

- outcome: secondary analyses of data from the Neonatal Research Network hypothermia trial. *J Child Neurol* 2011;26:322-8.
28. Murray DM, Boylan GB, Ali I, Ryan CA, Murphy BP, Connolly S. Defining the gap between electrographic seizure burden, clinical expression and staff recognition of neonatal seizures. *Arch Dis Child Fetal Neonatal Ed* 2008;93:F187-91.
 29. Yap V, Engel M, Takenouchi T, Perlman JM. Seizures are common in term infants undergoing head cooling. *Pediatr Neurol* 2009;41:327-31.
 30. Simbruner G, Mittal RA, Rohlmann F, Muche R. neo.nEURO.network Trial Participants. Systemic hypothermia after neonatal encephalopathy: outcomes of neo.nEURO.network RCT. *Pediatrics* 2010;126:e771-8.

50 Years Ago in *THE JOURNAL OF PEDIATRICS*

Allergic Properties of Milk and Milk Proteins: A Study of Anaphylaxis in Guinea Pigs

Cole WQ, Dees SC. *J Pediatr* 1963;63:256-63

Cow's milk feedings were increasingly supplementing breast milk feedings in infants beginning in the 1960s. Pediatricians observed adverse reactions to cow's milk, which was attributed to allergic sensitivity. Cole and Dees examined anaphylaxis in guinea pigs sensitized and challenged to skim milk, evaporated milk (heat denatured), casein, demineralized whey, β -lactoglobulin, α -lactoglobulin, and bovine immunoglobulins. All of the milk preparations and individual cow's milk protein were capable of inducing sensitivity and allergic anaphylaxis. Sensitivity to α -lactoglobulin was a major allergen in their studies. Heat denaturation only partially decreased antigenicity of milk proteins.

In the ensuing years, measurement of specific IgE (sIgE) to whole milk and its protein components has become standard practice.¹ A variety of allergic disorders have been associated or exacerbated with sensitivity to cow's milk protein, including asthma, allergic rhinitis, atopic dermatitis, eosinophilic esophagitis, and milk protein induced enterocolitis. Cow's milk allergy develops in the first year of life and clinical tolerance develops in 80% by the 5th year. Studies correlating sIgE levels and clinical allergic responses to oral milk challenges led to milk sIgE levels that gave either 95% positive and negative predictive values of clinical sensitivity and tolerance, respectively. There still remains a gray area of milk sIgE levels in which oral milk challenges are necessary to confirm allergic sensitivity. Children who "outgrow" milk allergy have sIgE to fewer epitopes of milk proteins and sIgE is to conformational epitopes. In the latter, heat-denaturation of milk proteins allowed children to eat baked goods containing milk. In addition, negative sIgE to casein increased the probability of tolerance to heated milk. Recently, Nadeau et al² reported oral desensitization to milk in children with severe life-threatening reactions.

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References

1. Boyce JA, Assa'ad A, Burks AW, Jones SM, Sampson HA, Wood RA, et al. Guidelines for the diagnosis and management of food allergy in the United States: report of the NIAID-sponsored expert panel. *J Allergy Clin Immunol* 2010;126:S1-58.
2. Nadeau KC, Schneider LC, Hoyte L, Borrás I, Umetsu DT. Rapid oral desensitization in combination with omalizumab therapy in patients with cow's milk allergy. *J Allergy Clin Immunol* 2011;127:1622-4.