"Truth in Science: the Right to Know and the Freedom to Decide"—3rd International Public Conference on Vaccination

By Nataliya V. Schetchikova, PhD, Staff Writer

Barbara Loe Fisher grew up in a family of medical doctors. When Chris, her first son, was born, she didn't have a single doubt about having him immunized, as she "assumed vaccines were safe and effective." In 1980, Chris, who was then two and a half—"the brightest child—he knew the alphabet, and could count up to 20"—got his fourth diphtheria, pertussis, and tetanus (DPT) shot. Four hours later, Barbara found him sitting on a chair "staring ahead like he couldn't see me." As she was looking at him in astonishment, Chris fell asleep. Barbara called her mother who told her to wake Chris up. Barbara woke him up. After staying awake for 20 minutes, Chris fell asleep again—this time for 12 hours. When he woke up, his intelligence was gone. Chris was left with multiple learning disabilities and attention deficit disorder.

Later, trying to find out what happened to her son, Fisher realized that he had had an encephalopathic reaction to the DPT vaccine, which led to neurological damage and that, had she not awakened him for 20 minutes, could have even left him autistic. "I learned that a severe reaction to the DPT vaccine can happen in children from families with a history of autoimmune disorders, children who have milk allergy, and children who are or have been recently sick, especially if they were taking antibiotics shortly before receiving the vaccine. Chris had all three of those risk factors. No one had told me of those risks."

In 1982, feeling "betrayed by the medical profession," Barbara Fisher, together with Kathi Williams, whose son also suffered a severe reaction to the DPT vaccine, formed the National Vaccine Information Center (NVIC). NVIC is a national, non-profit educational organization, advocating vaccine safety research and patients' informed consent. In addition to leading national grassroots vaccine safety and informed consent movements, and representing American consumers on the National Vaccine Advisory Committee of the Food and Drug Administration (FDA), NVIC organizes public conferences—a forum for concerned parents and scientists.

The 3rd International Public Conference on Vaccination, sponsored by the NVIC, was held in Washington, D.C., on Nov. 7-9, 2002, under the theme "Truth in Science: the Right to Know and the Freedom to Decide," and attracted not only parents of vaccine-injured children, but also researchers and physicians from around the globe. Opening the conference, Fisher stated, "Chronic diseases in this country are increasing. Learning disabilities, ADHD, and asthma have doubled; diabetes has increased three times, and autism by 200 to 600 percent. Why? Persistent anecdotal reports have linked chronic diseases and vaccines. Children were healthy until vaccination, and then experienced severe reactions, but medical science has written off the cause-and-effect connections. MDs and public health officials must take the suffering of people seriously, and not dismiss it through fear or prejudice."

Fisher emphasized that NVIC is not anti-vaccine, but pro-education: "We want people to intelligently participate in public health programs. People should be making informed and voluntary decisions on all medical procedures."

The Mystery of Autism

Autism is on the rise. California, for example, is now seeing 3,000 new cases of autism a year—compared with 200 per year until the 1980s, says Rick Rollens, a former California senator. A parent of an autistic child, Rollens has raised more than $70 million for research on autism and other neuroimmune dysfunctions in children. "Autism has a genetic basis, but it can't be a purely genetic disorder, as you can't have a purely genetic disorder epidemic, with a 272 percent increase over 11 years," he says.

Conference on Vaccination

Paul Shattock, MRPharmS, OBE, director of the Autism Research Unit, School of Sciences, University of Sunderland, England, says one in 150 children in the United Kingdom is autistic, and in the United States, it's one in 300 children. Incidences of autism are higher among boys: one in 172 American boys is diagnosed with the condition.

The increase in autism cannot be explained by a diagnostic shift, agrees Andrew J. Wakefield, MB, FRCS, FRCPath, a gastroenterologist and director of research for the International Child Development Resource Center. "There are two kinds of autism: early onset, caused by disturbance in pregnancy (at about 20 to 24 weeks), and regressive autism (RA)—developmental regression of a normally developing child," says Dr. Wakefield. "The incidences of both have increased drastically, but RA more."

