SHOULDER INNOVATIONS

Investor Presentation

September 2025

Forward Looking Statement

Certain statements in this presentation and the accompanying oral commentary are forward-looking statements and relate to or are based on estimates regarding market and industry data that Shoulder Innovations, Inc. (the "Company") prepared based on management's knowledge and estimates, together with information obtained from publicly available resources, other third-party sources, the Company's customers and other contacts in the markets in which the Company operates. Management's estimates are derived in part from third party sources and data from the Company's internal research. Although the Company believes that these third-party sources are reliable, it does not guarantee the accuracy or completeness of this information, and the Company has not verified this information. In presenting market and industry data in this presentation, management has made certain assumptions that it believes to be reasonable based on the data available to the Company and other sources, as well as on management's knowledge of, and experience to date in, the industry and markets in which the Company operates. These statements relate to future events or the future performance of the Company, as well as its business strategy and plans and objectives for future operations, and are subject to a number of known and unknown risks, uncertainties and other factors that may cause the actual results, levels of activity, performance or achievements of the Company or its industry to be materially different from those expressed or implied by any forward-looking statements. In some cases, forward-looking statements can be identified by words such as "anticipate," believe," "continue," "estimate," "expect," "intend," "may," "will," “could,” “predict” and similar expressions or terminology. Important factors that could cause actual results, developments and business decisions to differ materially from forward-looking statements are described in the sections titled “Risk Factors” in our filings with the Securities and Exchange Commission (the “SEC”), and include, but are not limited to, the following substantial known and unknown risks and uncertainties inherent in our business related to: any expectations regarding the Company's commercial and/or research and development initiatives; any projections of financial information, market opportunities or profitability; any statements about historical results that may suggest trends for the Company's business; any statements of the plans, strategies, and objectives of management for future operations; any statements of expectation or belief regarding future events, potential markets or market size, or technology developments; and the other important factors described in our Quarterly Report on From 10-Q for three months ended June 30, 2025 and other SEC filings. The Company has based these forward-looking statements largely on its current expectations, assumptions, estimates and projections. While the Company believes that these expectations, assumptions, estimates and projections are reasonable, such forward-looking statements are only predictions and involve known and unknown risk and uncertainties, many of which are beyond the Company’s control. These and other important factors may cause actual results, performance or achievements to differ materially from those expressed or implied by these forward-looking statements. The forward-looking statements in this presentation are made only as of the date hereof. Except to the extent required by law, the Company assumes no obligation and does not intend to update any of these forward-looking statements after the date of this presentation or to conform these statements to actual results or revised expectations.

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Market data and industry information used throughout this presentation are based on management's knowledge of the industry and the good faith estimates of management. Certain information contained in this presentation and statements made orally during this presentation relate to or are based on studies, publications, surveys and other data obtained from third-party sources and our own internal estimates and research. While we believe these third-party studies, publications, surveys and other data to be reliable as of the date of this presentation, it has not independently verified, and makes no representations as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, no independent source has evaluated the reasonableness or accuracy of our internal estimates or research and no reliance should be made on any information or statements made in this presentation relating to or based on such internal estimates and research.

Leader in Shoulder Surgical Care

1. **Transforming the $2.8B global annual shoulder arthroplasty market[1]**
2. **Purpose-built, disruptive ecosystem to address existing limitations within shoulder arthroplasty**
3. **Pioneer of the InSet Glenoid, a biomechanically designed implant to specifically address glenoid loosening, a central complication with shoulder arthroplasty**
4. **A leading 3D AI pre-operative surgical planning technology**
5. **Capital efficient instrument system, supporting growth in the ASC & outpatient setting**

~$37M
2Q'25 Trailing Twelve Months Net Revenue

~55%
'23-2Q'25 Revenue CAGR

77%
Gross Margin (1H 2025)

1. Based on Management estimates

Experienced Leadership Team Redefining Shoulder Surgical Care

Rob Ball
CEO

TORNIER
imascap
DePuy Synthes

Jeff Points
CFO

CSI
Empi
CliftonLarsonAllen

Matt Ahearn
COO

Brambles
Johnson Controls
LEANLOGISTICS

Dave Blue
Chief Customer Experience Officer

TORNIER
DVO Extremity Solutions
DePuy Synthes

Jon Osborne
VP, Commercial Development

TORNIER
Arthrex
S+N

Proven History of Successful Shoulder Innovation and Commercialization

DePuy Synthes

Global Shoulder
First multi-hundred-million dollar shoulder arthroplasty product line

TORNIER

Simpliciti
#1 market share shoulder arthroplasty system worldwide

TORNIER / stryker

Simpliciti Blueprint
First pre-operative planning platform for shoulder

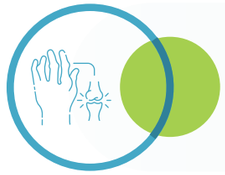
SHOULDER INNOVATIONS

InSet
ProVOYANCE

Shoulder Pain is Highly Prevalent with Quality-of-Life-Reducing Impacts

Key Drivers of Shoulder Pain

Osteoarthritis



Rheumatoid Arthritis

Rotator Cuff Tears

Shoulder Fractures

Shoulder Pain is Widespread

1 in 5 People

over 65 suffer from shoulder pain in the U.S.

8+ Million

annual physician visits related to shoulder conditions in the U.S.

38% of Patients[1]

with shoulder pain report inability to perform activities of daily life

Three Times[2]

as many total knee replacements annually compared to shoulder arthroplasties in the U.S.

Despite This Prevalence, There Has Been a Historical Underutilization of Surgical Treatments for Shoulder Care

1. Estimated according to a study published in the *Journal of Shoulder and Elbow Surgery*
2. Based on 790,000 total knee replacements done annually in U.S. vs. ~250,000 shoulder arthroplasty procedures (https://rheumatology.org/patients/joint-replacement-surgery)

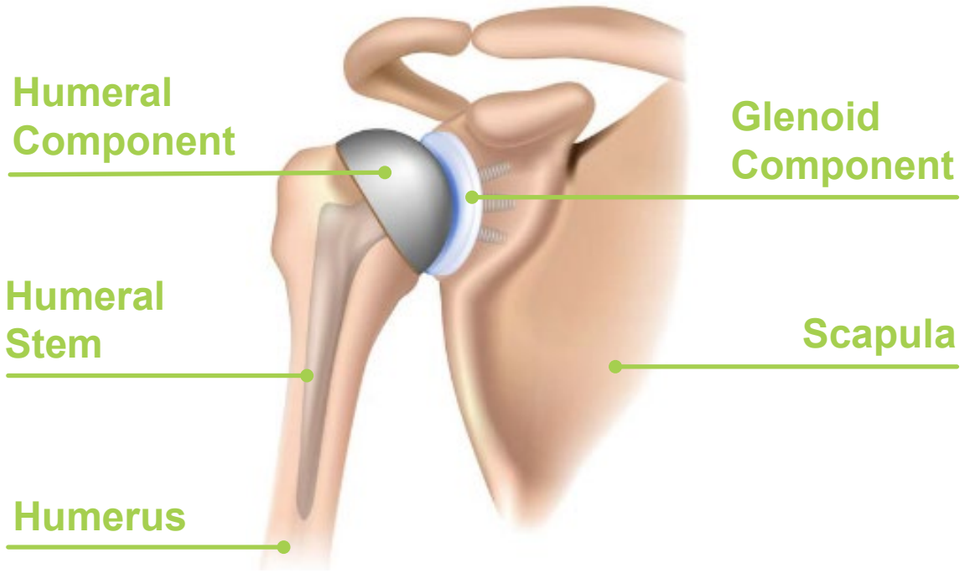
Shoulder Arthroplasty: Initial Focus Within Shoulder Surgical Care Market

Established Surgical Procedures for Reducing Joint Pain and Restoring Shoulder Motion

Osteoarthritis

Anatomic Total Shoulder Arthroplasty (aTSA)

