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ORIGINAL ARTICLE

Combining treat-to-target principles and shared decision-making: International expert consensus-based recommendations with a novel concept for minimal disease activity criteria in atopic dermatitis

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Abstract

Background: Current treat-to-target recommendations for atopic dermatitis (AD) may not include high enough treatment targets and do not fully consider patient needs.

Objective: To develop recommendations for optimized AD management, including disease severity assessments, treatment goals and targets, and guidance for treatment escalation/modification.

Methods: An international group of expert dermatologists drafted a series of recommendations for AD management using insights from a global patient study and 87 expert dermatologists from 44 countries. Experts voted on recommendations using a modified eDelphi voting process.

Results: The Aiming High in Eczema/Atopic Dermatitis (AHEAD) recommendations establish a novel approach to AD management, incorporating shared decision-making and a concept for minimal disease activity (MDA). Consensus (≥70% agreement) was reached for all recommendations in 1 round of voting; strong consensus (≥90% agreement) was reached for 30/34 recommendations. In the AHEAD approach, patients select their most troublesome AD feature(s); the clinician chooses a corresponding patient-reported severity measure and objective severity measure. Treatment targets are chosen from a list of 'moderate' and 'optimal' targets, with achievement of 'optimal' targets defined as MDA.

Conclusions: Patient and expert insights led to the development of AHEAD recommendations, which establish a novel approach to AD management. Patients were not involved in the eDelphi voting process used to generate consensus on each recommendation. However, patient perspectives were captured in a global, qualitative patient research study that was considered by the experts in their initial drafting of the recommendations.

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INTRODUCTION

Atopic dermatitis (AD) is a very common, chronic inflammatory skin disease characterized by red, itchy and painful skin.[1] AD can be associated with significant long-term disease burden; physical symptoms can impair patients' sleep quality, sexual relations, social interactions and work productivity, leading to mental health issues including anxiety and depression.[2,3] Many patients with AD are also dissatisfied with their treatment, highlighting the need for more effective therapies.[4,5]

Studies investigating AD management found that only 8% of patients with AD and 7% of patients with severe AD are treated with systemic therapies and may therefore not be receiving optimal treatment.[6,7]

Undertreatment of AD may be a consequence of inconsistent criteria used to identify candidates for systemic therapy among current guidelines (Appendix Table S1).[8–15] Additionally, due to the lack of qualitative patient research on the burden of AD, current management guidelines in AD are primarily based on clinician insights and may not fully consider patients' needs.

In 2020, a group of authors recognized that the complex nature of AD requires the identification of patient-relevant targets, with treatment tailored to the needs of the individual, including signs and symptoms unrelated to the skin, such as sleep loss, anxiety and depression.[16] Building on this, the 2021 treat-to-target initiative in AD adopted a multidimensional approach to AD management, utilizing a range of physician-reported and patient-reported outcome measures for flexibility and clinical utility.[17] The initiative attempted to address inconsistencies in prior treatment recommendations by using 3- and 6-month treatment targets suggested by clinicians, alongside an algorithm for optimization or modification of treatment.[17] The 6-month treatment targets proposed by the authors include 75% improvement in the Eczema Area and Severity Index (EASI-75), SCORing Atopic Dermatitis (SCORAD)-75 or SCORAD ≤24 and a peak pruritus absolute score of ≤4. However, recent data from the cross-sectional, 28-country MEASURE-AD study found that of 1434 adults with AD who were candidates for, or received, systemic therapy, approximately 45% who met ≥1 treatment target still had a moderate or severe EASI score at 6 months.[18] This suggests that current treatment targets may not be high enough and could be better tailored to individual patients to reach optimal treatment outcomes.

Higher 1-year treatment targets such as EASI-90 and absolute pruritus Numeric Rating Scale (NRS) ≤4 have been suggested by a more recent treat-to-target initiative.[19] However, similar to previous guidelines and recommendations for AD management, the authors used a physician-centric approach that is not readily adaptable to meet the needs of all patients.

Here, we report the Aiming High in Eczema/Atopic Dermatitis (AHEAD) consensus-based recommendations, which aim to provide a framework for optimized AD management, including disease severity assessments, treatment goals and targets, and guidance for treatment escalation or modification. This was developed for patients with AD at all ages and severities.

