Andrew J. Braziel, MD
Alan S. Curtis, MD
Kurt J. Hofmann, MD
Andrew Jawa, MD
Hervey L. Kimball, MD
Jacob M. Kirsch, MD
Brian P. McKeon, MD
Suzanne L. Miller, MD
Kai Mithoefer, MD
John C. Richmond, MD
Mark P. Slovenkai, MD
Andrew L. Terrano, MD
Paul P. Weitzel, MD
Thomas H. Weurz, MD

Lauren Dolloff, PA-C
Irene E. Ghobrial, PA-C
Kiet Le, PA-C
Sheri Martinelli, PA-C
Thomas Pacheco, PA-C
Jason D. Rand, PA-C
Julie Winn, PA-C
Stephen Wright, PA-C

BSSC
Boston Sports & Shoulder Center

To our patients,

Thank you for the opportunity to take part in your care. Our number one goal, along with that of our team at the Boston Sports and Shoulder Center, is to improve your quality of life through our knowledge, skill, experience, and most importantly – compassionate care. Shoulder replacement surgery is a highly effective procedure, but we recognize surgery can be stressful. We hope to make this process as smooth as possible.

This binder is intended to be a resource to help you and your loved ones understand shoulder replacement, the risks and benefits of surgery, and what to expect during your surgical and postoperative experience. Please keep this with you all the way up to your date of surgery and beyond. Additionally, our team is always here to answer your questions – please do not hesitate to contact us about anything. See the backside of this binder for information on how to relay questions to the team.

Our team is highly committed to improving patient outcomes and satisfaction. To this end, we kindly ask that you complete our patient-reported outcome questionnaires before each of your appointments. The questionnaires will ask you about your pain, shoulder function, general health, and satisfaction with your care. We rely on your responses to get a better understanding of how patients are doing and identify ways to improve the experience and outcomes for future patients.

Sincerely,

Andrew Jawa, MD

Jacob Kirsch, MD

Meet Your Shoulder Replacement Team

ANDREW JAWA, MD

Dr. Jawa is the open shoulder specialist at Boston Sports & Shoulder Center. He focuses on primary and revision total shoulder replacements (Reverse and Anatomic), Latarjets, tendon transfers and fractures. He performs over 300 shoulder replacements each year. He is a regional and national leader in his field, training other surgeons on the best management and surgical techniques for shoulder surgery. He has served as the head of the shoulder section of the New England Shoulder and Elbow Society, and is a full member of the prestigious American Shoulder and Elbow Society.

Dr. Jawa earned his medical degree from the University of Pennsylvania Medical School, followed by a Harvard combined orthopaedic surgery residency at Massachusetts General Hospital and Brigham and Women's Hospital. He also completed two fellowships at Massachusetts General Hospital; one in hand and upper extremity surgery, and the other in shoulder and elbow surgery. He performs all of his surgeries at the New England Baptist Hospital and the Boston Outpatient Surgical Suites.

JACOB KIRSCH, MD

Dr. Kirsch is a shoulder and elbow specialist at Boston Sports & Shoulder Center. He specializes in arthroscopic and open treatment of shoulder and elbow conditions, including shoulder arthritis, rotator cuff tears, fractures, and instability. He has advanced training in primary and revision shoulder replacement surgery. He has a particular focus in complex problems of the shoulder requiring shoulder replacement, sports related injuries, shoulder instability with bone loss, irreparable tendon tears and failed previous surgery.

Dr. Kirsch graduated Magna Cum Laude from Franklin & Marshall College as a member of the Phi Beta Kappa honor society. He earned his Doctor of Medicine with distinction from George Washington University School of Medicine, where he was inducted into the Alpha Omega Alpha (AOA) Honor Society and received the Julius S. Neviaser Award for Excellence in Orthopaedic Surgery. He went on to complete an orthopaedic surgery residency at the University of Michigan, where he also served as a team physician for the University of Michigan Men's Basketball team for several years. Dr. Kirsch also received advanced international training in shoulder surgery from world-renowned experts in Lyon, France. Dr. Kirsch then completed a fellowship in shoulder and elbow reconstruction at the Rothman Institute in Philadelphia, Pennsylvania.

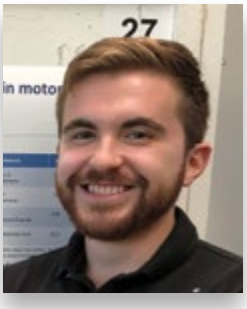
KIET LE, PA-C

Kiet works closely with Dr. Jawa and Dr. Kirsch as a Physician Assistant. He completed his Bachelor of Science in sports medicine at Quinnipiac University, and his Master of Physician Assistant Studies at Albany Medical College. He has extensive experience with joint replacements of the knee and shoulder. He should be considered a navigator for the process of your total shoulder replacement and is available to answer questions about surgery at any time before and after the operation. Additionally, he often assists in the operating room on the day of surgery. He can be reached by calling A.J. or by calling our main phone number, 781-890-2133, and asking a member of our staff to send a message through your patient chart.

A.J. HELMS, SURGICAL COORDINATOR

A.J. handles all surgery, imaging and procedure scheduling for Dr Jawa, Dr. Kirsch, and Kiet. He is the bridge between patient and provider. He is able to answer common logistical questions before and after surgery, as well as connect patients with the team to answer any clinical questions. A.J. can be reached at 617-751-5311.

PAUL HART, RESEARCH ASSISTANT



Paul is a medical assistant and research assistant at BSSC who works closely with Dr. Jawa and Dr. Kirsch to monitor surgical outcomes, complications, patient experience and satisfaction. If you have any suggestions to improve patient care, please contact Paul via email at PHart@bostonssc.com or by phone 617-751-5310.

Joint Replacement Center
Other Specialists

Dr. Andrew Braziel is a Board Certified joint replacement specialist at Boston Sports & Shoulder Center. He earned his medical degree from Georgetown University School of Medicine and completed his residency at UMass Memorial Medical Center. He completed the Otto E. Aufranc Fellowship in Adult Joint Reconstruction surgery at New England Baptist Hospital.

Dr. Braziel is the Co-Director of Out-Patient Arthroplasty at New England Baptist Hospital. He is an active member of multiple academic societies, including the American Association of Hip and Knee Surgeons (AAHKS), the American Academy of Orthopaedic Surgeons (AAOS), and he is a member of the American Board of Orthopaedic Surgeons (ABOS).

Dr. Braziel's clinical interests include joint replacements of the hip and knee.

Dr. Kurt Hofmann is a Board Certified orthopaedic foot and ankle surgeon at Boston Sports & Shoulder Center. He completed his medical school and residency training at Tufts University School of Medicine, and a foot and ankle fellowship at New England Baptist Hospital. He is an active member of multiple academic societies, including the American Orthopaedic Foot and Ankle Society (AOFAS), the American Academy of Orthopaedic Surgeons (AAOS).

Dr. Hofmann's clinical interests are in foot and ankle surgery, including ankle arthroscopy, minimally invasive foot and ankle surgery, and total ankle replacement.

Dr. Mark Slovenkai is a Board Certified orthopaedic foot and ankle surgeon at Boston Sports & Shoulder Center, and Chief of Orthopaedic Foot and Ankle Surgery at New England Baptist Hospital. He is an active member of the American Orthopaedic Foot and Ankle Society (AOFAS). He holds an academic appointment as Associate Clinical Professor of Orthopaedic Surgery at Tufts School of Medicine.

Dr. Slovenkai's clinical interests are reconstructive surgery of the foot and ankle, specializing in total ankle replacements.

Table of Contents

Understanding Shoulder Replacement Surgery

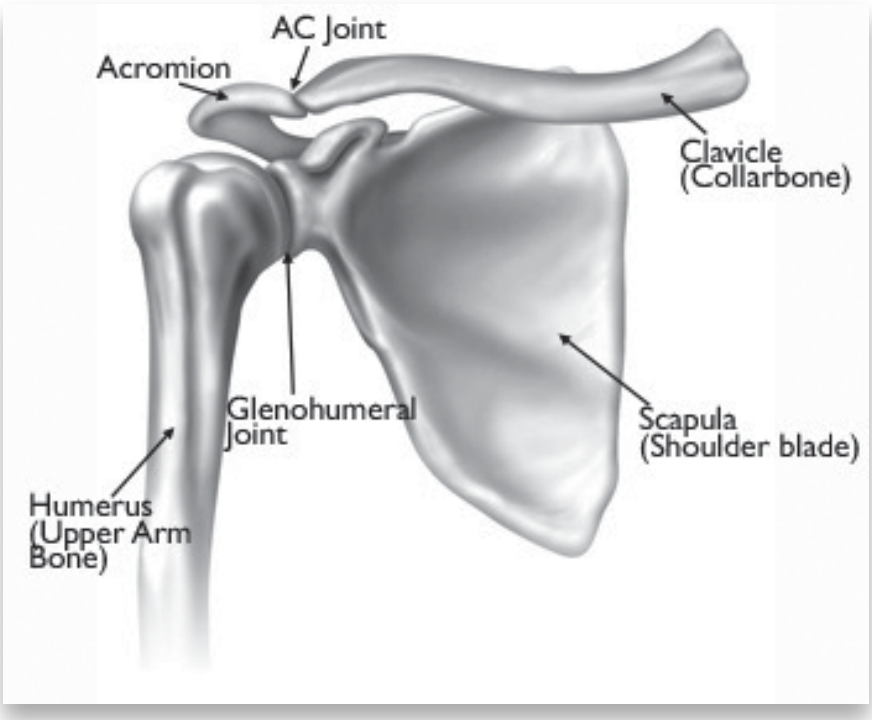
Shoulder replacement surgery has been recommended for the treatment of your shoulder problem. This operation is usually performed for arthritis or fractures of the shoulder, but other conditions involving the shoulder can also be successfully treated with shoulder replacement surgery.

The purpose of this information packet is to give you information about the surgery, as well as answer the most common questions patients typically ask. This handout provides information on your surgery, your hospital stay, as well as your return home.

Additionally, a video about total shoulder replacement surgery can be found at **www.bostonssc.com** under the *Patient Resources* tab or at **www.nebh.org** at the bottom of Dr. Jawa's profile.

The Normal Shoulder

The normal shoulder is very complex and involves three bones and more than one joint. These bones are the clavicle (collar bone), the scapula (shoulder blade), and the humerus (upper arm bone). The upper end of the arm bone (humerus) and the outside edge of the scapula bone (glenoid) form a "ball-and-socket joint." There are numerous muscles, ligaments and tendons which help to provide stability and movement. This joint is remarkable because it typically allows greater range of motion than any other joint in your body.



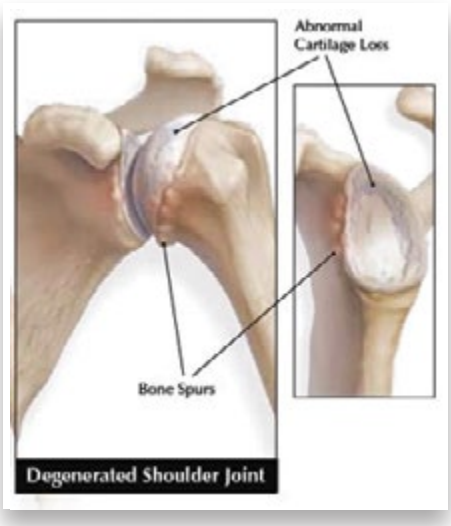
Types of Shoulder Replacements

There are two types of replacements. The anatomic total shoulder preserves the anatomy of your shoulder. A metal ball replaces the end of the upper arm bone (humerus) and a plastic cup replaces the socket (glenoid). The rotator cuff is left intact. A reverse shoulder replacement reverses the implants and a metal ball replaces the glenoid and a plastic cup replaces the end of the humerus.

There are multiple factors that determine which implant is best suited for you. Some of the factors are your age, activity level, body type, strength of your bone, and quality of soft tissue and your rotator cuff tendons.

Who Needs Total Shoulder Replacement Surgery?

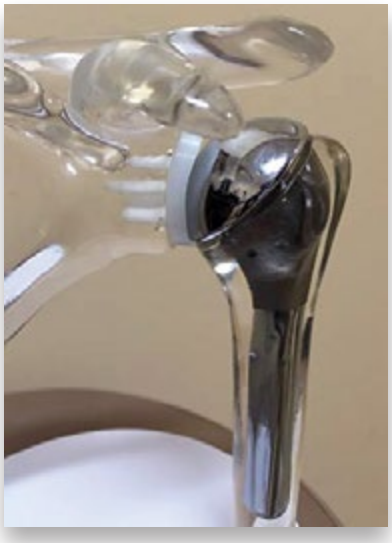
Total shoulder replacement surgery is suggested if there is degeneration of the ball-and-socket joint. When the smooth surfaces (cartilage) of the ball and socket become rough, they rub against each other rather than glide. This rubbing causes pain, stiffness and swelling. Most patients who decide to have shoulder replacement surgery have experienced shoulder pain for a long time. Many patients have developed pain that limits their daily activities and may interfere with their ability to sleep. Shoulder stiffness may also interfere with the use of their arm for everyday activities. A shoulder replacement is performed to alleviate shoulder pain and improve range of motion of your shoulder joint.



Anatomic Total Shoulder Replacement

Joint replacement surgery replaces the ends of damaged bones in a joint. The shoulder joint allows you to move the upper arm in multiple directions and it is where the end of the upper arm bone (humerus) meets the end of the scapula bone (glenoid). In the shoulder joint, the end of the humerus is shaped like a ball and the glenoid is shaped like a shallow cup.

During total shoulder replacement surgery, the damaged part of your shoulder is removed and replaced with an implant. Implants are made of various materials: stainless steel, titanium, cobalt-chrome, and polyethylene (surgical-grade plastic). Bone cement may also be used in the replacement.

