

# **Active American Shoulder and Elbow Surgeons Members (ASES) Are High Impact Researchers in the Field of Shoulder and Elbow Surgery: A Quantitative Analysis**

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## **INTRODUCTION:**

The volume of shoulder arthroplasty procedures has increased substantially, accompanied by a parallel rise in research output in shoulder and elbow surgery. Active Membership in the American Shoulder and Elbow Surgeons (ASES) society requires a substantial academic contribution. We seek to assess how current selection criteria relate to scientific influence in shoulder and elbow surgery to provide insights into the effectiveness of Active ASES membership criteria in identifying productive and influential researchers.

## **METHODS:**

We assessed two distinct cohorts: ASES Active Members and authors of the top 100 most cited shoulder and elbow surgery studies. Of the 954 total members, 308 were designated as active members. From each active member, the following variables were collected using the Scopus citation database (Elsevier, Amsterdam, Netherlands): H-index, number of all-time publications, number of publications in the past 10 years, citations, first author publications, senior author publications, first author publication percentage, and senior author publication percentage. These active members were also assessed to see whether they had authored a study among the top 100 most cited shoulder and elbow surgery studies. Additional leaders in shoulder and elbow surgery were found by compiling all the authors of the 100 most cited shoulder and elbow surgery publications. Using a technique popularized in various other studies in orthopaedic literature, this group formed a reasonable comparison group, as these were authors whose studies were among the most cited in the field. The Clarivate Analytics Web of Science database was searched using multiple Boolean queries on March 1<sup>st</sup> 2025 to capture all articles relating to orthopaedic surgery with an emphasis on shoulder or elbow surgery (Appendix A). This search resulted in 321,320 publications. These publications were sorted by the number of citations from highest to lowest. The titles of each publication were then reviewed to determine if they pertained to shoulder or elbow surgery. A total of 655 articles were sequentially reviewed to determine their pertinence to shoulder or elbow surgery. After compiling each author from each study, 282 unique authors were noted. A separate list of authors with two or more publications within the top 100 was formed and composed of 52 authors (Appendix B).

We then extracted the same aforementioned research-related variables for these 52 authors from the Scopus database. Of note, eight authors were also on the ASES Active Member list. Members of both cohorts were only included in the ASES Active Member cohort to avoid overlapping. This resulted in 8 members being removed from the top 100 most cited group.

As the data was not normally distributed, Mann-Whitney U tests were performed to compare quantitative variables between cohorts, with 0.05 as the significance level.

## **RESULTS:**

Of the 308 ASES Active Members, the average H-index was 29.8 with a median of 24. This group had an average number of publications of 133.1, with a median of 82.5. The average number of citations was 4,596 per member, with a median of 2229. Table 1 shows the full publication and citation metrics for ASES Active Members.

Fifty-two authors had at least two publications in the top 100 most cited studies on shoulder and elbow surgery. Of these authors, the average H-index was 44.6 with a median of 38.5. The average number of publications was 165.1, with a median of 115. Among these authors, the average number of citations was 11,331.2, and the median was 7,520.5. Additional information on the authors of the top 100 cited studies is available in Table 2.

These cohorts were compared with the full results shown in Table 3. ASES Active Members had a lower average H-index (29.7 vs. 42.1,  $p=0.002$ ) and fewer citations (4,596 vs. 10,417.2,  $p<0.001$ ) than the top 100 authors cohort. However, Active Members had significantly more first (7.1 vs. 3.7,  $p<0.001$ ) and senior (29.6 vs. 18.5,  $p=0.019$ ) author publications, and a higher proportion of these roles.

## **DISCUSSION AND CONCLUSION:**

While the most cited authors had higher citation metrics, ASES Active Members exhibited greater authorship leadership and sustained publication output. These findings suggest that ASES membership criteria are effective in selecting academically active and influential surgeons, fulfilling the society's goal of advancing the field of shoulder and elbow care.

