# Work Productivity Improved in Patients with Axial Spondyloarthritis Receiving Bimekizumab Treatment Over 52 Weeks: Results from Two Phase 3 Studies

Martin Rudwaleit,[1] Victoria Navarro-Compán,[2] Atul Deodhar,[3] Maureen Dubreuil,[4] Michael Frank Mørup,[5] Vanessa Taieb,[6] Christine de la Loge,[7] Carmen Fleurinck,[8] Ute Massow,[9] Thomas Vaux,[10] Annelies Boonen[11,12]

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## Objective

**To assess the impact of bimekizumab (BKZ) on work productivity and activity impairment in patients with non-radiographic (nr-) and radiographic (r-) axial spondyloarthritis (axSpA) in the phase 3 BE MOBILE 1 and 2 studies.**

## Background

- Symptoms of axSpA have a direct impact on work productivity and daily activities, profoundly impacting health-related quality of life and posing an economic burden to patients and society.[1]
- BKZ, a monoclonal IgG1 antibody that selectively inhibits interleukin (IL)-17F in addition to IL-17A, demonstrated rapid and sustained efficacy in improving signs and symptoms and controlling disease activity up to Week 52 in patients with nr-axSpA and r-axSpA (i.e., ankylosing spondylitis)[2] in the phase 3 studies BE MOBILE 1 and 2, respectively.[3]

## Methods

- BE MOBILE 1 (NCT03928704) and 2 (NCT03928743) comprised a 16-week double-blind period followed by a 36-week maintenance period (**Figure 1**).[3]
- Mean changes from baseline are reported at Week 16 and 52 in work productivity and activity impairment (WPAI)[4] axSpA scores, which assess:
  - Disease impact on patients' productivity while at paid work (i.e., presenteeism);
  - Work time missed (i.e., absenteeism [absence from paid work, including sick leave]);
  - Overall work impairment (composite of presenteeism and absenteeism);
  - Daily activity impairment (outside of paid work).
- The WPAI:axSpA consists of six questions, and scores are generated as percentage of time impaired, with higher scores reflecting higher impairment and less productivity.
- Observed case data are reported.

## Results

- At baseline, 431/586 (73.5%) patients were employed. Patients were a young working population (nr-axSpA mean age: 39.4 years; r-axSpA mean age: 38.8 years) and had substantial overall work impairment at baseline, with presenteeism contributing most to this (**Table 1**).

### Presenteeism, Overall Work Impairment, and Activity Impairment

- At Week 16, mean reductions from baseline (i.e., absolute improvements) were greater in BKZ- versus placebo (PBO)-randomized patients for overall work impairment (nr-axSpA: −26.5% vs. −14.1%; r-axSpA: −22.2% vs. −6.7%), presenteeism, and activity impairment (**Figure 2**).
- Mean improvements in overall work impairment were sustained or further improved to Week 52 in BKZ-randomized patients (nr-axSpA: −31.7%; r-axSpA: −27.0%).
  - Patients who switched from PBO to BKZ at Week 16 reached similar levels of improvement to BKZ-randomized patients at Week 52; similar trends were seen in presenteeism and activity impairment (**Figure 2**).
- Similar results were seen between patients with r-axSpA and nr-axSpA (**Figure 2**).

### Absenteeism

- Baseline absenteeism scores were low compared with other WPAI items (**Table 1**), leaving limited room for improvement.
- At Week 16, no clear separation between groups was seen; this response was improved or sustained in BKZ-randomized patients at Week 52 (**Figure 2**).

## Conclusions

**Bimekizumab treatment resulted in substantial improvements in presenteeism, overall work productivity, and activity impairment at Week 16 compared with PBO, with further improvements at Week 52 in patients across the full disease spectrum of axSpA.**

## Summary

**Patients across the full disease spectrum of axSpA receiving BKZ 160 mg Q4W over 52 weeks showed improvements in:**

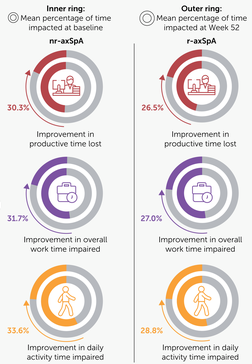
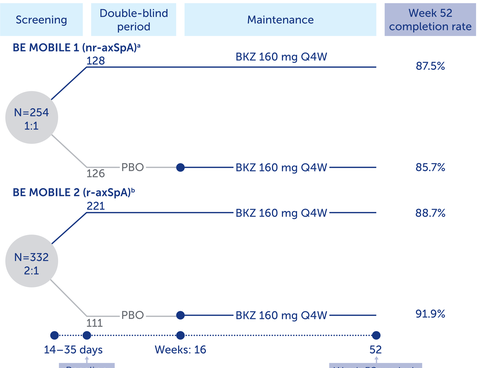




