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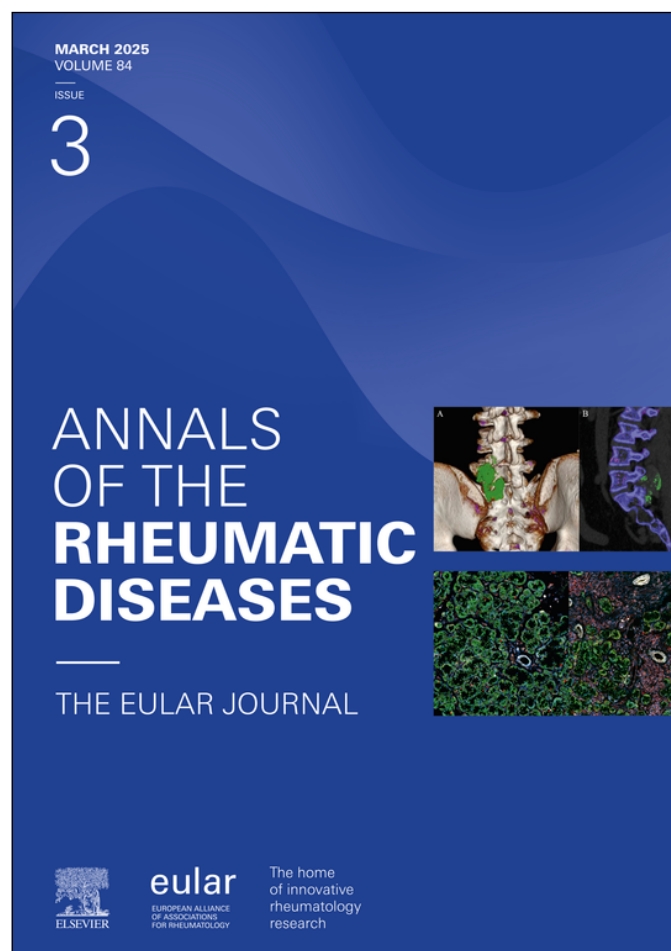
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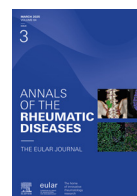
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Viewpoint

1995-2025: thirty years of ASAS and its contribution to the understanding of spondyloarthritis

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ABSTRACT

Objective: To describe the role of the Assessment of SpondyloArthritis international Society (ASAS) over the past 30 years in the understanding of the field of spondyloarthritis.

Methods: A narrative review of the achievements.

Results: A summary of the role of ASAS in defining nomenclature, definition of and criteria for SpA, outcome assessments, recommendations, and education.

Conclusion: ASAS played an important role in shaping the field of SpA.

In 2025, the Assessment of SpondyloArthritis international Society (ASAS) will celebrate its 30th anniversary after being founded in 1995 in Maastricht the Netherlands by a group of researchers interested in spondyloarthritis (SpA). In these last 30 years, major changes have taken place in the field of SpA. Meanwhile, ASAS has grown into an inclusive global

organisation comprising not only health professionals but also patients and epidemiologists, representing nearly 50 countries worldwide (Fig 1). In this article, ASAS proudly looks back at its role in the knowledge evolution of SpA.

Initially, ASAS used the acronym 'Assessment of Ankylosing Spondylitis' working group, with the primary aim to develop a

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Figure 1. ASAS meeting photos. Photo (left) from the first meeting of ASAS members during EULAR in Amsterdam, the Netherlands, in 1995, where the first core outcome set was defined. Photo (right) of the membership at the annual meeting in January 2024 in Barcelona, Spain. ASAS, Assessment of Spondyloarthritis international Society.

