

27. Augustin M, Glaeske G, Radtke MA, Christophers E, Reich K, Schäfer I. Epidemiology and comorbidity of psoriasis in children. *Br J Dermatol*. 2010;162(3):633-636.
28. Canpolat N, Kasapcopur O, Kaliskan S, et al. Ambulatory blood pressure and subclinical cardiovascular disease in patients with juvenile-onset systemic lupus erythematosus. *Pediatr Nephrol*. 2013;28(2):305-313.
29. Schwartz T, Sanner H, Husebye T, Flatø B, Sjaastad I. Cardiac dysfunction in juvenile dermatomyositis: a case-control study. *Ann Rheum Dis*. 2011;70(5):766-771.
30. Borowiec A, Dabrowski R, Wozniak J, et al. Cardiovascular assessment of asymptomatic patients with juvenile-onset localized and systemic scleroderma: 10 years prospective observation. *Scand J Rheumatol*. 2012;41(1):33-38.
31. Uehara M, Sugiura H, Tanaka K. Rarity of hypertension in adult patients with atopic dermatitis. *Br J Dermatol*. 2002;146(4):631-635.
32. De Ciuceis C, Rossini C, La Boria E, et al. Immune mechanisms in hypertension [published online January 21, 2014]. *High Blood Press Cardiovasc Prev*. doi:10.1007/s40292-014-0040-9.
33. Meininger JC, Gallagher MR, Eissa MA, Nguyen TQ, Chan W. Sleep duration and its association with ambulatory blood pressure in a school-based, diverse sample of adolescents. *Am J Hypertens*. 2014;27(7):948-955.
34. Au CT, Ho CK, Wing YK, Lam HS, Li AM. Acute and chronic effects of sleep duration on blood pressure. *Pediatrics*. 2014;133(1):e64-e72.
35. Kaye JA, Li L, Jick SS. Incidence of risk factors for myocardial infarction and other vascular diseases in patients with psoriasis. *Br J Dermatol*. 2008;159(4):895-902.
36. Machura E, Szczepanska M, Ziora K, et al. Evaluation of adipokines: apelin, visfatin, and resistin in children with atopic dermatitis. *Mediators Inflamm*. 2013;2013:760691.
37. Nagel G, Koenig W, Rapp K, Wabitsch M, Zoellner I, Weiland SK. Associations of adipokines with asthma, rhinoconjunctivitis, and eczema in German schoolchildren. *Pediatr Allergy Immunol*. 2009;20(1):81-88.
38. Weisberg SP, McCann D, Desai M, Rosenbaum M, Leibel RL, Ferrante AW Jr. Obesity is associated with macrophage accumulation in adipose tissue. *J Clin Invest*. 2003;112(12):1796-1808.
39. Rausch ME, Weisberg S, Vardhana P, Tortorello DV. Obesity in C57BL/6J mice is characterized by adipose tissue hypoxia and cytotoxic T-cell infiltration. *Int J Obes (Lond)*. 2008;32(3):451-463.
40. Caldefie-Chezet F, Poulin A, Vasson MP. Leptin regulates functional capacities of polymorphonuclear neutrophils. *Free Radic Res*. 2003;37(8):809-814.
41. Faggioni R, Feingold KR, Grunfeld C. Leptin regulation of the immune response and the immunodeficiency of malnutrition. *FASEB J*. 2001;15(14):2565-2571.
42. Kiguchi N, Maeda T, Kobayashi Y, Fukazawa Y, Kishioka S. Leptin enhances CC-chemokine ligand expression in cultured murine macrophage. *Biochem Biophys Res Commun*. 2009;384(3):311-315.
43. Lord GM, Matarese G, Howard JK, Bloom SR, Lechler RI. Leptin inhibits the anti-CD3-driven proliferation of peripheral blood T cells but enhances the production of proinflammatory cytokines. *J Leukoc Biol*. 2002;72(2):330-338.
44. Martín-Romero C, Santos-Alvarez J, Goberna R, Sánchez-Margalet V. Human leptin enhances activation and proliferation of human circulating T lymphocytes. *Cell Immunol*. 2000;199(1):15-24.
45. Santos-Alvarez J, Goberna R, Sánchez-Margalet V. Human leptin stimulates proliferation and activation of human circulating monocytes. *Cell Immunol*. 1999;194(1):6-11.
46. Papoutsakis C, Priftis KN, Drakouli M, et al. Childhood overweight/obesity and asthma: is there a link? a systematic review of recent epidemiologic evidence. *J Acad Nutr Diet*. 2013;113(1):77-105.
47. dos Santos RE, Aldridge JM, Lanz JR, Ferezin PC, Marone MM. Relationship of body fat distribution by waist circumference, dual-energy X-ray absorptiometry and ultrasonography to insulin resistance by homeostasis model assessment and lipid profile in obese and non-obese postmenopausal women. *Gynecol Endocrinol*. 2005;21(5):295-301.
48. Lakka HM, Lakka TA, Tuomilehto J, Salonen JT. Abdominal obesity is associated with increased risk of acute coronary events in men. *Eur Heart J*. 2002;23(9):706-713.
49. Schneider HJ, Glaesmer H, Klotsche J, et al; DETECT Study Group. Accuracy of anthropometric indicators of obesity to predict cardiovascular risk. *J Clin Endocrinol Metab*. 2007;92(2):589-594.
50. Schneider HJ, Klotsche J, Stalla GK, Wittchen HU. Obesity and risk of myocardial infarction: the INTERHEART study. *Lancet*. 2006;367(9516):1052.
51. Shao J, Yu L, Shen X, Li D, Wang K. Waist-to-height ratio, an optimal predictor for obesity and metabolic syndrome in Chinese adults. *J Nutr Health Aging*. 2010;14(9):782-785.
52. Valsamakis G, Chetty R, Anwar A, Banerjee AK, Barnett A, Kumar S. Association of simple anthropometric measures of obesity with visceral fat and the metabolic syndrome in male Caucasian and Indo-Asian subjects. *Diabet Med*. 2004;21(12):1339-1345.

