccines-in-one) to be used on your child.

11. Do not, under any circumstance, allow your child to be vaccinated with any new experimental vaccine.

Finally, I must say, I am sure glad that I developed permanent immunity to measles, mumps, rubella, and chicken pox the old fashioned way, by developing the disease, instead of depending on vaccination for a very tenuous "immunity"!

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What Every Parent Should Know About Infant and Childhood Vaccinations

Addenda

Part 1: Advice to People Who Were Not Vaccinated During Infancy or Childhood

Part 2: Advice to Parents Who Choose to Have Their Infants and Children Vaccinated

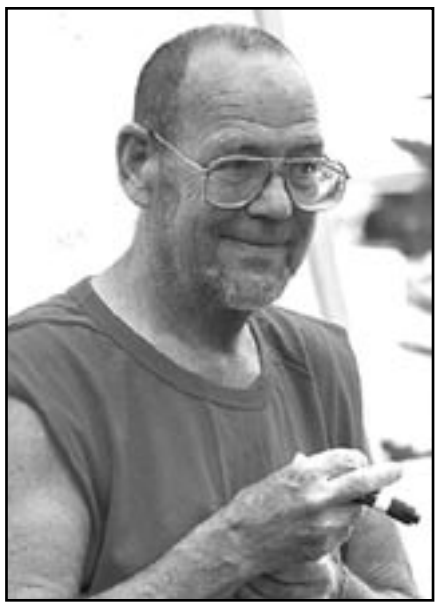
Jym Moon, PhD, FACN, CNS with Diana Lynn

Part 1. Advice to people who were not vaccinated during infancy or childhood.

After I had completed the three-article, five-part series on infant and childhood vaccinations, a macrobiotic mother (Diana Lynn) contacted me with a question regarding her adult son who had neither received a mumps vaccination nor developed mumps as a child. There must, by now, be many adult macrobiotic persons who were not vaccinated during childhood. This brief postscript will deal with the relevance of this circumstance for each of the ten mandatory childhood vaccines and the illnesses they are intended to prevent, arranged in order of apparent importance.

Measles

Measles is a highly contagious viral disease that can affect people of any age. Although measles is not a common disease today, there was an outbreak in the 1990s that affected around 54,000 people and caused 123 deaths. The outbreak occurred when the first generation of measles-



Jym Moon, PhD

vaccinated mothers gave birth – the babies were not protected by maternal antibodies that would have been transferred through the mother's milk had they naturally recovered from measles. The current vaccination schedule for children includes two doses: the first dose at 12 to 15 months and the second dose at 4 to 6 years. Vaccination does not confer lifelong immunity, so that if an outbreak of measles were to occur, everyone (including those previously vaccinated, but not those who have had the disease) might be at risk for measles development.

There are additional considerations in regard to the measles vaccine. For one thing, there have been measles outbreaks in grade schools where virtually all children had been vaccinated. The measles virus seems to be mutating and thereby developing resistance to the vaccine. The CDC has identified at least eight different genotypes of the measles virus throughout the world.

Measles is not an innocuous disease – it is estimated that as many as 1 in 3000 cases is fatal, mostly in infants. As well, encephalitis develops in approximately 1 in 1000 measles victims and the survivors may suffer permanent brain damage, again mostly infants. Middle ear infections and pneumonia are frequent complications.

Pregnant women who get measles may be at risk for premature birth, low birth weight infants, and infant death. However, there is evidence that some women who get the MMR vaccine before or during pregnancy give birth to children with neurological or behavioral problems. The CDC recommends that pregnant

women should wait until they have given birth to get the MMR vaccine and if a woman gets an MMR vaccine she should not get pregnant for at least three months after getting the shot. I must emphasize once more that there are multiple hazards with the MMR vaccine, and, in my estimation, MMR should be avoided by everyone.

Other conditions are known that preclude the MMR vaccine: women who are breast-feeding, people with HIV/AIDS or other immune system dysfunction, people undergoing cancer treatment, and people who have recently had a blood transfusion should not have a MMR vaccine. Due to these many considerations, it seems to the present writer that it is more difficult to provide sound advice regarding the measles vaccine than for any of the other current mandatory childhood vaccines. It is probably wise for most people who have not developed permanent immunity by spontaneously developing the disease to have a test for measles antibodies. A booster shot may be indicated, but if so, it should contain only the measles vaccine. The measles vaccine itself can be dangerous and to minimize any adverse reactions, it is wise to bolster the immune system by taking a carotene supplement (carotene is recommended as the only safe way to increase vitamin A levels) before, during, and after receiving the measles vaccine.