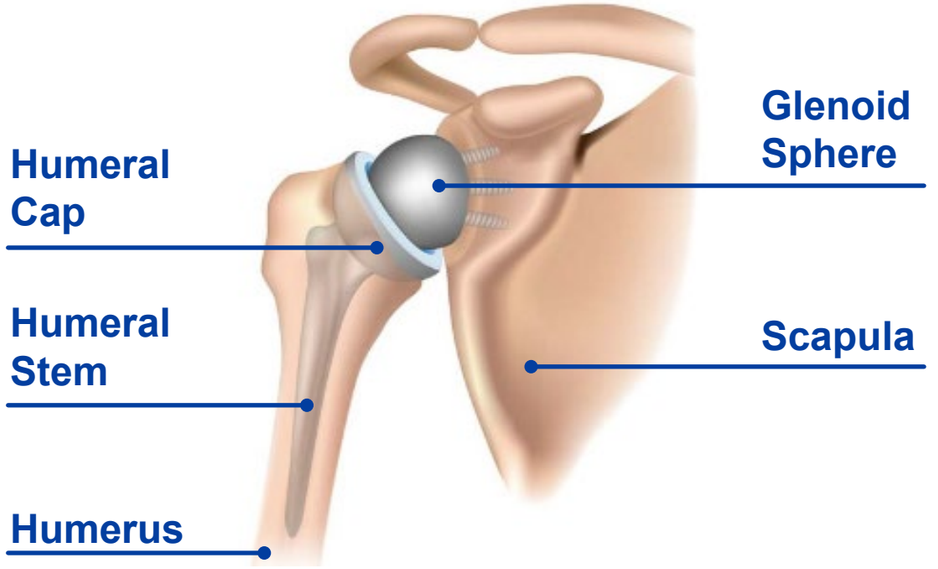
Imitates the natural joint anatomy



Osteoarthritis + Rotator Cuff Deficiency

Reverse Total Shoulder Arthroplasty (rTSA)

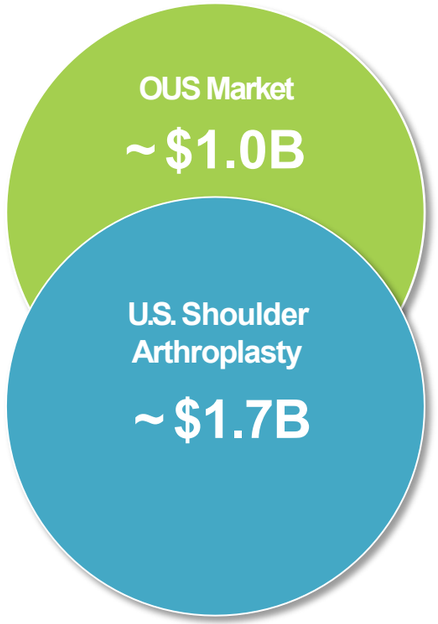
Inverts the shoulder anatomy and joint configuration



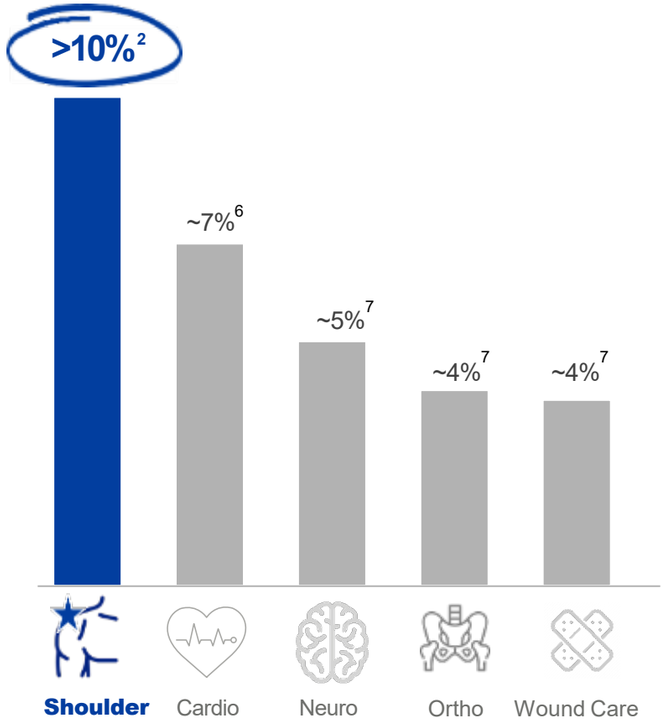
Shoulder Arthroplasty is One of the Fastest Growing Segments Within MedTech

Large & Growing TAM

$2.8B
Global Annual Market[1]

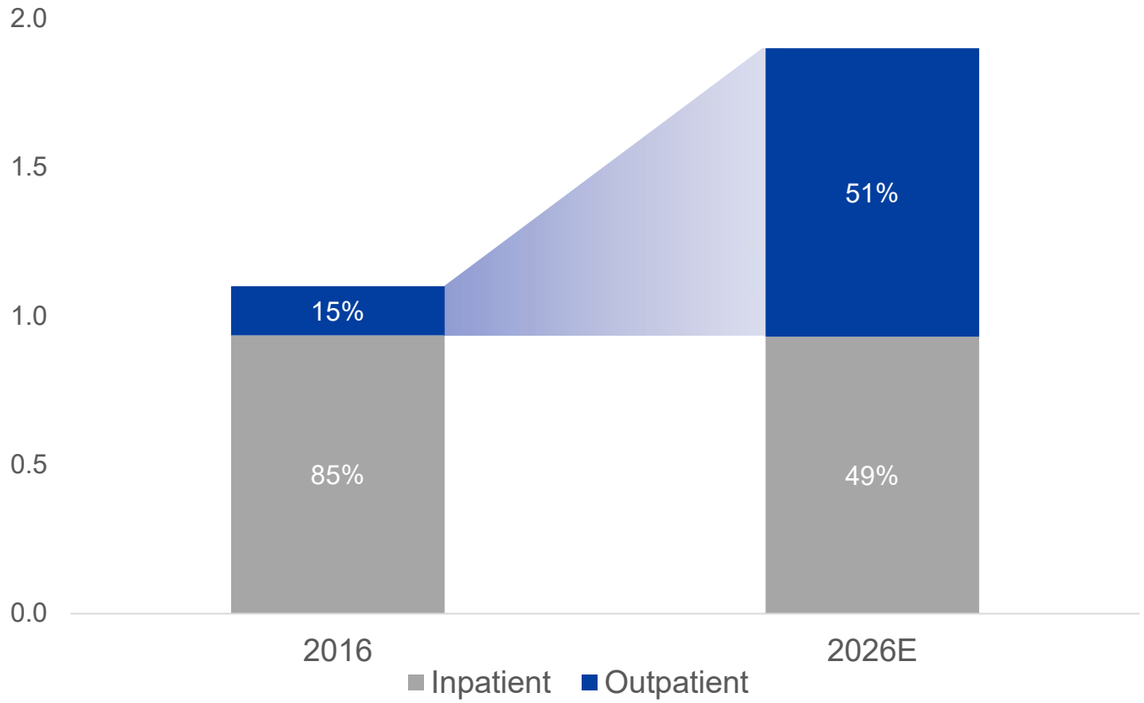


Forward Market Growth Rate (%)



ASC Will Capture Future Growth

Total Joint Arthroplasty Example[3]
(MM)



>10%
Historical U.S. Procedure Growth Between 2019-2024

~250,000
Procedures in the U.S.[4]

1,800
High-Volume Surgeons[5]

1. Based on management estimates
2. Expected U.S. market growth through 2029
3. https://pmc.ncbi.nlm.nih.gov/articles/PMC5685972/
4. Number of shoulder arthroplasty procedures expected in the U.S. in 2025 based on management estimates
5. Defined as U.S. surgeons performing the majority of shoulder arthroplasty procedures
6. Expected global market growth through 2029
7. Expected global market growth through 2030

Current Solutions in the Market Have Significant Limitations

1 Low Rates of Implant Survivorship	~40% of Implants Subject to Revision Surgery[1]
2 Frequent Post-Operative Complications	~15% of Subscapularis Tendons Fail Following an aTSA Procedure[2]
3 Imprecise Implant Positioning	Positioning as Little as 5 Degrees Off Angle Can Lead to Inferior Outcomes
4 Burdensome Surgical Workflow	Up to 9 Surgery Trays to Complete a Single Procedure