MATERIALS AND METHODS

Expert discussions and qualitative patient research

An overview of this expert initiative can be found in Figure 1. A group of seven international expert dermatologists formed an executive steering committee (ESC; Appendix Table S2) and agreed that there was a lack of evidence on patients' treatment goals, needs and expectations in AD management. Qualitative patient research was conducted to provide an evidence base for the creation of patient-focused recommendations and has been published separately.[20] In brief, adult patients (≥18 years) receiving treatment for AD were recruited from patient market research databases, clinician referrals and local advertising. Eligible patients had been diagnosed with AD and were currently receiving treatment for their AD. Patients were screened to ensure a diverse range of ages, gender, educational levels, geographic locations and AD severities.[20] Patients participated in 45-min, 1:1 telephone interviews in the patient's native language, conducted by a market research team. The interviews explored the impact of AD on patients' daily lives, what patients felt were the most significant symptoms, views on current scoring systems, how patients made treatment decisions and their expectations of treatment. Most questions were free form.

To gain local clinical insights, regional expert dermatology groups comprising nine regional sub-committees, consisting of approximately 10 dermatologists each, were formed. Altogether, 87 dermatologists from 44 countries contributed to the initiative (Appendix Table S2).

eDelphi voting and definition of consensus

Insights gained from the qualitative patient research and expert discussions were used by the ESC to draft clinical recommendations. All experts were invited to participate in a modified eDelphi voting process, wherein they were asked to rate the recommendations using a 10-point Likert scale,[21] ranging from 1 (strongly disagree) to 10 (strongly agree). Consensus agreement for a recommendation was pre-defined as ≥70% of all experts rating agreement as 7 (mildly agree), 8 (moderately agree), 9 (agree) or 10 (strongly agree); strong consensus was defined as ≥90% agreement. Experts were able to provide comments explaining their votes. Anonymity was maintained throughout the voting process.

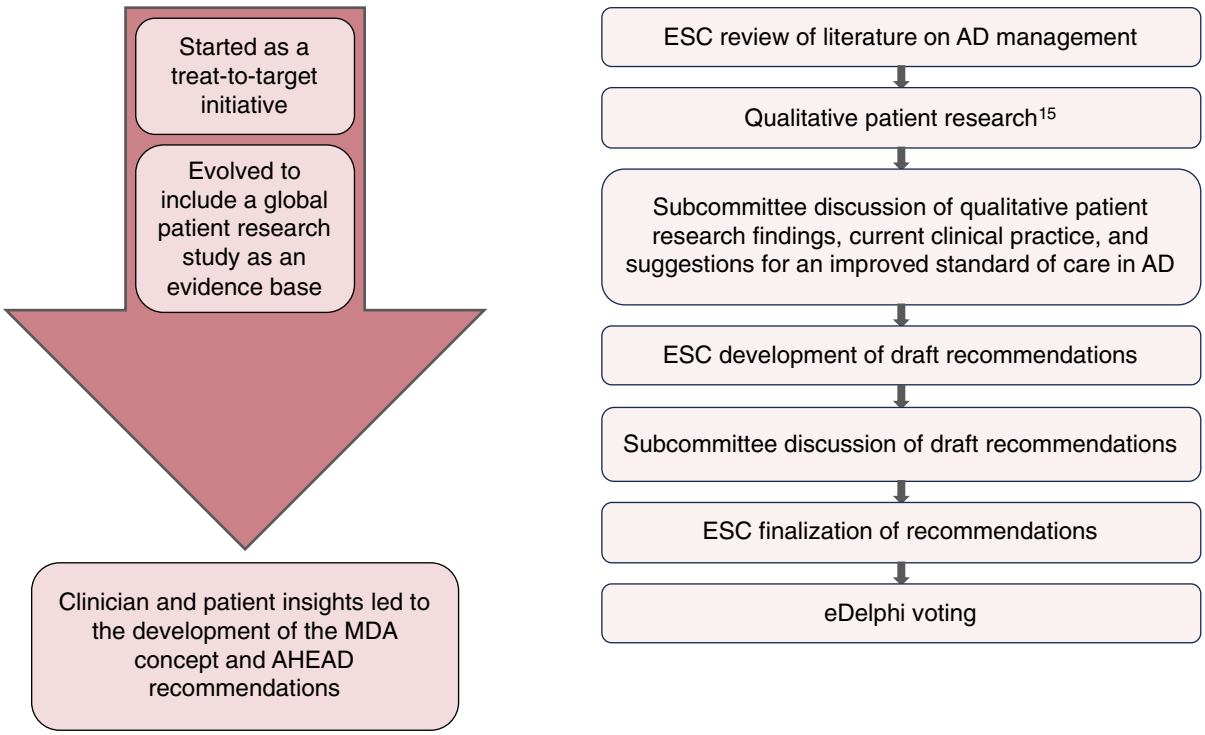

FIGURE 1 Overview of the expert initiative. AD, atopic dermatitis; AHEAD, Aiming High in Eczema/Atopic Dermatitis; ESC, executive steering committee; MDA, minimal disease activity.