Although in 40.3 percent of autism cases in the U.K., children who have been developing normally get diagnosed with autism after receiving vaccinations, the government calls it a mere coincidence, says Shattock. "Doctors tell the parents, 'There is no regression. You are saying your child started speaking and then stopped? Well, your child didn't have a language. You *thought* he had language, but he didn't.'"

Early-onset autism can be caused by exposure to alcohol, tobacco, and cocaine in pregnancy—as well as flu, viral infection, and maternal immunizations with live vaccines around the time of conception,[1] says Dr. Wakefield. "We hypothesize that RA is caused by the child's exposure to the measles, mumps, and rubella (MMR) vaccine. Often there is a second neurological regression following a booster vaccine. Some children become slightly clumsy after the first MMR vaccine, and after the second, they can't stand and can't speak."

Dr. Wakefield says he noticed that children with RA, in addition to developmental and behavioral symptoms, have physical symptoms such as GI problems, loss of fecal and urinary continence, and weight problems. Children also develop unusual thirst, abnormal gait—wide and flat-footed—and bowel problems, says Dr. Shattock.

When Dr. Wakefield started investigating the GI problems of autistic children, he found measles virus in their gut.[2] "We've discovered measles virus in GI tracts of 82 percent of patients with autism spectrum disorders (ASD), compared to 7 percent in developmentally normal controls. In more than 96 percent of ASD patients, MMR vaccine was the only source of exposure to measles," he says.

How could measles in the gut be connected with a brain disorder? Dr. Wakefield hypothesizes that the damage may be a result of one or more of three biologically plausible causes: entero-colonic encephalopathy, autoimmune response, or direct virus invasion of the central nervous system. The connection is yet to be researched, but from clinical practice, Dr. Wakefield noticed that "when we treat dysbiosis of autistic patients, we get cognitive improvement."

Why may children have adverse reactions to the MMR vaccine? Certain co-factors may increase the risk, says Dr. Wakefield. "What makes a child vulnerable? It's MMR vaccine plus
- Family history of autoimmune disease
- Current infectious disease
- Antibiotics use (recent or current)
- Atopic (allergic) disease
- Combination with other vaccines
- Prior or concurrent exposure to ethyl mercury."

The combination of three viruses in the MMR vaccine may be the main culprit, says Dr. Shattock. "Measles is the principal agent causing autism. Since the vaccine is live, children get a weak strain of measles. But the simultaneous presence of all three viruses in MMR increases the measles effect. Each virus attacks and suppresses the immune system at many different points."

To top it all off, MMR vaccine in the United Kingdom and the United States is given at the same time as the chicken pox (varicella) vaccine. "If you look at the varicella insert from Novartis—the vaccine manufacturer—it says, 'Chicken pox vaccine should not be given within four weeks of the MMR vaccine unless it's given at the same time.' Can someone explain this to me?" asks Dr. Shattock.

A Word about Mercury—Connection with Autism, Alzheimer's, and Heart Disease

Some researchers believe that another important co-factor increasing the likelihood of an adverse reaction to vaccines is mercury in thimerosal, a vaccine preservative. Mercury itself—in thimerosal or elsewhere—may be accountable for autism development,

says Boyd Haley, PhD, professor and chairman, Department of Chemistry, University of Kentucky. "Tests show that autistic children retain mercury in the body. They can't excrete it. Reports saying that babies can't get enough exposure to mercury from shots are not true," says Dr. Haley. "Thimerosal releases ethyl mercury very quickly." When in the '50s children were given one vaccine containing thimerosal, it didn't cause much of a problem. In the '90s, however, the accumulation of organic mercury from thimerosal in 22 vaccines exceeded all doses, says Jeffrey Thomspon, JD, an attorney with the Williams Bailey law firm in Houston, Texas.