Invited Commentary

PRACTICE GAPS

Pediatric Atopic Dermatitis and Associated Morbidities

Dawn Davis, MD

Pediatric atopic dermatitis (AD) is a cumbersome disease that has medical and psychosocial consequences for the child and family unit. With an ever-increasing prevalence, currently



Related article page 144

10.7% in the United States,¹ AD is managed by numerous medical professionals, most of whom are not dermatologists. Nonetheless, management of AD by dermatologists is commonplace. As such, it is imperative that primary care physicians and dermatologists work together as a seamless health care team to ensure that the patient's skin care and overall health is optimized.

In this issue of *JAMA Dermatology*, Silverberg and colleagues² link high body mass index, elevated systolic blood pressure, and central adiposity to pediatric AD via a thorough case-control study. How these conditions intersect is unknown.

The health care community has an urgent need to further investigate these diseases and champion patients and their

families to action. Although most laypeople assume the adipocyte is sedentary, scientists and medical professionals are increasingly aware that this cell population is robustly active. The cytokines released by adipocytes cause an inflammatory cascade with numerous deleterious systemic effects.

The increased risk of central obesity and systolic hypertension in Latino and Asian children with AD³ brings several concerns to the forefront. Is this association genetic or reflective of health care disparities? Minority populations have less health care access, more insurance limitations, and frequent language barriers that preclude an ideal patient-physician interaction. Perhaps cultural practices also play a role, which must be respected.

Screening the vital signs of pediatric patients with AD may be a best practice for patient quality of care and safety. Unfortunately, there are obstacles to operationalize this effectively, including time, resources (training support staff), and

cost (equipment and record-keeping supplies). Once this information is collected, it should be shared with the patient's primary care physician for transparency, efficiency, and the ideal use of medical resources. Because patient medical records are often fractionated among numerous institutions, this is not easily collated.

From a practical standpoint, children often will not visit their primary care physician for many years. After infancy, health maintenance encounters decrease substantially, with children often undergoing vaccinations only with a physician's support staff assistance or obtaining sport examinations in screening clinics provided by schools and health fairs. Thus, a dermatology visit for AD may be the only detailed medical encounter and health intervention opportunity for a patient.

If a patient is diagnosed as having hypertension or obesity, the dermatologist may need assistance from a primary care physician to properly educate the patient and family on lifestyle modification and provide support over time. Lifestyle modification must involve not only the child but also the family unit and sometimes their peers. Successful lifestyle adaptation for children truly takes a village.

Our charge as dermatologists is to provide the best whole-person care to patients. This is often multifactorial and extends beyond the skin. Further research on the comorbidities associated with pediatric AD is needed. Dermatologists must collaborate with primary care physicians and patient advocacy groups to educate the medical community and public that AD is more than a skin disease.

ARTICLE INFORMATION

Author Affiliation: Department of Dermatology, Mayo Clinic Rochester, Rochester, Minnesota.

Corresponding Author: Dawn Davis, MD, Department of Dermatology, Mayo Clinic Rochester, 200 First St SW, Gonda Room 16, Rochester, MN 55905 (davis.dawnmarie@mayo.edu).

Published Online: December 23, 2014.
doi:10.1001/jamadermatol.2014.3128.

Conflict of Interest Disclosures: Dr Davis reported serving on the American Academy of Dermatology Atopic Dermatitis Guidelines Committee and participating in writing guideline manuscripts. No other disclosures were reported.

REFERENCES

1. Shaw TE, Currie GP, Koudelka CW, Simpson EL. Eczema prevalence in the United States: data from

the 2003 National Survey of Children's Health. *J Invest Dermatol.* 2011;131(1):67-73.

2. Silverberg JI, Becker L, Kwasny M, Menter A, Cordoro KM, Paller AS. Central obesity and high blood pressure in pediatric patients with atopic dermatitis [published online December 23, 2014]. *JAMA Dermatol.* doi:10.1001/jamadermatol.2014.3059.