METHODS. The authors isolated coagulase-negative *Staphylococcus* (CoNS) species with identified antimicrobial activity against *S. aureus* from the skin of AD and non-AD subjects. The study identified *Staphylococcus epidermidis* and *Staphylococcus hominis* as sources of these antimicrobial peptides (AMPs). The CoNS strains were applied autologously to the lesional skin of 5 AD patients. *S. aureus* colonization was examined after autologous microbiome transplant.

RESULTS. When the CoNS strains were applied autologously to the lesional skin of AD patients, *S. aureus* colonization decreased.

CONCLUSIONS. Normal skin has CoNS that produce AMPs, which in turn inhibit overgrowth of *S. aureus*. Thus, some skin bacteria produce AMPs that protect against *S. aureus* colonization, and loss of these protective bacteria may contribute to the development of AD.

REVIEWER COMMENTS. This study highlights the importance of the skin microbiome in AD. Peptides made by the skin commensal microbiome may be the first line of defense against pathogens and later AD development. The findings from this study may one day provide the framework for the prevention and treatment of AD by altering the skin bacterial flora or by developing these AMPs as topical medications.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475FFF

Cheryl A. Steiman, MD
James E. Gern, MD
Madison, WI

Association Between Atopic Dermatitis and Attention Deficit Hyperactivity Disorder in U.S. Children and Adults

Strom MA, Fishbein AB, Paller AS, Silverberg JI. *Br J Dermatol*. 2016;175(5):920–929

PURPOSE OF THE STUDY. To determine if an association exists between atopic dermatitis and attention deficit (hyperactivity) disorder (ADD/ADHD) in children and adults and to describe the factors that contribute to such an association.

STUDY POPULATION. This study analyzed pooled data from 19 US population-based surveys that included 354 416 children and adolescents aged 2–17 years.

METHODS. Cross-sectional data were analyzed from 19 US population-based surveys, each assembled by the National Center for Health Statistics, including the 1997–2013 National Health Interview Survey and the 2003–2004 and 2007–2008 National Survey of Children's Health. Associations of both atopic dermatitis and ADD/ADHD were examined in children aged 2–17 years, including sex, age, race, household income, highest level of household/parental education, birthplace in the US or elsewhere, and insurance coverage. Bivariate and multivariate logistic regression models were used in statistical analysis.

RESULTS. The pooled prevalence of atopic dermatitis was 10.1%, and the pooled prevalence of ADD/ADHD was 7.3%. Children with atopic dermatitis demonstrated an association with ADD/ADHD (adjusted odds ratio [95% confidence interval], 1.14 [1.03–1.26]). Children with both severe atopic dermatitis and only 0–3 nights of adequate sleep per week had much higher odds of ADD/ADHD (16.83 [7.02–40.33]) than those with 0–3 nights of adequate sleep per week (1.83 [1.47–2.26]) or mild to moderate atopic dermatitis alone (1.56 [1.22–1.99]). Atopic dermatitis in the absence of other allergic diseases was also associated with increased risk of ADD/ADHD in children. For children with atopic dermatitis, a history of anemia, headaches, and obesity were associated with higher odds of ADD/ADHD.

CONCLUSIONS. Atopic dermatitis in children is associated with increased odds of ADD/ADHD. Headaches, obesity, and anemia occurring in children with atopic dermatitis further increase the risk of ADD/ADHD.

REVIEWER COMMENTS. This study demonstrates that atopic dermatitis in the absence of other allergic diseases in children is associated with increased risk of ADD/ADHD. Furthermore, severe atopic dermatitis and sleep disturbance may act both independently and synergistically to increase the risk of ADD/ADHD. Improved understanding of these risk associations between atopic dermatitis and ADD/ADHD will assist in the clinical care of these children.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475HHH

Thanai Pongdee, MD
Rochester, MN

Phenotypes of Atopic Dermatitis Depending on the Timing of Onset and Progression in Childhood

Roduit C, Frei R, Depner M, et al; and the PASTURE study group. *JAMA Pediatr*. 2017;171(7):655–662

PURPOSE OF THE STUDY. To use a symptom-based definition of atopic dermatitis to identify different phenotypes and to determine if certain subtypes are at higher risk to develop comorbid atopic disease.

STUDY POPULATION. A total of 1038 European children from The Protection Against Allergy Study in Rural Environments (PASTURE) birth cohort (designed to assess impact of living on a farm) were recruited between August 2002 and March 2005. This study included participants with data on atopic dermatitis up until age 6 years.

METHODS. Subtypes of atopic dermatitis in children were identified by using latent class analysis. Subtypes were based on the timing of onset and symptom course. The

Association Between Atopic Dermatitis and Attention Deficit Hyperactivity Disorder in U.S. Children and Adults

Thanai Pongdee

Pediatrics 2017;140;S206
DOI: 10.1542/peds.2017-2475HHH

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Association Between Atopic Dermatitis and Attention Deficit Hyperactivity Disorder in U.S. Children and Adults

Thanai Pongdee

Pediatrics 2017;140;S206
DOI: 10.1542/peds.2017-2475HHH