"Mercury exposure and toxicity will be even greater if:
1) the vaccine also contains aluminum.
2) the child has been taking antibiotics.
3) the child is from a mother who had dental fillings with mercury prior to getting pregnant.
4) the child is a boy. Male hormone testosterone enhances toxicity of thimerosal, while estrogen decreases it," says Dr. Haley.

How could mercury be connected to GI problems in autistic patients? Mercury binds to proteins making them ineffective, says Stephanie Cave, MD. "The patient loses enzyme function. Ethyl mercury changes gut permeability, increases food allergies, and alters immune function. It opens the body to viral, parasitic, and yeast infections, and inactivates Dipeptidyl Peptidase IV (DPPIV)—the enzyme that breaks down morphine peptides in the body. If you decide to vaccinate your child, get the vaccine package insert. Make sure there is no thimerosal in the vaccine," she says.

Heavy metals—especially mercury—may trigger not only autism, but also Alzheimer's disease, says Dr. Haley. "Alzheimer's disease happens in a genetically susceptible population, but genetics don't mean the person will necessarily develop a disease. There needs to be a trigger. Our food is full of glutamate; our body is a chelator—it contains organic acids, particularly EDTA (ethylenediamine tetra-acetic acid), that bond with metals. Mercury is the only metal that can chelate with EDTA, making itself more toxic."

Other heavy metals may play a role, too. "We hear that zinc is required for the body, but zinc potentiates toxicity of mercury, as do cadmium—in cigarette smoke, for example—and lead—in water. Zinc and mercury by themselves are not toxic, but a combination of zinc and mercury is very toxic. Because of that, we can't talk about safe levels of mercury. It depends on one's exposure to a variety of factors and is very individual," says Dr. Haley.

One such factor is dental amalgams, he says. "A study done in Singapore University showed that people with dental amalgams excreted 4.5 times more mercury in urine than free controls. People who have had amalgams in their mouths for 30 or 50 years are at risk for developing Alzheimer's," says Dr. Haley. "Even after 50 years with amalgams, people are still passing out mercury."
Dr. Haley also connects mercury to heart disease. "Mercury exposure leads to selenium deficiency. Low selenium affects the heart muscle, and may cause idiopathic heart disease."

Asthma

The prevalence of allergic disease (AD), including asthma, has also drastically increased in the past 20 years. "The cause of the increase is not known—and it's not entirely a diagnostic shift," says Eric Hurwitz, DC, PhD, assistant professor in residence, Department of Epidemiology, School of Public Health, University of California, and assistant professor, Department of Research, Southern California University of Health Sciences. "We hypothesize that vaccines are one of many environmental factors responsible for the increase. The link between vaccines and AD is biologically plausible."

Dr. Hurwitz's research showed that DPT vaccine may be associated with the risk of AD. A study of 13,944 children 2 months to 6 years old—99 percent of whom were vaccinated—showed a lower ratio of asthma, hay fever, sinusitis, wheezing, and itchy eyes in unvaccinated kids.[3]

A review of studies on vaccines and AD showed that often the effect of the DPT vaccine on AD depends on how long researchers study the children, says Dr. Hurwitz. "Studies observing children for less than five years report almost no DPT vaccine effect on wheezing, high fever, and eczema, while five- to 10-year-long studies show a 7- to 16-percent increase." Dr. Hurwitz suggests that the results may be explained by delayed effects of the DPT vaccine. "We need more studies on lifetime history, not just 12-month studies," he says.

Cancer

A possible vaccine-cancer connection is another highly emotional issue. Simian Virus 40 (SV40)—a cross-species transmission virus that can infect many mammals (bovine, mice cells, etc.)—has been found in the oral poliovirus vaccine (OPV) from 1955 to 1963—and possibly afterwards, says Stanley Kops, JD, a Philadelphia attorney specializing in product liability and personal injury law, and an expert on SV40 and neurovirulence. "From 1962 until Dec. 1977, the OPV vaccine was produced without meeting minimum standards, but the production was nevertheless continued as 'we needed the product.' The manufacturer admitted finding SV40 contamination in the vaccine—through the monkey kidney cells used for production," he says.