RESULTS

Qualitative patient research

Data from the patient research were published separately.[20] In summary, 88 patients from 15 countries participated in the study and reported that AD has a substantial, broad impact on patients' lives, with patients being affected by AD at all times of the day and night. Mental health issues such as anxiety and depression were commonly reported by patients with AD, and these symptoms had the largest impact on patients' daily lives.[20]

Additionally, there was a perception among patients that clinicians underestimated the burden of AD on their daily lives. Importantly, patients did not have a clear or consistent definition of symptom improvement. While patients did not expect their condition to be completely cured, the levels of improvement patients viewed as substantial varied depending on factors such as the severity of their AD and which symptoms they were experiencing,[20] suggesting that optimal treatment targets should be tailored to individual patient goals.

eDelphi voting

Expert participation in the eDelphi process was high across all regions, with 89% (77/87) of invited participants voting (Appendix Table S3). Consensus was reached for all recommendations in the first round of voting, with 88% of the recommendations (30/34) reaching a 'strong' consensus. The mean score for all recommendations ranged from 7.89 to 9.76.

Final recommendations

The 34 AHEAD recommendations focus on key areas of AD management: disease severity assessments, treatment goals and targets, clinician- and patient-reported outcome targets, long-term disease control and a novel AHEAD approach (including guidance for treatment escalation/modification; Table 1). The clinician- and patient-reported outcome measures used in AHEAD recommendations are described in Appendix Table S4.

The recommendations relating to disease severity assessments and treatment targets all reached a strong consensus (mean agreement = 98.1%; mean score = 9.3). These state that disease severity should be assessed using both clinician- and patient-reported outcomes and advise clinicians to discuss the results of any outcome measure used with the patient, explaining what these results mean in the context of their disease severity and available treatment choices. The experts agreed that due to more effective therapies and their increased availability around the globe (despite variations in accessibility), it is now possible to aim for higher targets to optimize patient outcomes. Moreover, they agreed that the primary treatment goal in

TABLE 1 AHEAD recommendations.

Disease severity assessments and treatment goals and targets	
1	AD is a heterogeneous condition, and the outcome measures used to assess disease severity should be tailored to the patient's reported signs and symptoms
2	Patient-reported outcomes are important tools for patients/caregivers to communicate the impact that AD has on their lives to others, especially to their physicians
3	Physician-reported outcomes are important tools for benchmarking the severity of the disease
4	The disease severity in a patient with AD should be assessed using both physician-reported and patient-reported outcomes
5	Physicians should discuss with the patient/caregiver the results of any outcome measures used and explain what the results mean in terms of disease severity and treatment choices
6	It is now possible to aim for higher targets to optimize patient outcomes whenever possible because more effective therapies are now available
7	The ultimate treatment goal in AD should be a satisfied patient with minimal impact on quality of life, clear/almost-clear skin with no/minimal itch
Long-term disease control	
8	Physicians should consider assessment of long-term disease control because disease activity on the day of the appointment may not reflect the patient's overall condition over the previous weeks or months
9	Physicians and patients/caregivers should aim for long-term control of disease, with minimal flares and achievement of MDA, and physicians should consider the use of ADCT or RECAP for the assessment of disease control
The AHEAD approach: Combining treat-to-target principles with shared decision-making	
10	Patients/caregivers should be asked to choose 1–3 AD features that are most important to them (out of the following 6 features: itch, skin appearance/condition, sleep disturbance, mental health, skin pain and impact on daily life)
11	The physician should choose patient-reported outcome measures that reflect the patient's/caregiver's choice of AD features
12	The physician should also choose at least one objective clinical measure that gives an overall picture of the patient's disease (EASI, SCORAD, or IGA and BSA)
13	The physician and patient/caregiver should discuss the chosen physician-reported and patient-reported outcomes and select either moderate or optimal targets; achievement of optimal targets is defined as MDA
14	Treatment response can be considered inadequate if the agreed targets are not met within 3–6 months; treatment modification or escalation should then be considered
15	Systemic therapy should be considered in patients with moderate-to-severe AD who have failed to achieve the agreed targets with topical medications or phototherapy, particularly if this is affecting their quality of life
16	Physicians and patients/caregivers should aim for optimal treatment targets to optimize disease control and patient outcomes when possible
Treatment targets for clinician-reported outcomes	
17	The moderate target for EASI should be EASI-75 or EASI ≤7, with EASI ≤7 only used in patients with moderate-to-severe AD
18	The optimal target for EASI should be EASI-90 or EASI ≤3
19	The moderate target for SCORAD should be SCORAD-50 or SCORAD ≤24, with SCORAD ≤24 only used in patients with moderate-to-severe AD
20	The optimal target for SCORAD should be SCORAD-75 or SCORAD ≤10
21	The moderate target for IGA and BSA should be IGA ≤2 and 50% improvement in BSA
22	The optimal target for IGA and BSA should be IGA 0/1 and BSA ≤2%
Treatment targets for patient-reported outcomes	
23	The moderate target for itch should be ≥4-point reduction in peak pruritus NRS
24	The optimal target for itch should be peak pruritus NRS ≤1
25	The moderate target for skin appearance/condition should be ≥4-point reduction in POEM
26	The optimal target for skin appearance/condition should be POEM ≤2
27	The moderate target for sleep disturbance should be ≥3-point reduction in sleep NRS
28	The optimal target for sleep disturbance should be sleep NRS ≤1
29	The moderate target for mental health should be HADS-A <11 or HADS-D <11
30	The optimal target for mental health should be HADS-A <8 and HADS-D <8
31	The moderate target for skin pain should be ≥3-point reduction in pain NRS
32	The optimal target for skin pain should be pain NRS ≤1