1. Revision surgery at 10-year follow-up
2. Based on a study published in the *Journal of Shoulder and Elbow Surgery* in which the tendon connecting the subscapularis muscle to the humeral bone is damaged

We Have Developed a Highly Differentiated Ecosystem that Seeks to Improve Core Components of Shoulder Surgical Care

aTSA and rTSA systems leveraging our InSet glenoid

Advanced Implant Systems

ProVoyance Technology

AI and ML-enabled 3D bespoke surgical plans

Enabling aTSA and rTSA procedures with two trays

Efficient Instrument System

Collaborative network of expert surgeon educators

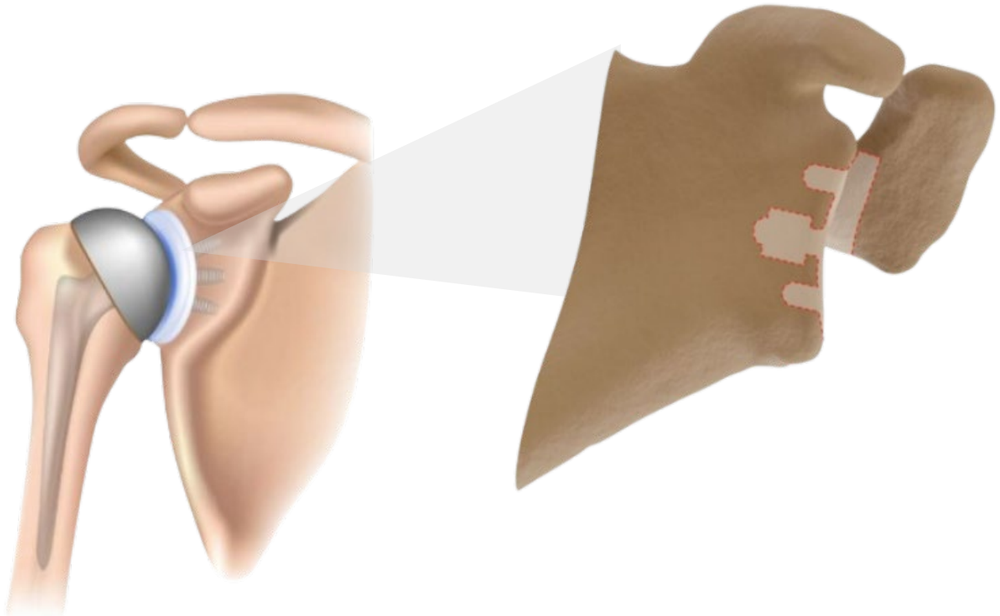
Surgeon-to-Surgeon Collaboration

Specialized Support

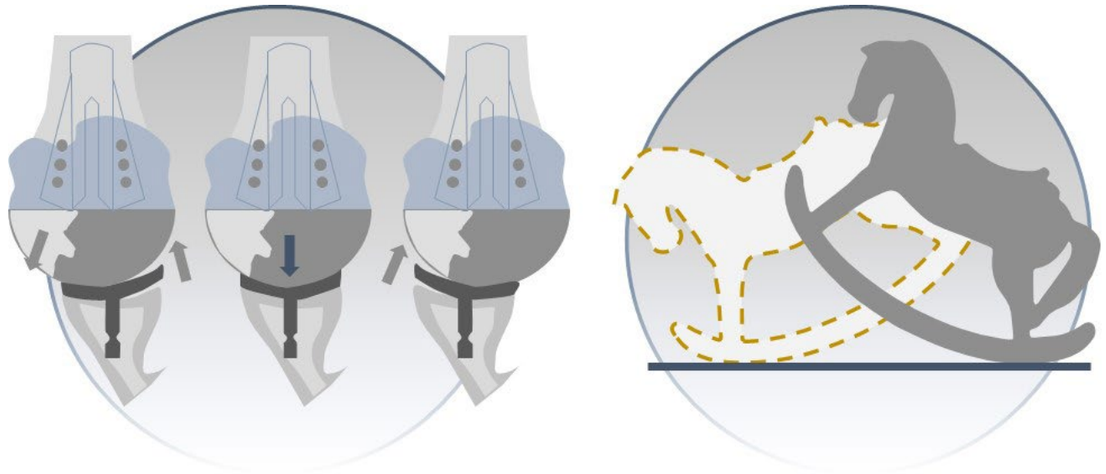
Shoulder specialists deliver highly tailored experience to surgeons

1 Traditional Implant Designs Have Low Rates of Implant Survivorship and Often Require Additional Surgical Intervention

Example of Traditional Glenoid Implant



With traditional implants, **normal movement can rock the glenoid loose**



Too much loosening can cause pain, and necessitate subsequent revision surgeries over time

~25% of aTSA Procedures
demonstrate precursor to loosening[1]

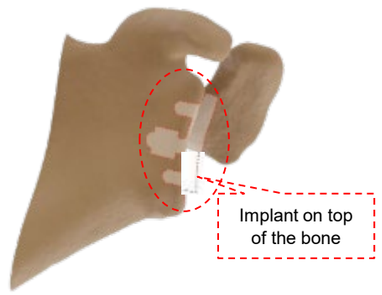
~30% of aTSA Procedures
demonstrate moderate to severe loosening[2]

~40% of Implants
were subject to revision surgery[3]

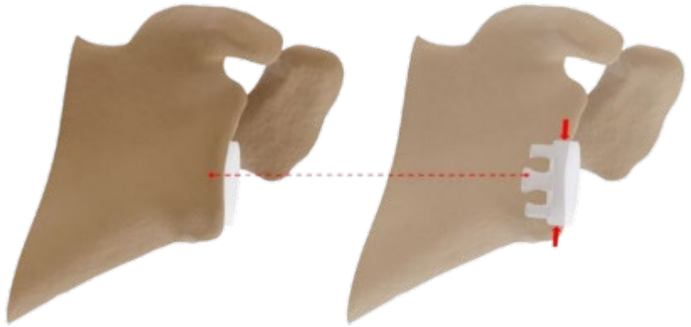
1. J Shoulder Elbow Surg. 2012 Nov;21(11):1526-33. Precursors to loosening within 5 years post-procedure
2. J Shoulder Elbow Surg. 2020;29(6):1188-1196. Moderate to severe loosening at a mean of 6.6 years
3. J Shoulder Elbow Surg. 2020;29(6):1188-1196. Revision surgery at 10-year follow-up

Our Novel InSet Glenoid Design Sets a New Standard for Fixation and Stability

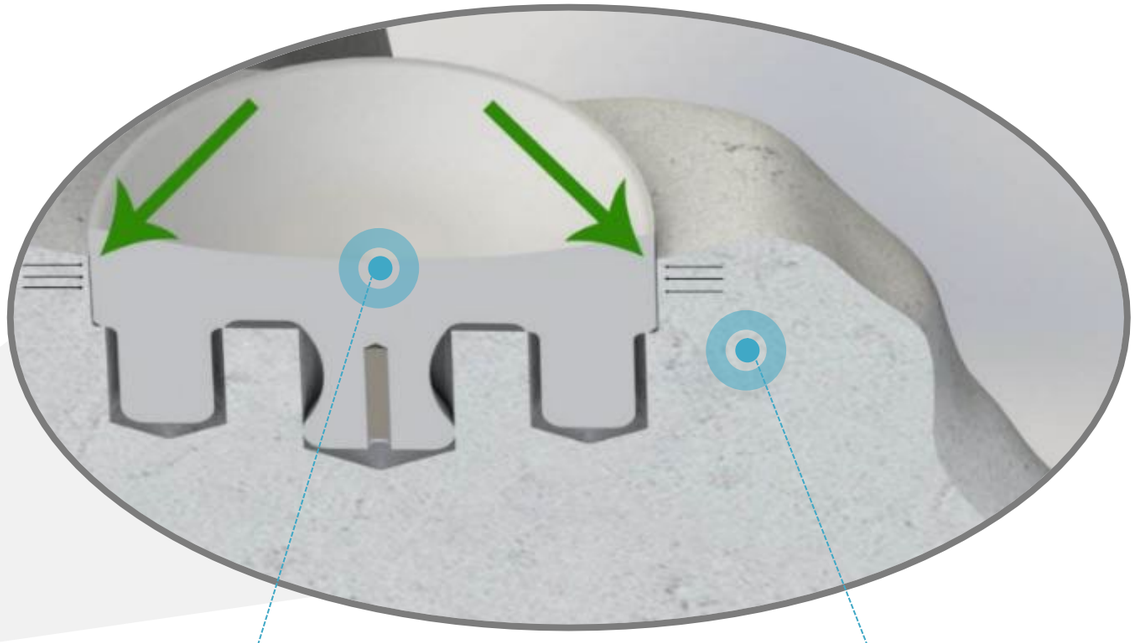
Traditional Implant, Sitting on Top of Bony Surface