Mumps

As mentioned previously, the rationale for giving the mumps vaccine to girls as well as to boys, is to prevent male sterility. Having all children vaccinated is purported to help prevent spread of the disease. Recall that spontaneously developed mumps confers lifetime immunity, whereas vaccination is temporary and wears off in time. Hence the following advice applies to infant boys who were not vaccinated as well as to those who were, but not to those who actually developed mumps during childhood. There is a simple antibody test that can be requested by any doctor to determine if a person has antibodies to the mumps virus.

It is recommended that all post-pubertal boys who were not vaccinated and did not develop mumps, or who were vaccinated as infants without any further booster vaccinations should have this test performed. In the absence of a sufficient mumps antibody titer, the mumps vaccine is indicated. It is preferable to receive only the mumps vaccine, and to avoid the combined MMR vaccine.

"I must emphasize once more that there are multiple hazards with the MMR vaccine, and, in my estimation, MMR should be avoided by everyone."

Rubella

The importance of preventing rubella among pregnant women has already been emphasized. It is extremely important for all females who intend to get pregnant to be tested for antibodies to rubella. If a woman who intends to become pregnant does not have a sufficient rubella antibody titer, she should receive a rubella vaccine. It is not necessary for males to be similarly tested or vaccinated, as rubella is a relatively mild disease for adult males, with no lasting consequences. The rubella vaccine is not a safe vaccine as it may cause arthritis. It is therefore recommended only for women who want to become pregnant.

Chicken Pox (varicella zoster)

When chicken pox occurs in adolescents or adults the consequences can be serious. It is estimated that around 20 percent of adults who get chicken pox also get pneumonia, inflamed lungs, fever, and persistent cough. Some adults develop liver or heart problems, arthritis, and lesions on the cornea. The death rate among adults who get chicken pox is 31 per 100,000 cases. Pregnant women who get chicken pox during their first or early second trimester are at risk of having a child with birth defects. Thus, it is wise for women who want to get pregnant to make sure they are immune to the chicken pox virus before getting pregnant. Young male adults who have not been vaccinated, and have not had chicken pox should also be tested for antibodies to the chicken pox virus. In the absence of a sufficient antibody titer, the chicken pox vaccine should be given.

Pertussis (Whooping Cough)

Although pertussis is most dangerous for children up to about one year of age due to the narrow air passages, older children and adults can develop the disease. After the introduction of the pertussis vaccine, the percentage of pertussis cases among people older than ten years of age very significantly increased.

The CDC makes no recommendation for pertussis vaccination after the fourth booster shot, recommended at four to six years of age. Information regarding side effects of the pertussis vaccine when given to older children and young adults is lacking. In the event that pertussis cases occur in the area of residence, it would be wise to have adolescent children and young adults checked for pertussis antibodies. In the absence of pertussis antibodies and the presence of

pertussis cases, vaccination with the acellular pertussis vaccine may be indicated.

Hepatitis B

The hepatitis B vaccine is potentially dangerous to adults as well as to infants. For this reason it seems sensible that only those who are most at risk for hepatitis B should receive the vaccine (in spite of the world-wide campaign to make certain that every infant is vaccinated). Hepatitis B can be transmitted only by exchange of infected body fluids such as blood or semen. Thus, those most at risk are intravenous drug users who share needles, homosexual men, and prostitutes and others with multiple sex partners. As well, health care workers who handle needles or blood, individuals who live in a household in which someone has hepatitis B, and employees and inmates of correctional institutions are also at risk.

Tetanus

Tetanus is caused by an anaerobic bacterium (*Clostridium tetani*) that is commonly found in soil, manure, and the digestive tracts of animals and humans. When the bacterium gets into the blood stream, it releases a neurotoxin that affects the muscles in the jaws as well as the muscles responsible for breathing. Death is frequent due to rigidity of the chest muscles that results in the inability to breathe. Nearly all cases of tetanus in the United States occur in people who are fifty years and older and who have either not been vaccinated or have not had a tetanus booster shot within ten years of injury. Tetanus shots are invariably given to people who have deep wounds that need to be treated by a physician, except in people who are certain that they have recently received a tetanus booster shot.

