



#3

## THINGS YOU NEED TO KNOW ABOUT MODERATE-TO-SEVERE ATOPIC DERMATITIS

## AFFECTS THE SKIN AND OFTEN CO-EXISTS WITH OTHER DISEASES

Moderate-to-severe AD is characterized by relentless intense itch, skin dryness, cracking, redness or darkness, crusting and oozing.<sup>1,3</sup> Persistent scratching can damage the skin and increase risk of infection.<sup>3-5</sup>

In one survey, up to 72% of people with moderate-to-severe AD experience other diseases that may have an allergic or atopic component, including: asthma, chronic rhinosinusitis, eosinophilic esophagitis, allergic rhinitis, and food allergy.<sup>6</sup> These diseases share an overactive immune response that may be driven in part by underlying type 2 inflammation.<sup>7</sup>

## AFFECTS CHILDREN AND ADULTS

People can develop AD at different ages, and the severity of the disease can also vary.<sup>8</sup> Globally, AD affects up to 20% of children<sup>9-16</sup> and between 2-10% of adults.<sup>17,18</sup> While AD can resolve after puberty, approximately 10-30% of children with AD continue to have the disease into adulthood. Between 15%-30% of adults with AD experienced onset in adulthood.<sup>19-23</sup>



## MORE THAN JUST A "SKIN RASH"

The emotional toll of AD can be as significant as the physical impact.<sup>24</sup> As visible symptoms and lesions of AD often appear on the hands and face, many adults living with AD report feeling embarrassed, self-conscious and often avoid work and social activities.<sup>24,25</sup> In a published study in 2006, around 30% of adults, 40% of adolescents and one-quarter of children with AD experienced bullying because of their disease, and half the respondents in all age groups felt unhappy or depressed.<sup>25</sup>



## IMPACTS CAREGIVERS AND FAMILIES

In a recent global survey of 1,422 people, 73% of people who worked and looked after a child with moderate-to-severe AD reported missing at least one day of work in the prior four weeks.<sup>26</sup> Caregivers reported an impact on the family due to their child's AD, which was substantially higher for children with moderate-to-severe AD.<sup>26</sup> This included household, food preparation, leisure activities, sleep, emotions and family relations.<sup>26,27</sup>



## NEED FOR INNOVATION

There is an urgent need for access to innovative long-term options, especially for adults and children suffering from uncontrolled AD.



[1] National Institutes of Health (NIH). Handout on Health: Atopic Dermatitis (A type of eczema) 2013. [http://www.nia.nih.gov/health\\_info/Atopic\\_Dermatitis/default.asp](http://www.nia.nih.gov/health_info/Atopic_Dermatitis/default.asp). Accessed October 31, 2016. [2] K. Eyerich, S. Eyerich and T. Biedermann, "The Multi-Modal Immune Pathogenesis of Atopic Eczema," *Trends Immunol*, vol. 36, no. 12, pp. 788-801, 2015. [3] C. Corrales, C. Walker and L. Murphy, "Atopic dermatitis: a review of diagnosis and treatment," *Am Fam Physician*, vol. 80, no. 4, pp. 1191-1198, 1999. [4] J. Ring, A. Alomar and T. Bieber, "Guidelines for treatment of atopic eczema (atopic dermatitis) Part 1," *J Eur Acad Dermatol Venereol*, vol. 26, no. 8, pp. 1045-1060, 2012. [5] E. Simpson, "Comorbidity in Atopic Dermatitis," *Curr Dermatol Rep*, vol. 1, no. 1, pp. 29-38, 2012. [6] E. Simpson, E. Guttman-Yassky, D. J. Margolis et al (2016). Chronicity, Comorbidity and Life Course Impairment in Atopic Dermatitis: Insights from a Cross-Sectional Study in US Adults. Poster P0301 presented at 25th EADV, (September 28-October 2, 2016, Vienna, Austria); [7] Gandhi NA, Bennett BL, Graham NM, Pirozzi G, Stahl N, Yancopoulos DG. Targeting key traxial drivers of type 2 inflammation in disease. *Nature reviews Drug discovery*. 2016 Jan;15(1):35-50. [8] T. Bieber, "Personalized management of atopic dermatitis: beyond emollients and topical steroids." In: T. B., F. N., eds. "Personalized treatment options in dermatology," Springer-Verlag, pp. 61-76, 2015; [9] Asher MI, Montefort S, Björkstén B, Lai CK, Strachan DP, Weiland SK, Williams H. Worldwide time trends in the prevalence of symptoms of asthma, allergic rhinoconjunctivitis, and eczema in childhood: ISAAC Phases One and Three repeat multicountry cross-sectional surveys. *Lancet*. 2006; 368(7333):743-749. [10] N. Ballardini, I. Kull, C. Sodemann, G. Lijia, M. Wickman, C.F. Wahlgren, "Eczema severity in preadolescent children and its relation to sex, flagrin mutations, asthma, rhinitis, aggravating factors and topical treatment: a report from the BAMSE birth cohort"; *Br J Dermatol*, vol. 168, no. 3, pp. 588-594, 2013. [11] S.J. Brown, C.L. Reston, H. Liao, et al., "Flagrin null mutations and childhood atopic eczema: a population-based case-control study." *J Allergy Clin Immunol*, vol. 121, no. 4, pp. 940-945, 2008. [12] S. Dhani, A. Sheikh, "Estimating the prevalence of aero-allergy and/or food allergy in infants, children and young people with moderate-to-severe atopic eczema/dermatitis in primary care: multi-centre, cross-sectional study," *J R Soc Med*, vol. 108, no. 6, pp. 229-236, 2015. [13] A. Lebon, J.A. Labout, H.A. Verbrugg, et al., "Role of Staphylococcus aureus nasal colonization in atopic dermatitis in infants: the Generation R Study". *Arch Pediatr Adolesc Med*, vol. 163, no. 8, pp. 745-749, 2009. [14] A.B.

