I Have a Job, so...my condition **Must** be Work-Related

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“Back Wreckers” or Back Mis-information?

A recent article entitled “How to Wreck Your Back” at WebMD.com identified 5 habits purported to put the back at risk of major damage.

The 5 habits included vigorous weekend exercise, poor lifting techniques, absentmindedness during daily activities, commuting, and computing.

Interestingly, none of these activities has been conclusively implicated as a common cause of significant back injury.

(The Back Letter June 2010)
The Business of Medicine: Major Cost Driver
The Business of Medicine:
Major Cost Driver
The 3 most expensive words

My _________ “popped!”

back
knee
shoulder
In Medical School—there is not a course on “It Popped”

Google Search

Pub\(\text{Med}\)

Key word Literature Review

Ask\(\text{.com}\)
Cracking and Popping Joints

**What causes a cracking joint?**
Different conditions may cause a cracking joint, and the problem is not always clear. In most cases, the exact cause of a cracked joint cannot be determined.

Some causes may include:

**Gas Bubbles**
The slow accumulation of gases around a joint can cause the formation of tiny bubbles of gas. Joint cracking may occur when these gases are released.

**Tendons or Ligaments**
Tendons and ligaments cross over the joints. These structures may pop or crack as they snap over the bony prominences around the joint.

**Arthritis**
Damage to the joint surface, the cartilage, can cause cracking joints. However, this type of joint cracking usually is found in older individuals with known arthritis.
The audible pop from high-velocity thrust manipulation and outcome in individuals with low back pain.

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Abstract

OBJECTIVE: To determine the relationship between an audible pop with spinal manipulation and improvement in pain and function in patients with low back pain.

METHODS: In this pragmatic study, 70 patients from a multicenter clinical trial were randomly assigned to receive high-velocity thrust manipulation and included in this secondary analysis. Patients were managed in physical therapy twice the first week, then once a week for the next 3 weeks, for a total of 5 sessions. A single high-velocity thrust manipulative intervention purported to affect the lumbopelvic region was used during the first two sessions. Therapists recorded whether an audible pop was heard by the patient or therapist. Outcome was assessed with an 11-point pain rating scale, the Oswestry Disability Questionnaire, and measurement of lumbopelvic flexion range of motion. Repeated measures analyses of variance were used to examine whether achievement of a pop resulted in improved outcome.

RESULTS: An audible pop was perceived in 59 (84%) of the patients. No differences were detected at baseline or at any follow-up period in the level of pain, the Oswestry score, or lumbopelvic range of motion based on whether a pop was achieved (P > .05). The odds ratios and 95% confidence intervals for achieving a successful outcome at each of the follow-up periods all approximated a value of 1, suggesting no improvement in the odds of successful outcome among patients in which an audible pop occurred.

CONCLUSIONS: The results of this pragmatic study suggest that a perceived audible pop may not relate to improved outcomes from high-velocity thrust manipulation for patients with nonradicular low back pain at either an immediate or longer-term follow-up.
Scrutinizing Claims of Work Relatedness

Many non-occupational clinical issues find their way into injury claims despite little or no scientific support.

Why?

Surveys of physicians on how they determine work-relatedness; the prevailing response is that they do not— they simply assume work-relatedness based on the fact that they have a patient who came to see them in the context of a workers’ compensation claim.
Claimant-Reported History: Credible or Incredible?

- Barsky AJ. Forgetting, fabricating, and telescoping: the instability of the medical history. Arch Internal Med 2002;162(9):981-984.


Claimant-Reported History: Credible or Incredible?

Carragee 2008:

“80% of claimants falsely denied relevant pre-existing conditions.”
Accurate assessment of EXTENT of injury

There are scientific and clinical standards for the determination of work-relatedness. AMA Guides to the Evaluation of Disease and Injury Causation published in 2008.
Accurate assessment of **EXTENT** of injury

**Scientific causation** analysis involves a search for the facts.

**Legal causation** is rooted in subjectivity—the subjective claims of the claimant, the subjective opinions of the experts and the subjective judgment by decision-makers.

Need to mitigate against the unjustified exposure to the reliably harmful effects of being a workers’ compensation or occupational injury claimant.

Need to consider non-occupational causes or explanations for a complaint or symptom.

