



FLORIDA
ORTHOPAEDIC
INSTITUTE®

Sports Medicine

**Our 10 most
asked sports
medicine
questions**



When should I see a doctor for an injury?

While it's hard to give specific advice without seeing you as a patient, examining your injury and reviewing your x-rays or MRIs, here are some guidelines to help you decide if you should see a doctor following an injury.

This list is not comprehensive as there can be other signs and symptoms that justify seeing a doctor for shoulder, knee or other injuries. If you're concerned about your injury, seeing a doctor is the best first step.

THE INJURED BODY PART IS CROOKED OR OUT OF PLACE.

If your leg, ankle, forearm or any other bone is deformed or crooked, it's probably broken. If your shoulder, kneecap, finger or any other joint in the body is clearly out of place, it's a good idea to see a doctor.

YOU'RE NOT PLAYING AS WELL AS NORMAL.

People can suffer injuries that gradually improve over time so that they can do some parts of their sport. But if you can't train or perform as well as you would like, get checked out.

YOU CAN'T BEAR WEIGHT ON YOUR LEG.

A fracture of the foot or ankle usually causes significant pain when you try to put weight on it. While ankle sprains and other

injuries can cause pain, if you have substantial pain when you try to put some pressure on your leg, it's time to find out if you've broken a bone.

CAN'T LIFT YOUR ARM?

If pain limits your ability to lift your arm, especially overhead, then that pain alone justifies seeing a doctor. Also, if you have significant weakness or the ability to lift your arm up or away from your body, it could signify a muscle or other serious soft tissue injury.

CAN'T BEND YOUR JOINT?

Pain can limit your ability to bend your knee or other body parts. Unrelated to pain, there can also be injured structures that prevent you from flexing or extending a body part. Either way, it's time to see a doctor.

ONE SIDE IS MORE SWOLLEN THAN THE OTHER SIDE.

While swelling is normal after a musculoskeletal injury, it's time to be concerned when the joint is significantly more swollen than the opposite side as it can suggest a fracture, torn ligament or torn tendon.

PAIN IS INCREASING.

Many people wait 24 or 48 hours to see if their pain and other symptoms improve, avoiding activities that cause pain and

increase stress on the injured area. If the pain is decreasing, that's a good sign. But if you aren't making much progress and the pain is increasing, it's time to see a doctor to evaluate your injury thoroughly.

REST, ICE, COMPRESSION WRAPS AND ELEVATION AREN'T HELPING.

Ice, elevation of the injured part and compression wraps are excellent first steps to help decrease swelling, as is rest. If they help you get back to normal, then they could be all you need to do. But if you aren't making much progress after a few days of these treatments, see a doctor.

OVER-THE-COUNTER MEDICATIONS AREN'T HELPING.

Over-the-counter medications like Tylenol, Advil, and aspirin can provide pain relief after you're hurt. If they don't help decrease pain and swelling, it could indicate that you've suffered a more severe injury.

YOU CAN'T SLEEP WITHOUT PAIN.

If pain is keeping you awake at night, it's time to see a doctor. Even though the injury may not need surgery, a doctor can find the cause of the pain and offer treatments to help you get some rest.



Can you take too much anti-inflammatories?

Over-the-counter nonsteroidal anti-inflammatory drugs like Advil/Motrin (ibuprofen) and Aleve (naproxen sodium) can provide pain relief after you're hurt.

Nonsteroidal anti-inflammatory drugs (NSAIDs) block the production of certain body chemicals that cause inflammation. They are effective in treating pain caused by slow, prolonged tissue damage (such as the pain from an arthritic joint) and general or localized pain, such as joint pain or back pain.

NSAIDs work like corticosteroids (also called steroids), without many of the side effects of steroids. Manufactured steroids are very similar to cortisone, a naturally-occurring hormone. Like cortisone, NSAIDs are effective in reducing inflammation and pain of joint and muscle injuries.

NSAIDs are among the most popular medications worldwide with more than 30 billion doses taken each year. It is estimated that about 15% of the US population takes an NSAID regularly.