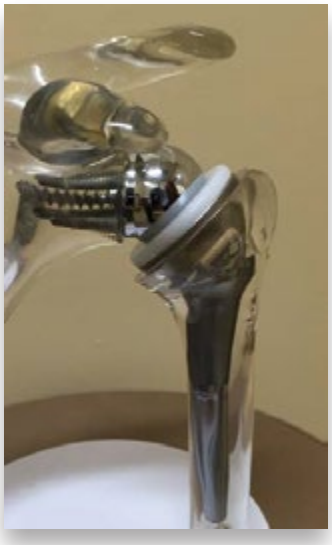


The most common reason for a total shoulder replacement:

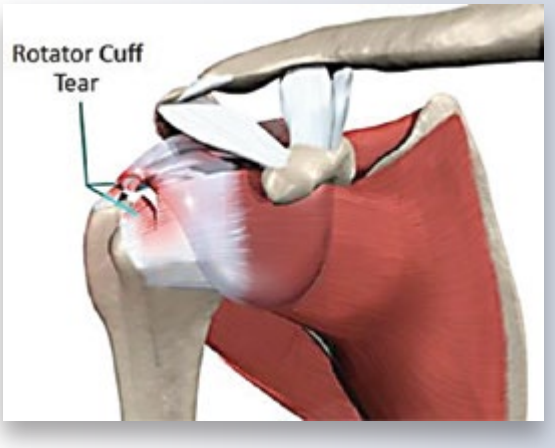
Severe degenerative joint disease (osteoarthritis) - The cartilage has worn away resulting in bone-on-bone contact. When the smooth surfaces of the head of the humerus (ball) and glenoid (socket) become rough, they rub against each other rather than glide.

Reverse Shoulder Replacement

Reverse total shoulder replacement surgery is an option when the rotator cuff muscles surrounding the shoulder are not functioning properly, usually due to a chronic tear in one or more of the tendons that is not able to be surgically repaired. This can also lead to degeneration of the ball-and-socket joint resulting in arthritis. Combined, a disorder called Rotator Cuff Arthropathy, can lead to chronic pain and shoulder dysfunction. Reverse shoulder replacement surgery is designed to alleviate most of the shoulder pain and restore function. It often helps to improve the range of motion of your shoulder joint. For a reverse shoulder replacement procedure, most of the surgery will follow the same steps as the conventional total shoulder. However, the components of the reverse are shaped differently. The glenoid (socket) component is shaped like a ball called the glenosphere. This is fixed to the scapula with screws. The humeral (arm) component is now the socket that attaches to the upper end of the humerus.



Common reasons for reverse shoulder replacement surgery are:



- Chronic tear of the rotator cuff tendon(s)
- Rotator Cuff Arthropathy (chronic rotator cuff tear with associated arthritis)
- Worn glenoid (socket)

Other reasons for reverse shoulder replacement surgery:

- Complicated proximal humerus fractures
- Poor healing (mal-union, non-union) of proximal humerus fractures previously repaired
- Worn born or thin rotator cuff for patients with osteoarthritis

Longevity of Shoulder Replacement

Shoulder replacement surgery is one of the most reliable and predictable operations for improving pain, function, and overall quality of life. Patients considering shoulder replacement commonly ask about how long their replacement will last. There are several factors that influence the longevity of a shoulder replacement, some of which are patient specific while others pertain to the type of shoulder replacement (anatomic total shoulder vs. reverse shoulder replacement). We will have a personalized discussion with you regarding your individual risk and anticipated likelihood of long-term success with a shoulder replacement.

It is important to understand that any long-term information pertaining to the longevity of shoulder replacement surgery is based on surgical techniques and implants that are over 10-20 years old. While we believe that current technology and surgical techniques will improve the survivorship of modern shoulder replacements, long-term follow-up will be needed to know for sure. In general, data from the Mayo Clinic indicates that the likelihood of not requiring a revision surgery after an anatomic total shoulder replacement is approximately 90% at 10 years and 80% at 20 years.[3, 4] Patients who receive a reverse shoulder replacement appear to have slightly better implant longevity, with several studies reporting >90% survivorship at a minimum of 10 years.[1, 2] Longer term follow-up after reverse shoulder replacement is limited as this is a relatively newer type of replacement. Recent data from the Australian Orthopaedic National Joint Registry with over 40,000 shoulder replacements demonstrated that at 10 years, 12.4% of patients required a revision surgery after an anatomic total shoulder replacement compared to 6.6% of patients after a reverse shoulder replacement.[5]

1. Bacle G, Nove-Josserand L, Garaud P, Walch G. Long-Term Outcomes of Reverse Total Shoulder Arthroplasty: A Follow-up of a Previous Study. J Bone Joint Surg Am 2017;99:454-461. 10.2106/JBJS.16.00223
2. Cuff DJ, Pupello DR, Santoni BG, Clark RE, Frankle MA. Reverse Shoulder Arthroplasty for the Treatment of Rotator Cuff Deficiency: A Concise Follow-up, at a Minimum of 10 Years, of Previous Reports. J Bone Joint Surg Am 2017;99:1895-1899. 10.2106/JBJS.17.00175
3. Schoch B, Schleck C, Cofield RH, Sperling JW. Shoulder arthroplasty in patients younger than 50 years: minimum 20-year follow-up. J Shoulder Elbow Surg 2015;24:705-710. 10.1016/j.jse.2014.07.016
4. Singh JA, Sperling JW, Cofield RH. Revision surgery following total shoulder arthroplasty: analysis of 2588 shoulders over three decades (1976 to 2008). J Bone Joint Surg Br 2011;93:1513-1517. 10.1302/0301-620X.93B11.26938
5. https://aoanjrr.sahmri.com/annual-reports-2019

Preparing For Your Total Shoulder Replacement

The following information is addressed in this packet. Any questions or concerns should be discussed between you and the team in preparation for your surgery. Much of this information can also be found in the video mentioned above and watched in the office.

- Preoperative education about the surgical procedure
- Surgical risks
- Preparation for surgery
- What to bring to the hospital
- Discharge planning
- Home preparation for after surgery

Pre-Operative Testing Appointment

Your Pre-operative testing appointment at New England Baptist Hospital will be made roughly 2 months ahead of your surgical date. This appointment should be within 30 days of your scheduled surgery date.

If you have not received your pre-admission testing schedule within 3 weeks before your surgery, or if you have question regarding the dates or times, please contact A.J. Helms at Boston Sports and Shoulder Center.

New England Baptist Hospital will provide you with the information and perform any tests that may be required to have prior to surgery. The following are discussed with you at your pre-screening appointment:

- Medications
  - Please bring a list of your medications to your pre-operative visit.
- Blood/Urine tests
- Medical clearance from your doctors
  - You may have additional appointments with a specialist (cardiologist, hematologist) depending on your medical history.
- Pre-operative infection prevention

It is important to continue taking all your other prescribed medication until your pre-admission testing office visit. During this visit, you will be given specific instructions about all of your prescription medication(s).

Preparing Your Home for After Surgery

- Move frequently used items, especially in the kitchen, bathroom, and bedroom, to easy-to-reach drawers and/or shelves.
- Make sure all your medications are within easy reach.
- Have a cell phone or cordless phone close to you.
- Place a list of emergency phone numbers by the phone.
- Shampoo and soap containers with pump tops are much easier to use than pop open tops.
- Stock your freezer with easy to reheat meals and stock up on non-perishables which are pre-cut as using a knife is not easy immediately after surgery. You will need to drink a lot of water and eat plenty of health foods and snacks.
- If possible, arrange assistance with laundry and cleaning.
- Clear pathways between your most commonly used areas -- such as from your bedroom to your bathroom and kitchen, and between the living room, bedroom, and bathroom.
- Remove all clutter and keep stairs free of objects.
- Install night lights between bedroom and bathroom
- Make arrangements to keep pets in another area of the house when you first get home. They can be an unintentional hazard.

Clothing for After Surgery

- Loose fitting clothing is recommended after surgery or Shoulder Shirts. You can purchase Shoulder Shirts at www.ShoulderShirts.com or www.ShoulderShirts.etsy.com.
- You may want to get a couple pairs of pants that have elastic waists.
- Many patients prefer bras that fasten in the front.
- You will want to be sure to have a pair of slip on shoes. Do not wear flip flops as it is too easy to trip.

Cold Therapy Machine

A Cold Therapy Machine to use following your surgery is highly recommended, as it sems to make recovery less painful and reduces swelling. Unfortunately, insurance does not cover these machines. You can search online using “Cold Therapy Unit” and will find some options. BSSC sells a “Breg Polar Care Cube” for $175, which can be purchased ahead of surgery. We have them available for pickup at the Waltham office, and you can order via phone if that is easier. This is not a requirement for surgery, but can be an easier alternative to making ice packs after your procedure and seems to be more effective.

Diet

Healthy eating **before** surgery helps you heal and recover **after** surgery. Good nutrition is necessary for healing. During the healing process, the body needs increased amounts of calories, protein, vitamins A and C, and sometimes the mineral zinc. The following guidelines will help you choose “power” foods to promote healing. Eat a variety of foods to get all the calories, proteins, vitamins, and minerals you need. If you have been given a special diet, follow it as much as possible. It will help promote wound healing and may prevent infection and some complications.

Iron-rich foods

Eat iron-rich foods prior to surgery. Iron combines with protein to make hemoglobin, the substance that carries oxygen in the blood to all parts of your body. When hemoglobin is low, weakness and fatigue may result causing a slower recovery.
Foods that contain a high amount of iron include:

- Lean red meat/ liver
- Enriched bread, pasta, fortified cereals
- Dried beans and peas
- Dried apricots and raisins
- Green leafy vegetables. NOTE: Patients on coumadin should talk with their physician

Vitamin C

Eating foods high in vitamin C long with iron-rich food will help your body absorb the iron. Foods that are high in vitamin C include:

- oranges and orange juice
- cantaloupe
- tomatoes
- potatoes

Eating in the days leading up to surgery

Eat only light meals, especially the day before surgery. The combined effects of anesthesia and your medication may slow down your bowel function. This can cause constipation after surgery. Increase fluids and fiber in your diet as well.

Practice Using a Sling

We suggest practicing daily activities or household duties using one arm or while wearing a sling for a few weeks prior to surgery. This will help you adapt and prepare for after surgery.

Preparing For Your Surgery

The Night Before Surgery

- Remember that you are to have *nothing to eat or drink after midnight* the night before surgery. Do not eat or drink anything including: gum, mints, or candy, and water or black coffee.
- If you are experiencing any signs of infection such as fever, cold/flu symptoms, diarrhea, skin rash, or open sores, please call the team and your medical doctor as soon as possible.
- Try to get a good night sleep. It is important to be well rested before surgery.
- Bathe or shower the night before or the morning of your surgery. A special wash may have been recommended by pre-screening at New England Baptist Hospital.
- All nail polish should be removed before your arrival for surgery. Your fingers will be used to accurately monitor your oxygen level during surgery.
- Creams and lotions should not be worn on the day of surgery. A light application of deodorant is allowed.

You will be admitted to the hospital on the morning of your surgery. You are typically asked to arrive about three hours prior to your actual surgery time. **New England Baptist Hospital will contact you the day prior to your surgery between 12-4 pm with an exact time to arrive at the hospital registration area on the day of surgery.** Please make every effort to arrive on time.

Most patients are discharged the day after surgery, though some patients are able to go home the day of surgery. Patients are typically discharged to their home without the need for a rehab facility. It is important to prepare your home for discharge after surgery (see Preparing Your Home for Surgery section). A case manager will be assigned to you the day of surgery and he or she will determine if you would benefit from going to a rehab facility instead of straight home. This process will also be initiated at your pre-operative appointment.

If you are having surgery at Boston Outpatient Surgical Suites, you will be contacted the day before surgery, between about 12 pm and 3 pm for your surgery and arrival time

What to Pack for an Overnight Stay

Pack a bag or small suitcase with only the items you may need during your hospital stay. Please bring your own toiletries and any necessary personal items. While in the hospital you may opt to wear the hospital gown or you may bring your own clothes from home. Please review the following about what to and what not to bring with you.

What to Bring to the Hospital

- This Total Shoulder Replacement Guide.
- A full set of comfortable clothing. The clothing should be loose-fitting to allow room for any post-operative swelling.
- Shoes with non-skid soles.
- Personal items: contact lenses/denture care materials, glasses, hearing aids.
- CPAP/BIPAP machine (if routinely used). If you require a CPAP/BIPAP, you must stay overnight at the hospital for monitoring.
- A form of photo ID and insurance cards to present to the registration and admitting department.
- Cold Therapy Unit, if purchased ahead of time.

What Not to Bring to the Hospital

- Money, jewelry, or other valuables.
- Medication - unless instructed by your surgeon/pre-operative nurse.
- Cigarettes, electric cigarettes, or tobacco.

Bring this Total Shoulder Replacement Binder with You on the Day of Your Surgery.

Your Surgery Day

When You Arrive at the Hospital or the Outpatient Suite

The day of surgery you will check in and proceed to the pre-operative area where you will change into a hospital gown. You will be asked to confirm your name, date of birth, your surgeon's name, and the procedure for which you are scheduled. Before your surgery, several different people who are in charge of your care will ask you to repeat this information. Do not be alarmed, this is a routine safety measure. The nurse in the surgery area will take your vital signs, start an IV, and review your medical history.

You will also meet with the anesthesiologist. Anesthesiologists are physicians who administer the medication to make you fall asleep and provide pain management during and following the surgery. During surgery, anesthesiologists choose from a variety of medications for their different functions such as relieving pain, making the patient unconscious, and relaxing the body's muscles. To do this they may administer inhalation (gas) anesthetic agents, sedatives, muscle relaxants, and other medications. The anesthesiologist balances all of these medications in accordance with medical and surgical needs of each patient.

The most common method of providing anesthesia during shoulder replacement is general anesthesia. With this, you are unconscious and have no awareness of the surgical procedure or any sensations. A tube is placed into the airway into your lungs. In addition to this, it is common to have a regional nerve block administered either before surgery or right after surgery. This will be discussed with you further by the anesthesiologist.

