

# ACOEM Practice Guidelines

## Clinical/PICO Questions

### ANKLE AND FOOT

#### Achilles Tendinopathy

##### *Special Studies, Diagnostic and Treatment Considerations*

- What evidence supports the use of X-ray for the diagnosis of Achilles tendon disorders, retrocalcaneal bursitis, blunt trauma, or suspected fracture?
- What evidence supports the use of ultrasound for Achilles tendinopathy?
- What evidence supports the use of MRI for Achilles tendinopathy?
- What evidence supports the use of Computerized Tomography for Achilles tendinopathy?

##### *INITIAL CARE*

##### *Medications*

- Are NSAIDs and Acetaminophen an effective treatment for acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of glucocorticosteroids as a treatment for acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of opioids as a treatment for acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of vitamins (including pyridoxine) as a treatment for Achilles tendinopathy?
- What evidence supports the use of topical NSAIDs for the treatment of acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of lidocaine patches to treat acute, subacute, chronic, or post-operative Achilles tendinopathy?
- Are glyceryl trinitrate patches an effective treatment for acute, subacute, chronic, or post-operative Achilles tendinopathy?

##### *Devices/Physical Methods*

- What evidence supports the use of exercise as a treatment for acute, subacute, chronic or post-operative Achilles tendinopathy?
- What evidence supports the use of cryotherapy or heat therapy for treatment of acute, subacute, chronic or post-operative Achilles tendinopathy?
- What evidence supports the use of night splinting for the treatment of acute, subacute, chronic or post-operative Achilles tendinopathy?
- Are magnets an effective treatment for Achilles tendinopathy?
- Are orthotic devices an effective treatment for acute, subacute, chronic, or post-operative Achilles tendinopathy?
- Is ESWT an effective treatment for chronic mid-portion Achilles tendinopathy? For acute, subacute, or post-operative Achilles tendinopathy?
- What evidence supports the use of acupuncture for the treatment of Achilles tendinopathy?
- What evidence supports the use of dry needling for the treatment of acute, subacute, or chronic Achilles tendinopathy?

- What evidence supports the use of massage and tendon mobilization for the treatment of acute, subacute, or chronic Achilles tendinopathy?
- What evidence supports the use of ultrasound for the treatment of acute, subacute, or chronic Achilles tendinopathy?
- What evidence supports the use of iontophoresis with glucocorticosteroid for the treatment of acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of iontophoresis with NSAIDs for the treatment of acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of phonophoresis for the treatment of acute, subacute, chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of low-level laser therapy for the treatment of acute, subacute, select chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of corticosteroid injections for the treatment of acute, subacute, select chronic, or post-operative Achilles tendinopathy?
- What evidence supports the use of platelet rich plasma injections for the treatment of Achilles tendinopathy?
- What evidence supports the use of glycosaminoglycan polysulfate local injections (GAGPS) for the treatment of Achilles tendinopathy?
- What evidence supports the use of heparin injections for the treatment of Achilles tendinopathy?
- What evidence supports the use of prolotherapy or polidocanol injections for the treatment of Achilles tendinopathy?
- What evidence supports the use of Apoprotinin Injections for the treatment of acute, subacute, or chronic Achilles tendinopathy?
- What evidence supports the use of surgery for the treatment of Achilles tendinopathy without rupture?
- What evidence supports the use of high-volume image-guided injections for the treatment of Achilles tendinopathy?

## **Achilles Tendon Rupture**

### ***Special Studies, Diagnostic and Treatment Considerations***

- What evidence supports the use of X-rays for the diagnosis of Achilles rupture?
- What evidence supports the use of Ultrasound for the diagnosis of Achilles rupture?
- Is MRI an effective diagnostic tool for the diagnosis of Achilles rupture?

### ***INITIAL CARE***

#### ***Medications***

- What evidence supports the use of acetaminophen or NSAIDs for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of opioids for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of cryotherapy/heat for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of surgery for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?

- What evidence supports the use of non-operative management with functional splinting for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of early weight bearing in non-operative treatment for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of early weight bearing in non-operative treatment for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence supports the use of open & percutaneous operative approaches for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?

### **Surgery**

- What evidence supports the use of augmented surgical repair for the treatment of acute, subacute, chronic or post-operative pain from Achilles rupture?
- What evidence suggests the use of early weight bearing for post-operative rehabilitation of Achilles tendon repair?
- What evidence supports the use of functional bracing for post-operative rehabilitation of Achilles tendon repair?
- What evidence supports the use of exercise and education for Achilles tendon rupture rehabilitation?
- What evidence supports the use of DVT prophylaxis for Achilles tendon rupture repair?
- What evidence supports the use of transcutaneous electrical nerve stimulation (tens) for Achilles tendiopathy?

### **Initial Care**

- What evidence supports the use of walking boots, casts, splints, and braces for acute, subacute, or chronic ankle compartment tenosynovitis?
- What evidence supports the use of NSAIDs for acute, subacute, or chronic ankle compartment tenosynovitis?
- What evidence supports the use of exercise for acute, subacute, or chronic ankle compartment tenosynovitis?
- What evidence supports the use of iontophoresis for acute, subacute, or chronic ankle compartment tenosynovitis?
- What evidence supports the use of other non-operative interventions such as manipulation & mobilization, massage, or acupuncture for the treatment of acute, subacute, or chronic ankle tenosynovitis?
- What evidence supports the use of glucocorticosteroid injections for acute, subacute, or chronic ankle tenosynovitis?

### **Surgery**

- What evidence supports the use of surgical release for subacute or chronic ankle tenosynovitis?

### **Plantar Fasciitis**

#### ***Special Studies, Diagnostic and Treatment Considerations***

- What evidence supports the use of x-ray as a diagnostic tool for plantar fasciitis?
- What evidence supports the use of MRI as a diagnostic tool for plantar fasciitis?
- What evidence supports the use of SPECT-CT as a diagnostic tool for plantar fasciitis?
- What evidence supports the use of Ultrasound as a diagnostic tool for plantar fasciitis?

## INITIAL CARE

- What evidence supports the use of education as a non-operative treatment for plantar fascia disorders?
- What evidence supports the use of NSAIDs and Acetaminophen for acute, subacute, chronic, or post-operative plantar fasciitis pain?
- What evidence supports the use of Infliximab (remicade) for the treatment of acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of opioids for acute, subacute, chronic, or post-operative plantar fasciitis pain?
- What evidence supports the use of oral or intramuscular glucocorticosteroids for acute, subacute, or chronic plantar heel pain?
- What evidence supports the use of vitamins for treatment or prevention of plantar fasciitis?
- What evidence supports the use of lidocaine patches for the treatment of acute, subacute, chronic or post-operative plantar fasciitis?
- What evidence supports the use of Topical NSAIDs for the treatment of acute, subacute, chronic or post-operative plantar fasciitis?
- What evidence supports the use of wheat grass cream for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of casting for chronic plantar fasciitis?
- What evidence supports the use of cryotherapy and heat for acute, subacute, chronic, or post-operative plantar heel pain?
- What evidence supports the use of magnets for acute, subacute, or chronic plantar heel pain?
- What evidence supports the use of night splints for plantar heel pain?
- What evidence supports the use of orthotic devices for acute, subacute, or chronic plantar heel pain?
- Are custom orthoses for acute, subacute, or chronic plantar fasciitis effective?
- Are orthoses effective for prevention of plantar fasciitis or lower extremity disorders?
- Are shock absorbing fitted shoes for prevention of plantar fasciitis?
- What evidence supports the use of stretching exercises for plantar fasciitis?
- What evidence supports the use of heel taping for acute, subacute, or chronic plantar fasciitis or heel pain?
- What evidence supports the use of acupuncture for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of low frequency electrical stimulation for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of extracorporeal shockwave therapy for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of ultrasound or fluoroscopy guidance for shockwave therapy for plantar fasciitis?
- What evidence supports the use of local anesthesia with high shockwave therapy for plantar fasciitis?
- What evidence supports the use of local anesthesia with low or medium shockwave therapy for plantar fasciitis?
- What evidence supports the use of radial extracorporeal shockwave therapy for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of iontophoresis with glucocorticosteroid or acetic acid for acute, subacute, or chronic plantar fasciitis?