Over-the-counter NSAIDs are effective pain-relievers, but they are intended for short-term use. Never use an over-the-

counter NSAID continuously for more than 10 days for pain without talking to your doctor. When taking NSAIDs for long periods, you should be carefully monitored by your healthcare provider to watch for harmful side effects. In the short term, be sure to follow the package instructions.

Damage to the gastrointestinal tract is the most common side effect from NSAIDs, which includes your esophagus, stomach, and small intestine. It is estimated that more than half of all bleeding ulcers are caused by NSAIDs.

When over-the-counter NSAIDs are used long-term, there is a risk of heart attack and stroke along with other side effects. In some people, they can cause high blood pressure and kidney damage. They can also cause potentially severe allergic reactions.

NSAIDs are remarkably effective medications, but they can cause trouble. The risk of serious side effects goes up when taken in higher than recommended doses or taken with second NSAID. Check for any interactions with other medications you may be taking.

To reduce pain also look for techniques that don't rely on

medication. R.I.C.E (Rest, Ice, Compression, Elevation) are great first steps to help decrease swelling and pain. Ask about other techniques that your doctor recommends that may help like biofeedback, acupuncture, hypnosis, yoga, physical therapy and exercise.



Cortisone shots: Use, risks & benefits?

A cortisone shot is the common name for a corticosteroid injection, used to treat a variety of musculoskeletal injuries. Usually performed in an office setting, a doctor injects a steroid into a joint or bursa. Steroids are anti-inflammatory medication so injections can decrease pain and swelling.

Cortisone shots treat pain related to degenerative conditions like osteoarthritis, and help with inflammatory conditions of joints, like rheumatoid arthritis. They also treat inflamed bursas and disorders of tendons and muscles.

Manufactured steroids are very similar to cortisone, a naturally-occurring hormone. Like cortisone, they are effective in reducing inflammation and pain of joint and muscle injuries. They provide pain relief by decreasing inflammation, which decreases pain and swelling in the affected area.

Cortisone injections typically do not resolve the underlying condition. For example, a cortisone shot can provide pain relief from articular cartilage breakdown in osteoarthritis of the knee, but it doesn't correct the underlying cartilage damage.

Receiving too many cortisone injections into one location in

too short a period is thought to have negative effects. There is concern over the possible breakdown of the articular cartilage with repeated shots for injections into joints, so most doctors limit patients to no more often than every six weeks, with 3-4 cortisone shots into a single joint within a year. There is also concern that cortisone can soften the cartilage within a joint, so some doctors are hesitant to use them on younger patients. Cortisone can also cause weakening of tendons and lead to tendon rupture.

Cortisone often takes several days to start decreasing pain so the joint/area can be uncomfortable if there is swelling. Ice and other forms of cold therapy help minimize swelling.

Cortisone shots can be part of a comprehensive treatment plan for many injuries. Your doctor will review additional treatments, like physical therapy, that can keep the problem from returning in the future.





What are common knee injuries?

When one or more of the knee's components (bones, muscles, tendons, and ligaments) are damaged, the result is knee pain. One of the most common orthopedic conditions, knee damage is caused by disease, chronic overuse, or acute injury. Knee pain can appear immediately or progress over time. There are both soft tissue injuries (like tendon or ligament strains) but also damage to the bones of the knee (the femur, tibia, and patella) through overuse or injury.

LIGAMENT INJURIES. The knee contains four major ligaments: the anterior cruciate ligament (ACL), medial cruciate ligament (MCL), lateral cruciate ligament (LCL), and posterior cruciate ligament (PCL). They connect the femur to the tibia and fibula. They also help stabilize the joint as it moves through its range of motion. Any ligament can be sprained or torn through injury or chronic wear-and-tear on the knee. Sprains and tears are especially common in athletes of all ages, since pivoting, stopping abruptly, and landing place a high level of stress on the knee.

