

stryker

# Blueprint<sup>®</sup>

3D Planning + PSI



**Embrace life** with  
shoulder replacement

**Lift** my arm  
patient education

[liftmyarm.com](http://liftmyarm.com)



# Is shoulder pain

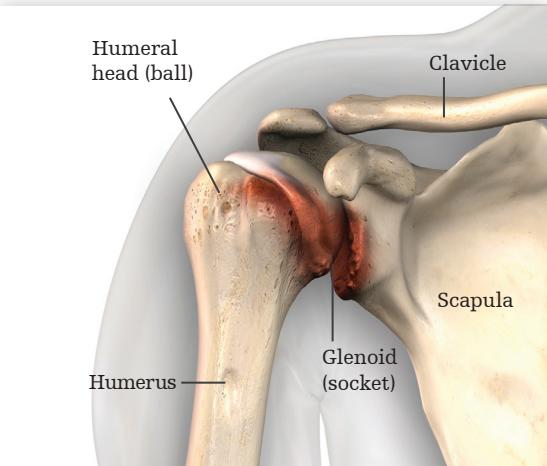
keeping you from your active lifestyle?

**You don't have to suffer.  
There is a reliable, effective solution.**

If you are reading this brochure, you may be a candidate for shoulder replacement surgery. Getting a total shoulder replacement is a big step, and you may be feeling a little uncertain about what comes next.

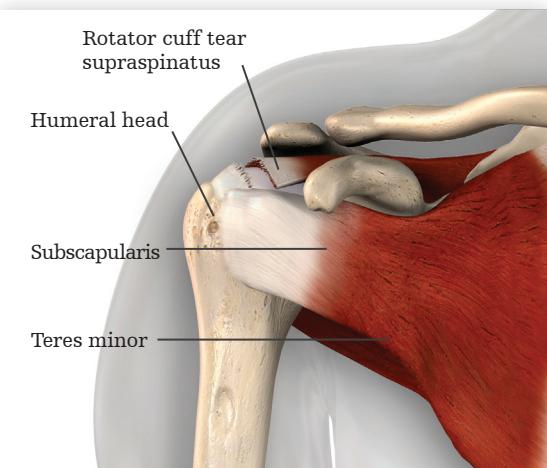
# Is it time for **shoulder replacement**?

When pain and lack of mobility reaches an advanced stage due to arthritis or a torn rotator cuff, shoulder replacement may be recommended.



## Shoulder with arthritis

Arthritis causes the cartilage—the smooth tissue covering bones—to break down. When the cartilage breaks down, the ball and socket of the shoulder joint rub against each other, which is painful, causes swelling and limits your range of motion. There are many types of arthritis, the most common types affecting the shoulder are osteoarthritis, rheumatoid arthritis and post-traumatic arthritis.



## Shoulder with torn rotator cuff

Rotator cuff tears are common, and are more likely to occur after age 40. The tendons that make up the rotator cuff weaken with age and are more likely to tear during a fall, when pulling or lifting with force, or during repetitive overhead activity such as painting, swimming and weightlifting. When a torn rotator cuff is not repaired, the shoulder doesn't move the way it should which causes wear and tear on the joint. Overtime, arthritis develops and all rotator cuff function may be lost, resulting in a condition called cuff tear arthropathy.

## We are **shoulder specialists**

At Stryker, we've passionately worked to advance the treatment of anatomic and reverse total shoulder replacements for over 25 years.

# Blueprint

## 3D Planning + PSI

### What is Blueprint?

Blueprint is a software program that allows your orthopaedic surgeon to develop a **personalized, pre-operative plan and patient-specific instrumentation (PSI)** for your shoulder replacement prior to your surgery.

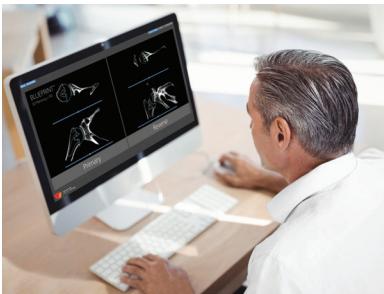
### How does Blueprint work?



# 1

Your surgeon will order a CT scan of your shoulder using the Blueprint CT protocol. CT stands for computed tomography. This scan creates cross-sectional images of the shoulder using specialized X-ray cameras.

# 2



Your surgeon loads your CT scan into Blueprint to create an anatomic 3D model of your shoulder and **virtually perform your shoulder replacement surgery**. Viewing your shoulder in 3D compared to traditional methods allows for:

- A better view of the unique anatomy of your shoulder.<sup>(1,2,3,4,10)</sup>
- Additional visualization of the wear patterns in your shoulder which may impact the type of implant used.
- More precise measurements.<sup>(2,3,11)</sup>
- Better implant types and implant sizes as it relates to your anatomy<sup>(10,11,12)</sup>
- Implant placement, to maximize bone preservation<sup>(10)</sup>

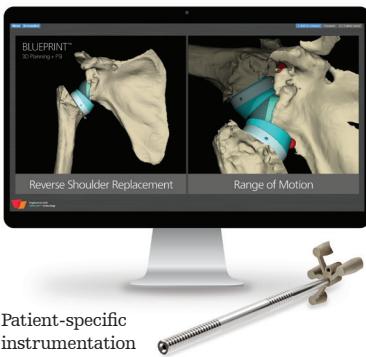


For more information on shoulder replacement, speak with your surgeon and visit:

[liftmyarm.com](http://liftmyarm.com)

## Why Blueprint?

Studies have shown that using 3D pre-operative planning software like Blueprint and patient-specific instrumentation enables the surgeon to accurately position the glenoid implant and replicate the pre-operative surgical plan compared to standard techniques.<sup>(1,2,3,4)</sup>



Patient-specific instrumentation

3

Your surgeon will carefully review all options and finalize **your customized surgical plan**. Your surgeon may choose to order a 3D printed patient-specific instrumentation (PSI) to assist with precisely transferring the surgical plan to your shoulder in the OR.<sup>(1,9)</sup>



4

Your personalized surgical plan is then followed during your surgery.