core outcome set for assessment of ankylosing spondylitis (AS) similar to the core outcome set developed for rheumatoid arthritis (RA) by Outcome Measures RA Clinical Trials (OMERACT) [1]. The first core set of domains was published in 1997 [2] followed by the core set of instruments in 1999 [3]. Around the same time, the ASAS response and partial remission criteria were also developed [4]. These were the first of many assessment tools developed by ASAS over the next 30 years. As ASAS progressed with the development and validation of new outcome assessments, it became evident that its global members also possessed collaborative insights about other aspects of the disease. Later, the mission of ASAS was expanded to “include the awareness of SpA, facilitate early diagnosis, and evaluate treatment modalities.” The same acronym, ASAS, was kept, but the full name was adopted to the updated nomenclature as the Assessment of SpondyloArthritis international Society to better reflect the broadened aims of the group, while the organisation was further professionalised. A very relevant recent development was the conception of Young-ASAS for ASAS members ≤ 45 years of age, to ensure a strong succession plan for the current leadership.

When the core set was being developed, nonsteroidal anti-inflammatory drugs (NSAIDs) were the only therapeutic agents available for treating axSpA. Serendipitously, the core outcome set was available at the time that new advanced treatments, the TNF-inhibitors (TNFi), were introduced and required testing for axSpA through randomised controlled trials (RCTs). This led to standardisation in the outcomes assessed in randomised controlled trials (RCTs) and the first statement from ASAS on the use of TNFi in axSpA, published in 2003 [5]. In 2023, a major update of the core set was published, including additional instruments developed over the preceding years [6,7].

Over the years, outcome assessments, including the development of new instruments, have remained the core focus of ASAS. With the increasing body of evidence on the understanding of the disease, several assessments had to be updated. It became especially clear that disease activity is evaluated differently by patients and physicians, while the first disease activity instruments were primarily patient reported (PRO). This inspired ASAS to develop the ASDAS, the Axial Spondyloarthritis Disease Activity Score [8]. The ASDAS is an instrument that includes C-reactive protein (CRP) and the patient’s global assessment of the disease next to other PROs. It excludes the nonspecific feature of fatigue and is weighted with less redundancy than the first available PRO, the Bath AS Disease Activity Index (BASDAI), thus accounting for the patient-based evaluation and the objective evaluation of disease activity. The ASDAS rapidly became the widely preferred instrument for assessment of

disease activity, also because of its good correlation with the progression of structural damage, confirming the theoretical triangular model of inflammation (disease activity), radiographic damage, and reduced physical function [9–11].

Another major milestone for ASAS was the development and validation of the ASAS Health Index (ASAS HI) [12]. This is based on the World Health Organization International Classification of Functioning, Disability and Health (WHO-ICF) and is an instrument to assess global functioning and health, specific for axSpA. It is the first (and only) instrument based on the ICF [12]. The ASAS HI is validated in 35 languages and is, as with all instruments developed by ASAS, freely available for use [13]. Recently, the EMA started the qualification process of the ASAS HI as a preferred instrument for the domain overall functioning and health-related quality of life in axSpA.

In 1995, while mostly conventional radiography (CR) was used for capturing damage of the disease, the use of magnetic resonance imaging (MRI) in axSpA had just been piloted. MRI of the sacroiliac joints (SIJ) showed inflammation much earlier than the structural damage visible on CR, the latter having contributed to a long delay between symptom onset and timepoint of diagnosis. As a consequence of CR limitations, research studies only included patients classified according to the modified New York criteria, therefore with (relatively) longstanding disease. To be able to include patients with earlier disease, the ASAS classification criteria were developed in which MRI played an important role [14,15]. Over the years, ASAS was instrumental in developing definitions and descriptions of abnormalities on MRI, typical for axSpA both in the sacroiliac joint (SIJ) and the spine [16–20]. Efforts to reduce the time to diagnose included publications on the ASAS definition of inflammatory back pain and guidelines for early referral [21].

