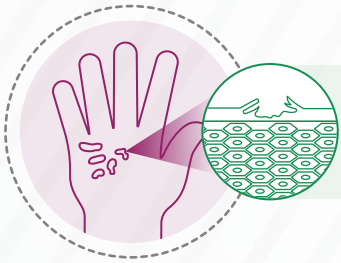


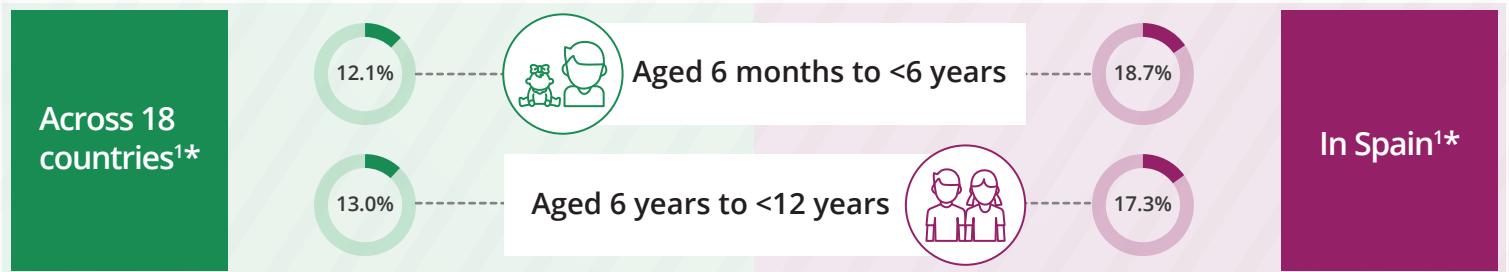
Atopic Dermatitis: Cumulative Disease Burden, Cytokines, and the Therapeutic Efficacy of Dupixent

Dr Ignasi Figueras of Bellvitge Hospital, University of Barcelona, and Dr Alexandra Golant of Mount Sinai Hospital, New York City, discuss the impact of inadequately controlled atopic dermatitis (AD) on children, the two cytokines that drive inflammation in AD, and the growing evidence for Dupixent's effectiveness in AD



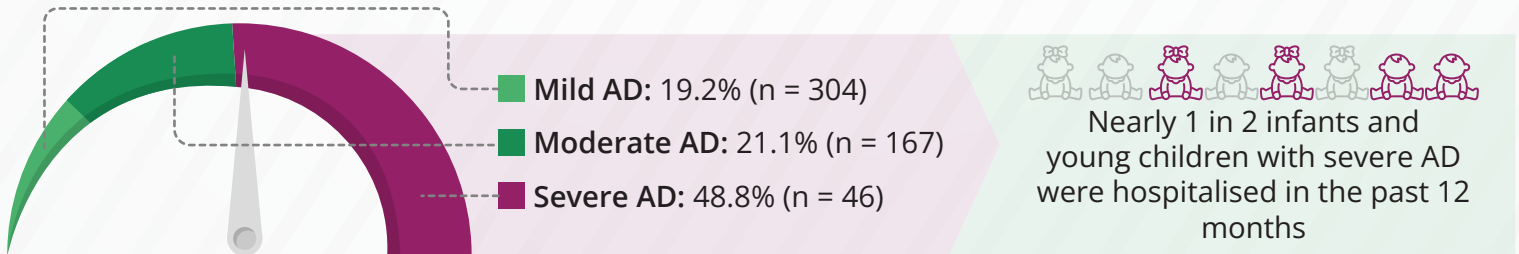
Atopic dermatitis (AD), a chronic inflammatory skin disease, affects a substantial proportion of children globally¹

AD prevalence in infants and children



*Data from EPI-CARE—an international, cross-sectional, 12-month, web-based survey in 18 countries in children aged 6 months to 11 years and adolescents aged 12 to 17 years