It is important to inform your anesthesiologist in the pre-operative area of any allergies or medications that have caused you problems in the past. It is also important to discuss any problems you may have had in the past with anesthesia.

Nerve Block

You may have a nerve block to control your pain before surgery. A nerve block is used when pain from surgery affects a smaller area of your body, such as an arm. There are several potential advantages of a nerve block. One advantage is that nerve blocks may allow for a significant decrease in the amount of opioid (narcotic) medication needed, which may result in fewer side effects such as nausea, vomiting, itching, drowsiness, constipation, and light-headedness. Nerve blocks generally last for 18-24 hours after surgery. We recommend taking pain medication prior to when your block wears off even though you are not experiencing pain; therefore, you do not fall behind in pain management when the block wears off.

Hearing aids

If you use hearing aids, wear them to the hospital on the day of your surgery. Wearing them will help you hear everything we need to tell you.

Dentures

You will be asked to remove all nonpermanent dental work before your surgery.

Contact lenses

Wear glasses if possible. If contact lenses must be worn, bring your lens case and solution. If glasses are worn, bring a case for them.

Hair

Wear your hair loose. Do NOT use clips, pins or bands in your hair. Do not use hair spray. A head cover will be provided on the way to the operating room. Before going to surgery, patients are asked to remove wigs and hairpieces.

Family Waiting Area

When you are taken to the operating room, your family will be directed to the family waiting area, where they will wait during your surgery. Once the surgery is completed, your surgeon will call or visit your family to update them on your condition.

During Surgery

Once in the surgery suite, you will be assisted onto the surgical table. The surgery room itself is kept cool and the nurses will give you warm blankets if needed.

The anesthesiologist will attach monitoring equipment and check your IV. They will constantly monitor your vital signs, including your heart rate and rhythm, blood pressure, and amount of oxygen in your blood throughout your procedure.

An additional aspect of our culture of safety is called the “time out.” In this safety measure, we confirm that we have the following before surgery begins:

- the correct patient
- the correct side and site marking
- the correct procedure
- the correct position on the operating table
- the correct implants, special equipment, and x-rays (when applicable)

Your surgery will last approximately 2 to 3 hours, possibly longer.

Post Anesthesia Care Unit (PACU)

After surgery, you will be taken to the Recovery Room/Post-Anesthesia Care Unit (PACU) where a nurse will care for you for at least the next 2-3 hours. The total time spent in recovery varies for each patient. The nurse will take your temperature, pulse, and blood pressure and assess your pain level. Pain medication will be started. You may feel very cold after surgery and may be warmed with blankets. Your arm will be in a sling. Dr. Jawa or Dr. Kirsch will assess your ability to move your fingers, wrist, and elbow and the sensation in your hand.

To assist your breathing, you may receive oxygen through a small nasal tube or mask. Circulation aids will be applied to your lower legs to prevent blood clots. A cold pack system may be wrapped around your surgical site to reduce swelling and pain. An X-ray will be done on your operative shoulder.

At **New England Baptist Hospital**, friends and family cannot visit with you in the PACU but can meet you in your hospital room. Dr. Jawa, Dr. Kirsch, or the hospital staff will inform your family members that once they leave you in the pre-operative waiting area it may be a number of hours before they see you again.

At **Boston Outpatient Surgical Suites**, your accompaniment will be brought into the recovery room when you are ready to see them. You will then come down to the Waltham BSSC office for an X-ray of your shoulder, and to discuss post-operative instructions as well as any questions you may have.

Going to Your Room at New England Baptist Hospital

After leaving PACU, you will be transferred to a nursing unit. The nurses will check your vital signs and make you comfortable.

A member of your surgical team will visit you daily. Many times, this visit will occur early in the morning. You are encouraged to write down any questions you may have for your surgical team so they may be answered during the visit. In addition to your surgical team, you may also be treated by an internal medicine doctor, or his/her nurse practitioner or physician assistant. They will also be aware of your plan of care and will assist as needed.

Circulation Aids

Compression stockings: You will not be as active as you usually are; therefore, you have a greater chance of developing blood clots. To help prevent them from forming, you will need to wear TED stockings. They are to be used at all times, except when bathing. Once you are home and ambulatory and if your lower extremities are not swollen, then these can be discontinued.

Sequential Compression Calf Sleeves: You can move while using the pump. The sleeves inflate every 20 to 60 seconds and make it feel as though your calves are being massaged. These sleeves are a very important part of your care. Please help by making sure you wear them at all times while in bed. Tell your nurse if you do not feel the sleeves inflating.

Cough and Deep Breathing

Coughing and deep breathing are extremely important to your recovery after surgery.

Incentive Spirometer: When in the hospital, you will be using a small device called an incentive spirometer. A nurse will show you how to use it and help you with deep breathing exercises. It is important that you use the incentive spirometer 10 times every hour while you are awake. Using it helps reduce the chance of developing Pneumonia after your surgery and helps to keep your lungs clear and active during your recovery. Having good lung function will help you perform activities of everyday living once you return home.

Pain Management

Effective pain management following surgery is a major priority for both you and your healthcare providers. Every effort is made to safely minimize your pain; however, it is normal to experience some discomfort following surgery.

You will be asked about your level of pain upon admission, and this will continue throughout your stay. You will be asked to “rate” your level of pain on a scale from 0 to 10. A rating of ‘0’ means that you are not in any pain at all, a 5 means that you are experiencing a moderate amount of pain, and a 10 means you are experiencing the worst possible pain. This score will be used to select the best pain medicine to manage your level of pain. The doctors and nurses will ask you how the pain medicine is working and adjust the dose as needed. Again, remember to take pain medication before your block wears off to stay ahead of your pain.

Most commonly, post-operative pain is best managed with oral pain medications.

The following information will help you understand your options for pain treatment, describe how you can help your doctors and nurses control your pain, and empower you to take an active role in making choices about pain treatment.

- You may receive more than one type of pain treatment, depending on your needs and the type of surgery you are having. All of these treatments are relatively safe, but like any therapy, they are not completely free of risk. Dangerous side effects are rare. More common side effects, such as nausea, vomiting, itching, drowsiness, constipation, and light-headedness can occur. These side effects are usually easily treated in most cases.
- Be sure to tell your doctor and nursing staff if you are taking pain medication at home on a regular basis and if you are allergic to or cannot tolerate certain pain medications.

Why is pain control so important?

In addition to keeping you comfortable, pain control can help you recover faster and may reduce your risk of developing certain complications after surgery, such as pneumonia or blood clots. If your pain is well controlled, you will be better able to complete important tasks such as walking and deep breathing exercises.

IMPORTANT! Do not wait until your pain is severe before you ask for pain medications.

Bowel Management

Some patients become constipated because of the pain medication and inactivity. We recommend staying on a stool softener or laxative while you are taking pain medication.

Physical Therapy

The goal of therapy on the day of surgery is to begin doing activities that will help you move about while still abiding by your restrictions. Doing these activities will help you gain confidence. These activities may be performed at bedside by your nurse or a Physical Therapist.

Occupational Therapy

Occupational therapy is the part of your care plan that centers on teaching you how to take care of yourself once you return home.

Occupational therapy focuses on such things as:

- Activities of Daily Living (ADLs), which includes bathing and bathroom safety, dressing, toileting, and homemaking tasks
- Advice on possible equipment needed
- Education about restrictions

Care Coordination

During your surgical stay at the hospital, a Care Coordinator will visit with you to assist in making your discharge plans. You have already discussed your options in the pre-operative stage, but the Care Coordinator is there to help make the final arrangements. Most patients plan to be discharged home after surgery. Generally, outcomes after surgery are much better when patients go home. However, if there is concern about your ability to manage at home, the Care Coordinator will help discuss post-operative rehabilitation in the facility of your choice. The referral process will be started and you will be informed of the status and anticipated day of your discharge.

If you are going to a community skilled nursing or rehab facility, you may want to consider having a family member/friend drive you to the facility on the day of discharge from the hospital. Transportation can also be arranged through an ambulance service; however, there may be a cost for this service.

After Discharge

You will be discharged from the hospital or the outpatient surgical suites when it is felt that you are safe to be discharged and your pain is under control. This is a collaborative decision made by you, your nurse, and the physical therapist. It varies for each individual patient.

Your nurse will review your discharge instructions, medications, and address any questions you may have.

If you are having surgery at the hospital and you have not met the criteria to be discharged home, you will be discharged to a skilled nursing facility of your choice. The facility will be informed of your hospital stay and a time of anticipated arrival will be arranged.

Please have your ride available on this day. Your team will let you know the approximate time. When notifying the person coming to pick you up, ask them to bring a pillow for your comfort. If you chill easily, it would be a good idea to have them bring a blanket.

Narcotic Fact Sheet for Patients

Please read the information below regarding what to expect following your surgery, the goal of post-operative pain management and the side effects of the medications prescribed.

What to expect after surgery

- Almost all surgical procedures result in some level of pain and discomfort. Pain and discomfort are generally greatest immediately after surgery and subside as time goes on.
- Reducing your pain is a priority for caregivers
- Over time, your pain will reduce and may be eliminated completely
- Oral narcotic medication is frequently administered to patients after surgery to help control post-operative pain. It is important to note that although these medications are effective for the treatment of acute pain, use beyond that can be detrimental to your health.
- It is vital that you discontinue the use of these medications as soon as your pain allows. Specifically, the medication should only be taken as needed as prescribed (usually every 4 hours). The medication is not required for the prescribed time interval.

Narcotic medication: Facts you need to know

- Physical dependence on opioids (which means the absence of opioids can produce withdraw symptoms) can occur at prescribed doses.
- Opiate abuse is on the rise in recent years and has tripled in the US since 1990.
- 5 million people in the United States are addicted to opiates.
- There are 17,000 opiate overdoses per year in the US.
- There were nearly 5 million drug related ER visits in 2010; 425,000 from narcotic pain relievers.
- Every day in the US, 46 people die of prescription drug overdoses.
- Unintentional deaths from prescription narcotics outnumber those of heroin or cocaine.

Adverse reactions to opioids include:

- Sleepiness
- Difficulty controlling arms/legs
- Constipation
- Limit ability to fight infection
- Itching
- Hormonal imbalance
- Decreased breathing
- Drug interactions
- Death

Potential risk factors for opiate abuse:

- Age 18-34
- Male
- 4 or more opioid prescriptions
- Refilling prescriptions early
- Opioid prescriptions from 2 or more pharmacies or physicians

Early symptoms of withdrawal:

- Agitation
- Anxiety
- Muscle aches
- Insomnia
- Sweating

Late symptoms of withdrawal:

- Abdominal cramping
- Diarrhea
- Nausea
- Vomiting

Ling, W., Mooney, L. and Hillhouse, M. (2011), Prescription opioid abuse, pain and addiction: Clinical issues and implications. Drug and Alcohol Review, 30: 300–305. doi: 10.1111/j.1465-3362.2010.00271.x

Hall AJ, Logan JE, Toblin RL, et al. Patterns of abuse among unintentional pharmaceutical overdose fatalities. JAMA. 2008;300:2613–2620

Substance Abuse and Mental Health Services Administration, Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-44, HHS Publication No. (SMA) 12-4713.

Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012.

Gregory TB. How to safely prescribe long-acting opioids. J Fam Pract. 2013 Dec;62(12 Suppl 1):S12-8. Opioid Painkiller Prescribing (Centers for Disease Control and Prevention) http://www.cdc.gov/vitalsigns/opioid-prescribing/

Hill KP, Rice LS, Connery HS and Weiss RD. Diagnosing and treating opioid dependence. J Fam Pract. 2012 October;61(10):588-597.

Painkiller Addiction Impacts Your Children http://www.percocetabusehelp.com/painkiller-addiction-impacts-your-children

White AG, Birnbaum HG, Schiller M, Tang J, Katz NP. Analytic models to identify patients at risk for prescription opioid abuse. Am J Manag Care. 2009 Dec;15(12):897-906.

Emergency Medicine: A Comprehensive Study Guide (6th edition 2004)

Other Concerns/Considerations

Infection

What is a surgical site infection (SSI)?

A surgical site infection (SSI) is an infection that occurs after surgery in the part of the body where the surgery took place. Most patients who have surgery do not develop an infection.

Some common symptoms of surgical site infection are:

- Increased redness and pain around the area where you had surgery
- Drainage of cloudy fluid from your surgical wound
- Fever

DVT/Blood Clot

Deep Vein Thrombosis (DVT) is a formation of a blood clot. This is a potential complication following a total shoulder replacement. A blood clot from your leg can travel to your lungs and cause a serious complication.

Sudden onset of shortness of breath and chest pain are warning signs of this condition. If you develop any of these signs, call 9-1-1.

Symptoms of a DVT may include:

- Pain in your calf and leg
- Increased swelling of your thigh, calf, ankle, or foot
- Redness
- Increased skin temperature at the site

Prevention of blood clots is the best treatment:

- Exercise, increased mobility
- Blood thinners
- Support stockings

Future Procedures – Dental work

The following recommendation is taken from the ADA Chairside Guide (© ADA 2015)

- In general, for patients with prosthetic joint implants, prophylactic antibiotics are not recommended prior to dental procedures to prevent prosthetic joint infection.
- For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon.

Smoking

If you smoke, you are required to stop prior to surgery. Stopping smoking will reduce the risk of breathing (respiratory) problems and complications from anesthesia that is used for surgery. Smoking also affects wound healing after surgery and puts you at an increased risk of infection.

There are many other health benefits from stopping smoking. Stopping smoking helps to:

- prolong your life
- decrease your risk of disease, including heart disease, heart attack, high blood pressure, lung cancer, throat cancer, emphysema (a type of lung disease), ulcers, gum disease and other conditions
- help you to feel better (if you stop smoking, you won't cough as much, have as many sore throats, and your stamina will improve)

We know it is an extremely difficult process to stop smoking, but we will be flexible and will work with you in scheduling surgery. Speak with your primary care physician for information on how to stop smoking. For more information about other smoking cessation programs in your community, please contact your local American Heart Association at 1-800-242-8721 or American Cancer Society at 1-800-227-2345.