The 2009 ASAS classification criteria allowed for the classification of patients with pathologic imaging findings suggestive of axSpA on either radiographs or MRI but also HLA-B27-positive patients with normal imaging, encompassing the entire spectrum of axSpA [14,15]. By the time of the publication of the criteria, several TNFi were already approved for radiographic axSpA (r-axSpA, previously called AS). To be able to apply these treatments to patients with active sacroiliitis on MRI but no established structural damage on CR (nonradiographic stage of axSpA, nr-axSpA), after discussion with the US Food and Drug Administration (FDA), a 1-year placebo-controlled RCT was conducted after failure of the initial nr-axSpA trials to receive approval for this stage of axSpA. Although historically driven, this regulatory distinction hindered the acceptance of axSpA as one entity, unlike rheumatoid arthritis, in which there is no split between nonerosive and erosive disease. Recently, an official

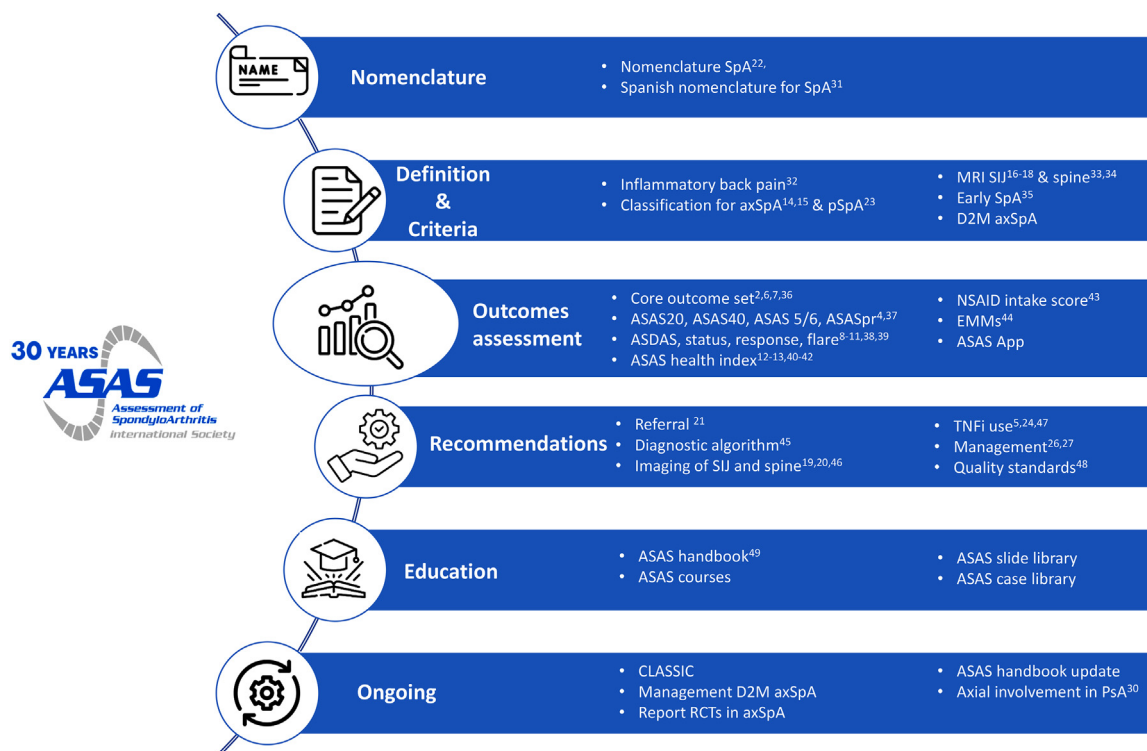


Figure 2. A summary of ASAS products. Legend: Nomenclature (SpA [22], Spanish[31]), definitions and criteria (IBP [32], classification criteria [14,15,23], MRI-SIJ [16–18], MRI-spine [33,34], early axSpA [35], D2M), outcome assessment (COS [2,6,7,36], treatment response [4,37], ASDAS [8–11,38,39], ASAS-HI [12,13,40–42], NSAID intake score [43], CRF EMMs [44]), recommendations (referral [21], diagnostic algorithm [45], imaging SIJ and spine [19,20,46], TNFi use [5,24,47], management [26,27], quality standards [48]), education (handbook [49]), and ongoing (axial involvement in PsA [30]). ASAS, Assessment of Spondyloarthritis international Society; ASDAS: Axial Spondyloarthritis Disease Activity Score; axSpA, axial spondyloarthritis; CLASSIC, Classification of Axial Spondyloarthritis Inception Cohort; D2M, difficult to manage; MRI, magnetic resonance imaging; NSAID, nonsteroidal anti-inflammatory drugs; EMMs, extramusculoskeletal manifestations; PsA, psoriatic arthritis; pSpA, peripheral spondyloarthritis; RCT, randomised controlled trials; SIJ, sacroiliac joints; SpA, spondyloarthritis; TNFi: tumour necrosis factor inhibitor.

statement was published by ASAS for the terminology to focus on axSpA as a whole [22].

