

Embargoed for Release:  
March 7, 2023, at 12:01 a.m. PST

### **Swing into Spring: Shoulder Arthroplasty Patients Can Return to Golf and Racket Sports with Less Pain, Maintain Level of Play**

**LAS VEGAS** (March 7, 2023)—Two studies presented at the 2023 [American Academy of Orthopaedic Surgeons](#) (AAOS) Annual Meeting found that patients who had shoulder arthroplasty could return to play golf or racket sports within six months to one year, experiencing significantly decreased pain as well maintained or improved performance. Both studies examined the return to racket sports or golf after total shoulder arthroplasty (TSA) or reverse shoulder arthroplasty (RSA).

Each year, 53,000 Americans have [shoulder arthroplasty](#), including TSA and RSA.<sup>i</sup> This may be due to osteoarthritis (OA), rheumatoid arthritis, a rotator cuff tear or a severe fracture. TSA is when the damaged parts of the bone, including both the ball and socket, are replaced with an implant. In RSA, both the ball and socket are replaced, but the implants are reversed.

“RSA is still relatively new, so there is not a lot of data out there,” said Jonathan Chad Levy, MD, FAAOS, director, Levy Shoulder Center at Paley Orthopedic & Spine Institute, Boca Raton, Fla. “As the indications of RSA have expanded and confidence in the outcomes has increased, we are seeing this procedure performed on people who are playing at a higher level and who want to get back to playing golf and racket sports. As thought leaders in the field, we wanted to critically look at the data to determine if it is possible for our patients to return to these sports.”

#### **Half of golfers’ performance improved after surgery**

Golf has increased in popularity, with 37.5 million Americans playing the sport in 2021.<sup>ii</sup> As golfers age, shoulder arthroplasty is more common due to the prevalence of OA, which is caused by age-related wear and tear.<sup>1</sup> Previous studies that examined the return to golf after shoulder arthroplasty focused on TSA. The few studies on returning to golf after RSA did not look at the quality of performance following surgery.

The retrospective cohort study, “Return to Golf after Shoulder Arthroplasty: Golf Performance and Outcome Scores,” included 69 patients who played golf recreationally; underwent shoulder arthroplasty between Jan. 1, 2009, and Jan. 1, 2019; returned to play following the procedure; and had complete two-year outcomes. A questionnaire was developed on the patients’ experience and included time to return to golf after shoulder arthroplasty; amount of golf played in a month; general activity level; golf handicap; change in drive length; golf accuracy; golf performance; visual analog score (VAS) pain experienced playing golf; and overall enjoyment while playing. TSA results were compared to RSA results. The findings included:

- Of the patients, 47 underwent TSA and 22 RSA. The cohorts were similar in age (TSA = 66 years, RSA = 71 years).
- The time to return to play between the two groups was similar; 48.9% of TSA patients returned to golf within six months and 85.1% within one year while 59.1% of RSA patients returned to playing within six months and 90.9% returned within one year.
- The two groups had similar frequencies of play and similar physical activity levels post-operatively. Of patients who reported a decrease in their golfing frequency, RSA patients more often listed pain as the factor.
- Overall, golf performance improved or stayed the same for 81.8% of patients, with 91% saying their enjoyment for the game either increased or stayed the same.
- There was no significant change in golf handicap for either group; however, almost half of patients reported an increase in their driving distance following surgery (60% TSA vs. 47.6% RSA).
- Pain significantly improved after surgery (median VAS pain went from six to one), with a slightly greater improvement in pain for TSA patients.

### **Pain significantly decreased for racket sports players**

Racket sports have experienced a surge in participants, seeing more than 23.6 million tennis players in 2022<sup>iii</sup> and 4.8 million pickleball players in 2021<sup>iv</sup> hit the courts. An estimated 2.7 million tennis players are over the age of 60,<sup>v</sup> and 29.6% of pickleball players are over the age of 55.<sup>iv</sup> There have been limited studies examining racket sport participation after shoulder arthroplasty.