- What evidence supports the use of low-level laser therapy for acute, subacute, or chronic plantar fasciitis?
- What evidence supports the use of manipulation for acute, subacute, chronic, or post-operative plantar heel pain?
- What evidence supports the use of massage and soft tissue mobilization for acute, subacute, chronic, or post-operative plantar fasciitis?
- What evidence supports the use of phonophoresis for acute, subacute, chronic, or post-operative plantar fasciitis?
- What evidence supports the use of ultrasound for acute, subacute, chronic, or post-operative plantar fasciitis?
- What evidence supports the use of low-dose radiation (radiotherapy) for chronic plantar heel pain?
- What evidence supports the use of botulinum toxin A injections for acute, subacute or chronic plantar fasciitis?
- What evidence supports the use of glucocorticosteroid injections for acute, subacute or chronic plantar fasciitis?
- What evidence supports the use of steroid injections guided by ultrasound or scintigraphy?
- What evidence supports the use of hyperosmolar dextrose injections for plantar fasciitis?
- What evidence supports the use of platelet rich plasma injections for plantar fasciitis?
- What evidence supports the use of cryosurgery for acute, subacute, or chronic plantar heel pain?
- What evidence supports the use of intracorporeal pneumatic shock therapy (IPST) for select chronic plantar fasciitis?
- What evidence supports the use of percutaneous calcaneus fenestration for chronic plantar heel pain?
- What evidence supports the use of radiofrequency microtenotomy for chronic plantar fasciitis?

### ***Surgical Considerations***

- What evidence supports the use of surgery for select chronic recalcitrant plantar fasciitis?
- What evidence supports the use of surgery for acute or subacute plantar fasciitis?

### **Foot Ulceration**

#### ***Diagnostic Studies***

- What evidence supports the use of x-rays to diagnose foot ulcers?

#### **Initial Care**

- What evidence supports the use of patient education for diabetic foot complications?
- What evidence supports the use of infrared temperature monitoring for diabetic foot complications?
- What evidence supports the use of wound dressing for management of lower extremity ulcers?

#### ***Physical Modalities***

- What evidence supports the use of localized mechanical compression/pressure?
- What evidence supports the use of negative pressure therapy (vacuum devices)?

- What evidence supports the use of total contact casting for foot ulcers?
- What evidence supports the use of a foot waffle support brace for select patients with foot ulcers?
- What evidence supports the use of becaplermin (regranex) for select non-healing diabetic neuropathic ulcers?
- What evidence supports the use of autologous-derived growth factors for select non-healing diabetic neuropathic ulcers?
- What evidence supports the use of topical nerve growth factors for select non-healing diabetic neuropathic ulcers?
- What evidence supports the use of topical basic fibroblast growth factors for select non-healing diabetic neuropathic ulcers?
- What evidence supports the use of granulocyte colony-stimulating factor for treating particularly challenging diabetic foot ulcers?
- What evidence supports the use of prostacyclin analogues (Iloprost) for diabetic ulcers?
- What evidence supports the use of low molecular weight heparins for diabetic foot ulcers?
- What evidence supports the use of complementary and alternative medications for diabetic foot ulcers?
- What evidence supports the use of hyperbaric oxygen for diabetic foot ulcers?
- What evidence supports the use of extracorporeal shock wave therapy for diabetic foot ulcers?
- What evidence supports the use of tissue-engineered skin grafts for non-healing diabetic ulcers?
- What evidence supports the use of sheets of cultured allogeneic keratinocytes for non-healing diabetic ulcers?

## **Charcot Joint (Neurogenic Arthropathy)**

### **Diagnostic testing**

- What evidence supports the use of x-rays as a diagnostic tool for charcot joint?
- What evidence supports the use of MRI as a diagnostic tool for charcot joint?

### **Initial Care**

- What evidence supports the use of medical treatment addressing the underlying neuropathy for charcot joint?
- What evidence supports the use of gait training by a therapist for charcot joint?
- What evidence supports the use of splints, walking braces, orthoses and casts for charcot joint?
- What evidence supports the use of Acetaminophen and/or NSAIDs for charcot joint?

### **Surgery**

- What evidence supports the use of ostectomy for charcot joint?
- What evidence supports the use of open reduction internal fixation for charcot joint?
- What evidence supports the use of arthroplasty for charcot joint?

## **Paronychia**

### **Initial Care**

- What evidence supports the use incision in drainage for paronychia?
- What evidence supports the use of antibiotics for paronychia?

- What evidence supports the use of warm compresses in the acute phase of paronychia?
- What evidence supports the use of topical antibiotics for paronychia?
- What evidence supports the use NSAIDs/Acetaminophen for paronychia?
- What evidence supports the use surgical management of paronychia?
- What evidence supports the use of topical and systemic antifungals as treatment for paronychia?
- What evidence supports the use glucocorticosteroids as a treatment for paronychia?
- What evidence supports the combination of antifungal and glucocorticosteroid creams as a treatment for paronychia?
- What evidence supports that tacrolimus 0.1% ointment is superior to steroids in the treatment of paronychia?
- What evidence supports the use of topical antibiotics and systemic antibiotics for the treatment of paronychia?

## **Foot Drop**

### *Physical Modalities*

- What evidence supports the use of ankle-foot orthotics for the treatment of foot drop?
- What evidence supports the use of taping for the treatment of foot drop?

## **Tarsal Tunnel Syndrome (TTS)**

### *Special Studies, Diagnostic and Treatment Considerations*

- What evidence supports the use of NCS for diagnosis and pre-operative assessment of TTS patients?
- What evidence supports the use of NCS for initial evaluation of TTS patients?
- What evidence supports the use of EMG for initial evaluation, diagnosis or pre-operative assessment of TTS?
- What evidence supports the use of MRI for diagnosis of TTS?
- What evidence supports the routine use of MRI to diagnose TTS?
- What evidence supports the use of ultrasound as an aid to NCS to diagnose TTS?
- What evidence supports the routine use of ultrasound for the diagnosis of TTS?

### **Initial Care**

- What evidence supports rest for treatment of TTS?
- What evidence supports self-application of ice or heat for treatment of TTS?
- What evidence supports taping for treatment of TTS?