Olesen, K. Bang, S. Juul, K. Thøstrup-Pedersen, "Stable incidence of atopic dermatitis among children in Denmark during the 1990s", *Acta Derm Venereol*, vol. 85, no. 3, pp. 244-247, 2005; [15] H. Saeki, H. Iizuka, Y. Mori, et al. "Prevalence of atopic dermatitis in Japanese elementary schoolchildren". *Br J Dermatol*, vol. 152, no. 1, pp. 110-114, 2005. [16] J.I. Silverberg, E.L. Simpson, "Association between severe eczema in children and multiple comorbid conditions and increased healthcare utilization", *Pediatr Allergy Immunol*, vol. 24, no. 5, pp.476-486, 2013; [17] World Allergy Organization, "White book on allergy: update 2013," 2013. [Online]. Available: <http://www.worldallergy.org/UserFiles/file/WhiteBook2-2013-v8.pdf>. [Accessed 24 July 2017]; [18] S. Barbarot, S. Auziere, A. Gadkar, G. Girolomoni, L. Puig, E. L. Simpson, D. J. Margolis, M. de Bruin-Weller, L. Eckert, "Epidemiology of atopic dermatitis in adults: results from an international survey", *Allergy*, vol. 73, no.6, pp. 1284-1293, 2018; [19] T. Bieber, "Atopic dermatitis 2.0: from the clinical phenotype to the molecular taxonomy and stratified medicine," *Allergy*, vol. 67, no. 12, pp. 1475-1482, 2012; [20] D. Garmhausen, T. Hagemann and T. Bieber, "Characterization of different courses of atopic dermatitis in adolescent and adult patients," *Allergy*, vol. 68, no. 4, pp. 498-506, 2013; [21] L. Eichenfeld, W. Tom and S. Chamlin, "Guidelines of care for the management of atopic dermatitis: section 1. Diagnosis and assessment of atopic dermatitis," *J Am Acad Dermatol*, vol. 70, no. 2, pp. 338-351, 2014; [22] T. Bieber, "Atopic dermatitis, Mechanisms of Disease," *N Engl J Med*, vol. 358, no. 14, pp. 1483-1494, 2008; [23] E. Guttman-Yassky, K. Nogralas and J. Krueger, "Contrasting pathogenesis of atopic dermatitis and psoriasis—part I: clinical and pathologic concepts," *J Allergy Clin Immun* [24] Silverberg JJ, Gelfand JM, Margolis DJ, Boguniewicz M, Fonacier L, Grayson MH, Simpson EL, Ong PY, Fuxench ZC. "Patient burden and quality of life in atopic dermatitis in US adults: a population-based cross-sectional study." *Annals of Allergy, Asthma & Immunology*. 1:121(3):340-7,2018. [25] T. Zuberbier, S. Orlow and A. Paller, "Patient perspectives on the management of atopic dermatitis," *J Allergy Clin Immunol*, vol. 115, no. 1, pp. 226-232, 2005; [26] Barbarot S, Bazot J, et al. 2020. "The Family Impact of Atopic Dermatitis (AD) in Children Aged 6-11 Years: A Cross-Sectional Study in the United States (US), Canada, Europe, and Japan." *American Academy of Dermatology Annual Meeting 2020*. Poster Abstract ID: 15021. [27] Balrishnan, R., et al. "Disease severity and associated family impact in childhood atopic dermatitis." *Archives of disease in childhood* 88:5 (2003): 423-427.