The study, “Racket Sports After Shoulder Arthroplasty,” was a retrospective cohort study of 39 patients who recreationally played a racket sport and had TSA or RSA between Jan. 1, 2009, and Jan. 1, 2019. The patients completed a questionnaire about their experience returning to racket sports after shoulder arthroplasty, consisting of the time to return to racket sports following surgery; amount playing in a month; general activity level; VAS pain while playing; performance; and enjoyment of the sport. The study found:

- Twenty-six players played tennis primarily, eight played pickleball and five played racquetball. Twenty-six patients underwent TSA and 13 RSA. The groups were similar in age (median age = 69 for TSA and 71 for RSA).
- The overall ability to return to play was 90%, with 80% of RSA patients and 96% of TSA patients returned to play their racket sport, demonstrating no significant difference between TSA and RSA in the time it took to return to play. Half of TSA patients returned within six months and 81% returned within one year; 46% of RSA patients returned within six months and 92% returning within one year.
- Four patients (3 RSA, 1 TSA) were unable to continue playing a racket sport after surgery, mainly due to an issue with their shoulders.
- Only nine patients played their racket sport less following surgery, with eight saying the reason was unrelated to their shoulder and one stating it was due to pain in their shoulder while playing.
- Of all patients, 90% said their performance improved or stayed the same while 98% said they enjoyed playing their racket sport more or the same as prior to surgery.
- Both groups had a five-point improvement in VAS pain score after shoulder arthroplasty.
- Few patients expressed enjoying their sport less post-operatively (TSA 4%, RSA 0%).

“These studies are really helping us define patient expectations and are able to show patients what is realistic in regard to returning to play golf or tennis after shoulder arthroplasty,” said Dr. Levy. “There have definitely been times when it made me pause to ask if I was going to take away a sport my patient is passionate about in an effort to give them pain relief. However, now I can say with confidence that you will be able to get back to playing tennis or golf and still enjoy the game.”

###

### 2023 AAOS Annual Meeting Disclosure Statement

#### **About the AAOS**

With more than 39,000 members, the [American Academy of Orthopaedic Surgeons](#) is the world’s largest medical association of musculoskeletal specialists. The AAOS is the trusted leader in advancing musculoskeletal health. It provides the highest quality, most comprehensive education to help orthopaedic surgeons and allied health professionals at every career level to best treat patients in their daily practices. The AAOS is the source for information on bone and joint conditions, treatments and related musculoskeletal healthcare issues; and it leads the healthcare discussion on advancing quality.

Follow the AAOS on [Facebook](#), [Twitter](#), [LinkedIn](#) and [Instagram](#).

#### **For more information, contact:**

Deanna Killackey

847-384-4035

630-815-5195

[killackey@aaos.org](mailto:killackey@aaos.org)

Lauren P. Riley

847-384-4031

708-227-1773

[pearson@aaos.org](mailto:pearson@aaos.org)

---

<sup>i</sup> OrthoInfo. Shoulder Joint Replacement. Accessed Feb. 9, 2023.

<https://orthoinfo.aaos.org/en/treatment/shoulder-joint-replacement/>

<sup>ii</sup> National Golf Foundation. Golf Industry Facts. Accessed Feb. 9, 2023. <https://www.ngf.org/golf-industry-research/>

<sup>iii</sup> United States Tennis Association. U.S. tennis participation grew for third straight year in 2022. Accessed Feb. 9, 2023. <https://www.usta.com/en/home/stay-current/national/u-s--tennis-participation-grew-for-third-straight-year-in-2022.html>

<sup>iv</sup> USA Pickleball Association. 2022 Pickleball Fact Sheet. Accessed. Feb. 9, 2023. <https://usapickleball.org/wp-content/uploads/2021/08/2022-Pickleball-Fact-Sheet-updated-5.5.22.pdf>

<sup>v</sup> Tennis Industry Association. 2021 TIA Tennis Industry Participation Report. Accessed Feb. 10, 2023. <http://www.tennisindustrymag.com/issues/202109/industry-research.pdf>