When SV40 is introduced in rodents, it causes brain tumors in laboratory conditions, says John Lednicky, MD, PhD, assistant professor and director of virology for molecular pathology, associate director of clinical microbiology, and director of clinical virology at Loyola University, Chicago. "SV40 is a polyoma-virus, which means it shows no symptoms in a healthy immune system. In nature, slower-growing viruses—just like SV40—linger and persist in the body, while faster kinds are killed by antibody response."

When a virus infects a cell, it has to bind to proteins to replicate its DNA. "In laboratory conditions, SV40 grows in human cells," said Dr. Lednicky. "Human cells have all the proteins necessary for the virus to replicate." The Institute of Medicine Committee in October 2002 concluded that biological evidence is strong that Simian Virus 40 (SV40) could lead to cancer in humans,[4] and urged the FDA to investigate and resolve the OPV contamination with SV40 issue, says Kops.

Hepatitis B and Flu—Vaccine Safety

Mark Geier, MD, director, Institute of Immuno-Oncology and Genetics, president of the Genetic Centers of America; and David Geier, president of MedCon, Inc., a recipient of a number of awards for academic achievements, co-authored more than 20 articles analyzing records of the Vaccine Adverse Events Reporting System (VAERS).

The connections between vaccines and adverse reactions are hard to establish, says Mr. Geier. "It's hard to do research on thimerosal in vaccines, for example—there is nothing to compare it with—people either have or have not taken vaccines." Reports show that **Hepatitis B adult vaccine**—genetically engineered, highly purified, and dubbed by the manufacturer as well-tolerated—may cause arthritis about a week after vaccination—far more often in females. Why? "Females usually have a history of yeast, and are often predisposed to yeast allergies. Until a better-tolerated vaccine is available, this vaccine should not be taken by people who are allergic to yeast," concludes Dr. Geier.

Flu mutates in any given year. Every year, federal health agency officials try to guess which three flu strains are most likely to be prevalent in the United States the following year to determine which strains to include in the year's flu vaccine. If they do not correctly predict it, the vaccine's effectiveness is thought to be much lower for that year.[5] Even if they guess right, the vaccine efficacy rate drops to 30 to 40 percent in people age 65 and older. But the problem is, "Flu vaccine has no proven efficacy. *It has never been tested in humans,"* says Geier.

Flu vaccines contain endotoxin (cell-associated bacterial toxin), and certain concentrations of it can lead to brain damage. The amplitude of adverse reactions largely depends on the manufacturer—the levels of endotoxin vary by as much as 125 percent. Flu vaccine, prepared from the fluids of chicken embryos inoculated with a specific type(s) of influenza virus, may allow salmonella virus into the vaccine. The strains of flu virus in the vaccine are inactivated with formaldehyde and preserved with thimerosal.[5]

The most serious adverse reaction to the flu vaccine is Guillain-Barré Syndrome (GBS), which occurs most often within two to four weeks of vaccination. GBS is an immune-mediated nerve disorder characterized by muscle weakness, unsteady gait, numbness, tingling, pain, and sometimes paralysis of one or more limbs or the face. GBS leads to death in fewer than five percent of cases.[5] Analysis of 1991-99 VAERS reports showed that GBS peaks every third year following flu vaccinations. The risk of a GBS reaction to flu vaccine is estimated at 4.9 percent, says Geier.

What are contraindications to the flu vaccine? Among the high risk factors listed by the Centers for

Disease Control and Prevention (CDC) and the vaccine manufacturers are:
- fever;
- impaired immune system;
- egg allergy;
- mercury allergy;
- a history of GBS.

In past years, pregnancy was also a contraindication to flu vaccine. Today, however, the Advisory Committee on Immunization Practices (ACIP) of the CDC recommends flu vaccine for women more than 14 weeks pregnant,[5] "because of the increased risk for flu-related complications," but in spite of the fact that "additional data are needed to confirm the safety of vaccination during pregnancy."[6]

Autism Treatment

Forewarned is forearmed, but what if the damage is already done? Even in severe cases of autism, there is still hope that the child's condition can be improved.