The ASAS classification criteria for axSpA are, together with ASDAS, the most well-known contributions of ASAS and have had a major impact in the field of rheumatology. They served as an important educational tool to explain the concept of SpA and have highlighted the importance of MRI to identify the disease at an early stage. In addition, classification criteria for peripheral SpA were also published [23]. Over the years, it became clear that classification criteria, including the ASAS classification criteria, cannot be used as a diagnostic tool. Using the classification criteria to make a diagnosis resulted in inaccurate (high) prevalences of axSpA. Overall, the criteria were criticised for being insufficiently specific; however, when used correctly, they served the purpose of classification well and have been the standard for inclusion in all recent RCTs for approval of new medications. Nevertheless, and in order to improve their specificity based on knowledge gained over the last 15 years, ASAS, together with the United States SpA Research and Treatment Network (SPARTAN), undertook the Classification of Axial Spondyloarthritis Inception Cohort (CLASSIC) with the aim of enhancing their specificity.

Another important product from ASAS for the clinical community has been the collaboration with European Alliance of Associations for Rheumatology (EULAR) and the publication of the ASAS/EULAR axSpA management recommendations in 2006 [24]. Since then, several updates have been published, the latest in 2022 [25–27]. These ASAS-EULAR management recommendations have a major impact on the management of axSpA worldwide and include both nonpharmacologic and

pharmacologic treatments. In addition, most recently, a definition for difficult to manage (D2M) axSpA has been developed and this will be followed by the development of recommendations on the management of D2M axSpA.

One of the strengths of ASAS is the fruitful collaboration between its almost 200 members leading to the successful completion of several worldwide studies in a very good collaborative spirit. Examples are the Comorbidities in SpA (COMOSPA) [28] and the peripheral SpA (PerSpA) studies [29]. Such projects contributed to the understanding of SpA as a disease from a more holistic perspective and have been the basis for subsequent analyses for additional research questions. They have also provided great opportunities to researchers who do not have large databases readily available and provided experience to young researchers who, under mentorship from established ASAS members, were able to perform their first international collaborative analyses.

ASAS has effectively integrated research and education for axSpA by supporting projects through annual fellowships and research grants, open to non-ASAS members (fellowships) interested in axSpA and to ASAS members (fellowships and grants). In addition, educational courses either in collaboration with corporate partners, with other societies such as SPARTAN, or independently, both face-to-face and online, have been conducted successfully in many countries in the world. This has resulted in the establishment of the ASAS educational core course, which takes place annually with global attendance. In addition, ASAS has developed an educational slide library with more than 550 slides in 14 languages as well as a case library on all topics related to axSpA, which can be freely used by everyone (www.asas-spa.org).

asas-group.org), and an update of the ASAS handbook, a collection of all information related to SpA is ongoing.

Although ASAS' focus is on clinical science and outcome measures, the collaboration of many researchers from translational and basic science with a specific interest in SpA, is increasing. This is especially relevant for research in the genetics of SpA, which is assisted by clear disease definitions and specific outcome measures.

Overall, ASAS has played an important role in understanding and 'capturing' a complex disease such as axSpA. Further collaborative projects with other major scientific societies, such as the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA) towards the characterisation of overlapping conditions such as psoriatic arthritis with inflammatory axial involvement are ongoing and will generate answers to questions regarding the entire family of SpA [30].

A list of ASAS products is presented in Figure 2 [2,4–24,26,27,30–49]. This was made possible by a highly active membership, collaborating in good spirit towards a common goal: to improve the health-related quality of life of patients with SpA.