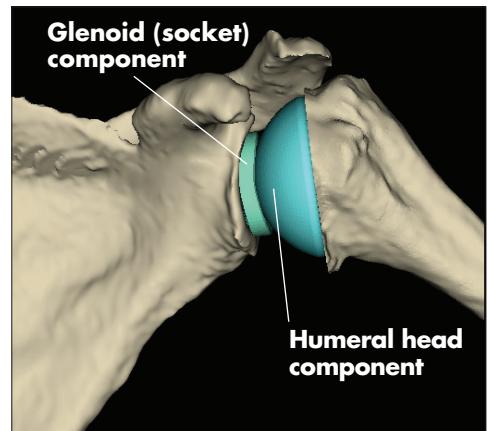
A **state-of-the-art technology** in shoulder replacement surgery called **Blueprint 3D planning** is available.

# Shoulder replacement procedures

## Primary and reverse total shoulder replacement

### Anatomic total shoulder

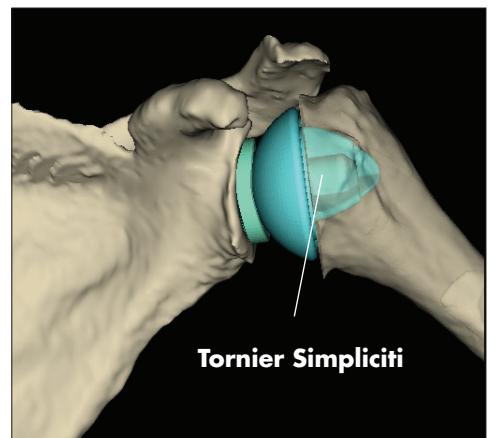
During a primary total shoulder replacement, the ball (humeral head) of the shoulder joint is replaced with an implant that includes a short stem with a smooth, rounded metal head. The socket (glenoid) is replaced with a smooth, rounded plastic cup that fits the head of the ball. Primary total shoulder replacement is intended to mimic the natural ball and socket anatomy of the shoulder joint and may be recommended for patients with advanced arthritis of the shoulder joint and a healthy, intact rotator cuff.



### Stemless shoulder replacement

Tornier Simpliciti is a stemless shoulder replacement system, featuring a “nucleus” instead of a long stem which means less bone is removed to secure it in place. The benefits of stemless shoulder replacement may include:

- Simplified implant placement<sup>(5,7)</sup>
- Less blood loss during surgery<sup>(6)</sup>
- Less time in the operating room<sup>(6)</sup>
- Less pain after surgery,<sup>(6)</sup> which may promote a faster recovery
- Bone preservation for any future procedures that are needed



**Tornier  
Simpliciti**



Your surgeon will discuss your specific condition and explain the potential benefits, risk and considerations of any surgical or non-surgical treatment option to manage your shoulder condition.

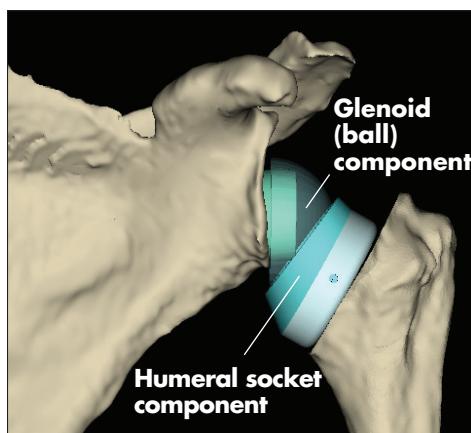
There are two types of total shoulder replacements —primary and reverse total shoulder replacement. Both procedures replace the “total” shoulder joint, meaning implants replace both the “ball” and “socket” of the shoulder joint. The procedures differ in the positioning of the ball and socket implants and the muscle groups used for movement after surgery.

## Reverse total shoulder

During a reverse total shoulder replacement, the ball (humeral head) of the shoulder joint is replaced with an implant that includes a short stem with a curved plastic tray. The socket (glenoid) is replaced with a rounded metal head. Reverse total shoulder replacement reverses the natural ball and socket anatomy of the shoulder joint which allows the stronger deltoid muscles to take over for strength and function.

Reverse total shoulder replacement may be recommended for patients with:

- Completely torn or irreparable rotator cuff tendons.
- Cuff tear arthropathy (shoulder arthritis with a large rotator cuff tear).
- Severe shoulder fracture (not plannable with Blueprint).
- Shoulder dislocation and a large rotator cuff tear.



In a well-documented study, 90% of shoulder replacement implants were still in place at ten years and 81% at twenty years.<sup>(8)</sup>

## References

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For more information and to find a shoulder surgeon near you, please visit:

[liftmyarm.com](http://liftmyarm.com)

The information presented in this brochure is for educational purposes only. Stryker is not dispensing medical advice. Please speak to your doctor to decide if joint replacement surgery is right for you. Only your doctor can make the medical judgment which products and treatments are right for your own individual condition. As with any surgery, joint replacement carries certain risks. Your surgeon will explain all the possible complications of the surgery, as well as side effects. Additionally, the lifetime of a joint replacement is not infinite and varies with each individual. Also, each patient will experience a different post-operative activity level, depending on their own individual clinical factors. Your doctor will help counsel you about how to best maintain your activities in order to potentially prolong the lifetime of the device.

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Content ID: AP-013508C 08-Dec-2021

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