**Figure 1** BE MOBILE 1 and 2 study designs



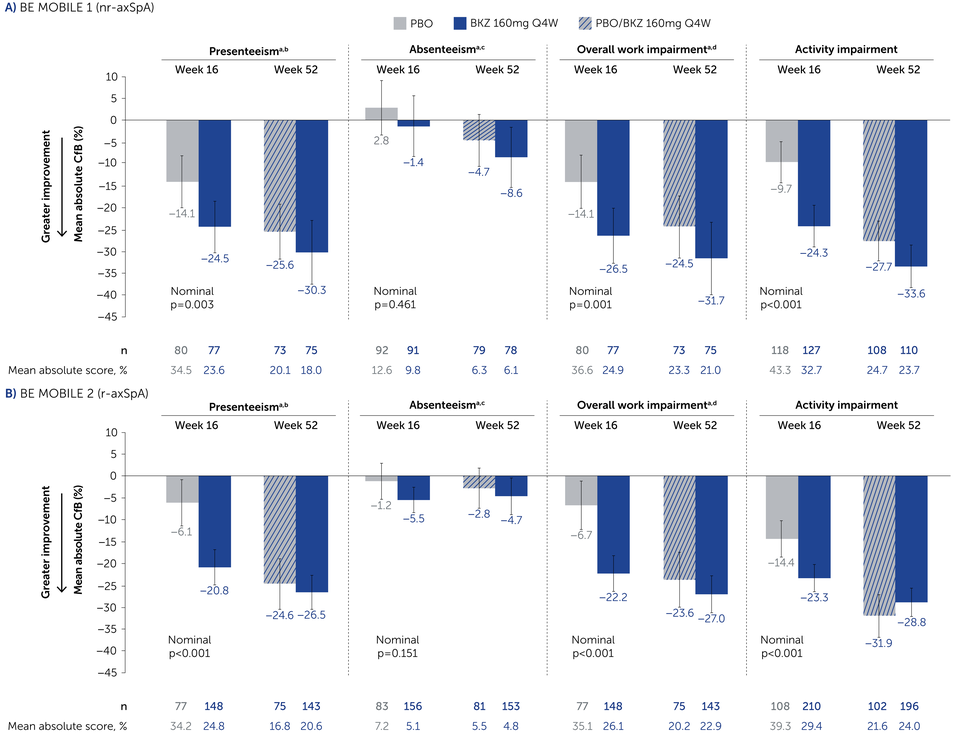

Patients were eligible to receive non-biologic rescue therapy from Week 20 at the discretion of the investigator while continuing to receive BKZ. All patients had active nr-axSpA or r-axSpA at baseline (BASDAI ≥4 and spinal pain ≥4). [a] Included patients had adult-onset nr-axSpA fulfilling ASAS classification criteria and objective signs of inflammation (active sacroiliitis on MRI and/or elevated CRP [>6 mg/L]); [b] Included patients had r-axSpA fulfilling modified New York criteria; all patients in BE MOBILE 2 also fulfilled ASAS classification criteria.

**Table 1** Baseline demographics and WPAI:axSpA item scores (OC)

| | BE MOBILE 1 (nr-axSpA) | | BE MOBILE 2 (r-axSpA) | |
|---|---|---|---|---|
| | PBO/BKZ 160 mg Q4W n=126 | BKZ 160 mg Q4W n=128 | PBO/BKZ 160 mg Q4W n=111 | BKZ 160 mg Q4W n=221 |
| **WPAI:axSpA item score**, mean % (SD) | | | | |
| Presenteeism[a,b] | 47.1 (20.9) (n=84) | 49.2 (25.1) (n=86) | 42.3 (23.4) (n=74) | 46.1 (24.9) (n=149) |
| Absenteeism[a,c] | 11.6 (26.7) (n=93) | 12.8 (25.0) (n=95) | 10.9 (26.9) (n=82) | 11.5 (23.6) (n=161) |
| Overall work impairment[a,d] | 49.1 (21.5) (n=84) | 52.2 (26.6) (n=86) | 43.9 (24.5) (n=74) | 49.2 (25.6) (n=149) |
| Activity impairment | 53.4 (21.7) (n=126) | 57.3 (22.9) (n=128) | 54.1 (24.2) (n=111) | 53.3 (23.6) (n=221) |
| **Employment**, n (%) | 93 (73.8) | 95 (74.2) | 82 (73.9) | 161 (72.9) |
| **Baseline demographics of employed patients** | | | | |
| **Age**, (years), mean (SD) | 39.5 (10.1) (n=93) | 39.3 (9.4) (n=95) | 38.1 (10.5) (n=82) | 39.2 (10.0) (n=161) |
| **Male**, n (%) | 50 (53.8) (n=93) | 53 (55.8) (n=95) | 65 (79.3) (n=82) | 124 (77.0) (n=161) |
| **Time since first symptoms of axSpA**, (years), mean (SD) | 8.6 (7.9) (n=93) | 8.3 (8.0) (n=95) | 11.0 (7.6) (n=82) | 12.4 (8.8) (n=161) |

Randomized set. WPAI:axSpA item scores are expressed as a percentage, with higher numbers indicating greater impairment and less productivity. The baseline demographics of the overall population have been previously reported.[3] [a] Absenteeism, presenteeism, and overall work impairment were assessed only in patients who were employed at baseline; [b] Impairment while at paid work due to axSpA; [d] Overall work impairment is a composite of absenteeism and presenteeism.