TABLE 1 (Continued)

33	The moderate target for impact on daily life should be ≥4-point reduction in DLQI (patients >16 years of age), CDLQI (patients 4–16 years of age) or IDQOL (patients <4 years of age)
34	The optimal target for impact on daily life should be DLQI ≤1 (patients >16 years of age), CDLQI ≤1 (patients 4–16 years of age) or IDQOL ≤1 (patients <4 years of age)

Abbreviations: AD, atopic dermatitis; ADCT, Atopic Dermatitis Control Tool; AHEAD, Aiming High in Eczema/Atopic Dermatitis; BSA, body surface area; CDLQI, Children's DLQI; DLQI, Dermatology Life Quality Index; EASI, Eczema Area and Severity Index; EASI-75/90, 75%/90% improvement in EASI; HADS-A, Hospital Anxiety and Depression Scale-Anxiety; HADS-D, Hospital Anxiety and Depression Scale-Depression; IDQOL, Infants' Dermatitis Quality of Life; IGA, Investigator's Global Assessment; MDA, minimal disease activity; NRS, Numeric Rating Scale; POEM, Patient-Oriented Eczema Measure; RECAP, Recap of Atopic Eczema; SCORAD, SCORing Atopic Dermatitis.

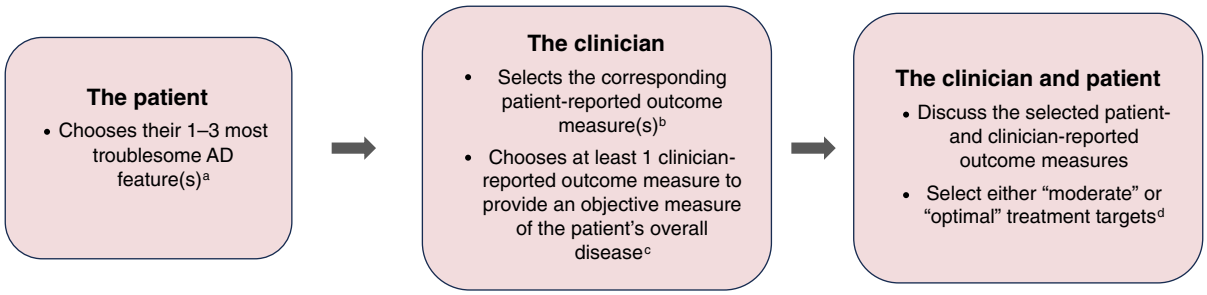

FIGURE 2 Overview of the AHEAD approach. [a]From itch, skin appearance/condition, sleep disturbance, mental health, skin pain and impact on daily life. [b]If itch is chosen, select peak pruritus NRS; if skin appearance/condition is chosen, select POEM; if sleep disturbance is chosen, select sleep NRS; if mental health is chosen, select HADS-A or HADS-D if skin pain is chosen, select pain NRS; if impact on daily life is chosen, select DLQI (patients >16 years of age), CDLQI (patients 4–16 years of age) or IDQOL (patients <4 years of age). [c]From EASI, SCORAD, or IGA and BSA. [d]Treatment targets should be reviewed every 3–6 months; if the patient does not achieve their targets within the agreed time frame, treatment escalation or modification should be considered. Clinicians and patients/caregivers should aim for optimal treatment targets; achievement of optimal targets is defined as MDA. AD, atopic dermatitis; AHEAD, Aiming High in Eczema/Atopic Dermatitis; BSA, body surface area; EASI, Eczema Area and Severity Index; HADS-A, Hospital Anxiety and Depression Scale-Anxiety; HADS-D, Hospital Anxiety and Depression Scale-Depression; IGA, Investigator's Global Assessment; MDA, minimal disease activity; NRS, Numeric Rating Scale; POEM, Patient-Oriented Eczema Measure; SCORAD, SCORing Atopic Dermatitis.

AD management should be a satisfied patient with a high quality of life, clear or almost-clear skin and a minimal degree of itching.

Of experts who provided a vote, all but 1 agreed that clinicians should consider assessment of long-term disease control (mean agreement = 98.7%; mean score = 9.64), as disease activity on the day of an appointment may not accurately represent the patient's overall condition over the previous weeks and months. Most agreed (mean agreement = 93.3%; mean score = 9.08) that clinicians and patients should aim for long-term disease control, minimal flares and achievement of MDA. They also agreed that clinicians should consider using the Atopic Dermatitis Control Tool (ADCT) or Recap of Atopic Eczema (RECAP) to assess disease control.[22,23] Both were included as they assess disease severity over the previous 7 days, unlike many of the tools currently used, which only assess the previous 24 h. However, in Recommendation 9, the experts specifically chose to omit 'long-term' when referring to the use of ADCT or RECAP for disease control, as they did not believe this would be defined as being within the previous week.

