
 **Antacid responsible for increased infection risk in children?** (*JAMA Pediatr.* 2014;DOI:10.1001/jamapediatrics.2014.696.)


The use of H-2 Receptor antagonist in children for suspected gastroesophageal reflux disease has increased to a great extent in last few years. This prospective study associated the use of H-2 Receptor antagonist with increase in bacterial growth in stomach. Children treated with H-2 receptor antagonists had more than double the rate of bacterial growth in the stomach compared with untreated children. Almost 50% of the children treated with antacid had more bacterial growth than those without treatment. It was also found that the growing use of acid suppressors in children has been accompanied by an increase in respiratory tract infections, pharyngitis, gastroenteritis, and *Clostridium difficile* colitis.

We must understand that any benefit of acid suppression should be weighed against potential risk, particularly in the immunocompromised host.

 **Cerebral oxygenation drops when preterm babies sleep in prone position** (*Pediatrics.* 2014;134:435-45,598-9.)

Sleeping in prone position is a major risk factor for sudden infant death syndrome (SIDS), and it is known that 29% of SIDS victims are preterm infants. In this study, cerebral oxygenation and blood pressure during sleep in the prone and supine positions were measured in preterm infants across the first six months post-term, and results were compared with those from term infants. Cerebral tissue oxygenation index in preterm infants was significantly lower in the prone position than in the supine position in both quiet sleep and active sleep at two to four weeks, two to three months, and five to six months corrected age. It was higher in quiet sleep than in active sleep in both sleep positions at two to four weeks corrected age, but lower in quiet than in active sleep at five to six months.


Preterm infants may be particularly vulnerable to critically impaired cerebral oxygenation in the prone position, particularly in the presence of cardiovascular instability, contributing to their heightened risk of SIDS. So we must suggest avoiding prone position in all preterm babies to prevent risk of SIDS.

 **Sleep consolidates memory of new motor task** (*NeuroImage.* 2014;99:50-8.)


The consolidation of motor sequence learning is known to depend on sleep. What is the state of brain during sleep? Is it resting? The answer is big NO and this study just confirms that. A good night's sleep leads to greater consolidation of a newly learned motor task than performing the same task not followed by sleep. The aim of the study was to directly compare changes in functional connectivity related to the consolidation process of a motor memory in two groups of young adults. Changes in connectivity within the cortico-striatal network were significantly different depending on whether participants had slept or not. When

someone practices a motor task during the day, it does not mean that the task-related activity is abolished as soon as practice has stopped. There may be exciting brain activity going on during sleep that results from the activity in particular brain areas that were recruited while you were involved in practice. The author of the study concludes by saying: "In our society today, we equate sleep and sleepiness with laziness and depression and other defects of character and where sleep deprivation is held out as a badge of honor. When in fact, any degree of sleep deprivation will impair performance and will impair learning. This is good evidence that the brain is not resting during sleep — it is consolidating memories and performing extremely important memory-related functions. Sleep is important."

We must pass on this important message to all adolescents.

 **New, rapid sickle cell test** (*Proc Natl Acad Sci U S A.* 2014;Sep 2: pii: 201414739.)

Although effective low cost interventions exist, child mortality attributable to sickle cell disease (SCD) remains high in our country due, in large part, to the lack of accessible diagnostic methods. Here is the importance of point-of-care technology in our day-to-day setting. Red blood cells with a high density ($\bar{n} > 1.120 \text{ g/cm}^3$) are characteristic of sickle cell disease. This study demonstrates a density-based separation of red blood cells in a system of aqueous multiphase polymers that enables a visual test that identifies sickle cell disease, starting from samples of whole blood, in less than 12 minutes. This low-cost, simple test could provide a means to enable diagnosis of sickle cell disease in our low-resource settings and enable life-saving interventions for children with the disease. The method itself provides a demonstration of the use of a biophysical indicator (here, density) rather than a biochemical marker (e.g., proteins separated by gel electrophoresis) as a means to do point-of-care hematology.

 **Iron fortification adversely affects the gut microbiome, increases pathogen abundance and induces intestinal inflammation in infants** (*Gut.* 2014;Aug 20: pii: gutjnl-2014-307720.)

Iron deficiency is one of the most common nutritional deficiencies in children in developing countries and one way of preventing it is fortification of the food. India also has Iron fortified meal scheme. But all is well? Probably not! This is the message we get by this study done in Kenyan children. In this study, effect of high and low dose in-home iron fortification on the infant gut microbiome and intestinal inflammation was studied. The primary outcome was gut microbiome composition and secondary outcomes included fecal calprotectin (marker of intestinal inflammation) and incidence of diarrhea. It was found that iron-containing fortified food to weaning infants adversely affected the gut microbiome, increasing pathogen abundance and causing intestinal inflammation.

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