InSet Glenoid, Sitting Within a Rim of Bone



InSet Glenoid



Complex articular **surface further reduces rocking horse motion**

Peripheral bone ledge is **buttress against rocking horse motion**

Improved Fixation Mechanics, More Reliable Implant Placement, Smaller & Simpler Surgical Exposure

InSet Glenoid Technology Supported by Data that Demonstrate Significant Clinical Benefits and Improved Patient Outcomes

Pre-Operation

In constant pain and unable to complete daily activities

+ 72

Point Score Improvement[3, 4]

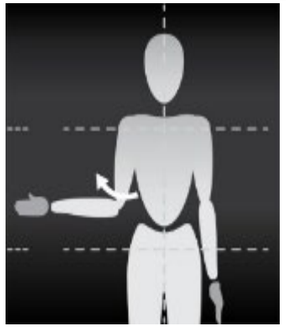
Pain-free and enjoying better quality of life

23
Pre-Op ASES[1] Score[3]

95
Post-Op ASES[1] Score[3, 4]

Key Clinical Factors

Rotation



Forward Flexion

Pain

Durability

InSet's Differentiation

- **87% Reduction[2]** *In "Rocking Horse" Motion*
- **ZERO[5]** *Surgical Complications*
- **ZERO[5]** *Loose Implants*
- **ZERO[5]** *Revision Surgeries*
- **FULL RANGE OF MOTION[5]** *Ability to Raise Arm & Reach Back*

InSet's Differentiation Demonstrated by 100% Implant Survivorship[5] and 87% Reduction in "Rocking Horse" Motion[2]

1. ASES: American Shoulder and Elbow Surgeon Score (0-100 scale, with 100 representing a patient's normal function) at a mean follow-up of 8.7 years
2. Shoulder Elbow Surg. (2012) 21, 759-803, Finite Element Analysis and Physiologic Testing of a Novel, Inset Glenoid Fixation Technique
3. J Shoulder Elbow Surg. (2019) 1-9, Long-Term Follow-up of Total Shoulder Replacement Surgery With Inset Glenoid Implants For Arthritis with Deficient Bone
4. From a retrospective long-term follow-up analysis of patients who underwent aTSA procedures with our InSet Glenoid.
5. Results observed at a mean follow-up time of 8.7 years

2 Common Post-Operative aTSA Complications Require Surgical Conversion to rTSA

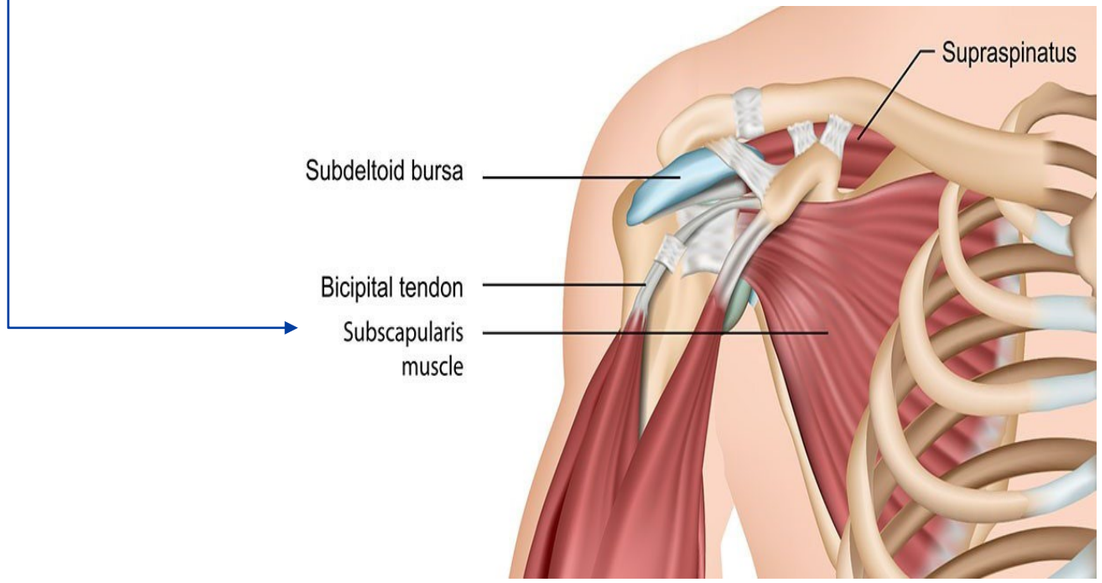
However, Traditional Implants are Not Designed for Replacement, Revision, or rTSA-Conversion Procedures

Traditional Implants….

- ✕ Place the implant stem deep into the humerus
- ✕ Require a high degree of initial bone removal
- ✕ Difficult to replace
- ✕ Not easily convertible from aTSA to rTSA

Post-Operative Complications Can Include…

Overstuffing, shoulder dislocation, humeral fractures, and **subscapularis tendon failure**

