

DISEASE WATCH | IN THE NEWS

Paracetamol reduces vaccine effectiveness

Routinely giving paracetamol to children after vaccination as a precaution against fever may reduce the effectiveness of the vaccination itself, researchers from the Czech Republic have found. A randomized trial of 459 children receiving vaccines showed that treatment with paracetamol in the 24 hours following vaccination greatly reduced fever but also lowered the antibody responses to several vaccine antigens. In addition, researchers showed that high fever (>39.5 °C) following vaccination was uncommon in both treatment groups. Although fever is a concern in children because of the risk of febrile convulsions, this research suggests that administration of antipyretic drugs, such as paracetamol, following vaccination should not be routinely recommended because of its adverse effects on the efficacy of the vaccine.

Lancet

CORBIS

**Doubts about HIV-1 vaccine**

The results of the recent Thai HIV-1 vaccine trial are more modest than originally suggested. The scientists announced last month that vaccination with RV144, a combination of two vaccines that had shown no protective effect alone, reduced the risk of infection by one-third. However, the full results of the study, published in the *New England Journal of Medicine*, include two additional analyses that do not show a statistically significant level of protection. The analysis that was announced last month had excluded seven people who were diagnosed as infected soon after the trial began, in contrast to the other two analyses, which included everyone who

took part or only those who adhered to the vaccination regimen. Although some scientists warn that the results should be interpreted with caution, others agree that the effect observed, although modest, is real and deserves further research. Indeed, the researchers involved in the study highlight the need to investigate why the vaccine was more effective in those at low or moderate risk of infection than in high-risk individuals such as those sharing needles, and the possibility that its effectiveness may decrease after 1 year. *N. Engl. J. Med./Nature News/Associated Press*

XMRV: pleiotropic effects?

A new study, published online in *Science*, reveals a link between the gammaretrovirus xenotropic murine leukaemia virus-related virus (XMRV) and chronic fatigue syndrome (CFS), a debilitating disease that affects an estimated 17 million people worldwide. The research showed that 67% of CFS sufferers (68 out of 101 patients) were infected with XMRV compared with 3.7% of healthy controls (8 out of 218). However, it is still unclear whether XMRV directly causes CFS or whether patients with CFS are immunosuppressed and therefore more likely to become infected. XMRV was also recently detected in nearly one-quarter of malignant prostate cancer biopsies, especially in more aggressive tumours, according to research published in *Proceedings of the National Academy of Sciences USA* in September. More work is needed to determine exactly how XMRV contributes to the development of CFS and prostate cancer in humans, and this may lead to new treatment and prevention strategies. *Science/Proc. Natl Acad. Sci. USA*

Action against diarrhoea

UNICEF and the WHO have launched a new strategy to reduce childhood deaths from diarrhoea in an attempt to boost global efforts to fight the second biggest killer of children under 5 years of age worldwide. Diarrhoea can be caused by bacteria (such as *Shigella* spp. and *Vibrio cholerae*), viruses (such as rotavirus) and parasites (such as *Cryptosporidium* spp.). These pathogens are usually transmitted by the faecal-oral route in contaminated water or food. There are 2.5 billion cases of diarrhoea every year in children under 5 years of age, and most cases are in Africa and South Asia. The WHO

and UNICEF have issued a seven-point plan to treat and prevent childhood diarrhoea, which includes improving water supplies, preventing dehydration and providing vaccination against diarrhoeal pathogens.

WHO/UNICEF

Shamed into hand washing

We are more likely to wash our hands with soap after using the toilet if we are 'shamed' into it, according to a recent study. Researchers at the London School of Hygiene and Tropical Medicine investigated hand washing behaviour at British service station toilets using electronic sensors and tested the effect of displaying a series of electronic messages designed to promote hand washing. They found that when no message was displayed, only approximately one-third of men and two-thirds of women washed their hands with soap. Messages that triggered a response of disgust (for example, "Soap it off or eat it later") were the most effective at promoting hand washing in men, whereas women responded better to messages that reinforced the benefits of hand washing (for example, "Water doesn't kill germs, soap does"). However, the only message that was effective for both men and women was: "Is the person next to you washing with soap?" This indicates that the way our hygiene behaviour is perceived by others is the major driving force behind hand washing. In fact, men were more likely to wash their hands when other people were present. These findings could trigger the development of new, innovative campaigns to promote hand washing, with the aim to reduce the risk of spreading infections.

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In the News was compiled with the assistance of David Ojcius, University of California, Merced, USA. David's links to infectious disease news stories can be accessed on Connotea (<http://www.connotea.org>), under the username ojcius.