Alcohol Use

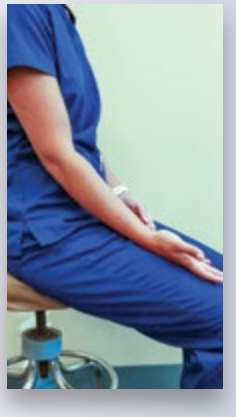
Drinking alcohol can greatly affect the outcome of your surgery. Your recovery from surgery may not proceed as planned if your health care providers are not aware of your history of alcohol use. Tell your health care provider how many drinks you have per day (or per week). Although it may be difficult to discuss alcohol use with your healthcare team, it is done for your safety and to improve the outcome of your surgery.

During your pre-surgical visit, you will be asked a series of questions. Your answers will help determine your risk of alcohol withdrawal and other alcohol related problems that could occur after surgery. Please respond to the questions as honestly as possible. Remember, any information provided is held in strict confidence. We are here to help you prepare and recover from your surgery as quickly and safely as possible.

General Discharge Information After: Shoulder Replacement

Sling/Activity:

- Sling should be worn at bedtime and outside of the home for the first 6 weeks after surgery. It does not need to be worn while you are at home or you are eating/drinking, however, it is very important to avoid rotating your hand away from your body. Please see the picture to the right as a reference of maintaining neutral shoulder rotation. The **hand of your operative arm** should remain in the box, and in front of you at all times.



- If you are wearing your sling at all times for comfort, it is important to come out of your sling 3-4 times a day to straighten your elbow and move your wrist and fingers to avoid stiffness.
- Until you are more comfortable you will need some help to remove your sling. You will need to unclip the shoulder strap and the Velcro strap across your forearm. Be sure to support your arm while the sling is being removed and put back on. Do not actively move your shoulder to remove your sling.
- You are unable to drive a car as long as you need to utilize a sling.

Ice:

- An ice device or ice bag (not directly touching the skin) should be utilized to reduce swelling and pain. Please ice every 3-4 hours for about 15-20 minutes each time until swelling subsides.

Wound Care:

- A waterproof “Aquacel” dressing will be applied to your incision after surgery. Please leave this dressing in place until your follow up appointment with Dr. Jawa or Dr. Kirsch. You may shower with this dressing, but no soaking in baths, pools or hot tubs. If you notice staining (darkening) of the dressing, please contact the office. Bruising in your surgical arm and swelling of your hand may occur in the days following surgery and is not uncommon.

Pain Medication:

- You will be given a prescription for narcotic **pain medication**. Take this as needed until the pain is minimal. You should also continue to take over the counter Tylenol or anti-inflammatories (NSAIDs) as directed for pain control. These medications have different mechanisms and can be taken together.

- Tylenol (acetaminophen) - **2 tabs (regular strength Tylenol, 325 mg each) every 6 hours as needed**, DO NOT exceed 3,000 mg in a 24-hour period.

Anti-inflammatories (NSAIDs):

- Mobic (meloxicam) – **1 tablet (7.5 mg) twice per day**, beginning 2 days before surgery to 5 days after surgery (do not take with any additional NSAIDs if you take the Mobic).

OR, YOU CAN CHOOSE TO TAKE ONE OF THE FOLLOWING:

- Advil or Motrin (ibuprofen, available over the counter) - **2 tabs (200 mg each) every 6 hours as needed.**
  - You may take Aleve or Naprosyn (naproxen) instead of ibuprofen, but Aleve dosage differs, and is **1-2 tablets (225 mg each) every 12 hours as needed.**
- You can alternate these medications, i.e., Tylenol at 8 am, Advil at 11am, Tylenol at 2 pm etc.
- If you take any oral anticoagulation, you may not be able to take any NSAIDs
- If you need a refill of your pain medication, please call the office at least 2 business days in advance.
- You should take a **stool softener** while on pain medication, as these may cause constipation. **Colace** can be purchased over-the-counter and can be taken twice daily.
- You may also have been given a prescription for **Zofran**, which you can take as needed for nausea.

Follow Up:

You have been scheduled for a post-operative visit, which should be listed in your surgical packet. Your first visit should be approximately 2 weeks after surgery. If you are unsure of when your follow up visit is scheduled, please contact the office.

WHEN TO CONTACT YOUR DOCTOR AFTER SURGERY

- **You have a fever over 101.4 degrees Fahrenheit**
- **You have drainage from incision**
- **The area around your incision becomes hot to touch, red, or swollen**
- **You have increased pain that is not relieved with pain medication**
- **You develop sudden or severe calf pain, or swelling in the calf that does not decrease after elevation of leg**
- **You have questions regarding activity or your medications**

Physical Therapy

- Please perform elbow, wrist and finger range of motion on a regular basis after surgery.
- Dr. Jawa and Dr. Kirsch prefer that their patients do not do formal physical therapy after Shoulder Replacement. They have found that most patients do well with progressing their motion and strength through normal daily activities. They have also found that sometimes physical therapy pushes patients too much causing increased pain and discomfort. At each post-operative appointment, Dr. Jawa, Dr. Kirsch, or Kiet will teach you exercises to do on your own to work on range of motion. Although you should progress with some gentle range of motion, as demonstrated by the team, and do not force any shoulder motions. Most importantly, do not let anyone (family members, physical therapists, etc.) force your arm into uncomfortable positions.

Discharge - Until Follow-Up Appointment

Instructions

- Perform these exercises 2-3 times per day with 10 repetitions per session.
- Encourage early range of motion of your elbow, wrist, and hand. Please begin this immediately.

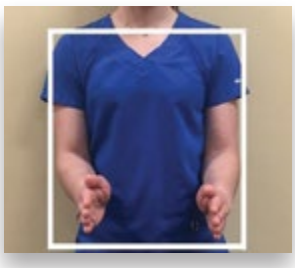
1. Open and close your hand.

2. Bend your wrist up and down.

3. Turn your palm up and down in a motion similar to turning the pages of a book.

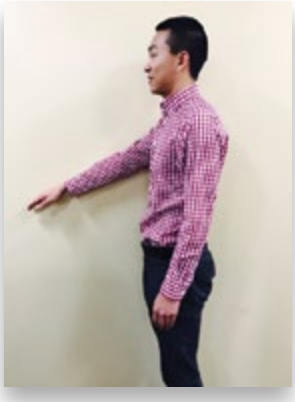
4. Bend and straighten your elbow as much as possible

First Post-Operative Visit Instructions

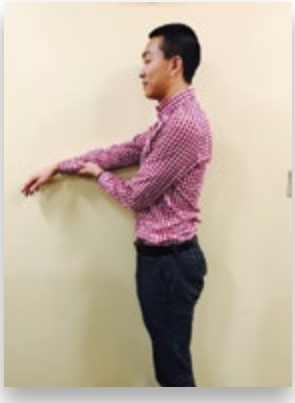


At your first post-operative visit (two weeks from your surgical date), Dr. Jawa/Dr. Kirsch will show you exercises to begin gentle range of motion of your shoulder. These exercises should be done in sets of 10, 3-5 times daily. Dr. Jawa/Dr. Kirsch may also recommend that you remove your sling as much as possible to do activities in front of you. It is important to remember not to rotate your arm to the side any further than seen to the right. You should also be sure to continue to wear your sling while sleeping and when in public.

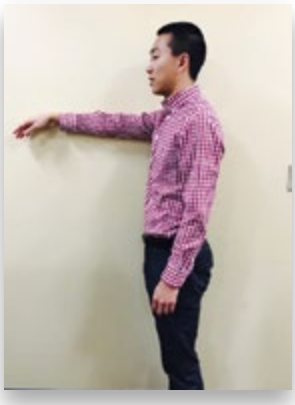
Exercises



Begin with your operative shoulder against a wall. Slowly lift your arm in front of you as high as possible. Your shoulder should remain against the wall to prevent you from rotating your shoulder outwards while doing this exercise.



Next, use your other arm to help lift your operative arm gently until you reach resistance. Stay in this position for 10 seconds and slowly release. Your non-operative arm should only be doing approximately 10% of the work.



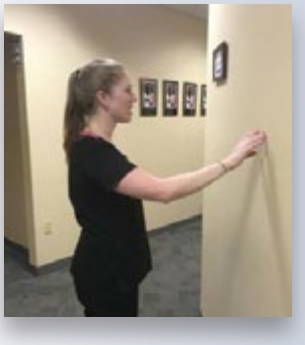
Your goal by your next post-operative visit should be at least 90° as seen to the right.

Second Post-Operative Visit Instructions

At your second post-operative visit (6 weeks from your surgical date), Dr. Jawa/Dr. Kirsch will show your exercises to begin gentle range of motion of your shoulder. These exercises should be done in sets of 10, 3-5 times daily. Dr. Jawa/Dr. Kirsch may also recommend that you remove your sling as much as possible to do activities in front of you.

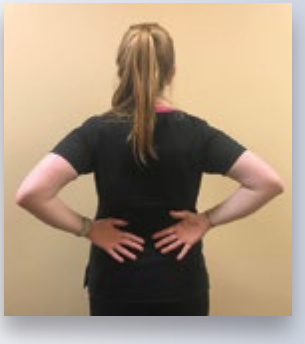
Exercises

Forward Elevation: Continue to work on lifting your arm in front of you. You may use a wall and “walk up” the wall with your fingertips as displayed to the right.



External Rotation: You can gently begin to rotate your arm outwards after your **second post-operative appointment**. You can use your non-operative arm to help apply light pressure to help you.

Internal Rotation: You may also now start to reach behind your back. This is generally the most difficult motion for patients after shoulder replacement.



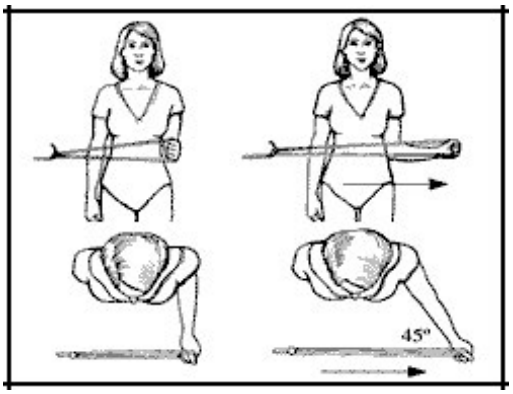
Third Post-Operative Visit Instructions

**If using TheraBands: use light/medium resistance bands, which are yellow, red, green, blue. Other resistance bands can be used, as long as their overall resistance is < 15 lbs (usually called #0, #1, extra-light, or light).

If using free weights, use weights less than 5 pounds.**

1) External Rotation:

Keeping your elbow at your side, turn your hand outward against resistance.
Perform 3 sets of 10 repetitions, 2-3 times per day.



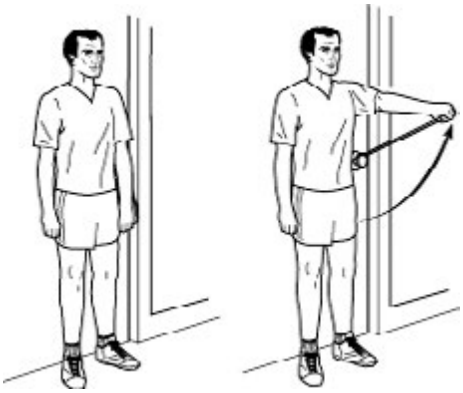
(Banded)

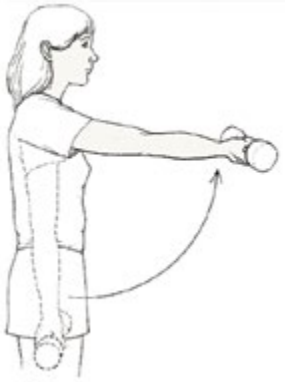
(Dumbbell)


(No equipment)

2) Forward Raise:

With light resistance, lift your arm in front of you to approximately shoulder height. Lift higher as you can tolerate. Perform 3 sets of 10 repetitions, 2-3 times per day.

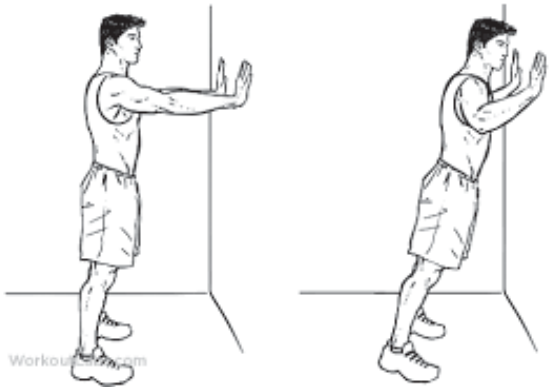

(Banded)


(Dumbbell)


(No equipment)

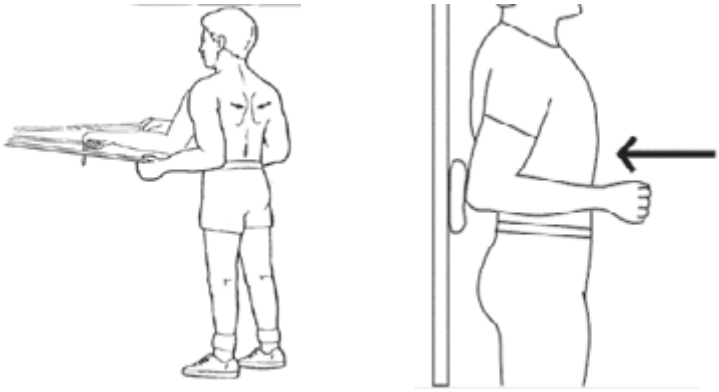
3) Wall Push Up:

Starting with your body upright, place your hands on the wall. Slowly lower yourself as tolerated, and press back to a standing position. Perform 3 sets of 10 repetitions, 2-3 times per day.