### **Medications**

- What evidence supports non-steroidal anti-inflammatory drugs (NSAIDs) and acetaminophen for TTS?
- What evidence supports the use of oral systemic glucocorticosteroids for treatment of TTS?
- What evidence supports the use of diuretics for routine treatment of TTS?
- What evidence supports the use of opioids for pain treatment of TTS in select patients?
- What evidence supports the routine use of opioids for treatment of pain from TTS?
- What evidence supports the use of other vitamins for the treatment of TTS?
- What evidence supports the use of pyridoxine for treatment of TTS?
- What evidence supports the use of lidocaine patches for treatment of TTS?

### ***Devices/Physical Methods***

- What evidence supports the use of exercises as treatment of TTS?
- What evidence supports the use of nocturnal splints for treatment of TTS?
- What evidence supports the use of orthotics for treatment of TTS?
- What evidence supports the use of acupuncture for treatment of TTS?
- What evidence supports the use of manipulation and mobilization of the distal lower extremity for treatment of TTS?
- What evidence supports the use of ultrasound for treatment of TTS?
- What evidence supports the use of iontophoresis for treatment of TTS?
- What evidence supports the use of phonophoresis for treatment of TTS?
- What evidence supports the use of glucocorticosteroid injections for TTS?
- What evidence supports the use of botulinum injections for treatment of TTS?

### ***Surgical Considerations***

- What evidence supports surgical release for space occupying lesion?

### ***Workplace Intervention***

- What evidence supports work restrictions for treatment of TTS?

### **RETURN-TO-WORK PROGRAMS**

- What evidence supports return-to-work programs for treatment of TTS?

### **Ankle Sprain**

#### ***Special Studies, Diagnostic and Treatment Considerations***

- What evidence supports the routine use of arthrography in diagnosis of acute, subacute, or chronic ankle sprain?
- What evidence supports the routine use of X-ray in assessment of acute ankle sprain?
- What evidence supports X-ray in assessment of acute ankle sprain when a fracture is suspected?
- What evidence supports routine stress X-ray for evaluation of ligament rupture in acute, subacute, or chronic ankle sprain?
- What evidence supports CT for assessment of acute, subacute, or chronic ankle sprain?
- What evidence supports MRA for assessment of acute, subacute, or chronic ankle sprain?
- What evidence supports MRI for assessment of acute, subacute, or chronic ankle sprain?
- What evidence supports bone scans for assessment of acute, subacute, or chronic ankle sprain?
- What evidence supports ultrasound for diagnosis of acute, subacute, or chronic ankle sprain?

#### ***INITIAL CARE***

- What evidence supports education for effects of acute, subacute, chronic, or post-operative ankle sprain?

#### ***Medications***

- What evidence supports acetaminophen for acute, subacute, or chronic ankle sprain?
- What evidence supports NSAIDs for acute, subacute, chronic or post-operative ankle sprain?
- What evidence supports opioids for select acute or post-operative ankle sprain?
- What evidence supports proteolytic enzymes for acute, subacute, or chronic ankle sprain?



- What evidence supports streptokinase/streptodomas preparations for acute, subacute, or chronic ankle?
- What evidence supports systemic glucocorticosteroids for acute, subacute, or chronic ankle sprain?
- What evidence supports vitamin therapy for treatment of ankle sprains?
- What evidence supports high-dose vitamin therapy for treatment of ankle sprains?
- What evidence supports benzydamine for ankle sprains?
- What evidence supports cold gel for ankle sprain?
- What evidence supports comfrey extract for ankle sprains?
- What evidence supports lidocaine patches for acute, subacute, or chronic ankle sprain?
- What evidence supports movelat for acute, subacute, or chronic ankle sprain?
- What evidence supports topical NSAIDs for acute, subacute, chronic, or post-operative ankle sprain?

### ***Devices/Physical Methods***

- What evidence supports contrast bath therapy for acute ankle sprain?
- What evidence supports early mobilization for acute ankle sprain?
- What evidence supports cast immobilization for acute mild to moderate ankle sprain?
- What evidence supports cast immobilization for severe ankle sprain?
- What evidence supports heat for acute ankle sprain?
- What evidence supports cast immobilization for acute mild to moderate ankle sprain?
- What evidence supports cast immobilization for severe ankle sprain?
- What evidence supports immediate non-weight bearing (Rest) for acute ankle sprain?
- What evidence supports cryotherapy for acute ankle sprain?
- What evidence supports compression therapy for acute ankle sprain?
- What evidence supports tubigrip for acute ankle sprain?
- What evidence supports tape, elastic wrap or tubular elastic for acute ankle sprain?
- What evidence supports ankle brace (orthosis) for acute ankle sprain?
- What evidence supports walking boot for acute ankle sprains?
- What evidence supports intermittent elevation for acute ankle sprain?
- What evidence supports high-voltage pulsed current for acute ankle sprain?
- What evidence supports magnets for acute, subacute, or chronic ankle sprain?
- What evidence supports the use of diathermy for acute, subacute, or chronic ankle sprain?
- What evidence supports the use of low frequency electrical stimulation for acute, subacute, or chronic ankle sprain?
- What evidence supports high-voltage pulsed electrical stimulation for acute, subacute, or chronic ankle sprain?
- What evidence supports iontophoresis for acute, subacute, or chronic ankle sprain?
- What evidence supports low-level laser therapy for acute, subacute, or chronic ankle sprain?
- What evidence supports phonophoresis for acute, subacute, or chronic ankle sprain?
- What evidence supports therapeutic ultrasound for acute, subacute, or chronic ankle sprain?
- What evidence supports acupuncture for acute, subacute, or chronic ankle sprain?
- What evidence supports hyperbaric oxygen therapy for acute, subacute or chronic ankle sprain?
- What evidence supports manipulation or mobilization for acute or subacute ankle sprain?
- What evidence supports manipulation or mobilization for chronic recurrent ankle sprain?

- What evidence supports ankle support (brace, tape) for prevention of ankle injury?
- What evidence supports balance/proprioception training for prevention of ankle injury?
- What evidence supports foot orthotics for prevention of ankle injury?
- What evidence supports special shoes for prevention of ankle sprain or recurrent ankle sprain?
- What evidence supports stretching/strengthening exercises for prevention of ankle injury?
- What evidence supports physical or occupational therapy for acute, subacute, or chronic ankle sprain?
- What evidence supports physical or occupational therapy for chronic ankle instability (CAI)?
- What evidence supports autologous blood injection for acute, subacute, or chronic ankle sprain?
- What evidence supports glucocorticosteroid injections for acute, subacute, or chronic ankle sprain?
- What evidence supports hyaluronic acid injections for acute, subacute, or chronic ankle sprain?
- What evidence supports platelet rich plasma injections for acute, subacute, or chronic ankle sprain?

### ***Surgical Considerations***

- What evidence supports surgery for treatment of acute or subacute ankle ligament tear?
- What evidence supports surgery for treatment of chronic ankle instability (CAI)?
- What evidence supports post-operative management, and which forms of post-operative management are most effective for ankle instability?

### **Mid-tarsus Pain and Sprains**

- What evidence supports weight-bearing x-rays for diagnosis of mid-tarsus pain and sprains?
- What evidence supports CT scans in certain cases and select pre-operative cases of mid-tarsus pain and sprains?
- What evidence supports immobilization in a short-leg walking boot or cast for 4-6 weeks for mild to moderate cases without diastasis?
- What evidence supports surgery for treatment of mid-tarsus pain and sprains?