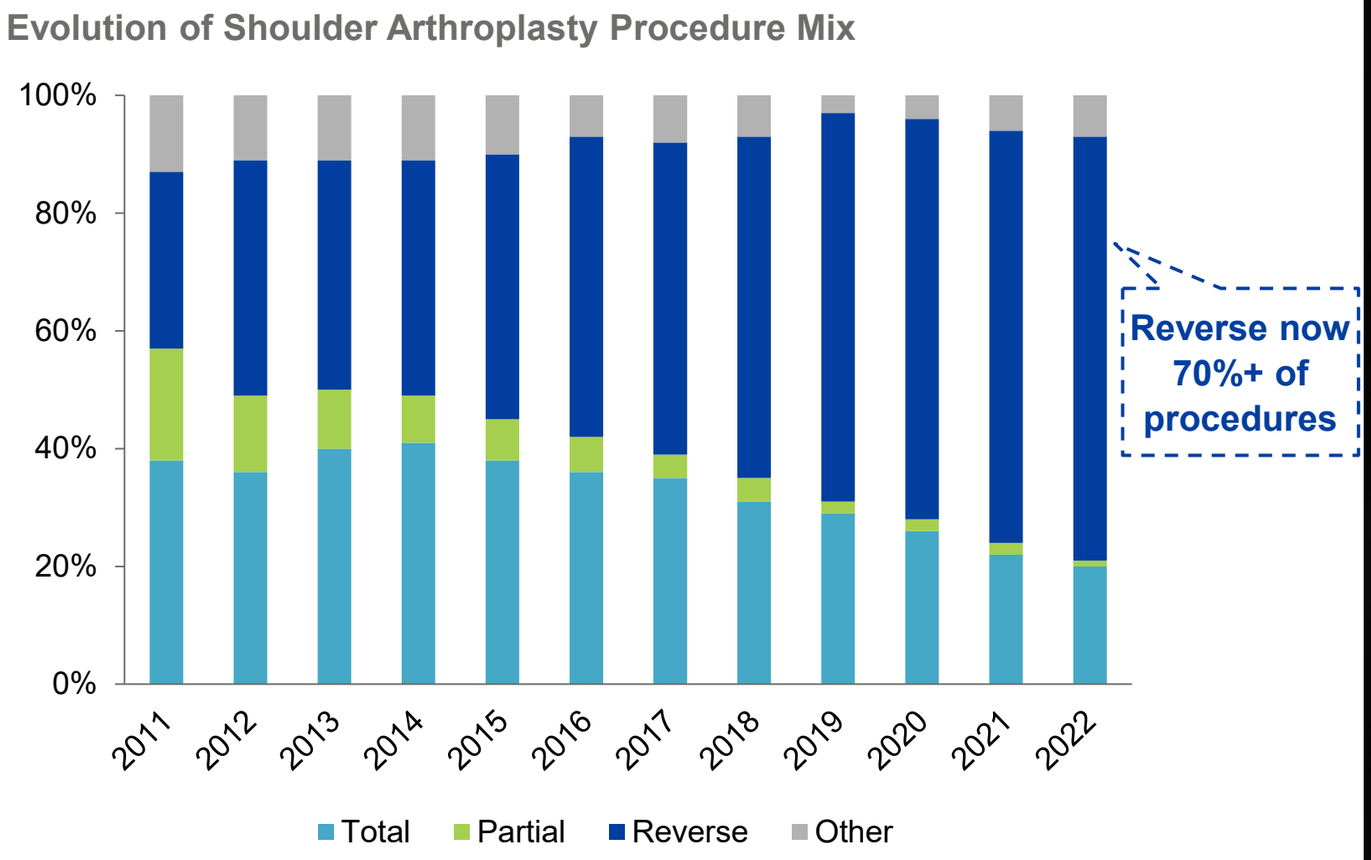


~15% of Subscapularis Tendons Fail

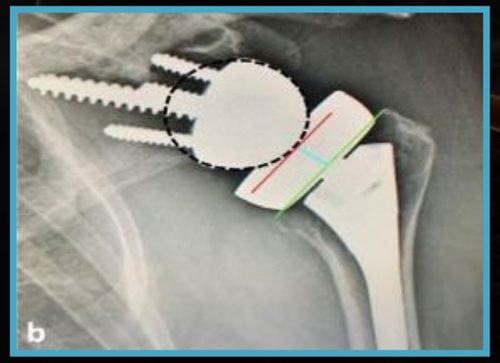
Following an aTSA Procedure[1, 2]

1. Based on a study published in the *Journal of Shoulder and Elbow Surgery* in which the tendon connecting the subscapularis muscle to the humeral bone is damaged
2. Due to inadequate healing of the tendon post-aTSA procedure

Frequency of Post-Operative aTSA Complications are Driving Significantly Higher rTSA Volumes



Gradual Market Transition Towards Inlay Reverse Arthroplasty



Onlay Arthroplasty

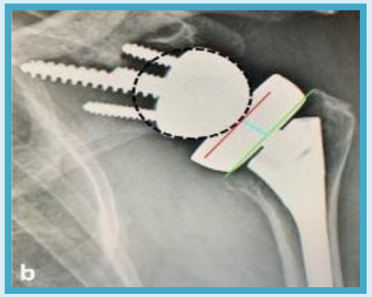
Inlay Arthroplasty

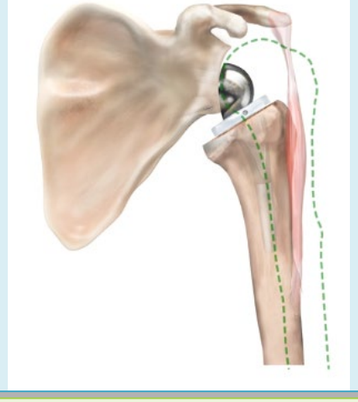
Image taken from: Badman et al, JSES, July 2021
Source: Curvo Research Network, 2023

InSet Reverse Stem Provides Biomechanical Advantages

Engineered to Provide Bone Sparing Implant Options to Achieve Desirable Range of Motion Biomechanics

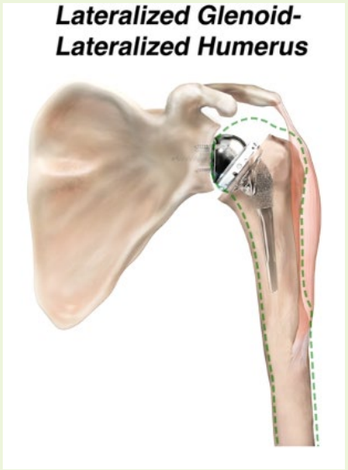
Traditional Reverse





41%[1]
of rTSAs Have Limited Internal Rotation after Surgery

InSet Reverse



Improved Post-Op Internal Rotation

- **Biomechanical advantage:** a more “anatomic” reverse shoulder construct
- **Inlay design** enables ability to both raise arm **and** reach back (unlike traditional reverse system designs, which can constrain range of motion)
- Achieves **desirable impingement free range of motion** and avoids arm lengthening and overstuffing
- **Design enables full conversion** from anatomic to reverse as needed

InSet Reverse Was Designed to Behave Like an Anatomic Replacement, Maximizing Post-Operative Motion

1. https://www.sciencedirect.com/science/article/pii/S2666639124000403

Our InSet Stems Are Compatible Across a Full Range of Implant Systems, Enabling Seamless Interchangeability Between aTSA and rTSA

Three InSet Stem Options

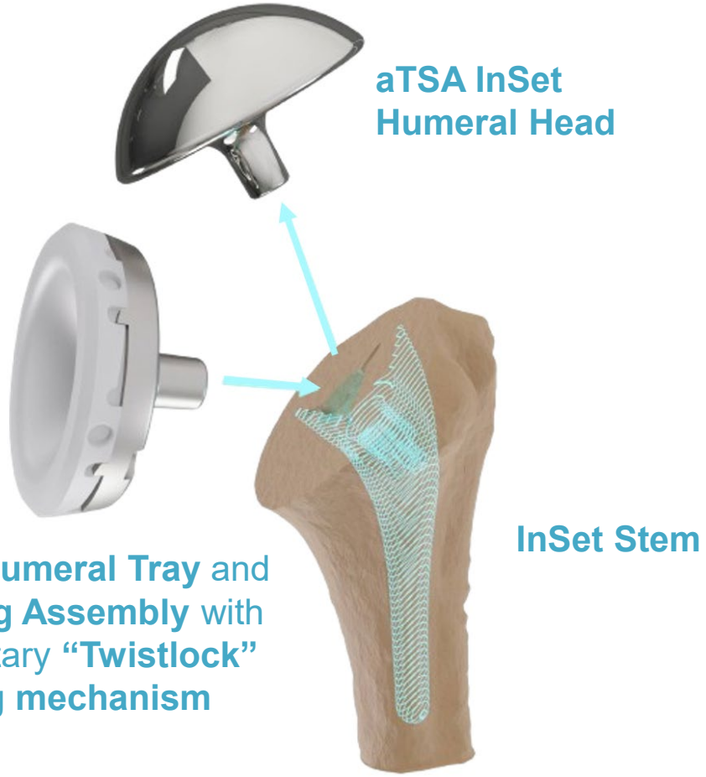
Stemless

70% of primary aTSA

Short Stem

InSet 95

All InSet Stems are Compatible with Both aTSA & rTSA Humeral Heads…

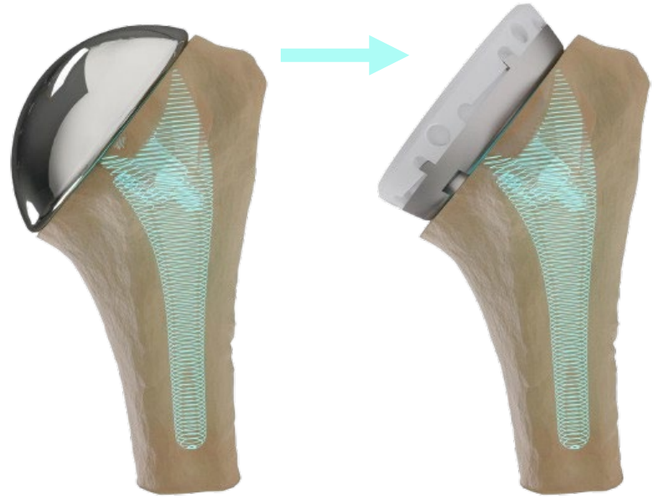


aTSA InSet Humeral Head

rTSA Humeral Tray and **Bearing Assembly** with proprietary **"Twistlock" locking mechanism**