MENISCUS INJURIES. Located where the femur meets the tibia in the knee, the meniscus is a

large, C-shaped piece of cartilage. Your meniscus acts as a shock-absorber between the femur and tibia, allowing them to come into contact with one another and move through a range of motion without causing pain. Sudden injury or chronic overuse can tear the meniscus.

FRACTURES. There are three primary bones in the knee: the femur, the tibia and the patella. The femur makes up the top of the joint while the tibia makes up the bottom of the joint. The patella covers both. A sudden impact, from a sports-related injury or a traumatic accident, can fracture any of these bones and cause extreme pain. When subjected to sustained stress, these bones can also develop stress fractures which are small breaks in the bone. Stress fractures can worsen over time if left untreated.

BURSITIS. Bursas are large, fluid-filled sacs that provides lubrication and cushioning to the internal parts of the knee. Bursitis is the inflammation of these sacs and can lead to pain, stiffness and swelling over time. Bursitis can be an overuse injury and is very common in runners and other individuals who put a lot of stress on their knees.

TENDINITIS. Commonly known as "jumper's knee", tendinitis usually is the result of overuse of the knee and is associated with front knee pain. It can occur in the patellar tendon (which attaches the bottom of the patella to the top of the tibia) or the quadricep tendon (which attaches the quadriceps muscles to the patella).

COMMON KNEE INJURIES IN BASEBALL, FOOTBALL & SOCCER:

- ACL Tears (Anterior Cruciate Ligament)
- Knee Tendinitis or Ruptures
- Kneecap Dislocations
- MCL Tears (Medial Collateral Ligament)
- Meniscus Tears/Torn Knee Cartilage
- MPFL Tears (Medial Patellofemoral Ligament)
- PCL Tears (Posterior Cruciate Ligament)
- Runner's Knee (Patellofemoral Pain Syndrome-PFPS)

What are the dangers of sport specialization?

Repetitive strain injuries (also called RSI and overuse injuries or syndrome) is a term used to describe damage and pain caused by repetitive movement and overuse. They are very common in the U.S. with more than 3 million cases reported per year.

While the elderly are most commonly affected, this is a common injury among young athletes, especially those who play one sport.

Overuse injuries are more common in sports than acute injuries, but they are more subtle and usually occur over time, making them more challenging to diagnose and treat. Overuse injuries result from repetitive micro-trauma to the tendons, bones, and joints and include tennis elbow, swimmer's shoulder, youth pitching elbow, runner's knee, jumper's knee, Achilles tendinitis, and shin splints.

Rapid acceleration of the intensity, duration, or frequency of activity can cause overuse injuries. They also happen when people return to a sport or activity after an injury and push themselves to achieve the level of participation they were at before injury.

Proper technique is also critical in avoiding overuse injuries, as slight changes in form can make a difference. Coaches, athletic trainers, and teachers can all play a role in preventing these injuries.

Overuse injuries can also be prevented with proper training and common sense. In general, you should not increase a training program or activity more than 10 percent a week to allow your body time for recovery and response. The 10 percent rule also applies to the amount of weight added in strength training programs and increasing pace or mileage for walkers and runners.

Improving core stability, integrating strength training and increasing flexibility also help minimize overuse injuries. Cross-train to include many different activities, like swimming, biking, or elliptical trainers. Always warm up and cool down before and after your activity.

For young athletes, the American Academy of Pediatrics recommends the following to prevent overuse injuries:

- Play smart. Athletes should avoid specializing in one sport before late adolescence. Child "superstars" are often injured or burn out prior to college. Children should be encouraged to try a variety of sports.
- Participation in a particular sport should be limited to 5 days per week.
- Athletes should sign up for one team and one sport per season.
- Rest up. Athletes should take at least 1 day off per week from organized activity to recover physically and mentally.
- Athletes should take a combined 3 months off per year from a specific sport (may be divided throughout the year in 1-month increments). The athlete should remain physically active during that time.



What is Little League Shoulder?

Little League Shoulder (proximal humeral epiphysiolysis) is an overuse injury to the growth area of the humerus at the shoulder joint. LLS is less well known than Little League elbow (medial apophysitis) but is increasing in frequency. It is most commonly found in overhand pitchers between ages 11 and 16.