There may not be a physical explanation.
Evidence-based diagnostics and treatment

• **Diagnostic Labeling**—promote simplicity
  Potential adverse consequence → sick behavior

• **Indication**—appropriate diagnostic testing
  Potential to reinforce the severity of the illness or injury
  MR imaging pathology identified in asymptomatic subjects

• **Eliminate** unproven, ineffective treatment

• **Expect functional improvement**
Evidence based diagnostics and treatment

What does this mean?

Look at ODG, MDA, ACOEM ---and it says we can approve this—so we do this?

The evidence in the guidelines—and the evidence in the claim.
Indications for Physical Therapy

Physical therapy medically necessary when this care is prescribed by a doctor in order to significantly improve, develop or restore physical functions lost or impaired as a result of a disease, injury or surgical procedure.

What if there is no injury?

Once therapeutic benefit has been achieved, or a home exercise program could be used for further gains, continuing supervised physical therapy is not considered medically necessary.

Physical therapy in asymptomatic persons or in persons without an identifiable clinical condition is considered not medically necessary.

Physical therapy in persons whose condition is neither regressing nor improving is considered not medically necessary.

Reference Aetna Clinical Health Policy Bulletin
Objective: To examine early magnetic resonance imaging (MRI) utilization for workers’ compensation cases with acute, disabling low back pain and further, to examine low or high propensity to undergo early MRI with disability duration, medical costs, and surgery. Conclusions: The majority of cases had no early MRI indications. Results suggest that iatrogenic effects of early MRI are worse disability and increased medical costs and surgery, unrelated to severity.

The cases that had an early MRI were more likely to have prolonged disability, higher medical costs, and greater utilization of surgery.

If the low-propensity early MRI and no-MRI subgroups had similar severity indicators and demographic features, it was expected that both would have similar outcomes as well. Based on the propensity stratification, almost half of the cases in the low-propensity early MRI subgroup had similar severity indicators to the low-propensity no-MRI subgroup, but they had much worse outcomes even after controlling for demographics and severity. Both the no-MRI subgroups went off disability 200% (low propensity) and 190% (high propensity) faster than the low-propensity early MRI subgroup.

The results indicate that, despite the multiple evidence-based guidelines recommending that early MRI use be reserved only to diagnose serious conditions requiring immediate intervention and then should be reserved for those being considered for surgery for persistent neurological dysfunction, many clinicians are not following them in the WC setting.
The Negative Effects of Early MRI

Relationship of Early Magnetic Resonance Imaging for Work-Related Acute Low Back Pain With Disability and Medical Utilization Outcomes  Barbara S. Webster, BSPT, PA-C, and Manuel Cifuentes, MD, MPH, ScD
JOEM. Volume 52, Number 9, September 2010

The knowledge of the MRI findings also neither changed the clinical outcome nor provided additional value to the clinical assessment. Although it is unknown what results patients were given in the current study, prior research suggests that patients with a low propensity to have a justifiable MRI had worse outcomes because, at least in part, they were negatively influenced by the MRI results.

The results support earlier studies which suggested that, patients or clinicians or both may misinterpret the presence of abnormalities, even if clinically unrelated, to be indicative of a more specific and severe diagnosis. Clinicians sometimes unintentionally create unfounded fears and medicalize clinically irrelevant findings that are as harmful as setting unrealistic expectations. This diagnostic focus may encourage the patient to expect a “cure” and result in patient requests for more intensive interventions.

These results emphasize the importance of making providers aware that when a medical procedure, in this case early MRI, is not indicated, its use provides no benefits, rather worse outcomes.
The Negative Effects of Early MRI

The Overuse of Spinal Imaging Has Little to Do With Patients’ Clinical Characteristics

Patients are often referred for spinal imaging for the wrong reasons, according to a large new study of senior citizens covered by the Medicare program in the United States. (See Pham et al., 2009)

How rapidly patients receive imaging, and the types of imaging they receive, “have more to do with patient, physician, and practice characteristics than clinical indications.”

Overuse of imaging is not a problem restricted to specialists. About a third of imaging studies were performed within primary care practices.