The expert group developed a novel approach to AD management (Figure 2). In the 'AHEAD approach', patients are asked to identify the 1–3 disease symptoms/features of AD that are most important to them to resolve. The clinician then chooses patient-reported outcome measures that correspond to the patient's choice of features. The clinician also chooses at least one clinician-reported outcome measure to provide an objective assessment of the patient's overall disease. Finally, the clinician and patient discuss the chosen clinician- and patient-reported outcomes and select either 'moderate' or 'optimal' treatment targets. Achievement of optimal treatment targets is defined as MDA.

Although experts agreed that clinicians and patients/caregivers should aim for higher (optimal) targets wherever possible, they also agreed that these targets may be difficult to achieve in some patients, so lower, 'moderate' targets were included as alternatives. Recommendations also provide guidance on treatment escalation or modification as well as eligibility for systemic therapy.

All recommendations on treatment targets (Tables 1 and 2; Appendix Table S4) reached consensus, with 15 of 18 reaching a strong consensus (mean agreement = 92.9%; mean score = 8.71). Two of the recommendations that did not reach a 'strong' consensus (recommendations 29 and 30) were related to the inclusion of mental health disorders as a feature of AD. Feedback from the experts revealed that some clinicians did not use or were unfamiliar with Hospital Anxiety and Depression Scale (HADS). Some experts favoured using other mental scales, for example Patient Healthcare Questionnaire 9 or Generalized Anxiety Disorder Assessment 7. There was some concern that psychiatric disorders primarily unrelated

TABLE 2 Recommended treatment targets for patient-reported and clinician-reported measures.[a]

Outcome measure	Moderate target	Optimal target
Patient-reported measures		
If itch chosen, use peak pruritus NRS	≥4-point improvement (reduction)	≤1
If skin appearance/condition chosen, use POEM	≥4-point improvement (reduction)	≤2
If sleep disturbance chosen, use sleep NRS	≥3-point improvement (reduction)	≤1
If mental health chosen, use HADS	HADS-A <11 or HADS-D <11	HADS-A <8 and HADS-D <8
If skin pain chosen, use pain NRS	≥3-point improvement (reduction)	≤1
If impact on daily activities chosen, use DLQI (patients >16 years of age), CDLQI (patients 4–16 years of age), or IDQOL (patients <4 years of age)	≥4-point improvement (reduction)	0/1
Clinician-reported measures		
EASI	EASI-75 or EASI ≤7 (moderate to severe)	EASI-90 or EASI ≤3
SCORAD	SCORAD-50 or SCORAD ≤24 (moderate to severe)	SCORAD-75 or SCORAD ≤10
IGA and BSA	IGA ≤2 and 50% BSA improvement	IGA 0/1 and BSA ≤2%