Diphtheria

Diphtheria most often affects children between two to five years of age. Diphtheria is presently a rare disease in the United States (i.e., between 1970 and 1979 there were about 196 cases per year; there were only 4 cases in 1992). Thus, diphtheria is not a major concern for most adults. The CDC recommends that everyone 10 years old and older should receive a tetanus and diphtheria (Td) booster shot every ten years. The small d is used to indicate that a less potent diphtheria toxoid is used for this booster shot. The CDC also claims that at least 50 percent of people age sixty and older may be susceptible to diphtheria because they have not had booster shots.

"Young male adults who have not been vaccinated, and have not had chicken pox should also be tested for antibodies to the chicken pox virus."

Polio

Following introduction of the oral polio vaccine (live virus vaccine), it has been suggested that most cases of polio in the United States resulted from that vaccine. It would seem most sensible at the present time for adult macrobiotics to avoid any polio vaccination, other than under circumstances where exposure to polio is likely as during an outbreak of polio, or when traveling to a country where polio exposure might occur.

Haemophilus influenzae type B (Hib)

The *Haemophilus influenzae* bacterium is a common and normal inhabitant of the mucous membranes of the upper respiratory tract, mouth, vagina, and intestinal tract. Because it is normally present without causing any disease, but causes disease under certain circumstances, Hib infection is referred to as an "opportunistic infection." As emphasized previously, the Hib vaccine has few side effects and has successfully controlled a previously common and potentially deadly disease of infancy. The vaccine is important during infancy, however, the CDC recommends that anyone older than five years of age usually does not need the Hib vaccine.

Part 2. Advice to parents who choose to have their infants and children vaccinated

Mothering Magazine Issue 126, September/October 2004 contains an article by Barbara Loe Fisher, "In the Wake of Vaccines," that should be read by all mothers of newborn infants before making a decision regarding infant vaccination. The article can be accessed online at *www.mothering.com/articles/growing_child/vaccines/wake.html*

In the event that an infant or child should have an adverse reaction to a vaccine, there are two places that this should be reported:

1. The Vaccine Adverse Events Reporting System (VAERS) is a program sponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). VAERS has a report form that is used to submit information. The form can be obtained from VAERS at 1-800-822-7967, or toll-free fax at 1-877-721-0366. The form can also be downloaded from

the VAERS website *www.vaers.org*; from the FDA Web site *www.fda.gov/cber/vaers/vaers.htm*; or from the CDC website *www.cdc.gov/nip/*. Either a parent or medical practitioner may report an adverse event to VAERS.

Each year about 12,000 reports are made to the Vaccine Adverse Events Reporting System. In the current writer's opinion, the CDC is remiss for not making it mandatory for every doctor to report all adverse events. But that is not the case and consequently this number represents only a small percentage of the total number of adverse vaccination events that actually occur.

"It is extremely important that every parent take the responsibility of crefully observing their child for several days following any vaccination."

2. The National Vaccine Information Center Vaccine (NVIC) Reaction Registry is a non-profit vaccine information center. To make a report to NVIC go to *www.909shot.com*. It is important to register adverse reactions to vaccines with NVIC as a "check and balance" system to the federally funded VAERS.

Millions of parents in the United States simply allow their infants and children to be vaccinated without questioning whether there will be adverse consequences, or not. Others will be aware that there may be adverse reactions to vaccines, but will choose to vaccinate anyway. Thus, the vast majority of infants and children will receive the scheduled "mandatory" vaccinations. Many thousands of these children will suffer from adverse reactions and will have these reactions recorded, whereas many thousands more will suffer adverse reactions that will go unnoticed and unrecorded.

It is extremely important that every parent take the responsibility of carefully observing their child for several days following any vaccination. Some things that should be watched for are: tenderness, inflammation, or swelling at the site of injection – a lump at the site of injection can be an indication of more serious illness that may follow; a baby's temperature should be checked as fever is a frequent complication of some vaccines; screaming bouts are fairly common; twitching and jerking, or staring into space may be indicative of a very serious reaction; restlessness and irritability; body rashes; diarrhea; changes in eating habits; ear and respiratory infections, and the onset of allergies.

In the event that a baby has an adverse reaction to a particular vaccine no matter how mild it may seem, great caution should be exercised before having a booster of the same vaccine.

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