Richard A. Deyo, MD pointed out in an editorial accompanying the study that efforts to maximize the patient satisfaction don’t always translate into high-quality back care. And it may be necessary to convince patients of this truth. (See Deyo, 2009)

Giving in to patients’ demands for imaging may send the wrong message, he pointed out. In a 1987 study, Deyo et al found that when x-rays were performed for low risk patients with back pain, it heightened expectations that imaging should be a standard part of the back care process. (See Deyo et al., 1987)

References:
The Negative Effects of Early MRI

Routine Imaging for Low Back Pain: Through a Glass Darkly

Although imaging is supposed to bring clarity to the diagnostic process, it has proven to be a stubborn obstacle to progress in the back pain field. There is abundant evidence of overuse and misuse of imaging across spinal medicine, particularly in the United States—to the detriment of individuals with low back pain.

When employed inappropriately, imaging doesn’t illuminate pain generators. Instead, it drags false possibilities across the diagnostic trail. It heightens fears and anxieties, affects the behavior of both patients and providers, and leads to misguided treatments.

A sequence of studies over the past 15 years has suggested that routine imaging in the absence of clear indications doesn’t provide useful diagnostic or prognostic information. And now a new systematic review and meta-analysis offers even more compelling evidence regarding the role of routine imaging.

Roger Chou, MD, of Oregon Health and Science University and colleagues analyzed six randomized controlled trials (RCTs) that compared immediate lumbar imaging (x-rays, MRI, or CT scanning) vs. usual clinical care without immediate imaging for low back pain—and then performed a meta-analysis with a random effects model. (See Chou et al., 2009.)

The results were clear. “Lumbar imaging for low back pain without indications of serious underlying conditions does not improve clinical outcomes.” Therefore, “clinicians should refrain from routine, immediate lumbar imaging in patients with acute or subacute low-back pain and without features suggesting a serious underlying condition.”
The Myth of Work-Related “Cumulative Trauma”

Degenerative Disc Disease: The Myth of Work-Related “Cumulative Trauma”
Christopher R. Brigham, MD, James Talmage, MD, Charles Brooks, MD, Gunnar Andersson, MD, and Craig Ueho MD, MPH

• “Attributing degenerative disc disease (DDD) to “cumulative trauma” at work is a myth that is not supported by current scientific evidence. The primary cause of DDD is non-occupational factors (genetics and aging).”

• “DDD is usually not the cause of neck or back pain but rather an incidental finding on x-rays or advanced imaging studies. Nevertheless, some physicians seem to believe that age-related changes on spinal images are responsible for non-specific spinal pain. This is like saying, “Of course you have headaches, you have gray hair.””

• “Battie and Videman performed an extensive literature review on the prevalence of disc degeneration, and in an article published in 2004 they summarized studies on its etiology. They concluded that 74% of the variance in degenerative disc changes relates to genetic factors. “
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• “Results of exposure-discordant monozygotic twins and classic twin studies suggest that physical loading specific to occupation and sport has a relatively minor role in the development of disc degeneration. Subsequent analyses by Battie et al, published in 2007, concluded that heritability estimates for back pain variables ranged from 30% to 46%.”

• Okada et al performed a prospective longitudinal study from 1995 to 2007 to clarify the normal aging process of cervical spine and the correlation between progressive disc degeneration and development of symptoms. The study, published in 2009, found no factor other than age that related to the progression of DDD. Specifically, there was no correlation between degenerative MR imaging findings and sex, smoking, alcohol consumptions, sport or body mass index. Neck pain was reported in 10% of the subjects, shoulder stiffness in 30%, and upper extremity numbness in 4%.
The Myth of Work-Related “Cumulative Trauma”

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“In summary, current scientific evidence does not support the premise that “cumulative trauma” results in or aggravates degenerative disc disease. “Repetitive strain injury” of the spine is a mythical medicolegal concept, not a clinical or pathologic reality.”
Repetitive Strain Injuries and Cumulative Trauma Disorders

Statement adopted by the Council of the American Society for Surgery of the Hand:

“The American Society for Surgery of the Hand is concerned that patients with upper extremity pain are being assigned specific diagnosis on the basis of subjective complaints without objective physical findings. There is also a tendency to assign a causal relationship to work for this pain when there is a lack of epidemiological evidence.”

“...the diagnoses of “cumulative trauma disorder” and “repetitive strain injury” are not appropriate and may actually lead the patient to believe that he or she has a condition that is something more than the ordinary aches and pains of life.”
Repetitive Strain Injuries and Cumulative Trauma Disorders

Statement adopted by the Council of the American Society for Surgery of the Hand:

“Tendinitis is a term that clearly indicates inflammation of tendons or tendon-muscle attachments, while tenosynovitis indicates inflammation of a tendon sheath. These terms are examples of clearly definable and diagnosable entities with a known histologic appearance. In the absence of edema, erythema, or crepitation, it is inappropriate to assign the provisional diagnosis.”