Hospitalisation due to AD among infants and young children in Europe^{2**}

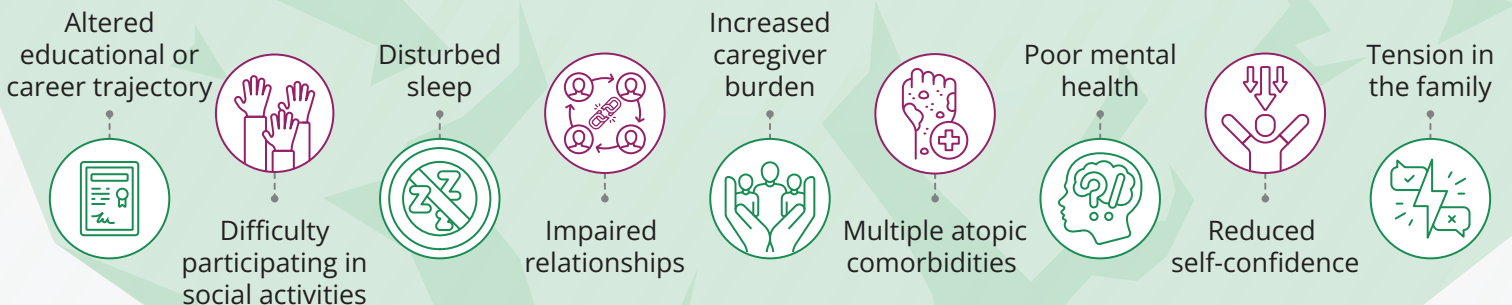


**Data from EPI-CARE—an international, cross-sectional, 12-month, web-based survey; children aged 6 months to <6 years (N = 1,489) were included here

Patients with AD suffer from a cumulative disease burden³⁻⁷

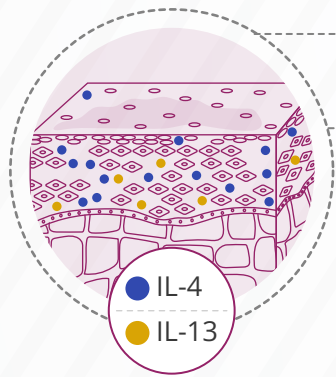
Physical symptoms such as skin lesions and itch are just the “tip of the iceberg”

Hidden impact of AD



Type 2 inflammation: The driver of AD⁸⁻¹²

Type 2 inflammation

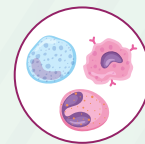


- Mediated by interleukin-4 (IL-4) and IL-13 signalling
- Contributes to clinical features of AD in all patients, regardless of patient characteristics
- **IL-31 is also a key cytokine contributing to itch in AD**

Cells producing type 2 cytokines



- Innate lymphoid/T cells**
- Th2 (T helper type 2 cells)
 - Tc2 (Cytotoxic T cell 2)
 - ILCs (Innate lymphoid cells)

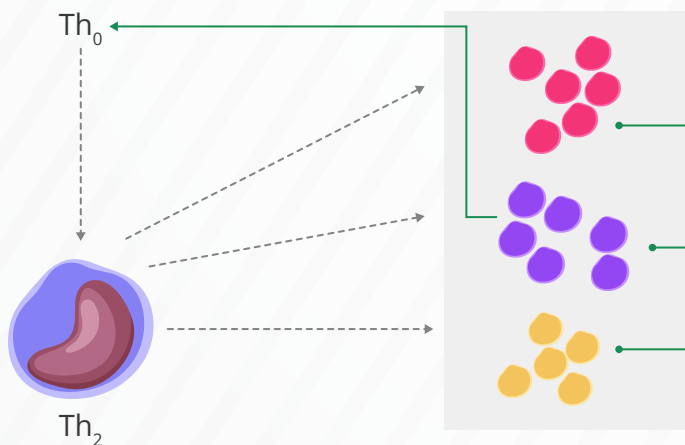


- Granulocytes**
- Mast cells
 - Eosinophils
 - Basophils

Type 2 cytokines in AD pathophysiology⁸⁻¹²



IL-4 orchestrates type 2 inflammation in AD by promoting Th2 differentiation and creating a positive feedback loop that further enhances IL-4, IL-13, and IL-31 signalling¹²⁻¹³