The future of ASAS still looks bright with a high number of enthusiastic members all working in the field of SpA. From the outset, ASAS has been a members-only society with co-opted active members. Given the impact over the years, there is no reason to change this. In the (near) future updated classification criteria, an updated definition on what is considered a positive MRI and criteria for the axial involvement in PsA can be expected. Additionally, projects on the development of management recommendations for difficult to manage axSpA, selection of a core outcome set for clinical practice and choice of instruments for the domain of peripheral involvement are currently being executed.

Competing interests

All authors were president or member of the ASAS executive committee during the past 30 years. Désirée van der Heijde has received consulting fees from AbbVie, Alfasigma, ArgenX, BMS, Eli Lilly, Grey-Wolf Therapeutics, Janssen, Novartis, Pfizer, Takeda, and UCB Pharma and is director of Imaging Rheumatology BV, Associate editor of *Annals Rheumatic Diseases*, editorial board member of the *Journal of Rheumatology* and *RMD Open*, and an adviser to the Assessment of Axial SpondyloArthritis International Society.

Victoria Navarro-Compán has received consultancy, speaker, and research grants from AbbVie, Alphasigma, BMS, Fresenius Kabi, Galapagos, Janssen, Eli Lilly, Moonlake, MSD, Novartis, Pfizer, Roche, and UCB. She is a member of the executive committee, executive secretary and elect president of ASAS.

Robert Landewé has received consulting fees from AbbVie, Pfizer, UCB, Eli Lilly, Novartis, Jansen Pharma, and Galapagos; honoraria from UCB and AbbVie; participated in a DSMB for a UCB trial; is a ASAS and METEOR board member and a director of Joint Imaging BV and of Rheumatology Consultancy BV.

Joachim Sieper has received fees for consultancies and for being a member of speakers' bureau from AbbVie, Merck, Novartis, and UCB.

Floris van Gaalen has received consulting and speaker fees from AbbVie, ASAS, BMS, Galapagos, Janssen, Lilly, Novartis, Pfizer, and UCB. FvG is a member of the executive committee of ASAS.

Lianne Gensler has received research grants and/or consulting fees from AbbVie, Acelyrin, Eli Lilly, Fresenius Kabi,

Janssen, Novartis, Pfizer, and UCB. She is a member of the executive committee of ASAS.

Pedro M. Machado has received honoraria from AbbVie, BMS, Celgene, Eli Lilly, Galapagos, Janssen, MSD, Novartis, Orphazyme Pfizer, Roche, and UCB. He is a member of the executive committee of ASAS.

Helena Marzo-Ortega has received research grants from Janssen, Novartis, Pfizer, and UCB and speaker fees/honoraria from AbbVie, Amgen, Biogen, Eli Lilly, Janssen, Moonlake, Novartis, Pfizer and UCB.

Denis Poddubnyy has received research support from AbbVie, Eli Lilly, MSD, Novartis, and Pfizer; consulting fees from AbbVie, Biocad, Bristol-Myers Squibb, Eli Lilly, Janssen, Moonlake, Novartis, Pfizer, and UCB; and speaker fees from AbbVie, Canon, DKSH, Eli Lilly, Janssen, MSD, Medscape, Novartis, Peervoice, Pfizer, and UCB. He is a member of the executive committee of ASAS.

Mikhail Protopopov has received consulting fees from Novartis as well as support for attending meetings and/or travel from AbbVie, Janssen, Novartis, and UCB.

Sofia Ramiro has received research grants and/or consultancy fees from AbbVie, Eli Lilly, Galapagos/Alfasigma, Janssen, MSD, Novartis, Pfizer, Sanofi, and UCB. She is a member of the executive committee of ASAS.

Alexandre Sepriano has received speaking and/or consulting fees from AbbVie, Novartis, UCB and Lilly as well as support for attending conferences from Janssen.

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Patient consent for publication

Not applicable.

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Contributors

DvdH, VNC, and XB drafted the paper. All authors reviewed the manuscript and approved the final version. DvdH is guarantor.

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