“If patents are told that they have one of these conditions, the oppressive power of the words may lead them to believe that they are severely injured.”
Carpal Tunnel Syndrome--Eradication as an Occupational Disease

From the *AMA Guides to the Evaluation of Disease and Injury Causation 2008*: “…the speculation that carpal tunnel syndrome is related to arm use is widely accepted but unproven. Because this proposed linkage is appealing and pervasive and seems to make sense, the lay press has advanced this association despite several quality scientific investigations that found little or no relationship between carpal tunnel syndrome and occupation or hand use.”

The *Guides Newsletter* – May/June 2009

Carpal Tunnel, Syndrome – Occupationally Related or Not?

- “In summary, the etiology of carpal tunnel syndrome is usually multi-factorial. Significant risk factors include genetics, age, female gender, and obesity. Although in the past CTS was often considered an occupational illness, the recent medical literature suggests most cases previously labeled as occupationally related were neither caused nor aggravated by work.”
What about Hernias?

• Hernias are extremely common.
• One of every 200 adults in the United States will see their doctor for a hernia.
• “It is commonly thought that lifting causes hernias. This is not true. Lifting or straining may alert the individual to the fact that they have a hernia, because it makes the hernia bulge, but that lifting or straining did not cause the hernia. In fact, most people who lift heavy objects never develop a hernia. The cause of the weakness that leads to the hernia is unknown.” (Ref: Robert H. Shmerling, M.D., Beth Israel Deaconess Medical Center.)
What about Hernias?

• In a published study of 133 new patients with 135 abdominal hernias of all varieties (115 inguinal, 3 femoral, 9 umbilical, 4 incisional, and 4 ventral or epigastric), the authors concluded that “...we are unable to find any clinical evidence to support the hypothesis that a hernia might develop as the result of one single strenuous or traumatic event. While we accept that this mechanism might still possibly occur, we believe that, at best, it is extremely uncommon.” (Ref: It is Highly Unlikely that the Development of an Abdominal Wall Hernia can be Attributable to a Single Strenuous Event. Pathak Samir and Graeme J. Poston, Department of Surgery, University Hospital, Liverpool, UK).

• From page 362 of the AMA Guides to The Evaluation of Disease and Injury Causation 2008, genetic and developmental factors are the primary etiology of hernias, further contributed to by obesity. From the Guides, it is noted that “the abdominal musculature has protective mechanisms recruited during lifting to help prevent hernia formation...and this is why there are no good studies showing an increased risk of hernias in laborers.”
Psychological Disorders vs. Physical Injury

We tend to think only in terms of:

Occupational Claim = Physical Injury
Psychological Disorders vs. Physical Injury

Psychological Disorders impact:

• Perception of severity
• The experience of pain
• Actions/attitude at work and with providers
• Motivation for being at work
• Response to information about clinical findings and diagnostic results
Psychological Disorders vs. Physical Injury

Psychological Disorders impact physician practice patterns:

Crying, tearful = refer to pain management
Argumentative and demanding = diagnostic tests and more drugs
Angry, threatening, or just plain scary = off work, diagnostics, drugs, basically whatever the patient wants to get them out of the office.
Fraud and Deception

The Interviews—Verbal behavior
Lies of Omission
Influence statements
Too much information
Overly-specific answers
Failure to answer the question, repeating the questions.
Attacks interviewer/Questions the interviewer
Invokes religion
Adds qualifiers—like “honestly, truthfully, etc..”
Fraud and Deception

Video surveillance and photographs.
Every picture tells a story.
The claimant is separating from his wife. They have a young son.

The claimant is highly active on Facebook. The claimant signed up for Facebook in March 2010. [The claimant has been in the process of moving in with his father. The process is ongoing and he expects to be moving for a few weeks. He states on Facebook that he carried and moved multiple heavy furniture items from one apartment to another for his wife on July 1, 2010, without help.

The claimant is a body builder. He has been lifting weights, jogging, taking supplements, and eating a 4,000-calorie-per-day diet with the goal to pack on muscle and get up to 200 lbs. Some days he goes to the gym more than once.

