

ISSUE 12

# ShARC BITE

GLENOSPHERE SIZING IN REVERSE TSA

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## Mission Statement

The Shoulder Arthroplasty Research Committee (ShARC) is a forward-looking global collaboration among research-focused surgeons of which the primary goal is to advance patient care. The ShARC Patient Registry is utilized to conduct patient monitoring, inform evidence-based implant design, and allow for the integration of novel technologies into clinical practice. Supported by Arthrex, the ShARC will continue to have tremendous influence on the advancement of shoulder arthroplasty through innovative research and a commitment to improve patient outcomes.

**ShARC Bites** are developed through registry data analysis and processing of the committee's preferences, cross-referenced with available ShARC and non-ShARC publications, to provide recommendations on current techniques and implants.

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## ► Summary Recommendation

The ShARC recommends sizing the glenosphere based on the anterior-to-posterior dimension of the glenoid with 83% of surgeons opting to use a lateralized glenosphere. The majority of surgeons (73%) determine glenosphere sizing using Virtual Implant Positioning™ (VIP™) system. ShARC surgeons rarely use eccentric glenospheres. These decisions are based primarily on maximizing impingement-free range of motion by avoiding anterior overhang, which can lead to subcoracoid impingement and diminished internal rotation, and excessive inferior overhang, which can increase the risk of acromial stress fracture. ShARC survey results indicate that the most common size glenosphere for women is 33 mm followed by 36 mm, and the most common size for men is 39 mm followed by 36 mm.

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## Background

The Univers Revers™ Modular Glenoid System (MGS) provides several sizing options for the glenosphere, including 33, 36, 39, and 42 mm. Each glenosphere is available in +0 mm or +4 mm lateralized and +2.5 mm eccentric options, and may be combined with baseplate lateralization of +0 mm, +2 mm, or +4 mm. Appropriate glenosphere sizing can significantly influence patient outcomes. Recent studies have demonstrated that anterior overhang can lead to diminished range of motion, particularly with respect to internal rotation, as well as a greater likelihood of subcoracoid pain.<sup>1,2</sup> In addition, the benefits of lateralization include increased stability through soft-tissue tensioning, decreased impingement, decreased scapular notching, and improved range of motion.<sup>3,4</sup> Lastly, glenosphere sizing should also take into account the amount of distalization, which can increase the risk of acromial stress fracture.<sup>5</sup>

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## Results

### Personal Protocol and VIP Planning

When sizing the glenosphere, 80% of ShARC surgeons have a personal protocol, with more than 70% using the VIP system to determine their glenosphere size.

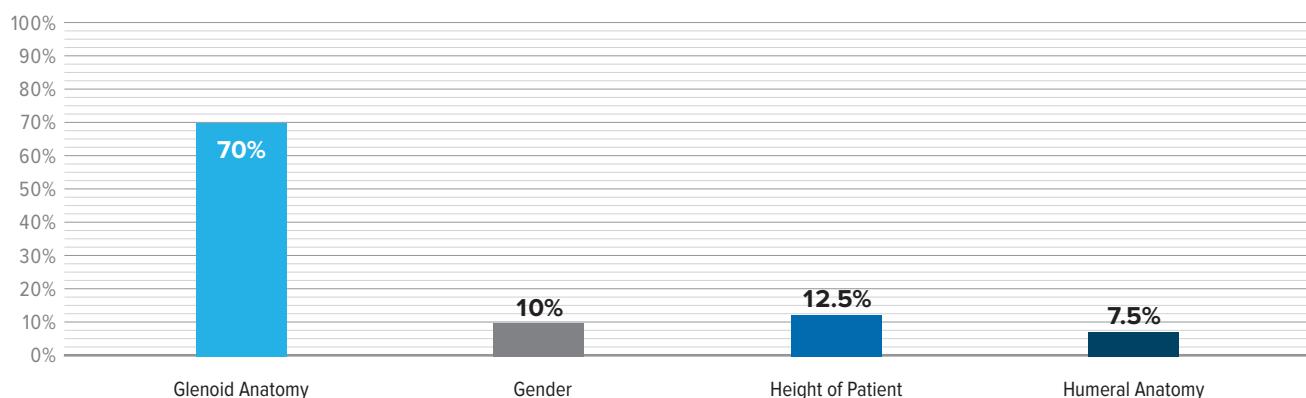
## True or False: I have a defined personal protocol for determining glenosphere size



