

 **Whole-cell pertussis vaccine more effective than acellular pertussis vaccine** (*Pediatrics* 131:6, pp. e1716-e1722 ,doi: 10.1542/peds.2012-3836)


There was a pertussis outbreak in 2010-2011 in USA which prompted this study of comparing effectiveness of early childhood whole cell pertussis vaccination versus acellular pertussis vaccination (4 DTwPs, mixed DTwP/DTaP, or 4 DTaPs). It was found that adolescents who received DTwP vaccines in childhood were better protected during a pertussis outbreak than those who received DTaP vaccines. In USA, since 2005, the ACIP has recommended boosting with reduced antigen content acellular pertussis vaccine (Tdap) for persons 11 years and older. The study found that a booster dose of Tdap did not overcome the advantage in protection from pertussis seen among those who had received four doses of the whole-cell vaccine. The results of this study suggest that variations in immune responses induced by primary immunization during infancy play a central role in protection from disease years later. Also, the study highlights the need for new pertussis vaccines that provide both an improved safety profile and long lasting immunity.

 **Dietary exposure to certain plastics may play a hidden role in epidemic increases in childhood hypertension** (*J Pediatr*; doi:10.1016/j.jpeds.2013.03.072)

Plastic additives known as phthalates are odorless, colorless and just about everywhere: They turn up in flooring, plastic cups, beach balls, plastic wrap, intravenous tubing and - according to the CDC - the bodies of most Americans. Once perceived as harmless, phthalates have come under increasing scrutiny. A growing collection of evidence suggests dietary exposure to phthalates (which can leech from packaging and mix with food) may cause significant metabolic and hormonal abnormalities, especially during early development. Now this study suggests that certain types of phthalates could pose another risk to children: compromised heart health. For the first time a connection between dietary exposures to DEHP (di-2-ethylhexylphthalate), a common class of phthalate widely used in industrial food production, and elevated systolic blood pressure has been established in this study. As we know, obesity is one of the major reasons behind elevated systolic blood pressure but this study suggests that environmental factors may also be a part of the problem. This is important because phthalate exposure can be controlled through regulatory and behavioral interventions. As plastic use is so rampant in our country, we must educate parents and adolescents about the cons of plastic on our health also.

 **Plastic bags are useful for prevention of hypothermia in preterm and low birth weight infants** (*Pediatrics* 2013 Jun 3 doi: 10.1542/peds.2012-2030)

Hypothermia contributes to neonatal mortality and morbidity in a great way, especially in preterm and low birth weight infants in developing countries. Plastic bags covering the trunk and extremities of very low birth weight infants reduces hypothermia. This technique has not been studied in larger infants or in many resource-limited settings. Infants at 26 to 36 weeks' gestational age and/or with a birth weight of 1000 to 2500 g born were randomized by using a 1:1 allocation and parallel design to standard thermoregulation (blanket or radiant warmer) care or to standard thermoregulation care plus placement inside a plastic bag at birth. The primary outcome measure was axillary temperature in the WHO-defined normal range (36.5-37.5°C) at 1 hour after birth. It was found that placement of preterm/low birth weight infants inside a plastic bag at birth compared with standard thermoregulation care reduced hypothermia without resulting in hyperthermia, and is a low-cost, low-technology tool for resource-limited settings like ours in peripheral rural and tribal areas. If used properly, this measure alone can help us reducing infant mortality rate to a considerable extent.

 **Common childhood asthma unconnected to allergens or inflammation** (*Sci Transl Med* doi:10.1126/scitranslmed.3005765)

Little is known about why asthma develops, how it constricts the airway or why response to treatments varies between patients. This work has revealed the roots of a common type of childhood asthma, showing that it is very different from other asthma cases. The notion that asthma has different forms gained ground after several genome-wide association studies (GWAS) found variation in a gene, later identified as *ORMDL3*, in up to 30 percent of asthma cases. In 2007, over-production of the gene's protein was connected to childhood asthma, and this gene has been the most consistent genetic factor identified so far for asthma. In 2010, a study in yeast found that *ORMDL3* protein inhibits sphingolipid de-novo synthesis. This finding prompted the researchers to investigate whether sphingolipid production is connected to asthma. Although it is yet not clear why asthma results from reduced production of sphingolipids, this study clearly show a link between loss of these lipids and bronchial hyperreactivity. This finding is not only valuable in understanding the pathogenesis of this complex disease, but provide a basis to develop novel therapies, especially asthma agents based on a patient's genotype.

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