The claimant also has been reconnecting with friends and going out to bars and clubs to “celebrate” his newfound “freedom.”

The claimant is an avid sports fan and expects to soon start an unpaid job as a sports blogger.

The claimant recently sold his truck but has not purchased a new vehicle yet.

The claimant expects to have surgery in the next few weeks. He anticipates being fully recovered after about 3 months.

The claimant is planning a trip to Las Vegas in the next few months and a 10-day hiking trip later this year.
Facebook

Photos - Mobile Uploads

400 lbs 8 wks after surgery! Dedication to be the strongest!

Added March 27
Aging Baby Boomers Report Ominous Levels of Disability

National Health Interview Survey over the 10 year period from 1997-2007. They found a rising tide of disability. The activities that respondents cited most commonly as disabilities were:

- Stooping, bending, or kneeling
- Standing for 2 hours
- Walking a quarter mile
- Pushing or pulling a large object; and
- Climbing 10 steps.

Of medical conditions that respondents believed were responsible for their disabilities, they cited back or neck problems, and arthritis or rheumatism, most frequently.
HEAD
SHOULDERS
SHOULDERS
KNEES and TOES
Osteoarthritis

Osteoarthritis is defined by American College of Rheumatology as

“A heterogeneous group of conditions that lead to joint symptoms and signs which are associated with defective integrity of articular cartilage, in addition to related changes in the underlying bone at the joint margins.” The condition is associated with joint pain, swelling, and motion loss and is characterized by “focal areas of loss of articular cartilage within synovial joints, associated with hypertrophy of bone (osteophytes and subchondral bone sclerosis) and thickening of the capsule.”
Knee Osteoarthritis

- Osteoarthritis (OA), also known as degenerative joint disease or degenerative arthritis, is the most common form of arthritis.
- More than 20 million Americans have OA.
- It is a leading cause of disability in the US.
- It is the most common cause of long-term disability in persons older than 65.
- Prevalence increases with age.
- Functional limitations may include difficulty with prolonged standing or walking, stair climbing, and transfers.
- Co-morbidities such as depression, poor aerobic capacity and other chronic conditions confound disability.
Knee Osteoarthritis

• Genetics may be the principle determinant of OA.
• Mechanical factors may also play a role.
• Obesity is associated with OA.
• Knee OA may be related to the inordinate mechanical stresses associated with excess body weight and/or hormonal changes that accompany obesity.
• Excess weight predisposes a person to premature joint degeneration.
Knee Osteoarthritis and Meniscal Tears

- Increasing severity of osteoarthritis on radiographs is associated with increasing rate of meniscus tears.
- Meniscus tears and extrusions are strongly associated with progression of knee osteoarthritis as assessed by MRI.
- The finding of a meniscus tear on MRI does not necessarily mean that any injury has occurred, and meniscus tears can occur in the absence of any memorable injury.
Knee Osteoarthritis and Meniscal Tears

• People with meniscus tears do not always have pain, and a person with knee pain and a meniscus tear on MRI does not necessarily have pain as a result of the tear.

• “Degenerative tears” may occur with minimal trauma or they may occur without any history of trauma. Degenerative tears typically occur in the posterior horn of the meniscus.
Causation Analysis: Knee Osteoarthritis

• Medical or scientifically based causation requires a detailed analysis of whether the factor could have caused the condition.

• To opine that an injury caused OA—the traumatized knee should show significant arthritis while the contra-lateral uninjured knee is radiographically normal.
Causation Analysis: Knee Osteoarthritis

• To opine that pre-existing arthritis was aggravated, the involved knee should show significantly more advanced OA than the contra-lateral joint.

• If both the injured and contra-lateral knee have symmetric OA, the arthritis is probably primary (idiopathic) rather than secondary (post-traumatic).
“The difficulty in identifying the activities associated with the development of arthritis of the knee is controlling for known confounders such as age, body weight, previous trauma, prior meniscectomy/prior surgery, female gender, genetics, family history and job duration.”
In certain cases, let’s image both knees and/or both shoulders...
What is Normal?
Knee Case Studies

Search for Key Words

Predict Risk early

Look for Key Cost Drivers
Knee Comparison Case #1

50 year old male, 5’8”, 200 pounds reported that he turned to his right to move down an aisle when his LEFT knee “popped.”