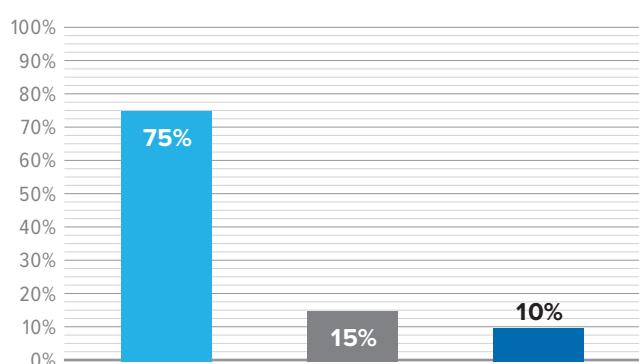
### Factors Influencing Sizing of the Glenosphere

ShARC survey data indicate that the majority of ShARC surgeons (70%) think that the most important anatomic factor influencing glenosphere sizing is the glenoid anatomy—more than gender, height, or humeral anatomy of the patient. Seventy-five percent of ShARC surgeons size the glenosphere primarily on the anterior-to-posterior dimension of the glenoid and 65% state that the most important factor driving their decision is impingement-free motion—more than scapular notching, stability, or gender. Anterior overhang can limit internal rotation,<sup>2</sup> and equivalent stability can be achieved with a lateralized smaller diameter glenosphere in comparison to a neutral-offset larger glenosphere.<sup>6</sup>

In order of importance (1 being the most important), which of the following demographic or anatomic factors drives your decision for sizing the glenosphere?

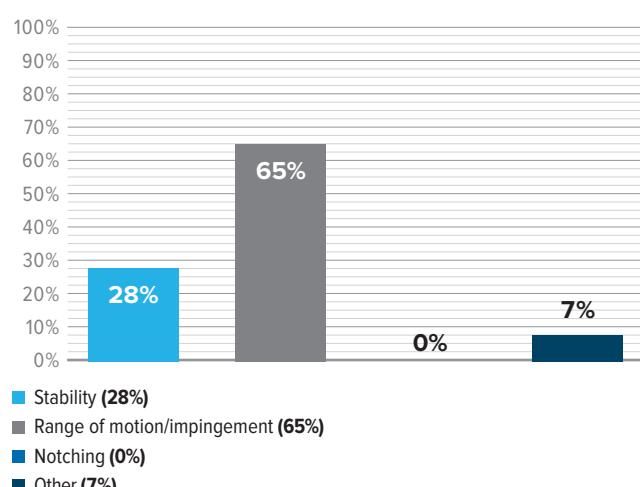


I primarily base my glenosphere size on:



- The size of the glenosphere relative to the glenoid from anterior to posterior (75%)
- The size of the glenosphere relative to the glenoid from superior to inferior (15%)
- Other (10%)

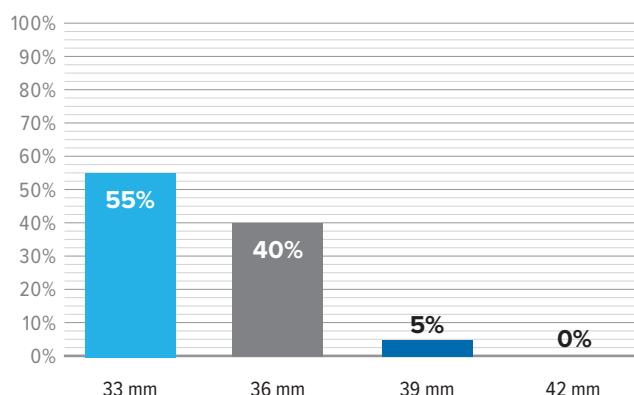
Which of the following parameters matters the most to you when sizing the glenosphere?