Abbreviations: AD, atopic dermatitis; BSA, body surface area; CDLQI, Children's DLQI; DLQI, Dermatology Life Quality Index; EASI, Eczema Area and Severity Index; EASI-75/90, 75%/90% improvement in EASI; HADS, Hospital Anxiety and Depression Scale; HADS-A, HADS-Anxiety; HADS-D, HADS-Depression; IDQOL, Infants' Dermatitis Quality of Life; IGA, Investigator's Global Assessment; MDA, minimal disease activity; NRS, Numeric Rating Scale; POEM, Patient-Oriented Eczema Measure; SCORAD, SCORing Atopic Dermatitis.

[a]Targets are for all AD severities, unless otherwise specified. Both 'moderate' and higher 'optimal' targets were developed to reflect that optimal targets may not be currently achievable in all patients and all parts of the world due to availability and access to advanced treatment options. Achievement of 'optimal' targets is defined as MDA.

to AD could influence HADS more strongly than AD and that linking therapeutic decisions for AD to HADS might have an adverse effect on patients with AD co-diagnosed with depression. Although it was agreed that not all mental health issues experienced by patients would be attributable to AD, data from the qualitative patient research study and numerous prior studies showed mental health to be an important issue in AD.[2,20,24,25] The additional recommendation that did not achieve 'strong' consensus was the optimal target for skin pain (recommendation 32), although this did achieve 89% agreement. Some experts felt that 'skin pain' is a non-specific phenomenon for AD and needs to be more clearly defined.

All recommendations on the AHEAD approach reached consensus, and all except one reached a strong consensus (mean agreement = 93.1%; mean score = 8.90). The recommendation that did not reach a strong consensus (recommendation 10) was related to patients choosing the AD features most important to them. Most experts agreed that, in general, a maximum of 3 AD features should be chosen in order to simplify the patient consultation process. However, this recommendation did not achieve strong consensus as some experts felt that the number of features should not be limited. Experts agreed that additional features may be required for more complex patients, such as those who report a significant burden from multiple AD features.

DISCUSSION

Insights from a global patient survey and expert discussions led to the development of the AHEAD recommendations, which cover disease severity assessments and treatment goals and targets, clinician- and patient-reported outcome targets, long-term disease control and a novel approach to AD management (including guidance for treatment escalation/modification). The diverse range of patient views obtained from the qualitative research, combined with expert insights from dermatologists worldwide, allowed for the creation of clinical recommendations that are truly patient-focused and consider the variety of challenges patients experience with their AD management worldwide. These recommendations aim to optimize AD management for patients with AD at all ages and severities. Consensus agreement was reached for all recommendations in the first round of voting, with at least 80% of respondents ranking their agreement as ≥7 out of 10. A 'strong' consensus, wherein at least 90% of respondents ranked their agreement as ≥7 out of 10, was achieved by all except four recommendations.

Although previous consensus recommendations and treatment guidelines were based on data from literature reviews and expert opinions, they were limited in their inclusion of global insights and evidence-based patient perspectives. For example, although the 2021 treat-to-target initiative recruited 10 patient representatives to participate in eDelphi voting, these were from nine predominantly European countries (eight European countries and Australia).[17] In comparison, AHEAD recommendations utilized an ethnically diverse, global, qualitative patient research study involving 88 patients from 15 countries as an evidence base for the recommendations.[20] Similarly, the 2021 treat-to-target initiative involved 77 clinicians from 28 predominantly European countries (25 European countries, Australia, Canada and Japan), and clinician participation in eDelphi voting was low, with 61.0% ($n = 47$) and 58.4% ($n = 45$) of clinicians voting in Rounds 1 and 2, respectively.[17]

In contrast, the current initiative involved 87 clinicians and included global perspectives, with more countries ($n = 44$) and involvement from a wider range of regions (24 European countries, the United States, 5 Latin American countries, 5 Asian countries, 5 Middle Eastern countries, Australia, Canada, Puerto Rico and New Zealand). Clinician participation in eDelphi voting was also high, with 88.5% ($n = 77$) of those invited taking part.