InSet Stem

…Making Revision / Conversion Surgeries Straightforward



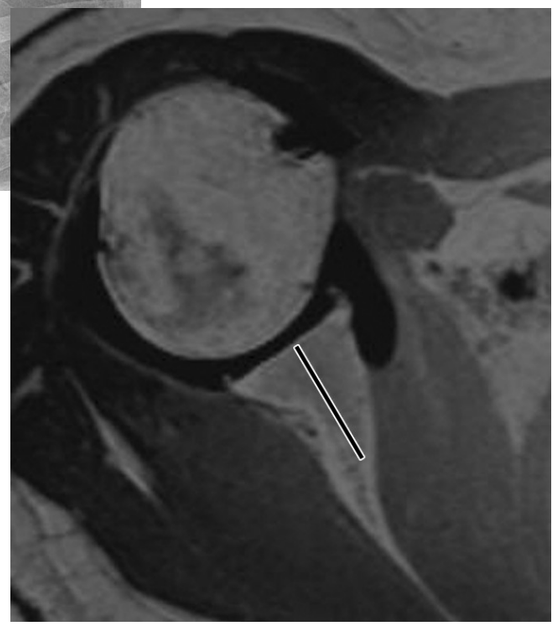
InSet Stem Remains in Place

- ✓ ***Consistent surgical technique***
- ✓ ***Identical instruments***
- ✓ ***Similar biomechanics***
- ✓ ***Interchangeable with aTSA / rTSA***

3 Limited Surgical Planning Can Lead to Imprecise Implant Positioning

Implant Positioning as Little as 5 Degrees Off Angle Can Lead to Inferior Patient Outcomes

Shoulder x-Ray



Shoulder MR Arthrogram

Surgeons have historically relied on **basic imagery to inform surgical approach**

- ✕ **Lacks 3D bone rendering**
- ✕ **No biomechanical simulation**
- ✕ **Does not fully capture patient-specific anatomy**
- ✕ **Requires outsourcing of imaging interpretation**
- ✕ **Offers limited surgeon engagement**

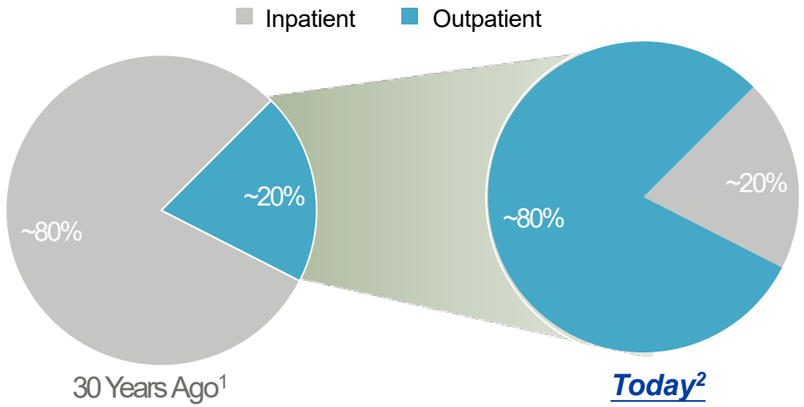
Our ProVoyance 3D Platform Streamlines Pre-Operative Planning Process

- **Hands-on** procedural planning performed by surgeons **at the site of care**
- Integrates **AI/ML** to transform CT images into **3D renderings of patient-specific anatomy**
- Provides **enhanced preoperative planning experience** for surgeons
- **Ease of use** is facilitated by the platform's highly intuitive, Unity-based interface

4 Market Shifts Towards ASC Setting Present Compelling Dynamic

Transition to the Outpatient Setting

Surgery is Experiencing a Long-Term Secular Shift Toward ASC



Inherent Resource and Space Constraints in ASCs vs. Hospital

Inpatient Stocking Room

ASC Shelves

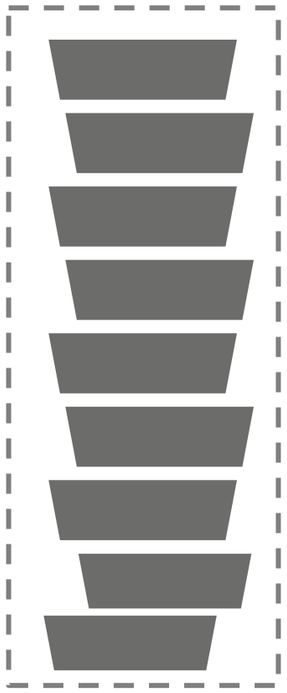
ASCs as Site of Care Present Numerous Advantages

- ✓ ASC has emerged as a **cost-efficient site of care delivery for shoulder arthroplasty**
- ✓ **Positive ASC-based clinical outcomes** relative to hospital-based outcomes in shoulder surgery
- ✓ Enables **streamlined workflows, scheduling flexibility, and operational autonomy**
- ✓ Expectation for **future shoulder arthroplasty growth to be largely within ASCs** vs. hospitals
- ✓ 2024 CMS reimbursement decision to add shoulder arthroplasty to the **ASC-covered procedure list further supports growth**

1. https://www.sciencedirect.com/science/article/pii/S0002961025000108
2. https://amsurg.com/blog/2024/07/25/filling-a-healthcare-need-how-ambulatory-surgery-centers-are-poised-for-continued-growth/#:~:text=More%20than%2080%20percent%20of,Surgery%20Center%20Association%20(ASCA) and https://higherlogicdownload.s3.amazonaws.com/ASCACONNECT/fd1693e2-e4a8-43d3-816d-17ecfc7d55c1/UploadedImages/AdvancingSurgicalCare/What_is_an_ASC.pdf

Our Capital Efficient Technology Suite Reduces Complexity & Cost

Status Quo
Up to 9 surgery trays to complete a single procedure



Competitor Trays and Implants

Shoulder Innovations Trays and Implants

Significant Reduction
in Surgery Tray Usage

- ✓ Full SI product portfolio and all procedures supported by **two instrument trays**
- ✓ Fewer SKUs and trays **reduce the implant footprint** per procedure
- ✓ Decreased capital outlay per procedure enables a **compelling economic value proposition**

ASC Portion of Procedures: ~10% in Dec 2023 → ~30% in Dec 2024[1]

1. During the month ended December 2023 and the month ended Dec 31,2024

InSet Glenoid Technology Leveraged Across a Full Range of Solutions for Both aTSA and rTSA Procedures

InSet aTSA System

InSet rTSA System

Consistent Innovation with Robust Pipeline of New Technologies

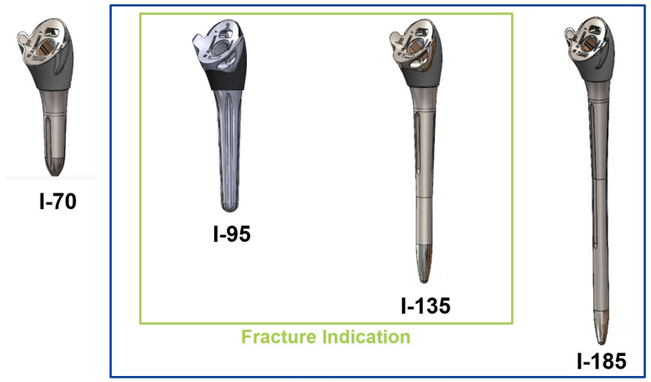
2016 – 2023

History of successfully launching new technologies to enhance our ecosystem and provide surgeons with the tools and support needed to deliver quality outcomes for patients

Pipeline

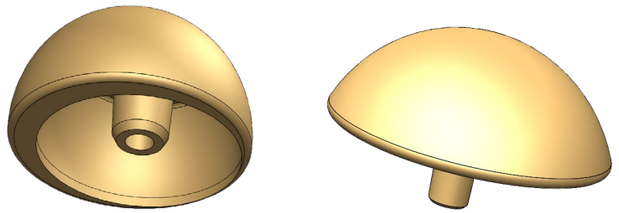
I-Series Expansion and New Indications

- *Expected to extend range of available stem sizes and include expanded indications into Fracture and Revision surgeries*
- *Anticipate pursuing FDA clearance of additional I-Series implants over the next twelve months*



Technologies for Metal Sensitive Patients

- *Developing a line of humeral head and glenoid technologies for the ~10-15% of the general population with metal hypersensitivity*
- *Anticipate pursuing FDA clearances of these solutions over the next twelve months*