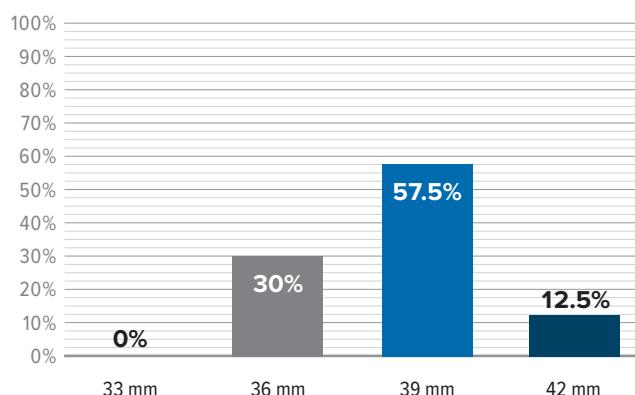
## Sizing According to Sex

ShARC surgeons typically use a 33 mm glenosphere in females and a 39 mm in males, with 36 mm as the next most common size for both. Selection is based on glenoid anatomy, not patient sex.

Rank the glenosphere size you put in women:



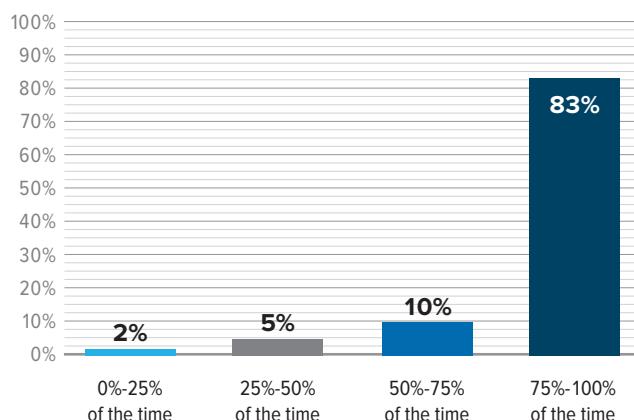
Rank the glenosphere size you put in men:



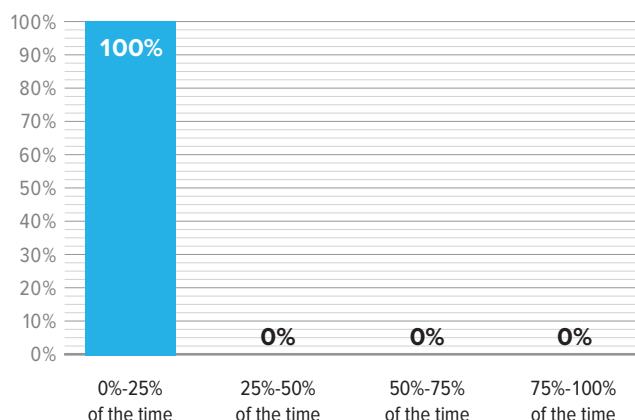
## Usage of Lateralized Glenosphere vs Eccentric Glenospheres

Once appropriately sized in the anterior-to-posterior dimension, 83% of ShARC surgeons use a +4 mm lateralized glenosphere 75%-100% of the time. An eccentric glenosphere is almost never used, with 100% of ShARC surgeons using an eccentric glenosphere 0-25% of the time. These findings underscore the importance of lateralization<sup>3,4</sup> and avoidance of distalization, which can increase the risk of acromial stress fracture.<sup>5</sup>

How often do you use a lateralized glenosphere?



How often do you use an eccentric glenosphere?



## References

1. Pak T, et al. *J Shoulder Elbow Surg*. 2024;33(10):2171-2177. doi:10.1016/j.jse.2024.02.019
2. Klosterman EL, et al. *JSES Int*. 2024;8(3):528-534. doi:10.1016/j.jseint.2024.01.010
3. Gobezie R, et al. *J Shoulder Elbow Surg*. 2019;28(5):813-818. doi:10.1016/j.jse.2018.11.064
4. Pak T, et al. *JSES Int*. 2024;8(3):522-527. doi:10.1016/j.jseint.2024.01.009
5. Pak T, et al. *J Shoulder Elbow Surg*. 2024;33(6S):S1-S8. doi:10.1016/j.jse.2023.11.018
6. Nguyen N, et al. *J Shoulder Elbow Surg*. 2025;34(12):2719-2726. doi:10.1016/j.jse.2025.03.007



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