The Harmonizing Outcome Measures for Eczema (HOME) initiative has similarly recognized the importance of capturing patient perspectives in clinical practice. The HOME core outcome set provided a consensus-derived, evidence-based minimum set of domains—including patient symptoms (measured by Patient-Oriented Eczema Measure [POEM] and peak pruritus NRS)—that should be assessed in clinical trials.[26] Following this, patient-reported symptoms were the top-prioritized domain by HOME, with recommended use of POEM and the Patient-Oriented SCORAD (PO-SCORAD) tool in clinical practice.[27] Although the AHEAD recommendations do not include the use of PO-SCORAD, they do include the use of POEM alongside other patient-reported measures and recognize the value of patient-reported outcomes for assessing disease severity. Contrary to the more rigid and physician-centric approaches used in prior recommendations and initiatives,[17,19,26,27] the AHEAD recommendations recognize a patient's unique reasons for making treatment decisions and therefore expand on the individualized approach as per that suggested in the 'treatable traits' concept.[16] Of note, the AHEAD recommendations do not use the taxonomy of domains set out by the COMET initiative,[28] or the methodology outlined by the CHORD COUSIN Collaboration,[29] as the list of AD features included in the AHEAD approach was designed to be used in collaboration with the patient, allowing them to select the features of most importance to them.

While European guidelines provide overall treatment goals for AD,[1] AHEAD recommendations provide clearly defined treatment targets. Data from the recent MEASURE-AD study indicate that the targets from the 2021 treat-to-target initiative may not be stringent enough to achieve optimal disease control in all patients.[18]

Indeed, higher 1-year treatment targets have recently been suggested[19]; targets included in AHEAD recommendations are even more ambitious given the shorter time frame of 3–6 months and offer a flexible, patient-centric approach by providing both 'moderate' and 'optimal' targets. Although patients/caregivers and clinicians are encouraged to aim for higher targets wherever possible, these 'optimal' targets may be difficult to achieve. For example, some patients may have limited access to, or availability of, the advanced treatment options required to meet 'optimal' targets. Furthermore, some patients may reject these treatment options due to concerns about potential risks, side effects or undesirable monitoring requirements, or may simply prefer to aim for the more 'moderate' targets that are easier to attain.

AHEAD recommendations will help to improve the standard of care in AD by providing more ambitious treatment targets than those used in current recommendations.[8–15,17,19] Clinicians are provided with a clear framework when making treatment decisions, such as treatment modification or escalation, and when to initiate systemic therapies, which will help to improve treatment outcomes by minimizing the portion of patients currently receiving suboptimal care (particularly those with moderate-to-severe AD). Shared decision-making will increase patient involvement in the management of their disease and may improve treatment satisfaction among patients.

Despite efforts to make AHEAD recommendations accessible to all patients, some tools used may be unavailable in certain languages; local translation may provide opportunities for broader use of such tools. Use of existing, validated tools that clinicians may already be familiar with should help the incorporation of recommendations into clinical practice. However, the AHEAD recommendations for assessment of long-term disease control were also limited by the currently available tools, as both ADCT and RECAP take into account the previous 7 days, but longer-term tools are needed. Furthermore, while global patient perspectives were captured in the qualitative patient research study[20] and were considered by the ESC in their initial drafting of the recommendations, patients did not participate in the eDelphi voting process and were therefore not involved in the generation of consensus. In addition, time constraints may pose a barrier to the implementation of the AHEAD recommendations in clinical practice. To overcome this, the authors believe that an easy-to-use tool should be developed by expert dermatologists, with input from patients or representatives of patient advocacy groups, to help guide clinicians and patients through the AHEAD approach and aid with the implementation of these recommendations in clinical practice. Within this tool, patients could complete patient-reported assessments prior to their appointment (e.g. online), thereby reducing the time constraints on their consultation.

The consensus-based AHEAD recommendations establish a novel approach to AD clinical practice that combines treat-to-target principles with shared decision-making. They will optimize AD management with higher treatment targets and increased patient involvement compared with the current standard of care, for patients at all ages and severities. Future endeavours will involve the development of a tool to help implement the AHEAD recommendations in real-world clinical practice and studies to assess their feasibility and clinical value.