Cytokines	Symptoms of AD
IL-31	Chronic itch
IL-4	Increased susceptibility to skin infections
IL-13	Barrier dysfunction
Eczematous lesions	

Challenges in AD treatment¹⁴⁻¹⁵

Broad-acting immunosuppressants are not a suitable treatment option

Systemic corticosteroids, although fast-acting, have an unfavourable risk/benefit ratio

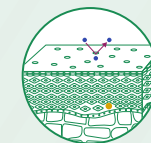


Other immunosuppressants (such as methotrexate, azathioprine, and cyclosporin A) can cause infections, gastrointestinal side effects, and renal and hepatic toxicity

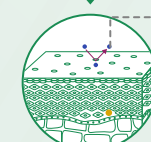
Dupixent for treating AD¹⁶⁻¹⁷



Monoclonal antibody



Targets the IL-4 receptor a subunit



Allergen

Specifically inhibits IL-4 and IL-13 signalling



Advantages of Dupixent in AD treatment¹⁶⁻¹⁷

Targeted immunomodulation



No requirement for screening

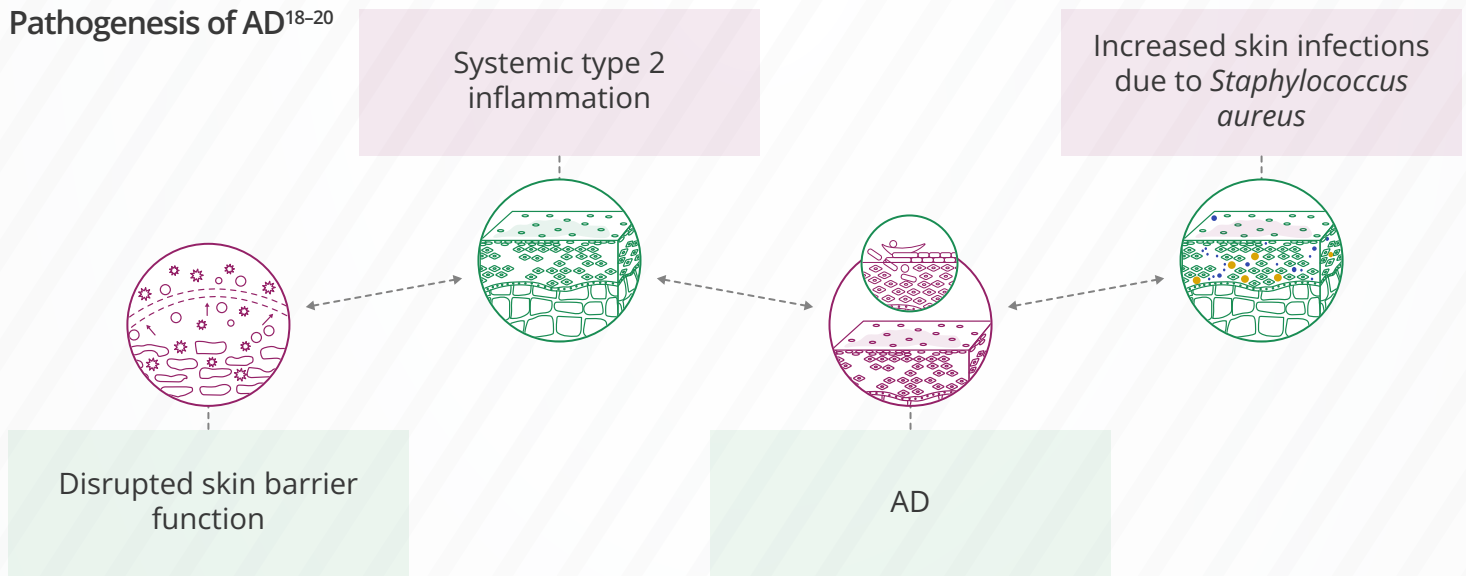


No preliminary testing for malignancy or other disorders needed

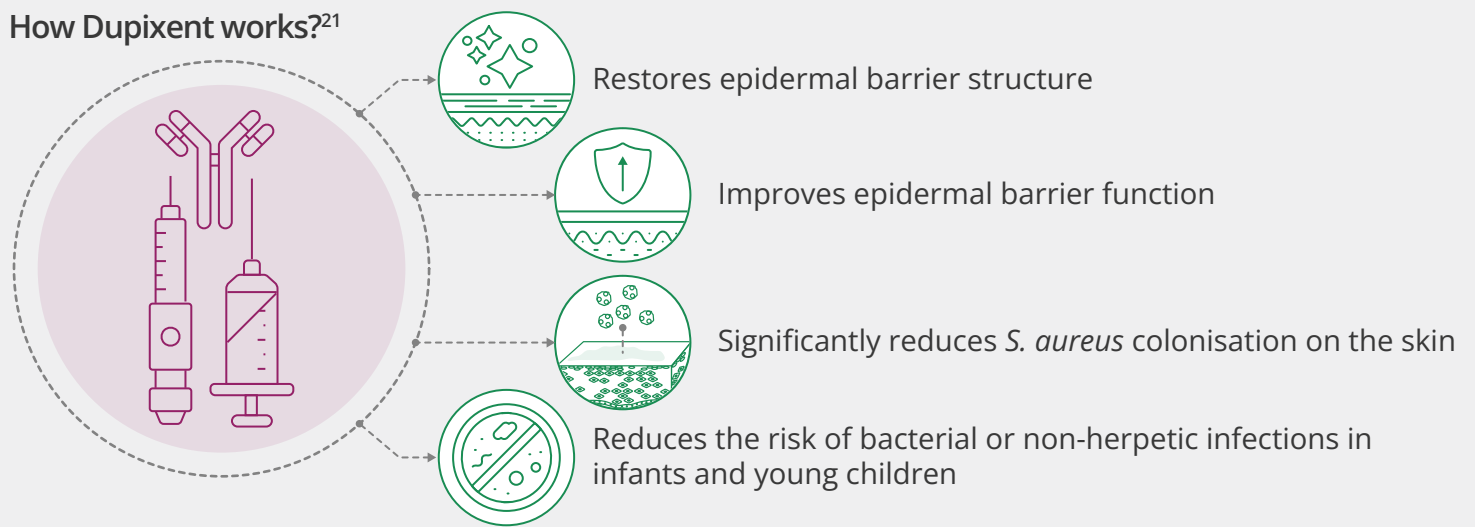


Effect of Dupixent on skin barrier function

Pathogenesis of AD¹⁸⁻²⁰



How Dupixent works?²¹



Effectiveness of Dupixent in AD: The LIBERTY AD trials²²⁻²⁵

Examined four groups



Infants and young children (6 months to 5 years old)

Children (6–11 years old)

Adolescents (12–17 years old)

Adults (18+ years old)

In all age groups, Dupixent consistently improved:



Signs of AD
(i.e., eczema area and severity index score)



Symptoms of AD
(scratch and itch)



Patient quality of life
(QoL)



Skin clearance

In post-hoc analysis, Dupixent demonstrated:



Improvements in signs, symptoms, and QoL in patients with both moderate and severe AD



RWE from 38,075 patients across 32 countries confirms its effectiveness and safety



Dupixent is the only systemic therapy for AD with safety data for up to 5 years in adults



Patients treated with Dupixent show high rates (76%) of clinical satisfaction for up to 3 years

In BALISTAD, an open-label, exploratory study in adults and adolescents with moderate-to-severe AD, Dupixent²⁷:



Significantly improved the structure of the epidermal barrier



Normalised skin barrier function



Improved stratum corneum ceramide composition

Concluding remarks

- ✓ The continuous and cumulative disease burden of paediatric AD has a significant effect on both patients and caregivers
- ✓ AD is driven by systemic type 2 inflammation via the cytokines IL-4 and IL-13
- ✓ Dupixent, an immunomodulator, specifically inhibits IL-4 and IL-13 signalling and consistently improves AD symptoms and QoL across all age groups
- ✓ Dupixent also enhances skin barrier function, reduces *S. aureus* colonisation, and prevents infections in patients with AD

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