Initial clinic—assertion of “possible fracture.”

At the time of initial interview, claimant verbalized need for a MRI *asap*. Wife heard yelling in the background, “you have the right to see a doctor and get treatment.”
Knee Comparison Case #1

MRI of the LEFT knee: complex degenerative tear of the medial meniscus; degenerative fraying of the lateral meniscus; chronic, complete disruption of the ACL; and mild to moderate 3 compartment chondromalacia.

MRI of the Right knee: uninjured, unaffected knee: degenerative tear of the posterior horn and body of the medial meniscus; chronic injury with complete disruption of the ACL; mild to moderate chondromalacia of all 3 knee compartments.

Orthopedic opinion: “no new injury”
Knee Comparison Case #2

48 year old male. Descending a ladder while holding a box. Box slipped and started to fall, in catching the box stepped down and twisted RIGHT knee. “I felt something pop.”

6’3”, weight 245, BMI>30

Of note—the claimant shared that he had been running 3-5 miles every day prior to claiming injury and he reportedly was running in marathons.
Knee Comparison Case #2

Uncooperative at the clinic. When asked about past history he said, “shot, stabbed, broken leg, and the usual military stuff.” He refused to answer most history questions. He reported that, “I’ve had a lot of surgeries.” He refused to answer specific questions about prior injuries on nurse case manager interview.
Knee Comparison Case #2

RIGHT Knee MRI: medial meniscus tear of the anterior horn and body with possible extension into the posterior horn, complex tear. Small tear of the lateral meniscus. Grade 3-4 chondromalacia of the patellofemoral articulation. Grade 2-3 chondromalacia of the lateral and medial compartments. Small effusion and popliteal cyst.
Knee Comparison Case #2

- **MRI of the left knee**: uninjured knee: showed chondromalacia of the patella, a tear of the posterior horn of the medial meniscus, and diffuse tendinosis.

**Orthopedic opinion**: “The MRI findings are symmetrical for the two knees as one would expect for pre-existing degenerative changes. The presence of a meniscus tear is not evidence of injury given that tears are present bilaterally.”
Knee Comparison Case #3

48 year old female, 5’7”, 360+ pound, 25 year employee - slipped and fell on RIGHT knee-the same knee which she had arthroscopic surgery on 10 years ago.

MRI of RIGHT knee: showed complex tearing and truncation involving the entire medial meniscus, moderately advanced cartilage loss in medial compartment, advanced cartilage loss in patellofemoral compartment, moderate cartilage loss in lateral compartment and osteophytes affecting all three compartments of the knee.
Knee Comparison Case #3

MRI of left knee: **uninvolved, (reportedly) asymptomatic**: showed complex tearing and truncation involving the entire medial meniscus, moderately advanced cartilage loss throughout the medial compartment, severe cartilage loss in the patellofemoral compartment, moderate to moderately advanced cartilage loss throughout the lateral compartment, and osteophytes affecting all 3 compartments.
Knee Comparison Case #3

Orthopedic opinion:

No objective evidence of any ACUTE injury to right knee as a result of incident at work.
MRI findings of both knees are remarkably symmetrical and reflect severe degenerative arthritis in both knees.
Knee Comparison Case #4

65 year old male, 4 month employee, seasonal hire, past history inclusive of firefighter, reported twisting his RIGHT knee and felt a “pop” while he was on a ladder.  
5’11” and 201lbs. BMI = 28 
MRI RIGHT knee showed chondromalacia of the patella, a tear of the posterior horn of the medial meniscus and a mild effusion. 
MRI of the left knee showed chondromalacia of the patella, a tear of the posterior horn of the medial meniscus, and a diffuse tendinosis.
Knee Comparison Case #4

Orthopedic opinion:
There is no objective evidence of any injury to the right knee as related to the event. The MRI findings are symmetrical for both knees. The presence of a meniscus tear is not evidence of injury necessarily as illustrated by the fact that the tears are present bilaterally.
Knee Comparison Case #5

47 year old male felt RIGHT knee “pop” while moving a display, pushing a Roto-Tier and stocking shelves. 5’10, 210 pounds. History of left knee surgery 27 years prior.

MRI of the RIGHT knee showed a complex tear of the posterior horn and body of the medial meniscus, questionable subtle tear of the anterior horn of the lateral meniscus, ganglion cyst present medially and laterally, abnormal signal in the posterior cruciate ligament, intact anterior cruciate ligament and possible previous tear of the lateral collateral ligament; small joint effusion seen.