4) Scapular Retraction:

Keeping your hands in front of you, squeeze your shoulder blades together for 3 seconds, then relax. Perform 3 sets of 10 repetitions, 2-3 times per day.



(Banded) (No equipment)

Checklist for your upcoming surgery at New England Baptist Hospital

After booking Surgery:

- ☐ Contact any specialists (i.e. Cardiology, Hematology/Oncology, Rheumatology) for documentation and clearance that they are comfortable with you proceeding with shoulder replacement surgery.
- ☐ If you take any medications such as immunosuppressants, hormone replacement, rheumatoid arthritis or osteoporosis medications, contact the prescribing physician as there may need to be changes to these before surgery.
- ☐ Register for BSSC's patient portal. This can be an effective way to relay any pre- and post-operative concerns.
- ☐ Make sure that no dental appointments are booked for 3 months after your surgical date.
- ☐ You cannot have a cortisone injection into the operative shoulder within 3.5 months of surgery.
- ☐ If you have ever had reactions to anesthesia or pre-surgical prep, be sure that Dr. Jawa/ Dr. Kirsch's staff are aware so these issues can be addressed early, preventing delays to your surgery.
- ☐ Visit and view the NEBH patient education video series for shoulder arthroplasty at:

  https://www.nebh.org/patients-care-partners/patient-education/shoulder-replacement/

Within two months of Surgery:

- ☐ Make sure to check the mail; a letter will be coming with your pre-screening appointment.
- ☐ Notify Dr. Jawa/Dr. Kirsch's staff of any change in medical conditions such as open wounds, rashes and any infections as they could impact your surgery.
- ☐ If you are on a blood thinner, consult with the provider who prescribes for a plan to stop safely before surgery. Be sure to know the details of this plan and when exactly to stop.
- ☐ If considering staying at a hotel near the hospital the night before surgery, contact New England Baptist Hospital at 617-754-5800 for further information.
- ☐ Begin to make arrangements to have someone (spouse, children, friend etc.) at home with you for a few days after surgery, to help you with day-to-day tasks.

Within one month of Surgery:

- ☐ If you have not received the date for your pre-screening appointment, contact Dr. Jawa/ Dr. Kirsch's office.
- ☐ If you are prescribed prednisone for a medical condition, contact Dr. Jawa/Dr. Kirsch's office.
- ☐ Be proactive in keeping healthy. Even simple illnesses such as a common cold could cancel surgery.
- ☐ If any dental work is taking place within the last month, contact your dentist immediately for any signs of infection. You need to be clear of any infections prior to surgery.
- ☐ Your pre-screening at New England Baptist Hospital will last between 3-6 hours. There can be delays, but this day is vital to ensuring you have a safe and comfortable experience for surgery. At this appointment you will be able to discuss any concerns you have with regards to medications, including anesthesia. You will also be able to inquire about VNA or rehab at this appointment and coordinate that care for after surgery. If you require an MRI or CT for surgery, it will be scheduled for this day as well.
- ☐ If you are a smoker, remember that you need to be completely off of cigarettes by the time of your surgery, or it may be canceled.
- ☐ Consider purchasing a cold therapy unit for your shoulder. These are available online, as well as through the BSSC. Contact the office at BSSC to purchase (refer to your pre-operative binder).

Within one week of Surgery:

- ☐ Stop all anti-inflammatories, unless otherwise directed by a physician, 7 days prior to Surgery, Tylenol is okay to continue.
- ☐ If you ordered a cold therapy unit through BSSC, arrange to pick it up at the office (Waltham office).
- ☐ Make any necessary arrangements at home to ensure safety after surgery.
- ☐ Be sure to know the date, time and location of your post-operative appointments.
- ☐ Make sure to use the Hibiclens soap as recommended, 3 days prior to surgery.
- ☐ Expect a call from New England Baptist Hospital between 12-4pm the day prior to surgery, informing you of your arrival time.

Checklist for your upcoming surgery at Boston Outpatient Surgical Suites

After booking Surgery:

- ☐ Register for BSSC's patient portal. This can be an effective way to relay any pre- and post-operative concerns.
- ☐ Make sure that no dental appointments are booked for 3 months after your surgical date.
- ☐ You cannot have a cortisone injection into the operative shoulder within 3.5 months of surgery.
- ☐ If you have ever had reactions to anesthesia or pre-surgical prep, be sure that Dr. Jawa/ Dr. Kirsch's staff are aware so these issues can be addressed early, preventing delays to your surgery.
- ☐ Inform Dr. Jawa/Dr. Kirsch's staff immediately if you have ever tested positive for MRSA.
- ☐ Register with the surgical center at bostonoutpatient.com.
- ☐ Book a pre-surgical clearance with your primary care physician within 30 days of surgery. They will need to complete a History & Physical. If you are over the age of 65, they will also need to complete an EKG.

Within two months of Surgery:

- ☐ Make sure to check the mail; a letter will be coming with instructions on pre-surgical medications.
- ☐ Notify Dr. Jawa/Dr. Kirsch's staff of any change in medical conditions such as open wounds, rashes and any infections as they could impact your surgery.
- ☐ Begin to make arrangements to have someone (spouse, children, family member, friend etc.) at home with you for a few days after surgery, to help you with day-to-day tasks such as preparing meals, medications, dressing yourself, etc.

Within one month of Surgery:

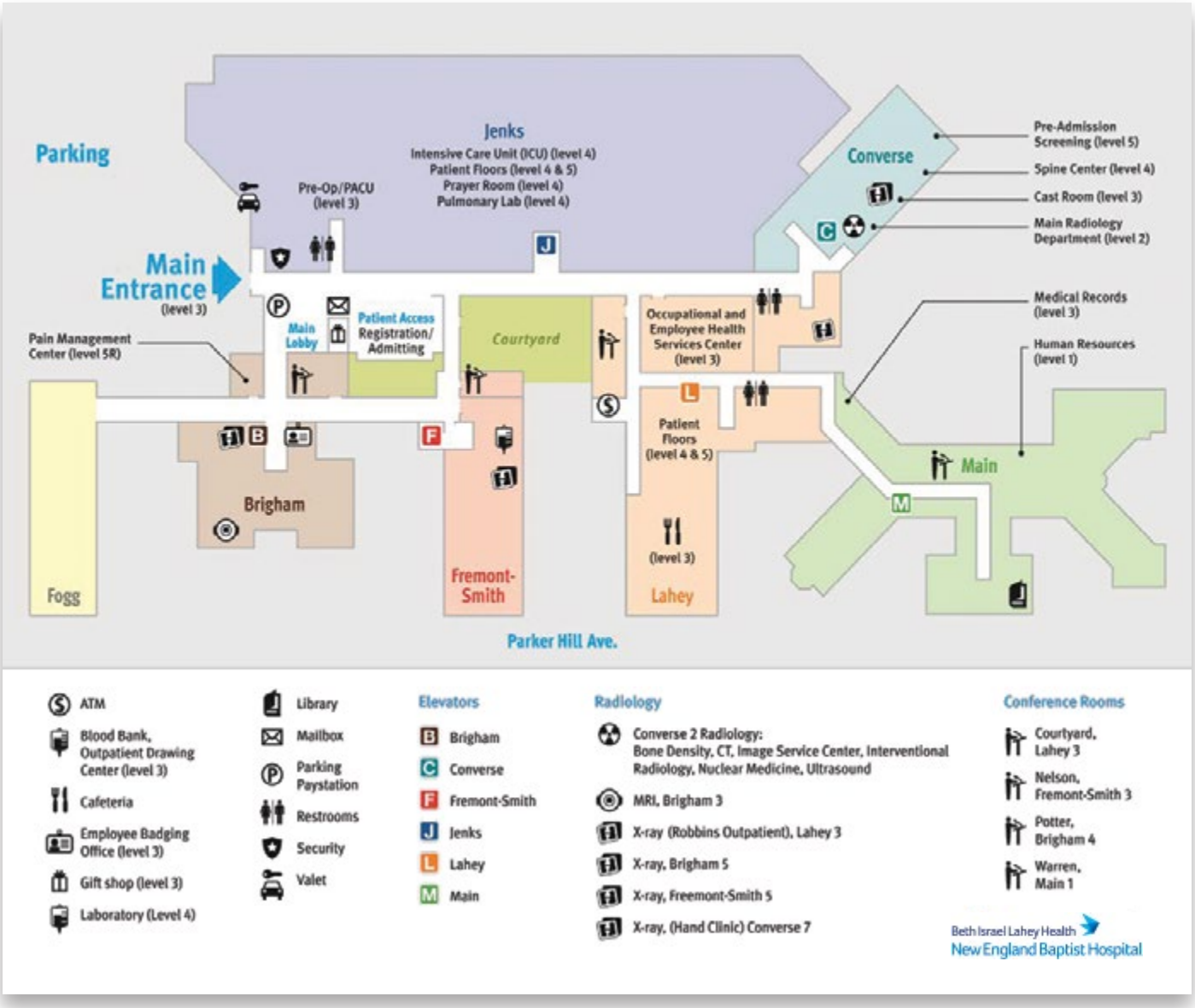
- ☐ If you are prescribed prednisone for a medical condition, contact Dr. Jawa/Dr. Kirsch's office.
- ☐ If a CT or MRI is needed before surgery, be sure you have that appointment by now
- ☐ Be proactive in keeping healthy. Even simple illnesses such as a common cold could cancel surgery.
- ☐ If any dental work is taking place within the last month, contact your dentist immediately for any signs of infection. You need to be clear of any infections prior to surgery.
- ☐ Make sure you have registered with the surgical center, and that your surgical clearance is sent to them.

- ☐ If you are a smoker, remember that you need to be completely off of cigarettes by the time of your surgery, or it may be canceled.
- ☐ Consider purchasing a cold therapy unit for your shoulder. These are available online, as well as through the BSSC. Contact the office at BSSC to purchase, and please reference your pre-surgical binder for more information.

Within one week of Surgery:

- ☐ Stop all anti-inflammatories, unless directed by a physician, 7 days prior to surgery. Tylenol is okay to continue.
- ☐ Make any necessary arrangements at home to ensure safety after surgery.
- ☐ If you ordered a cold therapy unit through BSSC, arrange to pick it up at the office (Waltham office).
- ☐ Be sure to know the date, time and location of your post-operative appointments.
- ☐ Expect a call from Boston Outpatient Surgical Suites between 11am-2pm the Friday prior to surgery, informing you of your arrival time.

Map of New England Baptist Hospital

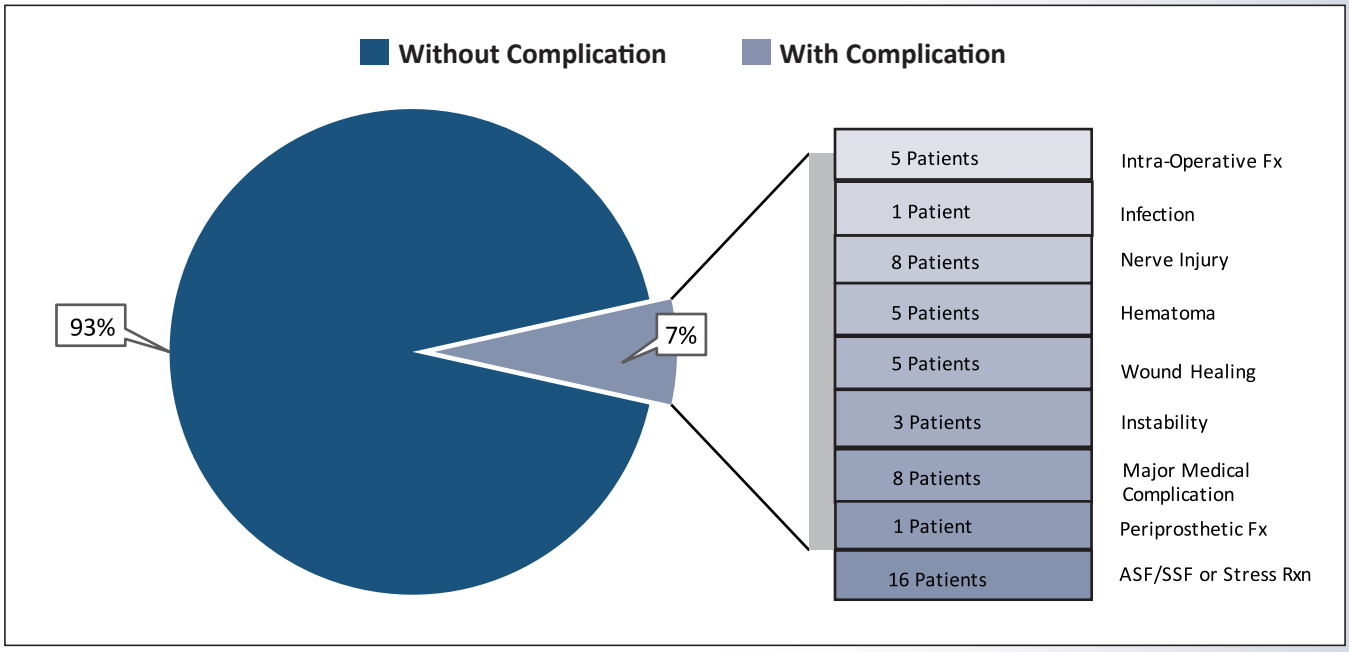


Surgical Overview and Outcomes 2016-2019

Procedure Type	Number of Procedures Performed
Primary Total Shoulder Replacement (Anatomic and Reverse)	970
Revision Total Shoulder Replacement	65
Latarjet	40
Open Reduction Internal Fixation	8
TOTAL	1083