Little League Shoulder typically results from too much throwing without proper rest, repeated overhead throwing using improper mechanics, or lack of muscle strength and endurance.

Little League Shoulder is caused by stress to the arm bone (humerus) nearest to the shoulder. Stress widens the growth plate and causes swelling and pain at the shoulder.

Untreated, the condition can worsen and lead to bone damage. There is also the possibility of growth plate closure. Little League Shoulder is similar to a stress fracture or a pediatric fracture called a Salter-Harris Type 1 fracture.

Symptoms of Little League Shoulder include pain in the shoulder when throwing or pitching, pain with the shoulder at rest or when lifting the arm, and decreased throwing speed and accuracy.

To determine if a child has Little League Shoulder, your doctor will do a complete physical exam and order imaging tests. X-ray imaging can show a widened or irregular growth plate. Magnetic resonance imaging (MRI) gives your doctor a more detailed image of both soft tissues and bone. An MRI shows details of the tendons and ligaments, which cannot be seen with X-rays alone and provides more detail of the growth plate.

No injury can be prevented entirely but proper mechanics, rest and strength can reduce the risk of injury. USA Baseball has developed recommended pitch counts by age and associated rest periods for young pitchers to help reduce the risk of injury.

PITCH LIMITS	
AGE	PER DAY
10-Under	75
11-12	85
13-16	95
17-18	105

NUMBER OF PITCHES	
THROWN	DAYS OF REST
1-20	0
21-40	1
41-60	2
61+	3



What are hyaluronic acid injections?

Hyaluronic acid (HA) injections are used to treat knee pain in people with osteoarthritis when other treatments have been unsuccessful. They are often used when corticosteroid (steroid) injections don't work. HA also is a better option if you have diabetes, as corticosteroids can raise blood sugar levels.

Hyaluronic acid injections are chemically similar to the body's natural joint fluid. Also known as gel injections or viscosupplementation, HA is a cushion or a buffer against inflammatory cells in the joint. It can also stimulate the knee to start producing more natural HA. It is also believed that HA helps reduce pain by coating nerve endings within the joint.

A fluid called hyaluronan provides lubrication in a normal, healthy joint. Hyaluronic acid is a key component of the joint fluid, gives the joint fluid a viscous, slippery quality. This enables the bones' cartilage-covered surfaces to glide against each other reducing joint friction and adds cushioning to protect joints during impact or weight-bearing activities.

But if you have osteoarthritis, there is less supply of this fluid, and the joint fluid can become watery. Hyaluronic acid joint

injections supplement the joint's hyaluronan with hyaluronic acid to help restore the fluid's natural properties and work as a lubricant and a shock absorber.

One series of treatment, which may consist of between one and three injections, usually offers relief for four to five months, but sometimes up to one year. In most cases, pain and stiffness will return. Some insurance companies limit the number of HA injections.

Research studies investigating the effectiveness of hyaluronic acid injections in treating knee osteoarthritis have found that:

1. Pain relief is not always immediate and usually begins around the fourth week after the initial injection.
2. Relief periods vary from 2 months up to 6 months, with the most effective period is usually between weeks 5 and 13.
3. Multiple injections may be more effective than a single injection in some people.
4. Additional injections may provide more extended relief in some patients who show initial improvement, up to 3 years.
5. Pain relief from injections may help postpone total knee replacement surgery in some cases.



What is an ACL sprain or tear?

An anterior cruciate ligament (ACL) sprain or tear is one of the most common knee injuries. High demand sports like soccer, football, and basketball have a higher incidence of ACL injuries. An injury to the ACL may need surgery to regain full function of the knee, depending on the severity of your injury, your activity level, and other factors.

Ligaments connect bones to one another and keep the knee stable. The knee has four primary ligaments, of two types:

Cruciate Ligaments – located inside your knee joint, controlling the back and forth motion of the knee.