### **Morton's Neuroma**

#### ***Physical Modalities***

- What evidence supports changes in footwear for treatment of Morton's Neuroma?
- What evidence supports orthotics for treatment of Morton's Neuroma?
- What evidence supports metatarsal pads for treatment of Morton's Neuroma?
- What evidence supports lidocaine for treatment of Morton's Neuroma?
- What evidence supports the use of manipulation or mobilization of the distal lower extremity for treatment of Morton's Neuroma?
- What evidence supports extracorporeal shockwave therapy for Morton's Neuroma?
- What evidence supports glucocorticosteroid injections for Morton's Neuroma?
- What evidence supports sclerosant injections for Morton's Neuroma?
- What evidence supports nerve ablation for Morton's Neuroma?
- What evidence supports surgical excision for Morton's Neuroma?

## **Bunions/Hallux Valgus**

- What evidence supports orthotics for treatment of Hallux Valgus?
- What evidence supports low intensity ultrasound for post-operative osteotomy bunion treatment?
- What evidence supports manipulation or mobilization for treatment of Hallux Valgus?

### *Surgical Considerations*

- What evidence supports surgery for hallux valgus?

## **Hammer Toe**

- What evidence supports the use of non-operative treatments (including footwear modifications to improve toe box/room, padding, corticosteroid injections, and orthoses) as treatment for hammer toe?
- What evidence supports surgery as a treatment for hammer toe?

## **Ankle and Foot Fractures**

### *Special Studies and Diagnostic and Treatment Considerations*

- What evidence supports X-rays for suspected acute ankle fractures?
- What evidence supports MRI for distal lower extremity and ankle fractures?
- What evidence supports CT for diagnosis and classification of ankle fractures?
- What evidence supports ultrasound imaging for diagnosing ankle fracture?

### *Medications*

- What evidence supports pre-operative antibiotic prophylaxis for ankle fractures?
- What evidence supports the use of nasal spray calcitonin for post-fracture osteopenia?
- What evidence supports the use of NSAIDs and acetaminophen for acute ankle fracture analgesia?
- What evidence supports the limited use of opioids for acute and post-operative pain management of ankle and foot fractures?
- What evidence supports tetanus immunization status for open fractures?
- What evidence supports analgesia for non-operative reduction ankle fractures?

### *Fracture Care*

- What evidence supports immobilization for non-displaced ankle fractures?
- What evidence supports immobilization and reduction for closed displaced ankle fractures?
- What evidence supports operative fixation for closed displaced ankle fractures?
- What evidence supports cast immobilization for tibial shaft fractures (closed, diaphyseal)?
- What evidence supports operative fixation for distal tibial extra-articular fractures?
- What evidence supports cast immobilization for distal tibial extra-articular fractures?
- What evidence supports non-operative management of tibial plafond and pilon fractures?
- What evidence supports operative management of tibial plafond and pilon fractures?
- What evidence supports operative fixation for syndesmotic ruptures?
- What evidence supports non-operative management of syndesmotic injuries?
- What evidence supports the operative fixation for displaced distal fibula fractures?
- What evidence supports the use of arthroscopy assisted ORIF for distal fibular fractures?

- What evidence supports the use of deltoid ligament repair concurrent with ORIF for unstable ankle fractures?
- What evidence supports the use of thigh tourniquet for ankle surgery?
- What evidence supports operative procedures and fixators for ankle & foot fractures?
- What evidence supports post-operative care dressing for ankle surgery?
- What evidence supports early mobilization for ankle fractures?
- What evidence supports early post-operative weight-bearing for ankle fractures?
- What evidence supports electrical stimulation for prevention of muscle atrophy?
- What evidence supports physical or occupational therapy for patients with functional debilities after cast removal?
- What evidence supports manual therapy as part of a post-ankle fracture rehabilitation program?
- What evidence supports passive stretching for contractures after immobilization of ankle fractures?
- What evidence supports hyperbaric oxygen for the management of ankle or foot fractures?
- What evidence supports hypnosis to promote healing of ankle and foot fractures?

## **Hindfoot Fractures (Calcaneus, Talus)**

### ***Special Studies, Diagnostic and Treatment Considerations***

- What evidence supports X-ray for the diagnosis of suspected acute hindfoot fractures?
- What evidence supports MRI for the diagnosis suspected acute hindfoot fractures?
- What evidence supports MRI for follow-up evaluation of non-acute calcaneus fracture?
- What evidence supports bone scanning for calcaneus fracture?
- What evidence supports CT for diagnosis and classification of hindfoot fractures?

### ***Initial Care***

- What evidence supports non-operative management of non-displaced talar fractures?
- What evidence supports operative management of displaced talar fractures?
- What evidence supports non-operative management of osteochondral lesions of the talus?
- What evidence supports operative intervention for osteochondral lesions of the talus?
- What evidence supports cast immobilization for select calcaneus fractures?
- What evidence supports operative management for select calcaneus fractures?
- What evidence supports use of pneumatic compression device for treatment of calcaneus fractures?
- What evidence supports use of diathermy for management of edema associated with calcaneus fracture?
- What evidence supports treatment of cancellous bone defect with displaced intra-articular calcaneus fractures?

## **Forefoot and Midfoot Fractures (Tarsal, Metatarsal, Phalanx)**

### ***Special Studies and Diagnostic and Treatment Considerations***

- What evidence supports x-ray for suspected acute forefoot or midfoot fractures?
- What evidence supports MRI for suspected acute forefoot and midfoot fractures?
- What evidence supports bone scanning for forefoot and midfoot fractures?
- What evidence supports CT for diagnosis and classification of forefoot and midfoot fractures?

### ***Medications***

- What evidence supports NSAIDs or acetaminophen for phalangeal or metatarsal fractures?

### ***Immobilization and Surgery***

- What evidence supports non-operative management for non-displaced tarsal-metatarsal injury (Lisfranc)?
- What evidence supports operative management for displaced tarsal-metatarsal injury (Lisfranc)?
- What evidence supports non-operative management for non-displaced metatarsal fractures?
- What evidence supports operative management for displaced metatarsal shaft fractures?
- What evidence supports non-operative management for proximal fifth metatarsal fractures?
- What evidence supports operative management for displaced metatarsal shaft fractures?
- What evidence supports immobilization for distal, middle, or proximal phalanx fractures?
- What evidence supports operative management for distal, middle, or proximal phalanx fractures?
- What evidence supports non-operative management for lower extremity stress fractures?
- What evidence supports operative management for lower extremity stress fractures?

