

Vaccine Given Through Skin Scratch May Have Benefits

From Brigham and Women's Hospital

New research from Brigham and Women's Hospital finds that giving a vaccine through a scratch on the skin leads to a better immune response compared to injecting the vaccine into the body. Researchers also found that the memory of the cells responsible for mounting an immune response may be more important than antibodies, which are generated from the types of needle and syringe vaccines most commonly used today.

This cell memory occurs in T cells, which are responsible for mounting an immune response to an invading virus and are found in lymph nodes, blood, and tissues including skin.

These findings, published in the journal *Nature Medicine*, show the remarkable ability of the skin to create strong immune responses after vaccination, says Thomas Kupper, MD, senior researcher on the paper and chairman of the department of dermatology at the hospital. The research should spur a new look at how vaccines are given, he says. "After all, our immune system evolved over millions of years to respond to infections of injured skin, not vaccines delivered by hypodermic syringe into muscle."

Nearly 200 years ago, the first vaccinations against smallpox were given via scratches. Today, nearly all modern vaccines are given through injections.

The researchers showed that giving vaccinia virus—which is used to create resistance to smallpox—through skin scratches led to a

Continued on the next page 



WorldCare
7 Bulfinch Place, P.O. Box 8310,
Boston, MA 02114
Tel. 617.374.9001

Dear Reader,

With spring in the air, we bring you information from the WorldCare Consortium hospitals on the importance of getting vitamin D. Parents of young children will also be especially interested in the latest discoveries about vaccines and SIDS.

Sincerely,

*Rebika Shaw,
Regional Director, Corporate Communications*

HEALTH NEWS

Doctors Show Progress in Search For SIDS Cause

From Children's Hospital Boston

Sudden infant death syndrome (SIDS), the leading cause of death in infants between one and 12 months old in the United States, has long mystified doctors and researchers. Now, after more than 20 years of research, experts at Children's Hospital Boston have linked SIDS to low production of serotonin in the brain. Their findings, published in the *Journal of the American Medical Association*, may point to an approach for identifying babies at risk of SIDS.

In the brainstem, serotonin plays a role in actions such as breathing, heart rate and blood pressure during sleep. The researchers, led by neuropathologist Hannah Kinney, MD, believe that low serotonin impairs the brainstem processes that regulate these activities. This puts babies at risk of sudden death from stresses such as breathing in carbon dioxide they'd exhaled while sleeping face-down.

In a normal baby who is re-breathing carbon dioxide, serotonin pathways in the brainstem would stir the baby awake long enough to turn his head, allowing him to breathe fresh air, Dr. Kinney says. A baby with low serotonin levels in the brainstem may never stir.

The future goal of this work is to devise a test to identify infants with a serotonin brainstem defect early and to develop treatments that would correct the low serotonin.

SIDS has puzzled doctors and families for decades, but once the medical community recognized that a baby's position while sleeping affects the risk for SIDS, national awareness campaigns sprouted to persuade parents to place babies to sleep on their backs. However, such campaigns haven't completely solved the problem, prompting ongoing research to find a biological component to SIDS.

Vaccines (continued)

much better immune response than giving the same vaccine through injection. Researchers also tested a vaccine for melanoma, a type of skin cancer. They found that when the vaccine was given in skin scratches, it worked better than vaccines delivered by injection for protecting animals from melanoma tumor growth.

"The lessons we are learning from these studies of vaccination by scarification (skin scratches) could help us develop new and more powerful vaccines for influenza, HIV, malaria and other infectious diseases," Dr. Kupper says. "We should also continue to explore the implications for developing powerful cancer vaccines, like the one demonstrated by melanoma vaccine results in this study."

Vitamin D Supplements May Lower Cardiovascular Risk

From Brigham and Women's Hospital

Although many vitamins and supplements have been tested in large clinical trials for their role in preventing disease, little is known about the effect of vitamin D supplementation on the risk of cardiovascular disease (CVD). In a review of research published in the last 43 years, researchers from Brigham and Women's Hospital found a link between vitamin D supplement use and a lower risk of death from CVD.

"We have found that vitamin D supplements in moderate-to-high doses may reduce the risk of CVD and that calcium supplementation

NEWS ON WORLDCARE

WorldCare partners with Equitable Life in Canada – WorldCare Second Opinions are now available to Equitable plan members and their families in Canada, as part of a suite of health services available through equitablehealth.ca. The unique service design allows members to access WorldCare Second Opinions for mental health issues as well, a first in the industry.

Patient Perspective

"Your staff were a gift in a very difficult and stressful time. They were there every second of the way with all the information I needed and an excellent calming approach. This benefit is absolutely phenomenal!!"

WorldCare member K.F.

About WorldCare

The global health care community has trusted WorldCare since 1994, when it became the first company to offer physician-referred, patient-specific, second opinion e-consultations (telemedicine) for serious illnesses. WorldCare benefits patients around the world by providing access to top physicians, cutting edge medical practices and best medical advice through highly specialized electronic medical opinions from the best medical centers in the United States.

WorldCare – 7 Bulfinch Place – P.O. Box 8310 – Boston, MA 02114
Phone: 617.374.9001 **Email:** info@worldcare.com **Web:** worldcare.com

seems to have a minimal effect on the prevention of CVD," says Lu Wang, MD, PhD, lead author of the paper and an instructor of medicine in the division of preventive medicine at the hospital.

While looking at 17 studies, Dr. Wang and colleagues found that the use of vitamin D supplements was associated with a reduced risk for CVD death, predominantly in patients undergoing dialysis. However, analysis from several randomized controlled trials did not show an apparent effect of vitamin D on the

risk of CVD events except in two smaller studies that used higher doses of vitamin D. Researchers also found that combined evidence from all studies showed very little effect of calcium supplementation on CVD risk.

"Future studies of vitamin D and calcium use, particularly large-scale, randomized clinical trials designed to evaluate the role of these supplements in the primary prevention of CVD, are urgently needed," says Howard Sesso, ScD, the senior author and a researcher in the division of preventive medicine at the hospital.



Contact your local WorldCare office if you are interested in obtaining a second opinion from a WorldCare Consortium hospital. Visit www.WorldCare.com for more information.