- Running diagonally in the middle of the knee, the anterior cruciate ligament (ACL) prevents the shinbone (tibia) from sliding out in front of the thighbone (femur) and provides rotational stability.
- The posterior cruciate ligament (PCL) mirrors the ACL but is attached to the back of the knee, crossing the ACL in an X.

Collateral Ligaments – on the sides of the knee, controlling the sideways motion of the knee and braces it against unusual movement.

- Medial collateral ligament

(MCL) on the inside.

- Lateral collateral ligament (LCL) on the outside.

Your anterior cruciate ligament can be injured in several ways:

- Rapidly changing direction.
- Deceleration coupled with cutting, pivoting or sidestepping moves.
- Suddenly stopping.
- Slowing down while running.
- Awkward or incorrect landings from a jump.
- Out of control play.
- Direct contact or collision (like a football tackle).

The majority of ACL injuries occur through non-contact – a smaller percent are from direct contact with another player or object.

Half of ACL injuries happen when there is damage to other structures in the knee, such as the meniscus, articular cartilage, or other ligaments. There can also be bruising of the bone beneath the cartilage surface. Magnetic resonance imaging (MRI) scans can help to see these additional injuries. When athletes commonly injure the ACL, the MCL, and the medial meniscus together, it's nicknamed the "unhappy triad."

When the anterior cruciate ligament is injured, typical

symptoms include:

- A "popping" noise.
- The knee gives out from under you.
- Loss of range of motion.
- Tenderness along the joint line.
- Discomfort while walking.
- Pain with swelling. Within 24 hours after the injury, the knee swells. Sometimes, the swelling and pain resolve on their own. You risk further damage to the cushioning cartilage (meniscus) of your knee if you return to sports, as your knee may be unstable.

An injury to a ligament is called a sprain and is graded on a severity scale.

Grade 1 Sprains – The ligament is mildly damaged. It has been slightly stretched but can still help keep the knee joint stable.

Grade 2 Sprains – The ligament is stretched to the point where it becomes loose. Also referred to as a partial tear of the ligament. Partial tears are rare – most ACL injuries are complete or near complete tears.

Grade 3 Sprains – The ligament is split into two pieces, and the knee joint is unstable. Commonly called a complete ligament tear.

FIVE STEPS TO REDUCE THE RISK OF AN ACL TEAR

1. **Targeted strength training** of the ACL and the other musculoskeletal components of the knee, including high-intensity jumping plyometrics and exercises that strengthen the quadriceps and hamstrings of the thigh.
2. **Improving balance and strengthening the small muscles of the feet, ankles, legs, and knees** helps prevent ACL injuries from a quick change of direction, a sudden slowdown or stop, a faulty landing, or a collision.
3. **Warming up and stretching** before intense activity help loosen muscles, which helps prevent injuries or reduce their severity.
4. **Wearing proper footwear and practicing proper technique.** Make sure your footwear fits properly. Practice proper athletic techniques to avoiding high-impact, damaging motions.
5. **Undergo a physical examination** with a sports medicine specialist to help to target any muscular weakness that may be susceptible to sprains or tears.

What do X-Rays and MRIs show?

DIGITAL X-RAYS

Traditional X-rays have been around since the early 1900s, using film to capture images of the body's internal structures. Bone x-rays use a minimal dose of ionizing radiation to produce pictures of any bone in the body. They are used to diagnose fractured bones or joint dislocation. Bone x-rays are the fastest and easiest way to view and assess bone fractures, injuries, and joint abnormalities.

Today's digital X-ray technology is widely used because of its low cost. It quickly produces the images needed, is noninvasive, and relatively harmless. Even though traditional X-rays are considered safe, digital X-rays produce 80% less radiation than film X-rays.

Since digital X-rays don't rely on film, there is a significant cost saving. Film is difficult to store, and images degrade over time. Digital images can be saved, transferred and easily accessed without any image degradation.

The image quality of digital X-ray is excellent. Images can be resized to enlarge hard-to-see potential issues without distorting or degrading the quality.