# **LOW BACK**

## **Special Studies, Diagnostic and Treatment Considerations**

- What evidence supports the use of Functional Capacity Evaluations for evaluating Chronic Stable Low Back Pain or Post-Operative Recovery?
- What evidence supports the use of Functional Capacity Evaluations for evaluation of Acute Low Back Pain, Acute or Subacute Radicular Syndromes, or Post-Operative Back Pain?
- What evidence supports the use of X-ray for evaluation of Acute Non-specific Low Back Pain or Subacute or Chronic Low Back Pain or Spondylolisthesis?
- What evidence supports the use of MRI for diagnosing Red Flag Conditions, Radicular Syndrome, Subacute, and Chronic Radicular Syndromes?
- Is Standing or Weight-bearing MRI a viable diagnostic option for Back or Radicular Pain Syndrome Conditions?
- What evidence supports the use of Routine CT for diagnosing Acute, Subacute, or Chronic Nonspecific Low Back Pain or Radicular Pain Syndromes?
- What evidence warrants the use of Myelography in Uncommon Situations?
- Is Bone Scanning a viable diagnostic test for Low Back Pain?
- What evidence supports the use of SPECT for evaluating Low Back Pain and Related Disorders?
- Is EMG a viable diagnostic test for patients with or without Leg Symptoms?
- Is Surface EMG a viable option for diagnosing Low Back Pain?
- What evidence supports the use of Ultrasound for Diagnosing Low Back Pain?
- What evidence supports the use of Thermography for Diagnosing Acute, Subacute, or Chronic Low Back Pain or Radicular Pain?
- Is Fluoroscopy a viable diagnostic tool for evaluating Acute, Subacute, or Chronic Low Back Pain?
- What evidence supports the use of Videofluoroscopy for the Assessment of Acute, Subacute, or Chronic Low Back Pain?
- Is Discography an effective tool for assessing Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes?
- Is MRI Discography an effective tool for evaluating Herniated Discs?
- What evidence supports the use of Myelography for Diagnosing Acute, Subacute, or Chronic Low Back Pain, Spinal Stenosis, Radicular Pain Syndromes, or Post-surgical Back Pain?

## **Initial Care**

- What evidence supports the use of Bed Rest for treatment of Acute, Subacute, Chronic, Radicular Low Back Pain, or Stable/unstable Spinal Fractures?
- Does Sitting Posture act as an effective treatment option for Acute, Subacute or Chronic Low Back Pain, Radicular Pain or Post-operative Pain?
- Does Sleep Posture Adjustment act as an effective treatment option for Acute, Subacute or Chronic Low Back Pain?
- Are Mattresses or other sleeping surfaces an effective option for treatment of Acute, Subacute, or Chronic Low Back Pain?

## **Exercises**

- What evidence supports the use of Exercise Prescriptions for Acute, Subacute, Chronic, Post-operative or Radicular Low Back Pain?

- What evidence supports the use of Aerobic Exercise for Treatment of Acute or Subacute Low Back Pain, Radicular Low Back Pain, Chronic Low Back Pain, Post-operative Low Back Pain?
- What evidence supports the use of Directional Exercises for Treatment of Acute, Subacute, Chronic, or Radicular Low Back Pain?
- Is Slump Stretching a reliable treatment option for Acute, Subacute, or Chronic Low Back Pain?
- Are Stretching Exercises a viable option for Prevention of Low Back Pain or Treatment of Chronic Low Back Pain?
- What evidence supports the use of Strengthening Exercises for Acute (Late Recovery), Subacute, Chronic, or Post-Operative Low Back Pain?
- Are Abdominal Strengthening Exercises an effective option for Treatment or Prevention of Low Back Pain?
- What evidence supports the use of Aquatic Therapy for Select Patients with Subacute or Chronic Low Back Pain? All other patients with Subacute or Chronic Low Back Pain?
- Are Lumbar Extension Machines an effective treatment option for Acute, Subacute, or Chronic Low Back Pain or Any Radicular Pain Syndrome?
- What evidence supports the use of Tai Chi and/or Yoga for treatment of Chronic Low Back Pain, Acute or Subacute Low Back Pain?

## **General Treatment Approach**

### **Medications**

- What evidence supports the use of NSAIDs for Treatment of Acute, Subacute, Chronic, Radicular, or Post-operative Low Back Pain?
- Are NSAIDs a viable treatment option for Patients at Risk for GI Adverse Effects or Cardiovascular Adverse Effect?
- Is Acetaminophen/Aspirin an effective treatment option for Patients at Risk for Cardiovascular Events or Treatment of Low Back Pain?
- What evidence supports the use of Antibiotics for treatment of Chronic Low Back Pain with Modic I Changes, Acute, Subacute, and Other Chronic or Radicular Low Back Pain?
- What evidence supports the use of Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs) aka “Dual Action Agents,” and Tricyclic Antidepressants (TCAs) for treatment of Acute, Subacute, and Chronic or Radicular Low Back Pain?
- What evidence supports the use of Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs) aka “Dual Action Agents,” and Tricyclic Antidepressants (TCAs) for treatment of Acute, Subacute, Post-operative, Radicular Low Back Pain?
- Are SSRIs an effective treatment option for Acute, Subacute, Post-operative, Radicular and Chronic Low Back Pain?
- What evidence supports the use of Anti-convulsants for Peri-operative Pain Management, Acute, Subacute, or Chronic Low Back Pain, Radicular Pain Syndromes?
- Is Gabapentin a viable treatment option for Severe Neurogenic Claudication?
- Are Bisphosphonates an effective treatment option for Chronic Low Back Pain?
- What evidence supports the use of Calcitonin for treatment of Chronic Low Back Pain?
- Are Oral and IV Colchicine effective treatment options for Acute, Subacute, or Chronic Low Back Pain?
- Is Thiocolchicoside a viable treatment option for Acute, Subacute, or Chronic Low Back Pain?

- What evidence supports the use of Ketamine for treatment of Chronic Low Back Pain?
- What evidence supports the use of Ketanserin for treatment of Chronic Low Back Pain?
- What evidence supports the use of Lidocaine Patches for treatment of Chronic Low Back Pain, Acute, Subacute, Radicular, or Post-operative Low Back Pain?
- Are NMDA Receptor/Antagonists an effective treatment option for Chronic Low Back Pain?
- What evidence supports the use of Opioids for Treatment of Non-Severe Acute Pain, Severe Acute Pain, Subacute or Chronic Severe Pain, Subacute and Chronic Non-malignant Pain, and Post-operative Pain?
- What evidence supports the use of Muscle Relaxants for treatment of Mild to Moderate Acute, Subacute, or Chronic Low Back Pain?
- What evidence supports the use of Muscle Relaxants for Moderate to Severe Acute Low Back Pain, Acute Radicular Pain, Acute Exacerbations of Chronic Pain, or Post-surgical Use?
- Are Systemic Glucocorticosteroids a viable treatment option for Acute or Subacute Radicular Pain Syndromes, Chronic Radicular Pain Syndromes, Acute, Subacute, or Chronic Low Back Pain?
- Is Thalidomide a viable treatment option for Chronic Low Back Pain?
- What evidence supports the use of Tumor Necrosis Factor Alpha for treatment of Radicular Pain, Acute, Subacute, or Chronic Low Back Pain?
- Are Complementary or Alternative Treatments or Dietary Supplements, etc., an effective treatment option for Acute, Subacute, or Chronic Low Back Pain?
- Are Medical Foods a viable treatment option for Acute, Subacute, Chronic, Radicular and Post-operative Low Back Pain?
- Are Herbal Treatments a viable option for Acute, Subacute, or Chronic Low Back Pain?
- Is Willow Bark an effective treatment option for Acute, Subacute, or Chronic Low Back Pain?
- Is Capsaicin a viable treatment option for Acute or Subacute Low Back Pain or Temporary Flares of Chronic Low Back Pain?
- Do other ointments and topical agents act as effective treatment options for Chronic Low Back Pain?
- Are Vitamins a viable option for Treatment of Acute, Subacute, Chronic, or Post-operative Low Back Pain, or Radicular Pain?

### **Physical and Occupational Therapy**

- Do Physical Therapy, Occupational Therapy or Other Professionals offer effective treatment methods for Mild to Moderate Acute, Subacute, or Chronic Low Back Pain?