Stephanie Cave, MD, a private practitioner in Baton Rouge and clinical faculty member at the Louisiana State University Medical School, and Sherri Tenpenny, DO, founder and director of OsteoMed II, an integrated practice of conventional, complementary, and preventive medicine in Strongsville, Ohio, presented their methodology of treating vaccine-injured patients. Although traditional medicine focuses on the patient's symptoms, their approach is to correct the underlying problems. "Laboratory findings show that autistic patients have low amino acids, abnormal urine, dysbiosis, low minerals and vitamins A, B_1, B_5, B_6, and B_{12}, elevated cellular metals, low plasma/sulfates, and lower levels of mercury in the hair due to retention," says Dr. Cave. Based on the tests, the patients undergo allergy elimination treatment; occupational therapy; nutritional supplementation with cod liver oil, multivitamins, acidophilus, liquid zinc, CoQ_{10}, digestive enzymes, and egg-based protein powder. Some patients are placed on gluten-free and casein-free diets. The doctors also employ osteopathic craniosacral therapy, as well as mercury and other heavy metals detoxification.

Dr. Cave says that 40 to 45 percent of patients get functional improvement on the program. "When our patients then go to neurologists and their autism is either gone or substantially improved, doctors say, 'The diagnosis must have been wrong. The child has never been autistic.' Children of all ages improve, but the older the child is, the longer it takes," she says.

Mary Megson, MD, a developmental pediatrician in Richmond, Virginia, helps vaccine-injured children by recommending cod liver oil—a rich source of vitamin A.

Dr. Megson says, "Vitamin A helps improve:
- Cell and epithelial tissue growth
- Vision, including night vision
- Epithelial tissue repair in gut, and brain
- Immune function
- Gene expression, and
- Metabolism."

From clinical practice, Dr. Megson noticed that autistic children have night vision problems. "What do they lose?" she asked herself. "Three-dimensional vision? Shape of objects?" Her investigation showed that the visual field of autistic children is limited because of structural changes in the retina of the eye. They see only a small picture in the center, compared with the broad field of vision other people have. "If you know that, you will understand their behavior. It's very logical in their perception of the world. The child wakes up in the morning, looks for his toys and can't find them. He remembers where he left them yesterday—but you cleaned up, so he can't find them. Autistic children are defensive, not offensive. They can't read your body language or facial expression. Their behavior will improve as their perception improves."

Dr. Megson recommends to make sure that the cod-liver oil manufacturer doesn't use mercury-based preservatives. Taking the cod-liver oil with vitamin E helps with digestion. "Continue the therapy for three months. If the child is allergic to fish, find other forms of vitamin A, such as chicken liver."

Let's Do the Science

Autism needs further research. "We know the damage has been done, but how?" asks Kathryn Carbone, a special assistant to the associate director for research, Centers for Biologics Evaluation and Research (CBER) of the FDA and associate professor of medicine and psychiatry at the Johns Hopkins School of Medicine. "Under the FDA Virus-Neurovirulence Program, we are trying to develop and study animal models to improve our understand-

No Small Issue: the Smallpox Vaccine

Bioterrorism/national security and smallpox vaccine issues were also raised at the conference. The National Vaccine Information Center is concerned with the government's mass release of the live smallpox vaccine before there is a confirmed smallpox virus release by terrorists. The Advisory Committee on Immunization Practices (ACIP) of the CDC recommendations state that under current circumstances, with no confirmed smallpox, and the risk of an attack assessed as low, vaccination of the general population is not recommended, as the potential benefits of vaccination do not outweigh the risks of vaccine complications.[11]

The NVIC report[12] warns of the following risk factors:

• Very serious complications are likely in 1 in 4,000 persons who get vaccinated.[13] If 280 million Americans were vaccinated pre-attack, there could be a minimum of 70,000 people who risk injury or death, requiring vaccinia immune globulin (VIG) emergency therapy.[12] Currently, there is enough VIG available to treat about 600 serious adverse events. Contracts for additional supplies of VIG are in progress.[11]

