In Summary...
from the INSTITUTE OF MEDICINE
Shaping the Future for Health

Immunization Safety Review: Multiple Immunizations and Immune Dysfunction

At the request of the Centers for Disease Control and Prevention and the National Institutes of Health, the Institute of Medicine (IOM), an arm of the National Academies, evaluated whether multiple immunizations can adversely affect the developing immune system. In *Immunization Safety Review: Multiple Immunizations and Immune Dysfunction*, the IOM committee carefully examines this hypothesized link and addresses other vaccine-safety issues.

By two years of age, healthy infants in the United States can receive up to 20 vaccinations to protect against 11 diseases. Although most people know that vaccines effectively protect against serious infectious diseases, approximately one-quarter of parents in a recent survey believe that infants get more vaccines than are good for them, and that too many immunizations could overwhelm an infant's immune system. The Immunization Safety Review Committee reviewed the evidence regarding the hypothesis that multiple immunizations increase the risk for immune dysfunction. Specifically, the committee looked at evidence of potential biological mechanisms and at epidemiological evidence for or against causality related to risk for infections, the autoimmune disease type 1 diabetes, and allergic disorders.

There are reasonable theories for how vaccines could cause these effects. However, for allergic disease and type 1 diabetes, the evidence from animal and clinical studies is weak that relevant biological mechanisms operate in humans after receipt of vaccines. The biological mechanisms evidence regarding increased risk for infections is strong. However, the committee found that the epidemiological evidence (i.e., from studies of vaccine-exposed populations and their control groups) favors rejection of a causal relationship between multiple immunizations and increased risk for infections and for type 1 diabetes. The epidemiological evidence regarding risk for allergic disease, particularly asthma, was inadequate to accept or reject a causal relationship.

These immune disorders carry heavy individual and societal burdens, and serious vaccine-preventable disease could increase if parents unnecessarily avoid immunizing their children due to continuing concerns about this issue. Because vaccines are given to healthy children to protect others in addition to themselves, it is important to understand fully the possible risks of serious adverse consequences of vaccines. Therefore, the committee recommends continued attention in the form of policy analysis, research, and communication strategy development. However, the committee does not recommend a review by national and federal vaccine-related advisory bodies of the licensure or schedule of administration of the vaccines administered to infants in the United States on the basis of concerns about immune dysfunction.

Where can I get more information on this issue?

You should discuss with your doctor any concerns or questions you have regarding your child's vaccinations. You can learn more about the Immunization Safety Review Committee and read the full report titled *Immunization Safety Review: Multiple Immunizations and Immune Dysfunction* at www.iom.edu/imsafety. From this website, you may also download copies of this abstract. To contact the project staff, please email (imsafety@nas.edu) or phone us (202/334-1342).

Any adverse effects experienced by your child after a vaccination should be reported to your doctor. Additional reporting information can be found through:

Vaccine Adverse Event Reporting System
1-800-922-7967 or http://www.vaers.org/vaers.htm

National Vaccine Injury Compensation Program
1-800-338-2382 or http://bhpr.hrsa.gov/vicp/qanda.htm

Last revised on May 29, 2002

Immunization Safety Review: Hepatitis B Vaccine and Demyelinating Neurological Disorders is available for sale from the National Academy Press, 2101 Constitution Avenue, N.W., Box 285, Washington, DC 20055; call (800) 624-6242 or (202) 334-3313 (in the Washington metropolitan area), or visit the NAP's on-line bookstore at **www.nap.edu.**

The Institute of Medicine is a private, nonprofit organization that provides health policy advice under a congressional charter granted to the National Academy of Sciences. For more information about the Institute of Medicine, visit the IOM home page at **www.iom.edu**.

Support for this project was provided by the Centers for Disease Control and Prevention, and the National Institute of Allergy and Infectious Diseases of the National Institutes of Health as part of a National Institutes of Health Task Order No. 74. The views presented in this publication are those of the Immunization Safety Review Committee and do not necessarily reflect the position or policy of the government, and no official endorsement should be inferred.