### **Devices**

- Are Shoe Insoles and Lifts an effective option for Treatment of Acute Low Back Pain, Subacute or Chronic Low Back Pain, Radicular Pain, or Other Back-related Conditions, Significant Leg Length Discrepancy, Prevention of Low Back Pain, Patients with Prolonged Walking Requirements?
- What evidence supports the use of Kinesiotaping and Taping for Treatment of Acute, Subacute, Chronic Low Back Pain, Radicular Pain, or Other Back-related Conditions?
- Lumbar Supports for Prevention of Low Back Pain, Treatment of Acute, Subacute and Chronic Low Back Pain, and after fusion surgery for Low Back Disorders?



- Are Magnets a viable option for Treatment of Acute, Subacute, or Chronic Low Back Pain?
- What evidence supports the use of Hyperbaric Oxygen and Topical versions for Treatment of Chronic Low Back Pain?
- Is Iontophoresis a viable option for Treatment of Low Back Pain?

### **Allied Health Therapies**

- Is Massage a viable treatment option for Acute Low Back Pain or Chronic Radicular Pain Syndromes, Select Subacute or Chronic Low Back Pain?
- Is Reflexology a viable treatment option for Chronic Low Back Pain, of Acute, Subacute, Radicular, Post-operative Low Back Pain or Other Low Back Conditions?
- Is Myofascial Release an effective form of treatment for Low Back Pain?
- Is Traction a viable option for Treatment of Low Back Pain?
- What evidence supports the use of Decompression through Traction and Spinal Decompressive Devices for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes?
- What evidence supports the use of Manipulation or Mobilization of the Lumbar Spine for Treatment of Acute or Subacute Low Back Pain or Radicular Pain Syndromes without Neurological Deficit, Chronic Pain, Radicular Pain Syndromes with Acute Neurological Deficits or Non-adjacent Areas for Low Back Pain?
- Are MUA and MASM viable option for Treatment of Acute, Subacute, or Chronic Low Back Pain?
- Are Cryotherapies a viable option for Treatment of Acute, Subacute, or Chronic Low Back Pain?
- Are Heat Therapy an effective option for Treatment of Acute, Subacute, or Chronic Low Back Pain?
- Is Diathermy an effective treatment option for Treatment of Low Back Pain?
- Is Infrared Therapy a viable option for Treatment of Acute, Subacute, Chronic, Post-operative or Radicular Low Back Pain?
- What evidence supports the use of Ultrasound for Treatment of Low Back Pain?
- What evidence supports the use of Low-level Laser Therapy for Treatment of Low Back Pain?
- What evidence supports the use of Acupuncture for Treatment of Acute, or Subacute, Radicular and Post-operative Low Back Pain, or Chronic to Severe Low Back Pain?
- Is Neuroreflexotherapy a viable option for Treatment of Moderate to Severe Chronic Low Back Pain, Acute or Subacute Low Back Pain or Radicular Pain?

### **Electrical Therapies**

- What evidence supports the use of Interferential Therapy for Treatment of Acute, Subacute or Chronic Low Back Pain, Chronic Radicular Pain Syndromes or Other Back Disorders?
- What evidence supports the use of TENS and NMES for Treatment of Acute or Subacute Low Back Pain or Acute Radicular Pain Syndromes?
- What evidence supports the use of PENS for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes?
- What evidence supports the use of Microcurrent Electrical Stimulation for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndrome?
- What evidence supports the use of H-Wave<sup>®</sup> Device Stimulation for Treatment of Low Back Pain and Radicular Pain Syndromes?

- What evidence supports the use of High-voltage Galvanic Therapy for Treatment of Low Back Pain?
- What evidence supports the use of Inversion Therapy for Treatment of Radicular Pain or Low Back Pain?

### **Injection Therapies**

- Epidural Glucocorticosteroid Injections for Treatment of Acute or Subacute Radicular Pain, Acute Flare-ups of Spinal Stenosis, and Acute, Subacute, or Chronic Low Back Pain without Radicular Symptoms?
- What evidence supports the use of Intradiscal Steroid Injections for Treatment of Acute, Subacute or Chronic Low Back Pain?
- What evidence supports the use of Epidural Clonidine for Treatment of Radicular Pain or Chronic Low Back Pain?
- What evidence supports the use of Intramuscular Clonidine for Treatment of Piriformis Syndrome and Other Low Back Conditions?
- Are Trigger and/or Tender Point Injections a viable option for Treatment of Acute, Subacute or Chronic Low Back Pain?
- What evidence supports the use of Diagnostic Facet Joint Injection for Chronic, Acute or Subacute Low Back Pain or Radicular Pain Syndromes?
- Are Diagnostic Medial Branch Blocks a viable treatment option for Acute or Subacute Low Back Pain or Radicular Pain Syndromes?
- What evidence supports the use of Therapeutic Facet Joint Injections for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes?
- What evidence supports the use of Therapeutic Facet Joint Injections for Treatment of Chronic Non-specific Axial Pain or patients with a Prior Injection?
- What evidence supports the use of Facet Joint Injections with Hyaluronic Acid for Treatment of Facet Degenerative Joint Disease?
- Are Sacroiliac Joint Corticosteroid Injections a viable option for Treatment of Sacroiliitis or Acute Low Back Pain?
- Are Intrathecal Drug Delivery Systems an effective form a treatment for Chronic Non-malignant Pain Conditions?
- What evidence supports the use of Prolotherapy Injections for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes?
- What evidence supports the use of Botulinum Injections for Treatment of Chronic Low Back Pain?
- What evidence supports the use of Radiofrequency Neurotomy, Neurotomy, or Facet Rhizotomy for Treatment of Chronic Low Back Pain?
- What evidence supports the use of Radiofrequency Lesioning for Treatment of Chronic Sciatica?
- What evidence supports the use of Intradiscal Electrothermal Therapy (IDET) for Treatment of Low Back Pain?
- What evidence supports the use of Percutaneous Intradiscal Radiofrequency Thermocoagulation for Treatment of Acute, Subacute, or Chronic Low Back Pain?

### **Surgical Considerations**

- What evidence supports the use of Lumbar Discectomy for treatment of Radiculopathy?

- What evidence supports the use of Discectomy for Treatment of Acute, Subacute, or Chronic Low Back Pain without Radiculopathy?
- What evidence supports the use of Adhesiolysis for Treatment of Low Back Pain?
- What evidence supports the use of Decompression Surgery for Treatment of Spinal Stenosis?
- What evidence supports the use of Lumbar Fusion for Treatment of Chronic Non-specific Low Back Pain, Isthmic Spondylolisthesis, Degenerative Spondylolisthesis, and Radiculopathy from Disc Herniation or Chronic Low Back Pain?
- What evidence supports the use of Disc Replacement for Treatment of Chronic Non-specific Low Back Pain or Other Spinal Pain Syndrome?
- Is Vertebroplasty a viable option for Treatment of Low Back or Thoracic Pain Due to Vertebral Compression Fractures?
- What evidence supports the use of Kyphoplasty for Treatment of Low Back or Thoracic Pain Due to Vertebral Compression Fractures?
- What evidence supports the use of Sacroiliac Surgery for Treatment of Low Back Pain Disorders?
- Are Spinal Cord Stimulators an effective option for Treatment of Acute, Subacute, or Chronic Low Back Pain or Radicular Pain Syndromes or Failed Back Surgery Syndrome?