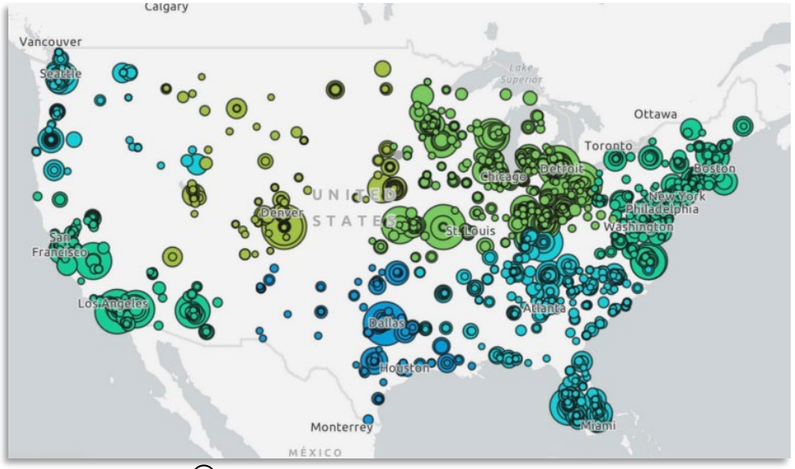
Adjacent Market Expansion

- ✓ *Sports medicine*
- ✓ *Shoulder trauma*

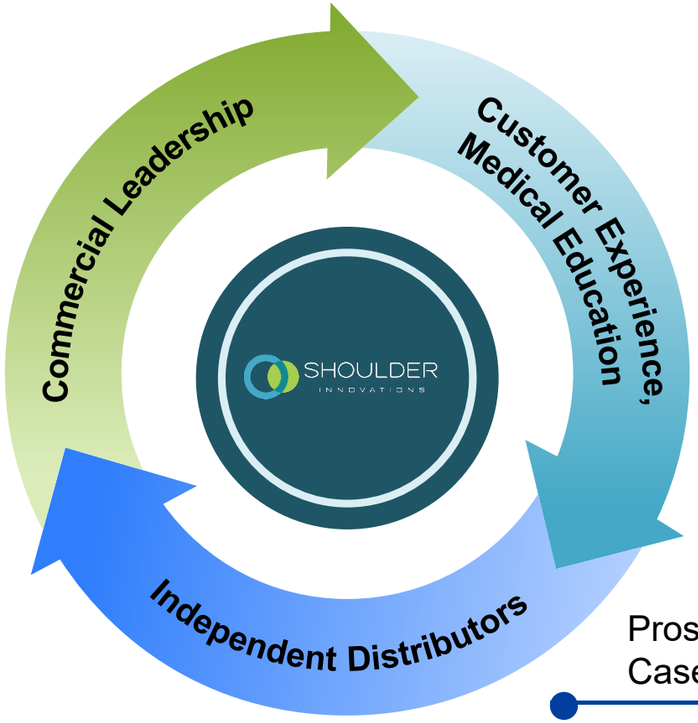
Integrated Commercial Approach Accelerates Adoption, Drives Deeper Surgeon Relationships, and Enhances Long-Term Retention

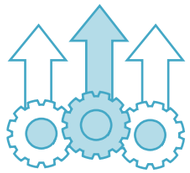
Distributor Management, Target Prospecting, Forecasting, Performance Management

- ✓ **27** specialized commercial leadership team members
- ✓ Leverage proprietary business intelligence tools and partner with independent distributors for account management



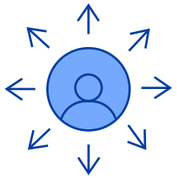
◯ Denotes surgeon location and case volumes





Key Account Conversions, Utilization Management, Surgeon to Surgeon Training

- ✓ **7** expert surgeon educators
- ✓ Facilitate rewarding and meaningful experiences for surgeons focused on clinical value



Prospecting, Relationship Management, Servicing, Case Coverage

- ✓ **41** independent distributors with over **150** trained reps
- ✓ Primarily orthopedic specialists with exclusive agreements to carry InSet as their dedicated shoulder solution

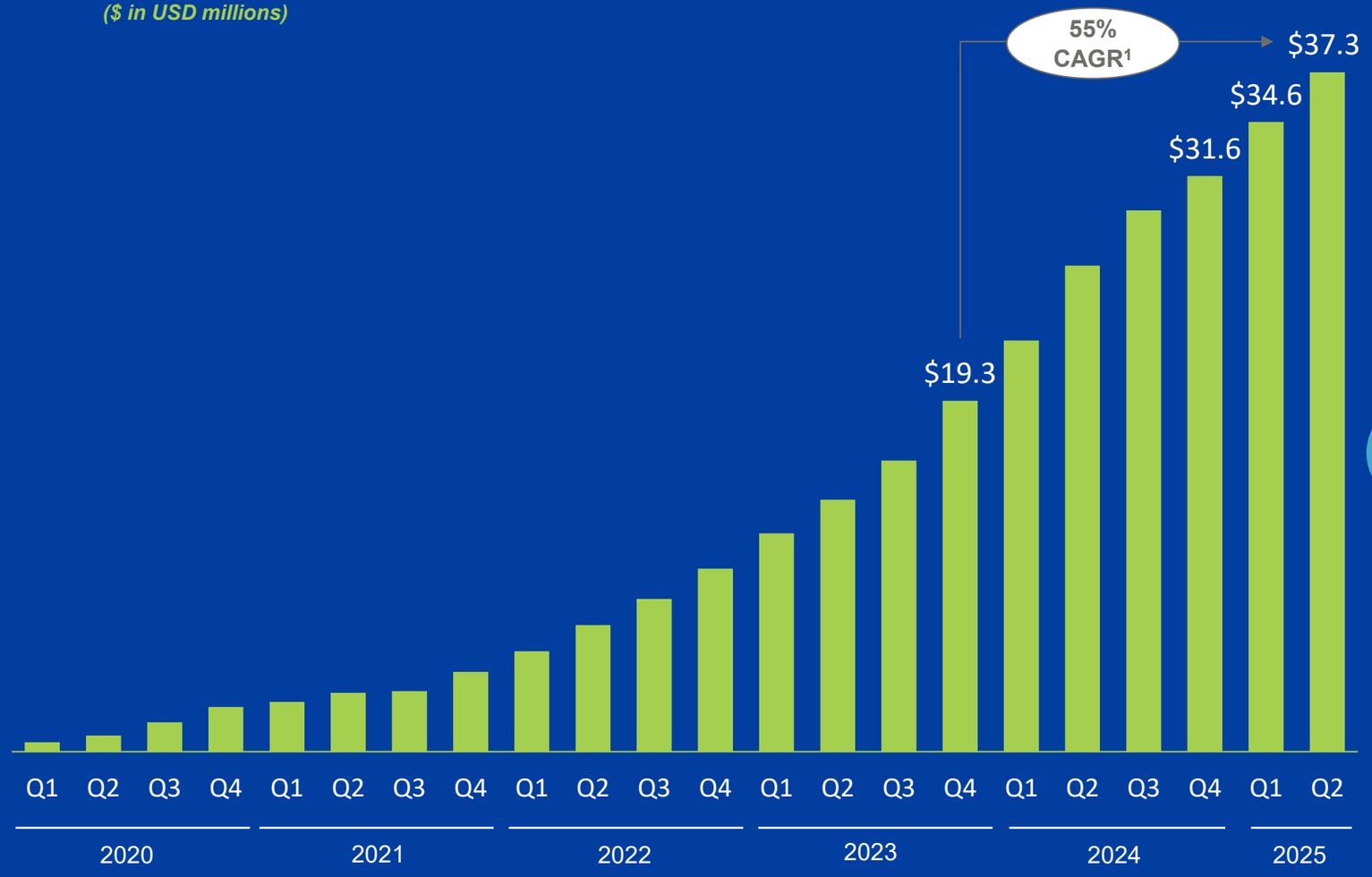
Focused Commercial Approach Targeting the ~1,800 High Volume Surgeons Performing Majority of Procedures

Commercial metrics as of quarter ended June 30, 2025

Financial Summary

Trailing Twelve Months Revenue

($ in USD millions)