MRI (MAGNETIC RESONANCE IMAGING)

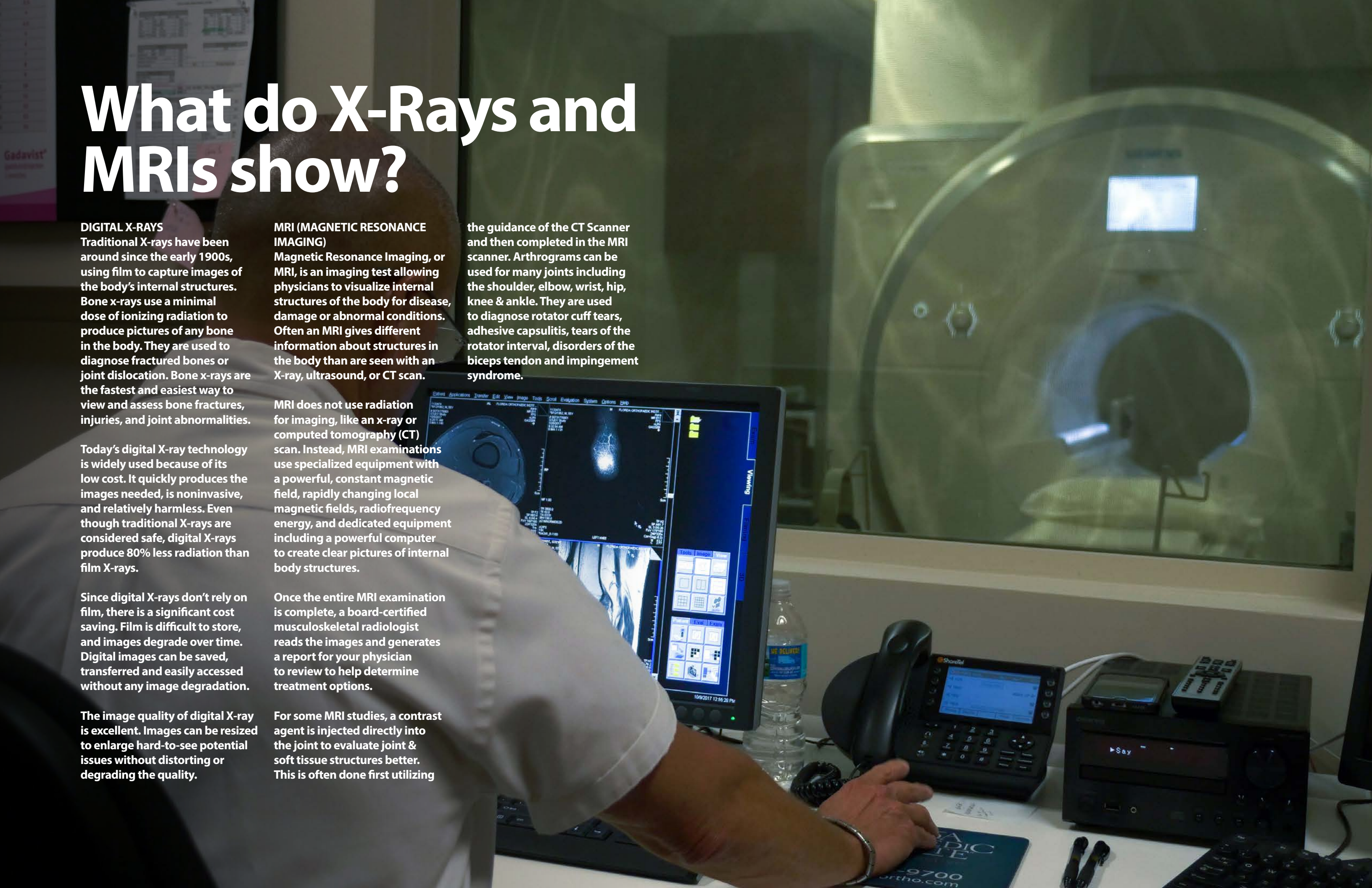
Magnetic Resonance Imaging, or MRI, is an imaging test allowing physicians to visualize internal structures of the body for disease, damage or abnormal conditions. Often an MRI gives different information about structures in the body than are seen with an X-ray, ultrasound, or CT scan.