MRI of the left knee had similar findings with identification of a Baker’s cyst and medial meniscal tear, described as horizontal oblique.
Knee Comparison Case #5

Orthopedic opinion:
Findings would have been the same had he not had the claim asserted.

The imaging changes are more consistent with pre-existence and age-appropriate changes of life rather than a nonspecific event.

In reasonable medical probability, the findings would have been the same on the MRIs had the claimant not gone to work that day.
Knee Comparison Case #6

59 year old female, part-time employee, 5’3, 228 pounds, reportedly slipped and fell on wet floor injuring the LEFT knee. Denied prior left knee injury, but INDEX identified 2 prior left leg injuries.

MRI of the LEFT knee: showed mild cartilage loss in all three compartments of the knee with abnormal signal in the posterior horn of the medial meniscus. Small to moderate sized oblique tears extending to the inferior articular margin with some mild blunting of the free edge.

MRI of the right knee: **uninvolved, uninjured**: showed mild cartilage loss in all three compartments of the knee with abnormal signal in the posterior horn of the medial meniscus. Small oblique tear extending to the undersurface with some blunting of the free edge.
Knee Comparison Case #6

Orthopedic opinion:

MRI reports for both knees are virtually identical.

Without talking to the claimant, a person who read both reports would not know which side allegedly had been injured.

If the claimant had sustained a significant injury to the left knee, it is reasonable to expect that the left knee MRI would look different from the right knee MRI. The fact that the MRI reports are virtually identical indicates that the meniscus tears, if real, are pre-existing and degenerative.
Shoulder Arthritis

• ACJ osteoarthritis frequently contributes to rotator cuff tears.

• Rotator cuff tendinopathy generally is multifactorial and tears usually result from a combination of intrinsic or extrinsic factors.

• Intrinsic factors include age related degeneration. The primary extrinsic factor is impingement.

• There is a high association between cuff tears and inferiorly projecting osteophytes.
Shoulder Arthritis

• Age (degeneration) and acromial morphology (impingement) are two of the factors involved in causing rotator cuff tears.

• The incidence of cuff defects is relatively rare before the age of 40 and begins to rise in the 50- to 60-year age group and continues to increase in the 70-year and over age group.

• Rotator cuff tears must to a certain extent be regarded as “normal” degenerative attrition, not necessarily causing pain and functional impairment.
Shoulder Arthritis

• Many cuff defects occur in 50- to 60-year-old individuals who have led sedentary lives without a history of injury or heavy use.

• 40 per cent of those with cuff defects have never done strenuous physical work (Neer, 1983)

• Cuff defects are frequently bilateral.

• Many heavy laborers never develop cuff defects.
Frozen Shoulders

- **Adhesive Capsulitis**: (Frozen Shoulder), is an idiopathic disease with 2 principal characteristics: pain and contracture.

- Shoulder pain is the third most common cause of musculoskeletal disability after low back pain and neck pain.

- There is an 11% prevalence of FS in individuals with diabetes. In Type I diabetics, the risk of developing FS in their lifetime is approximately 40%. FS is also associated with hyperthyroidism and hypertriglyceridemia.

- Patients often try to recall minor trauma associated with the onset of their shoulder symptoms, but, in most cases, the minor trauma simply makes the patient conscious of the insidious, underlying disease process.
What is normal?
Shoulder Case Studies

Search for Key Words

Predict Risk Early

Look for Key Cost Drivers
Shoulder Comparison Case #1

60 year old, 5’4” 200 pound female, retail sales associate reportedly picked up a cosmetic box by the flaps and felt a “pop” in her RIGHT shoulder.

MRI of the RIGHT shoulder showed a full thickness complete tear of the supraspinatus with tendinosis and degenerative joint disease. MRI of the left, uninvolved, shoulder showed full thickness complete tear of the left subscapularis, with degenerative joint disease.

Orthopedic Opinion:
“Both shoulders would have been exactly the same at the time of the imaging studies had the claimant not gone to work that day. The findings are age-appropriate.”
Shoulder Comparison Case #2

44 year old female, right hand dominant, diabetic reported experiencing RIGHT shoulder pain with lifting a mattress to change sheets.