### **Rehabilitation for Delayed Recovery**

- Are Chronic Pain Management/Functional Restoration Programs a viable treatment option for Chronic Spinal Pain, Subacute (Early Intervention) Pain Management, or Acute Spinal Disorders?
- Are Work Rehabilitation Programs a viable treatment option for Acute, Subacute and Chronic Spinal Pain?
- What evidence supports the use of Participatory Ergonomic Programs for Subacute and Chronic Low Back Pain?
- What evidence supports the use of Back Schools or Education for Treatment/Prevention of Select Patients with Acute Low Back Pain or Chronic Low Back Pain?
- What evidence supports the use of Cognitive Behavioral Therapy for Treatment of Subacute and Chronic Low Back Pain?
- What evidence supports the use of Psychological Evaluation for Chronic Low Back Pain Disorders?
- Is Fear Avoidance Belief Training a viable option for Treatment of Acute, Subacute, or Chronic Low Back Pain?
- What evidence supports the use of Biofeedback for treatment of Acute, Subacute, or Chronic Low Back Pain?
- What evidence supports the use of Rehabilitation for Patients with Subacute or Chronic Low Back Pain?

# **Chronic Pain**

## **Diagnostic and Other Testing**

- What evidence supports the use of Antibodies for diagnosing chronic pain with suspicion of rheumatological disorder?
- What evidence supports the use of antibodies to confirm specific disorders?
- What evidence supports ANSAR testing for diagnosing chronic pain?
- What evidence supports bone scanning for diagnosing CRPS?
- What evidence supports the use of non-specific inflammatory markers for screening for inflammatory disorders?
- What evidence supports cytokine tests for diagnosing chronic pain?
- What evidence supports needle EMG to diagnose neurological compromise?
- What evidence supports the use of EMG for diagnosing chronic back pain without leg symptoms?
- What evidence supports the use of nerve conduction studies for diagnosing peripheral entrapment neuropathy?
- Nerve conduction studies for diagnosing peripheral systemic neuropathy?
- What evidence supports surface EMG for diagnosing chronic pain?
- What evidence supports functional MRIs for diagnosing chronic pain?
- What evidence supports the use of local anesthetic injection for diagnosing chronic pain?
- What evidence supports QSART for diagnosing CRPS?
- What evidence supports SPECT/PET for diagnosing chronic pain?
- What evidence supports the use of thermography for diagnosing CRPS?

## **Other Tests**

- What evidence supports FCEs for chronic pain?

## **Initial Care**

### **Activities and Activity Alteration**

- What evidence supports Bed Rest for neuropathic pain, CRPS or other chronic persistent pain?
- What evidence supports altering sleep posture for chronic pain conditions?
- What evidence supports specific beds or other commercial sleep products for chronic pain syndromes?
- What evidence supports aerobic exercise for chronic persistent pain?
- What evidence supports stretching exercises for chronic persistent pain?
- What evidence supports active-assisted (“aggressive”) stretching for chronic persistent pain?
- What evidence supports graded exercises for CRPS?
- What evidence supports recreational activities for CRPS?
- What evidence supports desensitization techniques for CRPS?
- What evidence supports aquatic therapy for neuropathic pain, CRPS, or other chronic persistent pain with referral criteria?
- What evidence supports aquatic therapy for other neuropathic pain, CRPS, or chronic persistent pain?
- What evidence supports yoga for other chronic persistent pain?
- What evidence supports yoga for CRPS?

## Medications

- What evidence supports oral NSAIDs for chronic persistent pain or chronic radicular pain syndromes?
- What evidence supports oral NSAIDs for chronic persistent pain or chronic radicular pain syndromes?
- What evidence supports acetaminophen for chronic persistent pain and radicular pain syndromes?
- What evidence supports oral NSAIDs for CRPS?
- What evidence supports acetaminophen for CRPS?
- What evidence supports intravenous NSAIDs for CRPS?
- What evidence supports the use of norepinephrine reuptake inhibitor anti-depressants (TCAs) as a treatment for chronic persistent pain?
- What evidence supports selective serotonin reuptake inhibitors (SSRIs), bupropion, or trazodone for chronic persistent pain?
- What evidence supports duloxetine for chronic persistent pain?
- What evidence supports norepinephrine reuptake inhibitor anti-depressants for neuropathic pain?
- What evidence supports selective serotonin reuptake inhibitors (SSRIs), Bupropion, or Trazodone for neuropathic pain?
- What evidence supports duloxetine for neuropathic pain?
- What evidence supports norepinephrine reuptake inhibitor anti-depressants for CRPS?
- What evidence supports duloxetine for CRPS?
- What evidence supports selective serotonin reuptake inhibitors (SSRIs), Bupropion, or trazodone for CRPS?
- What evidence supports anti-convulsant agents (except topiramate) for chronic persistent (non-radicular)?
- What evidence supports Anti-convulsant agents (except topiramate) for chronic radicular or neuropathic pain?
- What evidence supports topiramate for radicular or neuropathic pain?
- What evidence supports anti-convulsant agents for CRPS?
- What evidence supports gabapentin and pregabalin for neuropathic pain?
- What evidence supports gabapentin for chronic radicular pain syndromes?
- What evidence supports gabapentin or pregabalin for chronic, non-neuropathic pain?
- What evidence supports short-term use of gabapentin or pregabalin for CRPS?
- What evidence supports long-term use of gabapentin and pregabalin for CRPS?
- What evidence supports the use of bisphosphonates for all other chronic pain conditions?
- What evidence supports the calcitonin for CRPS?
- What evidence supports the calcitonin for all other chronic pain conditions?
- What evidence supports Clonidine for CRPS?
- What evidence supports Clonidine for all other chronic pain conditions?
- What evidence supports the administration of intravenous regional anesthesia with clonidine for administration prior to surgery?
- What evidence supports epidural clonidine for chronic pain conditions?
- What evidence supports the use of glucocorticosteroids for CRPS?
- What evidence supports glucocorticosteroids for chronic persistent pain?
- What evidence supports the use of herbal and other preparations for chronic pain?