• Almost all who get vaccinated will suffer some kind of mild to moderate reaction, which may include high fever, fatigue, irritability, and swollen lymph glands. More serious smallpox vaccine complications include encephalitis; progressive vaccinia leading to death after the internal organs, tissue, and bones disintegrate; eczema resembling third-degree burns; and smallpox-like lesions.[13] Approximately half of all smallpox vaccine complications are for "autoinoculation," in which the recently vaccinated person touches or scratches the lesion at the site and spreads the live vaccinia virus to the eye, nose, mouth, or genitalia where more lesions form. The CDC reports that autoinoculation occurs in 1 in 1,890 first-time vaccinations.[14] The risk of serious adverse events with currently available vaccines is assumed to be similar to those previously observed and could be higher today due to the increased prevalence of persons with altered immune systems.[11]

• The recently vaccinated become infected with the vaccinia virus—the live virus used in the vaccine—and can transmit it to others by direct person-to-person and close contact (within 6 feet) through autoinoculation.[15]

• Children today receive up to 37 doses of multiple vaccines in early childhood.[16] In 1971, most American children were only receiving DPT, polio, measles, and rubella vaccines.[17] The currently available smallpox vaccine was never tested for safety or efficacy,[14,18] and there is no information on how the vaccine will interact with the many other vaccines routinely given to American children today or how it will impact their long-term health. Those genetically or otherwise biologically vulnerable to vaccine-induced neuroimmune dysfunction will be at special risk.[12]

CDC warns that some people are at greater risk for serious side effects from the smallpox vaccine. Unless they have been exposed to the smallpox virus, individuals who have the following conditions, or who live with someone who does, should NOT get the smallpox vaccine:[19]

• People with a weakened immune system. Cancer treatment, an organ transplant, HIV, or medications to treat autoimmune disorders and other illnesses can weaken the immune system.[19]

• Women who are pregnant or who may become pregnant within a month of vaccination because of the risk of developing fetal vaccinia—a very rare, but serious, complication of smallpox vaccination during pregnancy or shortly before conception.[15]

• Smallpox vaccine should not be administered to people with a history of eczema or atopic dermatitis, irrespective of disease severity or activity, and to their household contacts, due to the increased risk from implantation of vaccinia virus into the diseased skin, sometimes with a fatal outcome.[15]

• Persons with other acute, chronic, or exfoliative conditions (e.g., burns, impetigo, varicella zoster, herpes, severe acne, or psoriasis) are at higher risk for inadvertent inoculation and should not be vaccinated until the condition resolves. Reports show that persons with Darier's disease can develop eczema vaccinatum and therefore should not be vaccinated.[15]

In addition, individuals should not get the smallpox vaccine if they:

• Are allergic to the vaccine or any of its ingredients.

• Are currently breastfeeding.

• Are younger than 12 months of age. However, the ACIP advises against non-emergency use of smallpox vaccine in children younger than 18 years of age.[19] The CDC reports that about 1 in 2,500 infant vaccinations results in generalized vaccinia infection and about 1 in 24,000 results in brain inflammation.[14]

• Have a moderate or severe short-term illness. These people should wait until they are completely recovered to get the vaccine.[19]

Currently, there are no licensed smallpox vaccines. Smallpox vaccines previously produced by Wyeth (Dryvax) and Aventis-Pasteur are available under Investigational New Drug (IND) protocols held by CDC. Both vaccines were prepared from calf lymph with a seed virus derived from the New York City Board of Health (NYCBH) strain of vaccinia virus. In October 2001, the federal government contracted with Acambis and Acambis-Baxter Pharmaceuticals for at least 209 million doses of smallpox vaccine produced in cell-culture. These vaccines use a clone of the same NYCBH strain of vaccinia virus.[11]

ing of the mechanisms of virus-associated brain damage in infants and children, and apply this knowledge to development of better testing for vaccines."