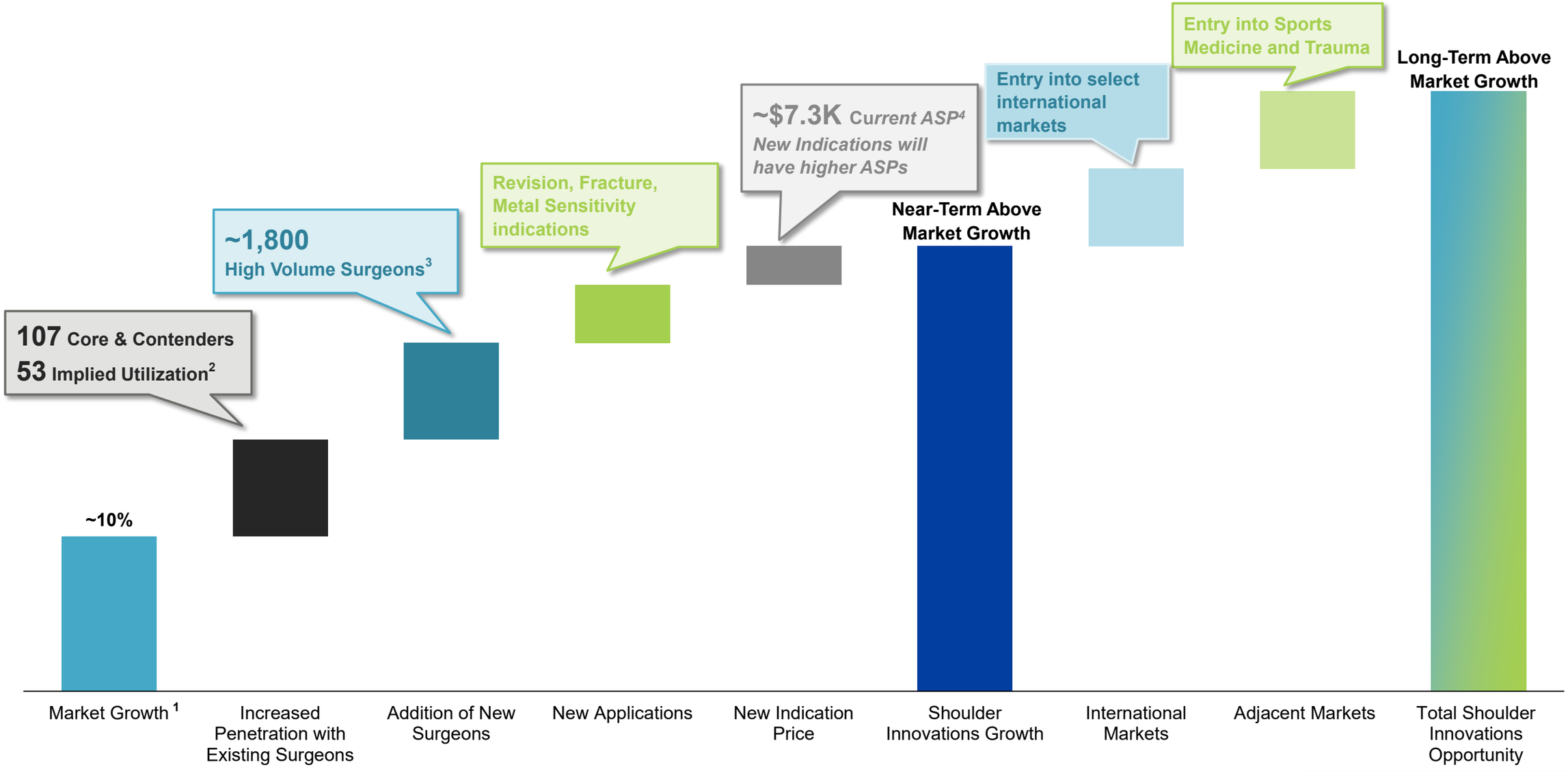


Strong business momentum and continued **rapid market adoption** of innovative technology

Steady growth led by launch and adoption of rTSA, Stemless, and Long stem products

1. Compounded annual growth rate from Q4'23 to Q2'25

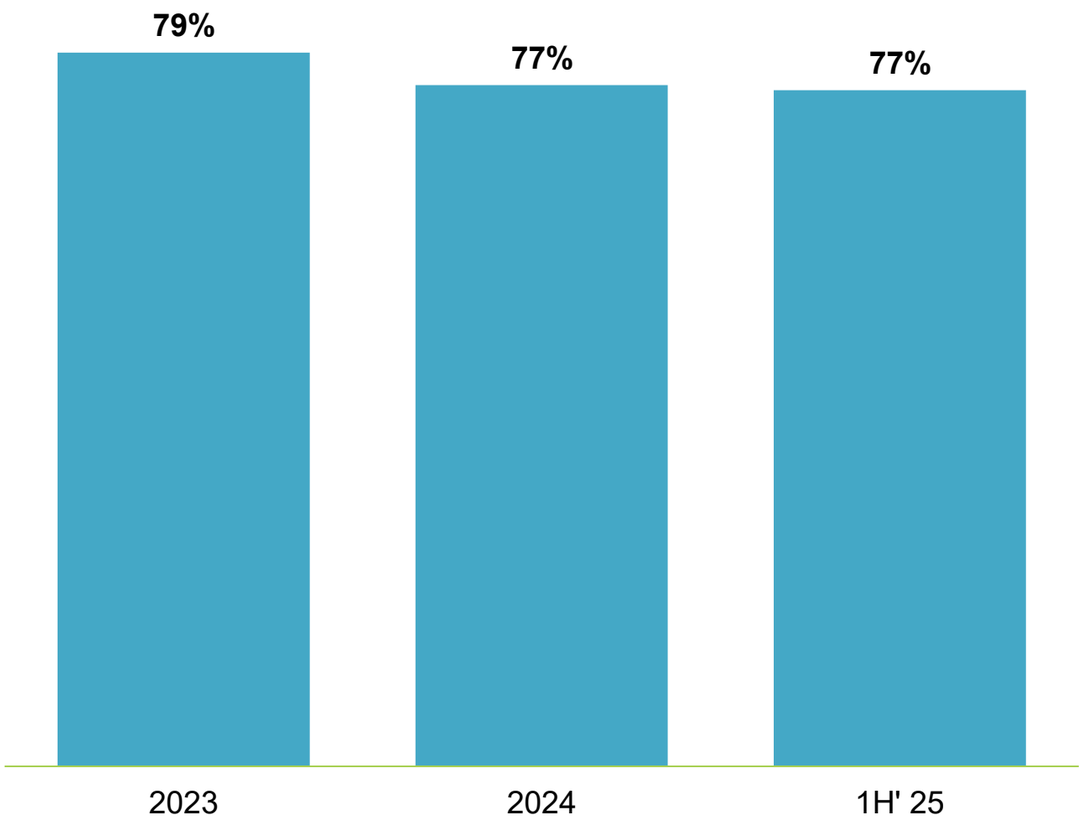
Multiple Drivers to Sustain Above-Market Growth



1. The number of shoulder arthroplasty procedures in the United States grew at approximately 10% per year from 2019 to 2024
2. Utilization defined as number of implant systems to Core & Contender surgeons divided by total number of Core & Contender surgeons
3. Based on management estimates; defined as U.S. surgeons performing the majority of shoulder arthroplasty procedures
4. ASP as of quarter ended June 30, 2025

Multiple Initiatives to Drive Profitability

Attractive Gross Margin Profile



Key Profitability Initiatives

- ASP
- Manufacturing and Supply Chain Cost-Down Initiatives
- Salesforce Productivity
- R&D and SG&A Spend Moderating as a Function of Revenue
- Modest Capex Investments
- Improving Working Capital Dynamics

Investment Highlights

- **Disruptive ecosystem** to address existing limitations within $2.8Bn annual global shoulder arthroplasty market
- **Strong clinical results** and positive outcomes for patients and surgeons
- Well-positioned as shoulder surgical care market **grows in outpatient settings**
- **Unique commercial organization** dedicated to the shoulder surgical care market
- **AI-enabled** business and clinical intelligence technologies
- **Proven and experienced management team**

SHOULDER INNOVATIONS

Thank You