Total RSAs from 2016-2019

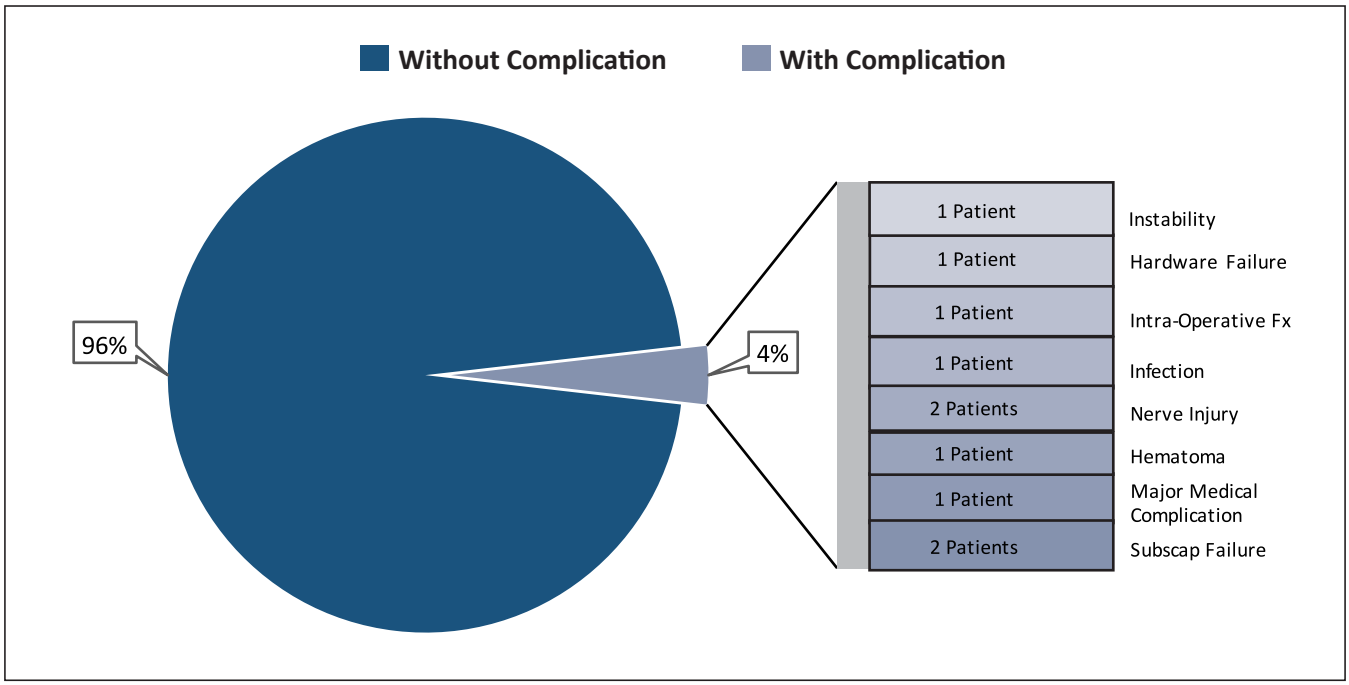
Total # of RSAs =685



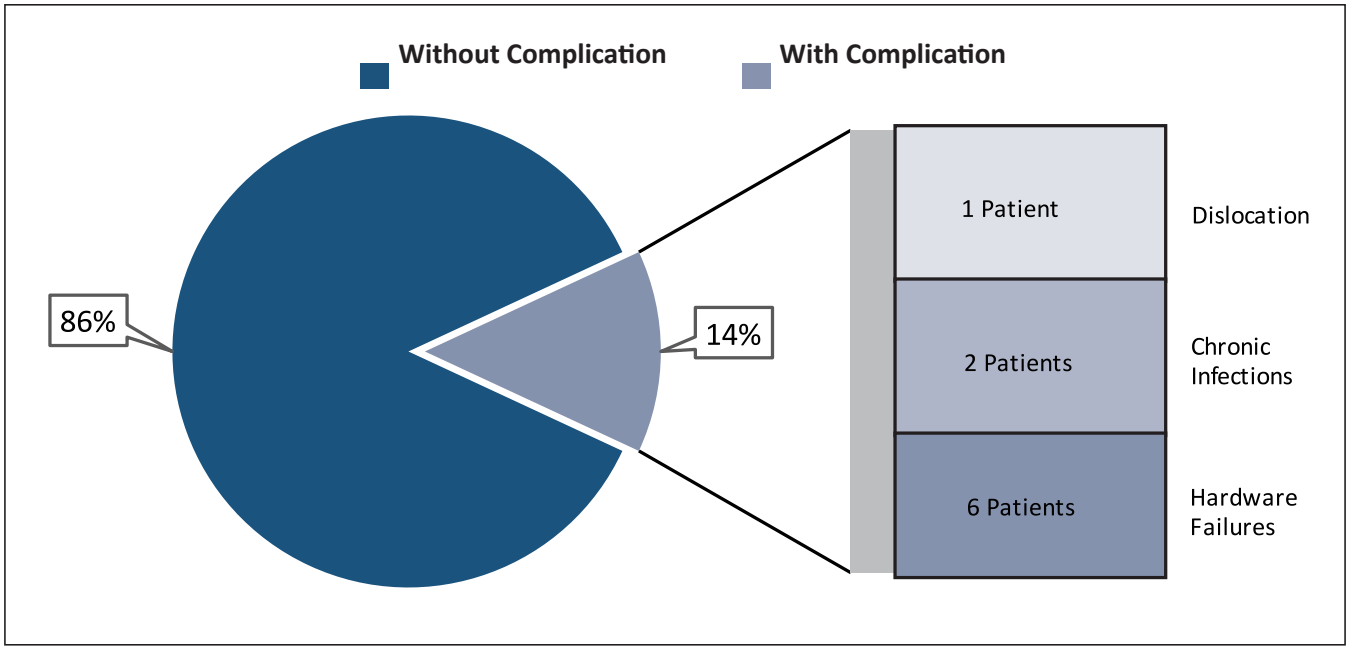
Surgical Overview and Outcomes 2016-2019