MRI of the right shoulder: significant degenerative changes of the AC joint, subacromial and subdeltoid chronic bursitis, degenerative cysts of the glenoid, and rotator cuff disease with no full thickness tear.

MRI of the left, uninvolved, shoulder: same findings, but without the degenerative cysts of the glenoid.

Orthopedic opinion:
“The degenerative findings simply pre-existed serendipitously to the asserted complaint of discomfort.”
Shoulder Comparison Case #3

58 year old male reportedly fell after attempting to sit in a wheeled chair. He said that the chair rolled away from him and he fell onto his LEFT shoulder.

Initial examination was unremarkable clinically with no objective evidence of injury. Claimant has had 7 prior orthopedic surgeries, including carpal tunnel and low back surgery.
MRIs of both shoulders indicate bilateral degenerative changes with some tearing of the supraspinatus tendons along with tendinopathy, and degenerative changes of the AC joint.

Orthopedic Opinion:
“This is an invisible industrial injury claim. If this type of mechanical insult were to have credibility, then society would have to discontinue football, wrestling, gymnastics, tumbling and other creative activities.”
Shoulder Comparison Case #4

78 year old male sanding when the sander got jammed, later reported that his right arm and shoulder hurt when he went to pick anything up.
Claimant has diabetes, hypertension and hyperlipidemia.
Radiographs showed “mild degenerative change” of the acromioclavicular joint.
Shoulder Comparison Case #4

MRI of the **RIGHT** shoulder showed a large full thickness tear of the supraspinatus and infraspinatus tendons with retraction, a tear of the superior labrum, “degenerative changes”, osteoarthritis of the acromioclavicular joint with osteophytes and “very poor visualization of the long head of the biceps tendon”. The report describes “some degree of atrophy” in the supraspinatus and infraspinatus muscles.

MRI of the left, **uninvolved**, shoulder showed a full thickness tear of the supraspinatus tendon with retraction and “at least partial tearing of the infraspinatus tendon”. The long head of the biceps tendon was intact. There were “mild degenerative changes” and there was osteoarthritis of the acromioclavicular joint with osteophytes.

**Orthopedic Opinion:**
“Presence of bilateral full thickness rotator cuff tears confirms the fact that they are not related to trauma in this case. The MRI findings for both shoulders are remarkably similar. Without talking to the claimant, a person who read both reports would not know which shoulder allegedly had been injured.”
Shoulder Comparison Case #5

64 year old, 5’7”, 160 pound male while he was putting an alignment pad into place, he felt his RIGHT shoulder “pop.” He reported that he was reaching in front with his arms above his shoulders holding, pressing and turning.

MRI of the RIGHT shoulder showed degenerative disease with a tear of the posterior supraspinatus and anterior infraspinatus with significant acromioclavicular joint arthrosis and multiple spurs. An undersurface spur is seen along the inferior margin of the acromion process, which could contribute to an impingement syndrome.
Shoulder Comparison Case #5

MRI of the left, uninvolved, shoulder showed a full thickness tear of the supraspinatus at its insertion with some subdeltoid and subacromial bursitis. There is also hypertrophy of the acromioclavicular joint with degenerative changes and osteophyte formation moderately impinging on the rotator cuff.

Orthopedic Opinion:
“The claimant has age appropriate degenerative changes of the bony, ligamentous and tendinous structures of both shoulders. MRI findings today would be the same in both shoulders had the claimant not gone to work.”
Work Ability/Disability

Risk
Capacity
Tolerance
Work Ability/Disability

• Risk Assessment: “worst case scenario”
• Capacity \(\rightarrow\) current ability
• Tolerance
  Individual risk/reward
  Not scientifically measurable
  Not predictable by objective findings
Physician Behavior

Question: Can this person do this job?

Choices:
1. Play secretary
2. Try to measure tolerance
3. Gut reaction → educated guess
4. Abstain
WORK is a treatment modality

Is Work Good For Your Health and Well-Being? 2006
Gordon Waddell, CBE DSc MD FRCS
A. Kim Burton, PhD DO EurErg
WORK is a treatment modality

Strong Evidence

Work meets important psychosocial needs
Work is therapeutic
Work promotes recovery
Being at work/staying at work improves outcomes
Arthritis and Activity

Arthritis Foundation Exercise Program
Instructor Training Workshop
What did we learn?
Thank You...