# Consumer Interest in Shoulder Replacement Surgery: A Google Trends™ Analysis From 2013 to 2023

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## Introduction

Shoulder replacement has grown rapidly over the past decade, owing in part to the rise of reverse shoulder arthroplasty and its expanding indications. The interest of industry in shoulder replacement is well documented, however, patient interest in shoulder replacement has not been investigated.

## Methods

Search inquiry data was queried from Google Trends™ to measure consumer interest in shoulder replacement over the period from 2013 to 2023. The primary search terms were "Shoulder Arthritis" and "Shoulder Replacement" OR "Total Shoulder Replacement." Secondary search terms were "Reverse Shoulder Replacement" OR "Reverse Total Shoulder Replacement." Searches by geographic location were also conducted.

## Results

Search volume index significantly increased for all search terms during the 10-year interval ($p < 0.001$). Trend analysis of search volume index versus time revealed excellent correlations ($R^2$) for all search terms: "shoulder arthritis" (0.76), "shoulder replacement" or "total shoulder replacement" (0.79), and "reverse shoulder replacement" or "reverse total shoulder replacement" (0.75). When compared with the trend for the search term "shoulder arthritis", an excellent correlation was revealed for "shoulder replacement" or "total shoulder replacement" ($R^2 = 0.74$, $p < 0.001$) and a strong-moderate correlation was observed for "reverse shoulder replacement" or "reverse total shoulder replacement" ($R^2 = 0.69$, $p < 0.001$).

Over the 10-year period, interest increased the most for "shoulder arthritis" in Connecticut and Alabama, for "shoulder replacement" or "total shoulder replacement" in Mississippi and Montana, and for "reverse shoulder replacement" or "reverse total shoulder replacement" in Utah and Indiana.

## Discussion/Conclusion

Our results demonstrate a significant increase in patient interest in shoulder replacements over the past decade and identify geographic hot spots of patient interest. This data will be useful for educating and treating populations interested in shoulder replacements. This is the first study to utilize Google Trends™ to analyze patient interest in shoulder replacement surgery.