MRI does not use radiation for imaging, like an x-ray or computed tomography (CT) scan. Instead, MRI examinations use specialized equipment with a powerful, constant magnetic field, rapidly changing local magnetic fields, radiofrequency energy, and dedicated equipment including a powerful computer to create clear pictures of internal body structures.

Once the entire MRI examination is complete, a board-certified musculoskeletal radiologist reads the images and generates a report for your physician to review to help determine treatment options.

For some MRI studies, a contrast agent is injected directly into the joint to evaluate joint & soft tissue structures better. This is often done first utilizing

the guidance of the CT Scanner and then completed in the MRI scanner. Arthrograms can be used for many joints including the shoulder, elbow, wrist, hip, knee & ankle. They are used to diagnose rotator cuff tears, adhesive capsulitis, tears of the rotator interval, disorders of the biceps tendon and impingement syndrome.



What are common shoulder injuries?

The shoulder is an extraordinary joint, allowing a full 180-degree range of motion on three different planes. It is a complex structure made of three separate joints, working together to give you a tremendous range of motion. Yet, the more a joint can do, the more can go wrong — and so the more specialized treatment required.

Since your shoulder is such a complicated part of your body, many conditions can affect it. Here are some of the more common ones.

BANKART REPAIR - A Bankart Repair is a minimally invasive surgical procedure that repairs a tear of the glenoid labrum in the shoulder. When the shoulder pops out of joint frequently and tears the inferior glenohumeral ligament, it's called a Bankart lesion, named after English orthopedist Arthur Bankart. A Bankart Repair re-anchors the torn pieces of cartilage to restore security and stability to the shoulder.

BICEP TENDON TEAR
When the biceps muscle tears from the bone at the point of attachment (tendon) to the shoulder, a biceps tendon rupture occurs. While this can occur at the elbow, the biceps tendon is most commonly torn at the shoulder.

BURSITIS OR TENDINITIS

Overuse injuries from continually over-exerting activities are some of the major causes of bursitis or tendinitis. Overuse injuries are commonly found in individuals who play competitive sports but can also be related to repetitive activities such as painting or stocking shelves. The overuse activities cause friction and scraping of the rotator cuff and its nearby joints.

FRACTURED COLLARBONE

Fractured collarbones typically occur in children or people who fall on the side of their shoulder. Most of these injuries can be cared for non-surgically with a sling and/or splint. If the injury is a severely displaced fracture or joint separation, surgery may be needed.

ROTATOR CUFF TEAR

A significant injury, such as falling, can cause a rotator cuff tear. Rotator cuff tears are caused by a variety of factors, including genetics, trauma, age or activity-related injury. Rotator cuff tears can also be caused by a prolonged breakdown or degeneration of the associated tendon. Tears that start out small often develop into larger, more painful and debilitating injuries due to continuing degeneration of the torn tendon.

Surgeons at Florida Orthopaedic Institute are now repairing rotator cuff tendon tears quickly with a new minimally invasive surgical approach using the latest technology: a postage-sized bioinductive implant that induces new tendinous tissue to grow and help tendons heal. This new technology biologically augments the tendon through the induction of new tendinous tissue growth.

SHOULDER IMPINGEMENT

Shoulder impingement is typically found in athletes that regularly make over-the-head motions. If medical expertise is consulted and treated in the early stages, shoulder impingement can be corrected in a conservative nonsurgical manner.

COMMON SHOULDER INJURIES IN BASEBALL, FOOTBALL & SOCCER:

- Anterior Shoulder Instability
- Bicep Tendinitis
- Bicep Tendon Tears
- Capsulitis (Frozen Shoulder)
- Internal Impingement
- Rotator Cuff Injuries
- Shoulder Dislocations
- Shoulder Instability
- Shoulder Separations
- Shoulder Tendinitis
- Slap Tears (Superior Labrum Anterior to Posterior)



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