

UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

June 9, 2025

Robert Ball Chief Executive Officer Shoulder Innovations, Inc. 1535 Steele Avenue SW, Suite B Grand Rapids, MI 49507

Re: Shoulder Innovations, Inc.
Amendment No. 1 to Draft Registration Statement on Form S-1
Submitted May 23, 2025
CIK No. 0001699350

Dear Robert Ball:

We have reviewed your amended draft registration statement and have the following comments. Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe a comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to this letter and your amended draft registration statement or filed registration statement, we may have additional comments. Unless we note otherwise, any references to prior comments are to comments in our May 14, 2025 letter.

Amendment No. 1 to Draft Registration Statement on Form S-1

Prospectus Summary, page 2

- 1. We note your response to comment 1, including your revised disclosure on page 2 referencing "publicly available industry data, including from the National Institutes of Health." Please revise to provide the specific source for your estimate that shoulder conditions result in more than eight million physician visits annually in the United States and can require surgical intervention.
- 2. We note your revised disclosure in response to comment 2, including that "for the three months ended March 31, 2025, [you] estimate an implied utilization rate for [y]our ProVoyance technology of approximately 90% based on the number of surgical plans reported to have been created using ProVoyance technology and the number of [y]our implant systems sold during such period." We also note your response that

"this information is based on real-world data from [your] customers and the actual number of implant systems sold during the respective period," "[t]he ProVoyance technology tracks and reports each surgical plan it is used to create [and ba]sed on those reports . . . a total of 1,303 surgical plans were created using ProVoyance during the three months ended March 31, 2025," and "[d]uring the same period, [you] sold 1,443 implant systems, which, when considered against the 1,303 surgical plans created during the same period, yields an implied utilization rate of 90%." Please revise your disclosures on page 3 to include this additional information provided in your response to comment 2.

Market Overview, page 4

3. We note your response to comments 5 and 6, including your revised disclosure on page 4 that, "[b]ased on [y]our internal estimates, knowledge of [y]our industry and third-party data regarding the number of shoulder arthroplasty procedures performed, [you] expect this market to grow by approximately 11% annually through 2029," and that "[you] believe a significant opportunity exists outside of the United States and, based on third-party industry reports and [y]our internal estimates, [you] estimate that the total international shoulder arthroplasty market is approximately \$1.7 billion in 2025." You also disclose that "[t]ogether, [you] believe these markets represent a global annual shoulder arthroplasty market of approximately \$3.4 billion." Please revise to cite the third-party data and industry reports referenced above, further discuss how these growth and total international market estimates were calculated, and elaborate on any material assumptions underlying such calculations.

Critical Accounting Policies and Estimates, page 96

- 4. We note that inventories comprise over 20% of total assets and that inventory adjustments adversely impacted your 2024 gross margin. Given that the March 31, 2025 inventory balance is 40% higher than your annualized cost of goods sold (COGS), it is not clear whether the asset balance includes a substantial amount of aged inventory. Based on your response to prior comment 12, it is not clear whether you may have a material amount of inventory that has been re-sterilized upon expiration of its five year shelf life. We note that you track the age of your inventory items (page F-20), and that obsolescence and your markets sensitivity to new products and innovation have been identified as material risks on pages 19-31. Please provide a critical accounting policy disclosure that quantifies the extent to which your inventory asset balance includes products for which there were no material sales during the most recent quarter. Disclose the amounts of inventory on hand that you determined to be obsolete or unmarketable. Reconcile this data with your conclusion that your March 31, 2025 inventory reserve is adequate. See Item 303(b)(3) of Regulation S-K.
- 5. Based on your response to prior comment 12, we understand that you estimate your future twelve month sales levels when determining your non-current inventory amounts. Based on your December 31, 2023 inventory balance and your 2024 COGS balance, it appears that this estimate may have been off by 25% at December 31, 2023. Similarly, the disparity appears to exceed 45% at December 31, 2022. Further, it appears that you are classifying all of your inventory as current based on an expectation that 2025 sales will increase by over 90%. Consequently, it remains

unclear why you have not classified a portion of your inventory as non-current. Please revise or provide a critical accounting policy disclosure that addresses the accuracy of your prior estimates and quantifies the impact of your 2025 sales growth estimate on your inventory classification. See ASC 210-10-45-3 and Article 303(b)(3) of Regulation S-K.

Competition, page 136

6. We note your response to comment 18, including your revised disclosure on page 136 that you "have seen and continue to see consolidation amongst [y]our competitors and have seen and continue to see [y]our competitors innovate and improve upon traditional implants and technologies." Please revise your disclosure in this section to note whether any of your competitors offer specific alternatives to traditional glenoid implants and humeral stem technologies.

Statements of Operations, page F-4

7. Based on the disclosure on page F-27, it does not appear that depreciation expense is included in Cost of Goods Sold. Please clarify for us how your presentation here and on page F-16 complies with SAB 11:B.

Surgical Instruments, page F-21

8. Regarding your response to prior comment 20, please provide an accounting policy disclosure that clarifies the basis for your statement that "the customers do not obtain control of the surgical instruments." In this regard, we understand that the surgical instruments are provided to customers at no cost and that there does not appear to be a legally enforceable contract governing your continuing ownership rights over these instruments. Further, it is not clear whether any material quantity of non-defective surgical instruments has ever been returned to you by your customers. Also, it is not clear whether you have an effective method to objectively verify the existence of these instruments after they are transferred to the customers which makes the application of a substantive impairment policy uncertain. The known factors you considered in assigning the 5 year useful life are similarly not clear. Given that surgical instruments appear to comprise over 15% of your total assets, please expand your disclosure to address these issues.

Please contact Al Pavot at 202-551-3738 or Li Xiao at 202-551-4391 if you have questions regarding comments on the financial statements and related matters. Please contact Juan Grana at 202-551-6034 or Jane Park at 202-551-7439 with any other questions.

Sincerely,

Division of Corporation Finance Office of Industrial Applications and Services