**Figure 2** Mean absolute change from baseline in WPAI:axSpA scores at Week 16 and Week 52 (OC)




Randomized set. Error bars represent 95% CI. WPAI:axSpA item scores are expressed as a percentage, with a greater reduction indicating greater improvement. Week 16 nominal p values were calculated using ANCOVA with baseline WPAI:axSpA item score as covariate and treatment, region and either MRI/CRP classification at baseline (nr-axSpA) or prior TNF inhibitor exposure (r-axSpA) as fixed effects. [a] Absenteeism, presenteeism, and overall work impairment were assessed only in patients who were employed at baseline; [b] Impairment while at paid work due to axSpA; [c] Work time missed due to axSpA; [d] Overall work impairment is a composite of absenteeism and presenteeism.

**ANCOVA:** analysis of covariance; **ASAS:** Assessment in SpondyloArthritis International Society; **axSpA:** axial spondyloarthritis; **BASDAI:** Bath Ankylosing Spondylitis Disease Activity Index; **BKZ:** bimekizumab; **CfB:** change from baseline; **CI:** confidence interval; **CRP:** C-reactive protein; **IL:** interleukin; **MRI:** magnetic resonance imaging; **nr-axSpA:** non-radiographic axSpA; **OC:** observed case; **PBO:** placebo; **Q4W:** every 4 weeks; **r-axSpA:** radiographic axSpA; **SD:** standard deviation; **TNF:** tumor necrosis factor; **WPAI:** Work Productivity and Activity Impairment.

Institutions: [1]University of Bielefeld, Klinikum Bielefeld, Bielefeld, Germany; [2]Department of Rheumatology, La Paz University Hospital, IdiPaz, Madrid, Spain; [3]Oregon Health & Science University, Division of Arthritis & Rheumatic Diseases, Portland, OR, USA; [4]Department of Rheumatology, Boston University School of Medicine, Boston, MA, USA; [5]UCB Pharma, Copenhagen, Denmark; [6]UCB Pharma, Colombes, France; [7]PCOM Analytics, Avallon, France; [8]UCB Pharma, Brussels, Belgium; [9]UCB Pharma, Monheim am Rhein, Germany; [10]UCB Pharma, Slough, UK; [11]Department of Internal Medicine, Division of Rheumatology, Maastricht University Medical Center, Maastricht, The Netherlands; [12]Care and Public Health Research Institute (Caphri), Maastricht University, Maastricht, The Netherlands.

**References:** Strand V, J Clin Rheumatol 2017;23(7):383–91; Boel A, Ann Rheum Dis 2019;78(11):1545–9; Baraliakos X, Ann Rheum Dis 2023;and-2023–224803; Reilly MC, Pharmacoeconomics 1993;4(5):353–65; **Author Contributions:** Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: **MR**, **VNC**, **AD**, **MD**, **MFM**, **VT**, **CdiL**, **CF**, **UM**, **TV**, **AB**. Drafting of the publication, or reviewing it critically for important intellectual content: **MR**, **VNC**, **AD**, **MD**, **MFM**, **VT**, **CdiL**, **CF**, **UM**, **TV**, **AB**. Final approval of the publication: **MR**, **VNC**, **AD**, **MD**, **MFM**, **VT**, **CdiL**, **CF**, **UM**, **TV**, **AB**. **Author Disclosures: MR:** Speakers bureau for AbbVie, Boehringer Ingelheim, Chugai, Eli Lilly, Janssen, Novartis, Pfizer, and UCB Pharma; consultant of AbbVie, Eli Lilly, Novartis, and UCB Pharma; **VNC:** Speakers bureau for AbbVie, Eli Lilly, Fresenius Kabi, Janssen, MSD, Novartis, Pfizer, and UCB Pharma; consultant for AbbVie, Eli Lilly, Galapagos, MoonLake, MSD, Novartis, Pfizer, and UCB Pharma; grant/research support from AbbVie and Novartis; **AD:** Speakers bureau for Janssen, Novartis, and Pfizer; consultant for AbbVie, BMS, Eli Lilly, Janssen, MoonLake, Novartis, Pfizer, and UCB Pharma; grant/research support from AbbVie, BMS, Celgene, Eli Lilly, MoonLake, Novartis, Pfizer, and UCB Pharma; **MD:** Educational grant from Pfizer paid to institution; consulting fees from Amgen and UCB Pharma; **MFM, CF, UM, TV:** Employees of UCB Pharma; **VT:** Employee and shareholder of UCB Pharma; **CdiL:** Consultant to UCB Pharma; **AB:** Research grants from AbbVie; speakers honoraria and consulting fees from AbbVie, Galapagos, Pfizer, Novartis, and UCB Pharma. **Acknowledgements:** We would like to thank the patients and their caregivers in addition to all the investigators and their teams who contributed to these studies. The authors acknowledge Celia Mencleberg, UCB Pharma, for publication coordination, Patrick Cox, BSc, Costello Medical, London, UK for medical writing and editorial assistance, and the Costello Medical Creative team for design support. These studies were funded by UCB Pharma. All costs associated with development of this presentation were funded by UCB Pharma.

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