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CONFLICT OF INTEREST STATEMENT

Jonathan I. Silverberg is an investigator for AbbVie, Bristol Myers Squibb, Eli Lilly, GlaxoSmithKline, Incyte, Kiniksa Pharmaceuticals, LEO Pharma, Realm Therapeutics and Regeneron; a consultant for AbbVie, Alamar, Amgen, AObiome, Arcutis, Arena, Asana, Aslan, BioMX, Biosion, Bodewell, Boehringer Ingelheim, Cara, Castle Biosciences, Celgene, Connect Biopharma, Dermavant, Dermira, Dermtech, Eli Lilly, Galderma, GlaxoSmithKline, Incyte, Kiniksa, LEO Pharma, Menlo, Novartis, Optum, Pfizer, RAPT, Regeneron, Sanofi-Genzyme, Shaperon and Union; and a speaker for AbbVie, Eli Lilly, LEO Pharma, Pfizer, Regeneron and Sanofi-Genzyme. Melinda Gooderham is an investigator, speaker and/or advisor for AbbVie, Akros, Amgen, AnaptysBio, Arcutis, Aristea, Aslan, Bausch Health, Boehringer Ingelheim, Bristol Myers Squibb, Dermavant, Dermira, Eli Lilly, Galderma, GlaxoSmithKline, Incyte, Janssen, Kyowa Kirin, LEO Pharma, MedImmune, Meiji, Merck, Moonlake, Nimbus, Novartis, Pfizer, Regeneron, Roche, Sanofi-Genzyme, Sun Pharma, Takeda, Tarsus, UCB, Union and Vyntex. Norito Katoh has received honoraria as a speaker/consultant for AbbVie, Celgene Japan, Eli Lilly Japan, Jansen Pharma, Kyowa Kirin, LEO Pharma, Maruho, Mitsubishi Tanabe Pharma, Sanofi, Taiho Pharmaceutical and Torii Pharmaceutical; and has received grants as an investigator from A2 Healthcare, AbbVie, Boehringer Ingelheim Japan, Eisai, Eli Lilly Japan, Jansen Pharma, Kyowa Kirin, LEO Pharma, Maruho, Sun Pharma, Taiho Pharmaceutical and Torii Pharmaceutical. Valeria Aoki is an investigator for Eli Lilly and Sanofi (clinical trials); and a consultant and/or speaker for AbbVie and Pfizer. Andrew E. Pink is an advisory board member, investigator for, received grants from, or received educational support from AbbVie, Almirall, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Eli Lilly, Janssen, La Roche-Posay, LEO Pharma, Novartis, Pfizer, Roche, Sanofi-Genzyme and UCB. Yousef Binamer has received honoraria as a speaker and consultant, and has received travel support from AbbVie, Eli Lilly, Janssen, Kyowa Kirin, NewBridge, Novartis and Sanofi; and has received research grants from Novartis and Sanofi. Marius Rademaker is an investigator for AbbVie, Akesobio, Aslan, Galderma and Suzhou Connect. Daria Fomina has no relationships to disclose. Jan Gutermuth is an investigator, speaker and/or advisor for AbbVie, Almirall, Ariez International, Celgene, Eli Lilly, Eucerin, Janssen, LEO Pharma, La Roche-Posay, Nestlé, Pfizer, Pierre Fabre, Regeneron/Sanofi and Thermo Fisher Celgene. Jiyoung Ahn is a speaker/consultant for AbbVie, Eli Lilly, LEO Pharma, Novartis, Pfizer and Sanofi; and received investigator grants from AbbVie, Amgen, Eli Lilly and Sanofi. Fernando Valenzuela is an investigator, speaker and/or advisor for AbbVie, Amgen, Boehringer Ingelheim, Bristol Myers Squibb, Eli Lilly, Janssen, LEO Pharma, Merck, Novartis, Pfizer, Roche and Sanofi. Mahreen Ameen is an investigator and advisor for AbbVie. Martin Steinhoff is an investigator for AbbVie, Almirall, Bayer Health, Bristol Myers Squibb, Celgene, Chugai, Galderma, GlaxoSmithKline, LEO Pharma, L'Oréal, Maruho, Mitsubishi, Novartis, Pfizer, Pierre Fabre, Regeneron, Sanofi-Genzyme and Toray; a consultant for AbbVie, Algorithm, Almirall, Avon, Baiersdorf, Bayer Health, Bristol Myers Squibb, Chugai, Eli Lilly, Galderma, GlaxoSmithKline, Janssen, Johnson & Johnson, LEO Pharma, L'Oréal, Maruho, MenloTX, Mitsubishi, Novartis, Pfizer, Pierre Fabre, Qatar Pharm,

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

Patient consent is not applicable.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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