Total TSAs from 2016-2019

Total # of TSAs = 297

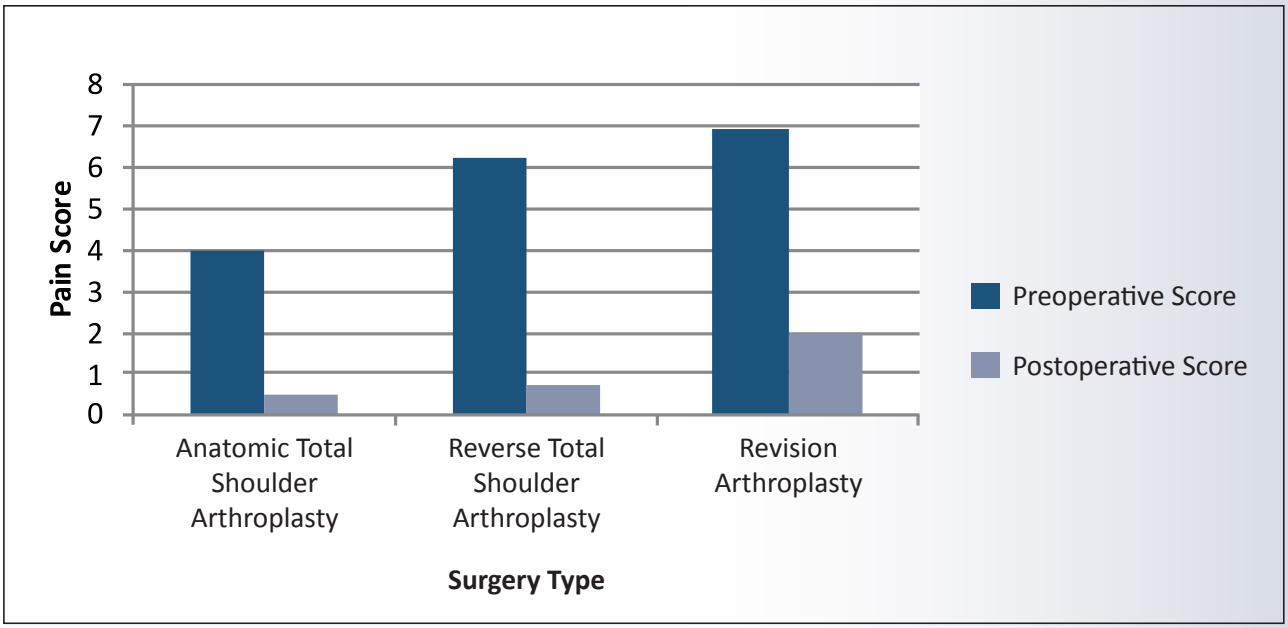


All Revision 2016-2019

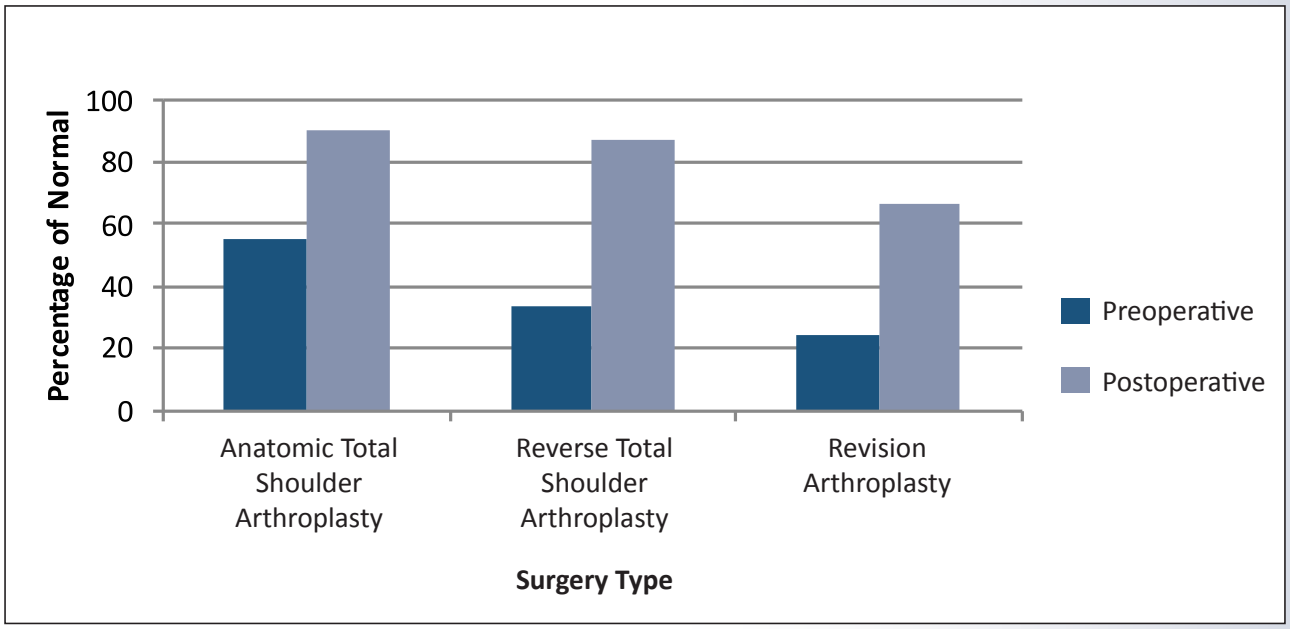


Surgical Overview and Outcomes 2016-2019

Improvement in Pain over 2-Years

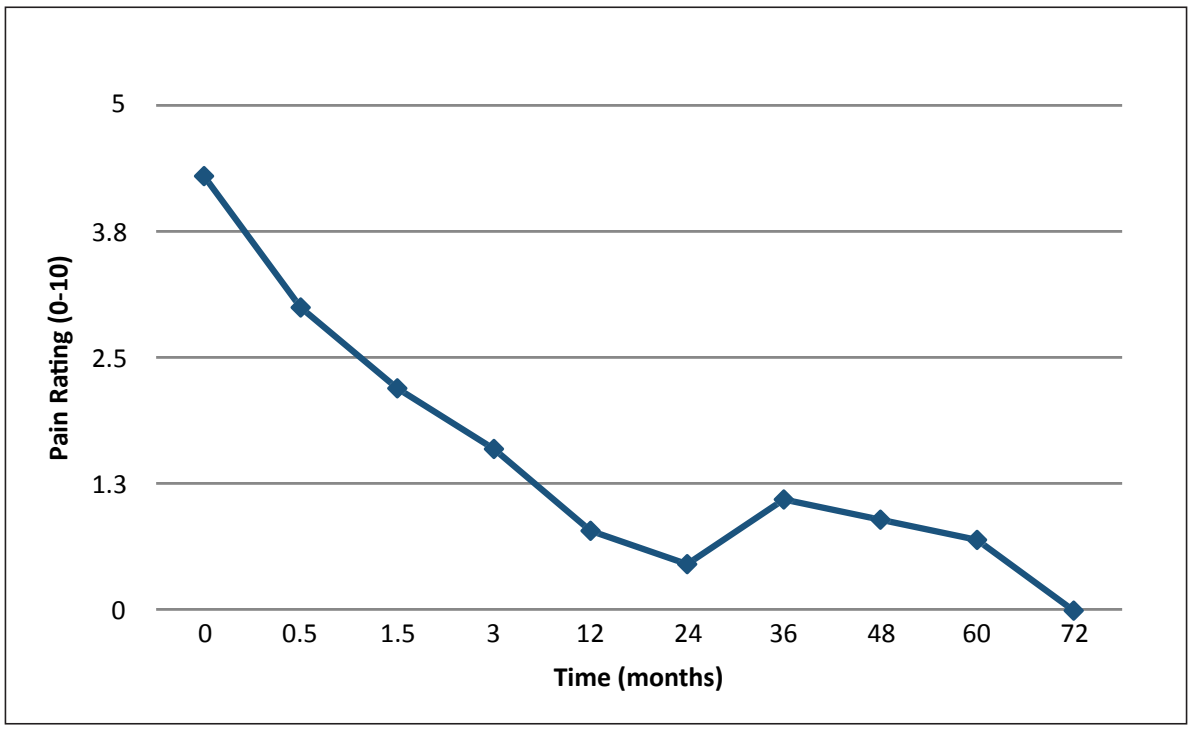


Improvement in Percentage of Normal over 2-Years

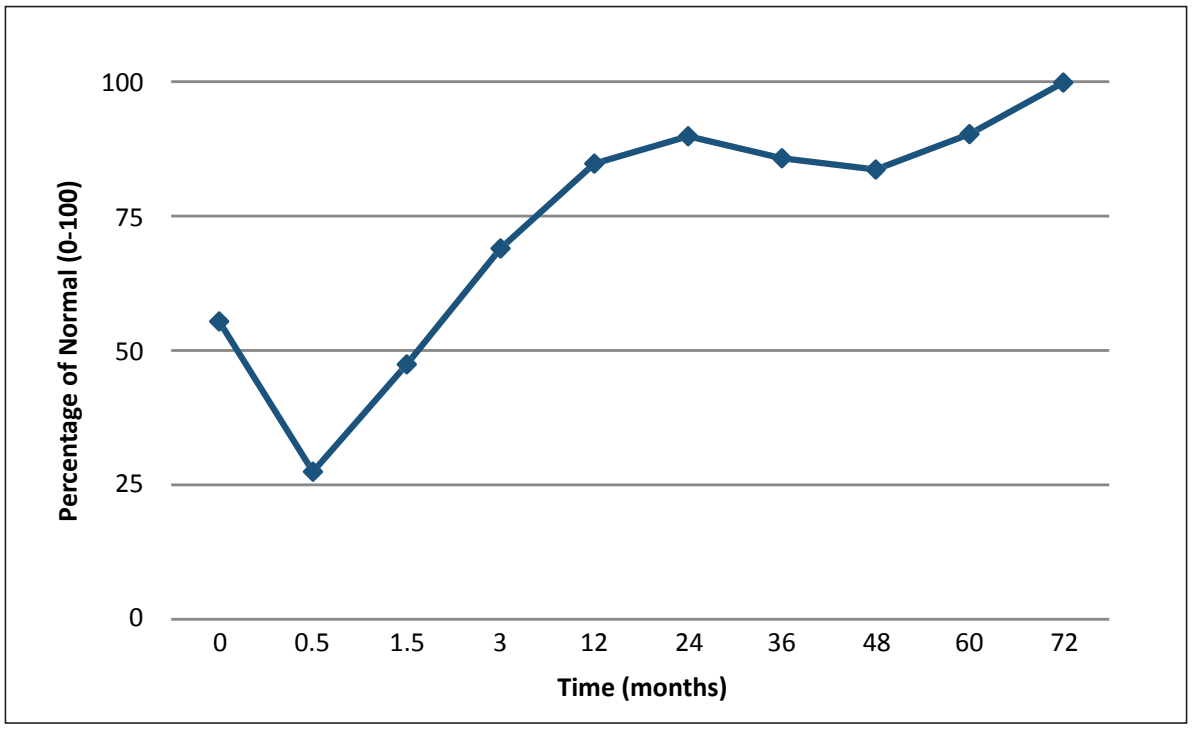


Surgical Overview and Outcomes 2016-2019

Anatomic Shoulder Replacement
Pain Progression

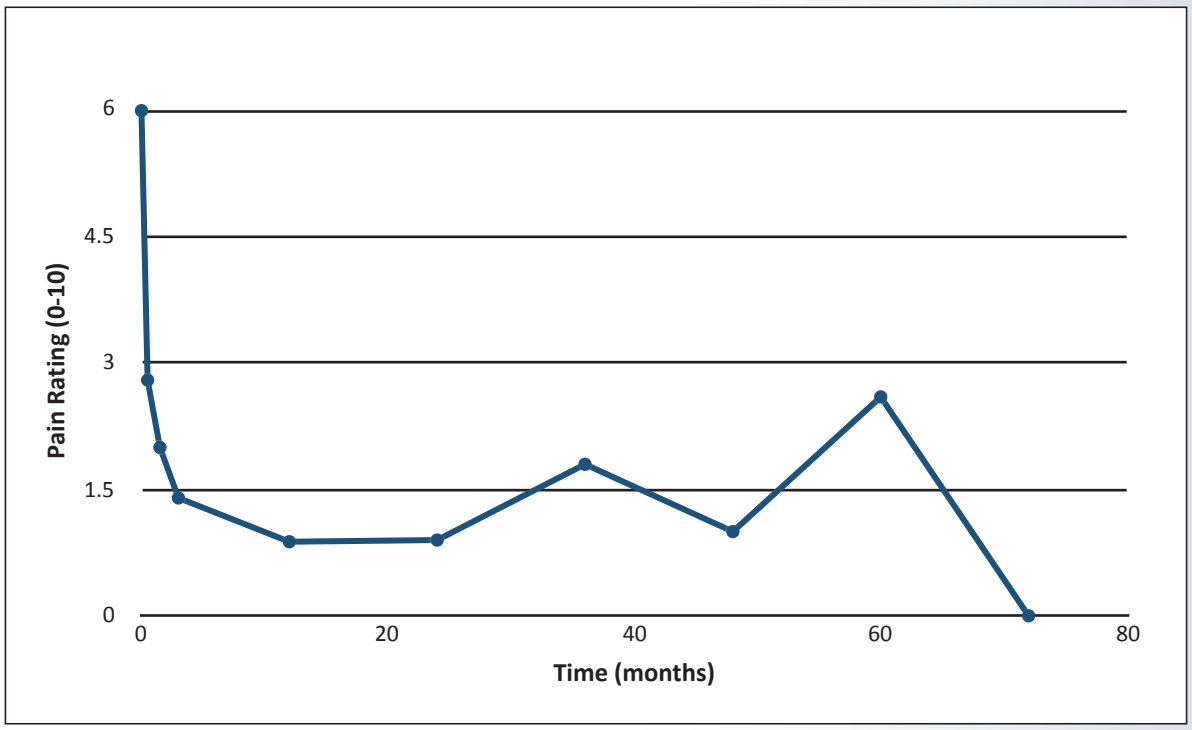


Anatomic Shoulder Replacement Percentage
of Normal Progression

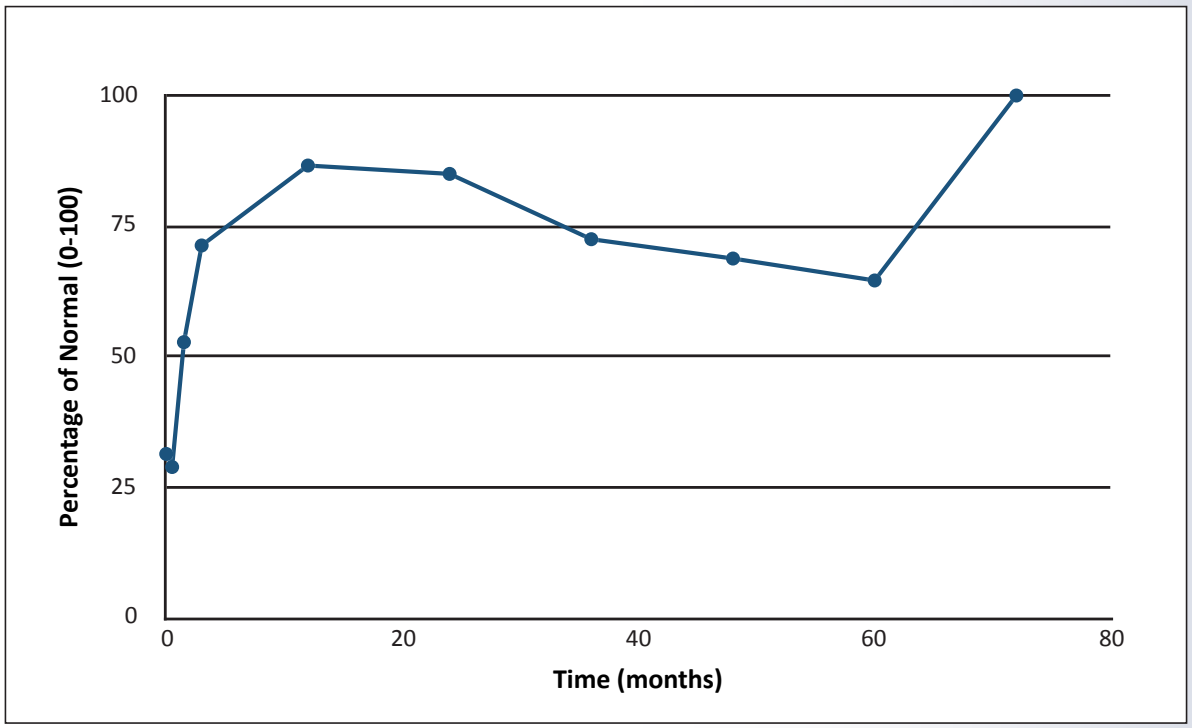


Surgical Overview and Outcomes 2016-2019

Reverse Shoulder Replacement
Pain Progression



Reverse Total Shoulder Replacement
Percentage of Normal Progression



Andrew Jawa, MD
Curriculum Vitae

Office

Boston Sports and Shoulder Center
840 Winter Street, Waltham, MA 02451
Phone: (781) 890-2133
Fax: (781) 890-2177

Citizenship

United States

Education

1994 - 1998 Williams College
Williamstown, MA
Degree: BA, Summa Cum Laude, 1998
Major: Economics and Biology
Awards: Phi Beta Kappa, 1997, 1998

1998 - 2002 University of Pennsylvania, School of Medicine
Philadelphia, PA
Degree: MD, 2002
Award: Alpha Omega Alpha

2002 - 2003 Brigham and Women's Hospital
Boston, MA
Intern - Surgery

2003 - 2007 Harvard Combined Orthopaedics Residency Program
Boston, MA
Resident - Orthopaedic Surgery

2007 - 2008 Massachusetts General Hospital
Jesse Jupiter, MD
Boston, MA
Fellow – Hand and Microvascular Surgery

2008 - 2009 Massachusetts General Hospital
Jon J.P. Warner, MD
Boston, MA
Fellow – Shoulder and Elbow Surgery

Licensures

Medical, Massachusetts, 2007 #231192

Certifications

Diplomate of the American Board of Orthopaedic Surgery, 2011
Subspecialty Certificate in Surgery of the Hand
American Board of Orthopaedic Surgery, 2012

Employment

03/2009 - 05/2014 Boston University Medical Center

03/2011 - present Boston Sports and Shoulder Center,
New England Baptist Hospital

Academic

Boston University
03/2009 – 05/2014 Assistant Professor
02/2009 – 05/2014 Boston University Residency Training Program

Tufts University
03/2011 - present New England Baptist Sports Fellowship Training Program
06/2014 - present Assistant Professor
05/2015 - present Tufts Residency Training Program

Bibliography

Peer Reviewed Publications

1. Erickson JT, Mayer C, **Jawa A**, Ling L, Olson EB Jr., Vidruk EH, Mitchell GS,. Katz DM. Chemoafferent degeneration and carotid body hypoplasia following chronic hyperoxia in newborn rats. *Journal of Physiology*. 1998 Jun;(509): 519-26.

2. **Jawa A**, Hanna BG, Hubbard A,. Russo P, Dormans JP. Enlarging thigh mass in a 13-month-old boy. *Clinical Orthopaedics & Related Research*. 2003 Sep;(414): 329-35.

3. Lynch HA, Johannessen W, Wu JP, **Jawa A**, Elliott DM. Effect of Fiber Orientation and Strain-Rate on the Uniaxial Tensile Material Properties of Tendon. *Journal of Biomechanical Engineering*. 2003 Oct;(125): 726-31.

4. **Jawa A**, Mehta S, Grupp S, Kramer SS, Carpentieri DF. Dormans JP. Face and thigh swelling in a 6-year-old girl. *Clinical Orthopaedics & Related Research*. 2003 Oct;(415): 309-18.

5. **Jawa A**, McCarty P, Doornberg J, Harris M, Ring D. Extra-articular distal-third diaphyseal fractures of the humerus: a comparison of functional bracing and plate fixation. *The Journal of Bone and Joint Surgery-Am*. 2006 Nov;(88): 2348-2355.

6. **Jawa A**, Avidov L, Jupiter J. Primary intraarticular lymphoma of the elbow: a case report. *The Journal of Bone and Joint Surgery-Am*. 2006 Dec;(88): 2730-2734.

7. Shi L, **Jawa A**, Jupiter J. Vascularized fibula graft for humeral reconstruction. *Techniques in Shoulder and Elbow Surgery*. 2008 Sep;(9): 168-173.

8. Kong BS, Kim YJ, Suh YS, **Jawa A**, Nazzal A, Lee S. Finger soft tissue reconstruction using arterialized venous free flaps having 2 parallel veins. *The Journal of Hand Surgery-Am*. 2008 Dec;(33): 1802-1806.

9. **Jawa A**, Jupiter J. Modified step-cut osteotomy for metacarpal and phalanx maluniouns. *The Journal of Hand Surgery-Am*. 2009, Feb;(34): 335-340.

10. Herndon JG, Allan BJ, Dyer G, **Jawa A**, Zurakowski D. Predictors of success on the American Board of Orthopaedic Surgery examination. *Clinical Orthopaedics & Related Research*. 2009 Jun;(467): 2436-45.

11. Kleweno CP, **Jawa A**, Wells JH, O'Brien TG, Higgins LD, Harris MB, Warner JJ. Midshaft clavicular fractures: comparison of intramedullary pin and plate fixation. *The Journal of Shoulder and Elbow Surgery*. 2011 Jul;20(7):1114-7.

12. Boykin RE, **Jawa A**, O'Brien T, Higgins LD, Warner JJP. Variability in operative management of proximal humerus fractures. *Shoulder & Elbow*. 2011 Sep;3:197-201.

13. Sekimpi, P, Okike, K, Zirkle, L, **Jawa A**. Femoral Fracture Fixation in developing countries: an evaluation of the surgical implant generation Network (SIGN) intramedullary nail. *The Journal of Bone Joint Surgery-Am*. 2011 Oct;93(19): 1811-1818.