Studying animal models is difficult. Animal autism is not identical to the human disorder. "We are trying to find out what basic brain damage leads to autism spectrum disorders (ASD). How does the damage lead to ASD? Modern medicine treats symptoms, which may not be the best way to do it," says Dr. Carbone.

ASD is studied on the Borna disease virus (BDV), using the newborn rat model. The virus infects the nervous system tissues and causes developmental brain damage and neurobehavioral diseases following infection of newborn rats.[7,8,9] "*Newborn* rodents are chosen as they are very sensitive to viruses," explains Dr. Carbone. She couldn't comment, however, on whether the high sensitivity to viruses in newborn rodents correlates to that in human infants.

BDV in rodents, says Dr. Carbone, causes behavioral and neurotransmitter abnormalities similar to the symptoms of ASD children:
- Reduced ability to play
- Hyperreactivity
- Circadian rhythm: sleep – active cycle disturbed
- Anxiety
- Memory/learning problems
- Abnormal levels of serotonin.

How do you test a rat? "You can't interview it or test facial recognition," says Dr. Carbone. "We test play behaviors, hyperreactivity, and the sleep cycle. BDV-infected rats ceased activities related to play. They studied other rats, but didn't play with them. They were also hyperreactive to changes in the environment and had abnormally increased activity while others slept."

Therapy used on BDV rats showed that genetic background influences the outcome of the infection. "We tested fluoxetine on specific strains of rats. The results differed in two infected strains of rats. Lewis rats responded nicely to fluoxetine, but it had no effect on Fisher rats. This is a positive sign for future research, because rat strains need to be selected appropriately and can't be mixed," says Dr. Carbone.

CBER is doing important work. One of its achievements is the research on the Urabe mumps vaccine that was widely used in Europe, Canada, Japan, and South America to protect children against the mumps virus, which may cause meningitis. Pediatricians noticed an increase in meningitis—inflammation of the covering in the brain—in the vaccinated children. Studies showed that the Urabe vaccine caused meningitis in the region of 1 case per 3,800 doses,[10] compared to 1 in 10 infections through the mumps virus and to Jeryl Lynn mumps vaccine (used in the United States), which showed no association with meningitis. Although the Urabe vaccine was much safer than the disease itself, it was much less safe than other types of vaccine.

Things to Ponder

The vaccination issue still causes a lot of controversy. "In the past, viruses had to fight to get into the body, and the body defended itself. Now we inject viruses into the bodies. So, who is in control?" asks Dr. Shattock.

Another issue is vaccine manufacturers' ethics. Vaccine production is driven by good intentions, but, says Dr. Shattock, "When there is a product, you need to sell it and you need to give people a reason to use it, so some diseases may be proclaimed more dangerous than they really are. Then, you claim that the vaccine gives protection for life. But, as it turns out, the vaccine does not give lifelong immunity. It just makes the disease more benign, so you tell people to get booster vaccines."

Another ethical issue, says Adil Shamoo, PhD, professor and former chairman, Department of Biochemistry and Molecular Biology, University of Maryland School of Medicine, is conflict of interest in science. "We speak of conflict of interest when personal, financial, political, or other interests may threaten the person's ability to carry out professional, legal, ethical, or social responsibilities by adversely affecting his judgment, decision-making, motivation, or behavior. Look into the sources of research funding. Is it supported by the federal government, private industry, foundations, etc.? When a university accepts equity with a private company to conduct research or when the institutional review board reviews a proposal from a company that has just contributed $30 million, it's a conflict-of-interest issue."

Concluding his presentation on MMR vaccine and autism, Dr. Wakefield, who went through professional and personal turmoil while standing by his

research findings and by his belief that the medical profession should investigate the potential connection between vaccines and chronic disease, stated, "I am not saying we shouldn't vaccinate. All I am saying is, vaccines should be safe. Let's listen to the parents. Let's test the biologically plausible hypotheses. Let's do the science." ▼

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