14. **Jawa A**, Shi L, O'Brien T, Macy J, Higgins L, Warner JP. Prosthesis of antibiotic-loaded acrylic cement (PROSTALAC) for the treatment of infection after shoulder arthroplasty. *The Journal of Bone and Joint Surgery-Am*. 2011 Nov;93(21): 2001-2009.

15. Kurylo J, Axelrad W, Tornetta III, P, **Jawa A**. Open fractures of the distal radius: the effects of delayed debridement and immediate internal fixation on infection rates and the need for secondary procedures. *The Journal of Hand Surgery-Am*. 2011 Jul;36(7): 1131-4.

16. Bishop GB, Born T, Kakar S, **Jawa A**. The diagnostic accuracy of inflammatory blood markers for purulent flexor tenosynovitis. *The Journal of Hand Surgery-Am*. 2013 Nov; 38(11): 2208-11.

17. Yi PH, Ganta A, Hussein KI, Frank RM, **Jawa A**. Readability of arthroscopy-related patient education materials from the American Academy of Orthopaedic Surgeons and Arthroscopy Association of North America Web sites. *Arthroscopy*. 2013 Jun; 29(6): 1108-12.

18. Yi PH, Weening AA, Shin SR, Hussein KI, Tornetta P 3rd, **Jawa A**. Injury patterns and outcomes of open fractures of the proximal ulna do not differ from closed fractures. *Clinical Orthopaedics and Related Research*. 2014 Jul;472(7): 2100-4.

19. Neuhaus V, Menendez M, Kurylo JC, Dyer GS, **Jawa A**, Ring D. Risk factors for fracture mobility six weeks after initiation of brace treatment of mid-diaphyseal humeral fractures. *The Journal of Bone and Joint Surgery-Am*. 2014 Mar 5; 96(5): 403-7.

20. Yi PH, Chang MM, Haughom BD, **Jawa A**. Readability of patient education materials from the AAHS. *Hand*. 2014 Sep;9(3):393-4

21. **Jawa A**, Yi PH, Boykin RE, Gardner MJ, Gerber C, Lorich DG, Walch G, Warner JP. Treatment of proximal humeral fractures: comparison of shoulder and trauma surgeons. *The American Journal of Orthopedics*. 2015 Feb;44(2):77-81.

22. LaMartina J, **Jawa A**, Stucken C, Merlin G, Tornetta P 3rd. Predicting alignment after closed reduction and casting of distal Radius fractures. *The Journal of Hand Surgery-Am*. 2015 May; 40(5):934-9.

23. **Jawa A**, Dasti UR, Fasulo SM, Vaickus MH, Curtis AS, Miller SL. Anatomic total shoulder arthroplasty for patients receiving workers' compensation. *The Journal of Shoulder and Elbow Surgery*. 2015 Nov;24(11):1694-7.

24. **Jawa A**, Burnikel D. Treatment of Proximal Humeral Fractures: A Critical Analysis Review. *Journal of Bone and Joint Surgery Reviews*. 2016 Jan 12;4(1).

25. Parisien, R., Yi, P., Li, X., **Jawa A**. The risk of nerve injury during anatomical and reverse total shoulder arthroplasty: an intraoperative neuromonitoring study. *The Journal of Shoulder and Elbow Surgery* 2016 Jul; 25(7):1122-7.

26. **Jawa A**, Dasti U, Brown A, Grannatt K, Miller S. Gender differences in expectations and outcomes for total shoulder arthroplasty: a prospective cohort study. *The Journal of Shoulder and Elbow Surgery* 2016 Aug; 25(8): 1323-7.

27. Menendez ME, Ring D, **Jawa A**. Inpatient falls after shoulder arthroplasty. *The Journal of Shoulder and Elbow Surgery*. 2017 Jan; 26(1): 14-19.

28. Lowe JT, Li X, Fasulo SM, Testa EJ, **Jawa A**. Patients recall worse preoperative pain after shoulder arthroplasty than originally reported: a study of recall accuracy using the American Shoulder and Elbow Surgeons score. *The Journal of Shoulder and Elbow Surgery*. 2017 Mar; 26(3): 506-511.

29. Lowe JT, Testa EJ, Li X, Miller S, Deangelis J, **Jawa A**. Magnetic resonance imaging is comparable to computed tomography for determination of glenoid version but does not accurately distinguish between Walch B2 and C classifications. *The Journal of Shoulder and Elbow Surgery* 2017 Apr; 26(4):669-673.

30. Yi P, Sing D, Bedi A, Eichinger J, **Jawa A**, Li X. Insurance status affects postoperative morbidity and complication rate after shoulder arthroplasty. *The Journal of Shoulder and Elbow Surgery*. 2017 Aug; 26 (8): 1423-1431.

31. Mantell MT, Nelson R, Lowe JT, Endrizzi DP, **Jawa A**. Critical shoulder angle is associated with full-thickness rotator cuff tears in patients with glenohumeral osteoarthritis *The Journal of Shoulder and Elbow Surgery*. 2017 Dec; 26(12): e376-e381.

32. Fitzgerald M, Lawler SM, Lowe JT, Nelson R, Mantell M, **Jawa A**. Computed tomography underestimates rotator cuff pathology in patients with glenohumeral osteoarthritis. *The Journal of Shoulder and Elbow Surgery*. Accepted Jan 2018.

Jacob M. Kirsch, MD
Curriculum Vitae

Office

Boston Sports and Shoulder Center
840 Winter Street
Waltham, MA 02451
Phone: (781) 890-2133
Fax: (781) 890-2177

Citizenship

United States

Education

2006 – 2010 Franklin & Marshall College
Lancaster, PA
Degree: BA, Magna Cum Laude, 2010
Major: Religious Studies
Awards: Phi Beta Kappa, Benjamin Rush Honor Society, Black Pyramid Honor Society

2010 – 2014 George Washington School of Medicine
Washington, DC
Degree: MD, 2014
Awards: Alpha Omega Alpha, Julius S. Neviaser Award for Excellence in Orthopaedic Surgery

2014 – 2019 University of Michigan
Ann Arbor, MI
Resident - Orthopaedic Surgery

2019 – 2020 The Rothman Institute at Thomas Jefferson University
Philadelphia, PA
Clinical Fellow – Shoulder and Elbow Reconstruction

Licensures

Medical, Massachusetts, 2020

Certifications

ACLS 2014-2020

Employment

9/2020 – present Boston Sports and Shoulder Center
New England Baptist Hospital

Bibliography

Peer Reviewed Publications

1. Paclot J, Gasbarro G, **Kirsch JM**, Neyton L. Shoulder hemiarthroplasty after previous pectoralis major transfer for irreparable subscapularis tear: A case report. *JBJS Case Connector*. 2020:10(2)e0332

2. Neyton L, Gossing L, Gasbarro G, **Kirsch JM**. Modified L'Episcopo Tendon Transfer for Isolated Loss of External Rotation. *Accepted to JSES*.

3. **Kirsch JM**, Namdari S. Rehabilitation After Anatomic and Reverse Shoulder Arthroplasty: A Critical Analysis Review. *JBJS Reviews*. 2020:8(2)e0129. 1-10.

4. Neyton L, **Kirsch JM**, Collotte P, Collin P, Gossing G, Walch G. Mid- to Long Term Follow-up of Shoulder Arthroplasty for Primary Glenohumeral Osteoarthritis in Patients Aged 60 or Under. *Journal of Shoulder and Elbow Surgery*. 2019 September; 28: 1666-1673.

5. **Kirsch JM**, Bakshi N, Ayeni OR, Khan M, Bedi. A Clinical Outcomes and Quality of Literature Addressing Glenohumeral Internal Rotation Deficit: A Scoping Review. *HSS Journal*. 2019. June.

6. Bakshi NK, Inclan PM, **Kirsch JM**, Bedi, A, Agresta C, Freehill MT. Current Workload Recommendations in Baseball Pitchers: A Systematic Review. *American Journal of Sports Medicine, published online ahead of print Apr 23rd 2019.*

7. Bakshi N, Khan M, **Kirsch JM**, Perera E, Rinaldi G, Razdan P, Tigani L, Bedi A. Significant demographic and geographic differences exist in the reporting of superior labrum from anterior to posterior tear literature: A Systematic Review. *JISAKOS*. 2018 August; 0:1-6.

8. **Kirsch JM**, Blum L, Hake ME. "Distal Clavicle Fractures: Open Reduction and Internal Fixation with a Hook Plate. *Journal of Orthopedic Trauma*. 2018 August, 32(8): S2-3.

9. Kay J, **Kirsch JM**, Bakshi N, Ekhtiari S, Horner N, Gichuru M, Khan M, Bedi A. Humeral Retroversion and Capsule Thickening in the Overhead Throwing Athlete: A Systematic Review. *Arthroscopy*. 2018 April; 34(4): 1308-1318.

10. Ekhtiari S, Khan M, **Kirsch JM**, Thornley P, Larson CM, and Bedi A. Most Elite Athletes Return to Competition Following Operative Management of Meniscal Tears: A Systematic Review. *JISAKOS*. 2018 April; 3(2): 110-115.

11. **Kirsch JM**, Burrus T, Bedi A. Common Injuries in Professional Football Quarterbacks. *Current Reviews in Musculoskeletal Medicine*. 2018 March; 11(1): 6-11.

12. **Kirsch JM**, Khan M, Thornley P, Gichuru M, Freehill MT, Nevaiser A, Moravek J, Miller BS, Bedi A. Platform Shoulder Arthroplasty: A Systematic Review. *Journal of Shoulder and Elbow Surgery*. 2018 April; 27(4): 756-763.

13. **Kirsch JM**, Bedi A, Horner N, Wiater JM, Pauzenberger L, Koueiter D, Miller BS, Bhandari M, Khan M. Tranexamic Acid in Shoulder Arthroplasty: A Systematic Review and Meta-analysis. *Journal of Bone and Joint Surgery Reviews*. 2017 September 5(9): 1-11.

14. Burke MC, Minnock C, Robbins CB, Abbott MD, Caird MS, Farley FA, **Kirsch JM**, Thomas JR, Li GY. Intraobserver and Interobserver Reliability of Radiographic Analysis of Pediatric Proximal Humerus Physeal Fractures. *Journal of Pediatric Orthopedics*. 2019 February; 39(2): e125-129.

15. **Kirsch JM**, Thomas JR, Kahn, M, Townsend W, Lawton JN, Bedi A. Return to Sport Following Osteochondral Autograft Transplantation for Osteochondritis Dissecans of the Capitellum: A Systematic Review. *Arthroscopy*. 2017 July; 33(7): 1412-1420.

16. **Kirsch JM**, Nathani A, Robbins C, Gagnier J, Bedi A and Miller BS. Is There an Association Between the "Critical Shoulder Angle" and Clinical Outcome after Rotator Cuff Repair? *Orthopaedic Journal of Sports Medicine*. 2017 Apr 18;5(4): 1-6.

17. **Kirsch JM**, Khan M, Bedi A. Does Hip Arthroscopy Have a Role in the Treatment of Developmental Hip Dysplasia? *Journal of Arthroplasty*. 2017 Sep; 32(9S):S28-S31.

18. Hake ME, Etscheidt J, Chadayammuri V, **Kirsch JM**, Mauffrey C. Age and Dressing Type as Independent Predictors of Postoperative Infection in Patients with Acute Compartment Syndrome of the Lower Leg. *International Orthopaedics (SICOT). Published Ahead of Print on 2017 July 20.*

19. **Kirsch JM**, Lee S, Lawton JN. "Upper Extremity Compartment Syndromes." Scientific American Plastic Surgery, 11/2016, https: //www.deckerip.com/products/scientific-american-surgery, 2016.

20. **Kirsch JM**, Thomas JR, Bedi A, Lawton JN. Current Concepts: Osteochondral Autograft Transplantation for Osteochondritis Dissecans of the Capitellum. *American Association of Hand Surgery-HAND*. 2016 Dec; 11(4): 396-402.

21. **Kirsch JM**, Nathani A, Patel RD. Multiple Adjacent Isolated Thoracic Spinous Process Fractures in High-Energy Trauma. *Case Reports In Orthopaedics*. 2015 June, 1-3.

22. **Kirsch JM**, Rosenberg AE, O'Hara BJ, Abraham AJ. Aggressive Tibial Lesion in a 70-year-old man. *Clin Orthop Relat Res*. 2014 Aug;472(8):2555-60.

23. Walk RM, Snyder JA, Srinivasan P, **Kirsch JM**, et al. Cold atmospheric plasma for the ablative treatment of neuroblastoma. *Journal of Pediatric Surgery*. 2013;48:67-73.

Helpful Administrative Tips

General appointment scheduling

Our main phone number, 781-890-2133, is the best place to start if you need to schedule a follow up appointment. Select Option 1 after hearing the automated prompt.

Prescription Requests

Using our main number, select option 2 after hearing the automated prompt. You will be asked to leave a voicemail, which our Medical Assistants regularly check during business hours. They will then contact Kiet with your request, so please be sure to leave a detailed message, including verifying your pharmacy.

FMLA/Disability Paperwork

These requests can be faxed to our office at 781-890-2177. Please be sure they include your name, and where they should be faxed after completion. There is roughly a 7 day turn around for these forms, so please allow enough time before surgery for their completion.

Patient Portal

If you have not yet registered for our patient portal, please consider doing so. If you need any assistance, please contact A.J. at 617-751-5311. Our portal allows you to send and receive secure messages, which are kept as a part of your medical record. This can be especially helpful after surgery, as questions often come up during non-business hours. Once your message is sent, it is received by A.J. who can triage it appropriately (please note that urgent matters should not be sent in this manner).

Leaving voicemails for A.J.

Please be sure to leave detailed messages if you reach A.J.'s voicemail. This is especially helpful if your question is more clinical in nature; A.J. can transcribe the message and send it to Kiet, thus expediting a response.

Notes

Boston Sports & Shoulder Center

www.bostonssc.com