- What evidence supports ketamine infusion for CRPS, neuropathic pain, or other chronic syndromes?
- What evidence supports dextromethorphan for peripheral diabetic neuropathy or other peripheral neuropathies?
- What evidence supports NMDA receptor/antagonists for chronic pain syndromes?
- What evidence supports the use of muscle relaxants for chronic persistent pain?
- What evidence supports muscle relaxants for acute exacerbations for chronic pain?
- What evidence supports the use muscle relaxants for CRPS?
- What evidence supports the use of thalidomide for CRPS or other chronic pain syndromes?
- What evidence supports capsicum creams for chronic persistent pain?
- What evidence supports capsicum creams for CRPS or other chronic pain syndromes?
- What evidence supports topical NSAIDs for chronic pain where target tissue are superficially located?
- What evidence supports topical NSAIDs for other chronic pain syndromes?
- What evidence supports wheatgrass cream for chronic persistent pain or other chronic pain conditions?
- What evidence supports the use of other creams/ointments for chronic persistent pain or other chronic pain conditions?
- What evidence supports the use of lidocaine patches for localized chronic pain?
- What evidence supports the use of lidocaine patches for postherpetic neuralgia?
- What evidence supports the use of DMSO for CRPS?
- What evidence supports DMSO for other chronic pain syndromes?
- What evidence supports N-Acetylcysteine (NAC) for CRPS?
- What evidence supports N-Acetylcysteine (NAC) for all other chronic pain syndromes?
- What evidence supports EMLA cream for CRPS?
- What evidence supports EMLA cream for other chronic pain syndromes?
- What evidence supports tumor necrosis factor-alpha blockers for CRPS?
- What evidence supports tumor necrosis factor-alpha blockers for radicular pain syndromes?
- What evidence supports tumor necrosis factor-alpha blockers for chronic persistent and neuropathic pain?
- What evidence supports complementary or alternative treatments, dietary supplements, etc., for chronic pain?
- What evidence supports vitamins for chronic pain?
- What evidence supports Vitamin C for prevention of CRPS in patients with wrist fractures, extreme trauma, or high risk for CRPS?
- What evidence supports the routine use of opioids for chronic pain?
- What evidence supports the use of opioids for chronic pain in specific patient populations?
- What evidence supports screening patients prior to initiation of opioids for chronic pain?
- What evidence supports opioid treatment agreement (“Opioid Contract”) for patients with chronic pain?
- What evidence supports urine drug screening for patients prescribed opioids for chronic pain?

### **Physical and Occupational Therapy**

- What evidence supports physical or occupational therapy for chronic pain conditions?

## **Devices**

- What evidence supports the use of hyperbaric oxygen for CRPS, chronic pain, or other chronic pain?
- What evidence supports magnets and magnetic stimulation for neuropathic pain, CRPS, chronic persistent pain?
- What evidence supports taping and kinesiotaping for neuropathic pain, CRPS, or chronic persistent pain?

## **Allied Health Therapies**

- What evidence supports the use of acupuncture for CRPS or other chronic pain?
- What evidence supports the self-application of cryotherapies for chronic muscular pain, neuropathic pain or other chronic persistent pain?
- What evidence supports the use of cryotherapies for CRPS?
- What evidence supports the routine use of cryotherapies in health care provider offices or high tech devices for any chronic pain condition?
- What evidence supports self-application of heat therapy for CRPS or other chronic pain syndromes?
- What evidence supports the application of heat therapy by a health care provider for chronic pain?
- What evidence supports diathermy for chronic persistent pain, neuropathic pain, or CRPS?
- What evidence supports external radiation for sympathetic blockade for CRPS?
- What evidence supports the use of external radiation for sympathetic blockade for neuropathic pain or other chronic persistent pain?
- What evidence supports provider-based infrared therapy for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports the self-application of infrared therapy for chronic pain conditions?
- What evidence supports the use of Ultrasound in the treatment of chronic musculoskeletal pain?
- What evidence supports the use of low-level laser therapy for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports regular or routine manipulation or mobilization for prophylactic treatment?
- What evidence supports manipulation for neuropathic pain?
- What evidence supports manipulation for CRPS?
- What evidence supports massage for CRPS, neuropathic pain or chronic persistent pain?
- What evidence supports mechanical massage devices for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports the use of mirror therapy for CRPS?
- What evidence supports myofascial release for chronic persistent pain, CRPS, or neuropathic pain?
- What evidence supports reflexology for neuropathic pain, CRPS, or other chronic persistent pain?

## **Electrical Therapies**

- What evidence supports the use of high-voltage galvanic therapy for neuropathic pain, CRPS, or other chronic persistent pain?

- What evidence supports the use of H-wave stimulation for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports interferential therapy for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports iontophoresis for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports microcurrent electrical stimulation for neuropathic pain, CRPS, or other chronic persistent?
- What evidence supports PENS for neuropathic pain, CRPS, or other chronic persistent pain?
- What evidence supports sympathetic electrotherapy for CRPS or other chronic pain conditions?
- What evidence supports TENS for chronic persistent pain or chronic radicular pain?
- What evidence supports TENS for CRPS?

### **Injection Therapies**

- What evidence supports botulinum toxin injections for CRPS?
- What evidence supports intrathecal baclofen for CRPS?
- What evidence supports intrapleural bupivacaine infusions for neuropathic pain, CRPS, or other chronic pain?
- What evidence supports intrathecal drug delivery systems for chronic nonmalignant pain conditions?
- What evidence supports the use of lidocaine infusion for neuropathic pain or CRPS?
- What evidence supports the use of stellate ganglion blocks for CRPS?
- What evidence supports the use of guanethidine Bier blocks for CRPS?
- What evidence supports phentolamine Bier blocks for CRPS?
- What evidence supports bretylium Bier blocks for CRPS?
- What evidence supports methylprednisolone Bier blocks for CRPS?
- What evidence supports reserpine Bier blocks for CRPS?
- What evidence supports brachial plexus blocks and infusions for CRPS?

### **Surgical Considerations**

- What evidence supports spinal cord stimulators for short- to intermediate-term relief of CRPS?
- What evidence supports spinal cord stimulators for long-term relief (>3 years) of CRPS?

### **Psychological Services**

- What evidence supports psychological evaluation for all chronic pain conditions?
- What evidence supports cognitive behavioral therapy for patients with chronic pain?

### **Rehabilitation for Delayed Recovery**

- What evidence supports work conditioning, work hardening, and early intervention programs for chronic pain syndromes?
- What evidence supports the use of multidisciplinary or interdisciplinary program (IPRP) for chronic pain?
- What evidence supports IPRPs for other musculoskeletal disorders?
- What evidence supports other functional restoration for chronic pain?



## **Appendix – Tender Points/Fibromyalgia**

### **Special Studies, Diagnostic/Treatment Considerations**

- What evidence supports cytokine testing to diagnose tender points/fibromyalgia?
- What evidence supports other studies/tests to diagnose tender points/fibromyalgia?
- What evidence supports invasive tests to diagnose tender points/fibromyalgia?
- What evidence supports functional capacity evaluations (FCEs) to evaluate tender points/fibromyalgia?

### **Activities and Activity Alteration**

- What evidence supports activity modification for tender points/fibromyalgia?
- What evidence supports bed rest for tender points/fibromyalgia?
- What evidence supports aerobic exercise for tender points/fibromyalgia?
- What evidence supports stretching exercises for tender points/fibromyalgia?
- What evidence supports strengthening exercises for tender points/fibromyalgia?
- What evidence supports an inclusion of fear avoidance belief training for tender points/fibromyalgia?
- What evidence supports the use of aquatic therapy for tender points/fibromyalgia with referral criteria?
- What evidence supports all other aquatic therapy for tender points/fibromyalgia?
- What evidence supports the use of yoga for the treatment of tender/points/fibromyalgia?

### **Medications**

- What evidence supports the use of NSAIDS for tender points/fibromyalgia?
- What evidence supports duloxetine for tender points/fibromyalgia?
- What evidence supports norepinephrine reuptake inhibitor anti-depressants (TCAs) for tender points/fibromyalgia?
- What evidence supports fluoxetine for tender points/fibromyalgia?
- What evidence supports other selective serotonin reuptake inhibitors for tender points/fibromyalgia?
- What evidence supports gabapentin or pregabalin for severe fibromyalgia?
- What evidence supports heberal or other preparations for tender points/fibromyalgia?
- What evidence supports skeletal muscle relaxants for tender points/fibromyalgia?
- What evidence supports topical medications (capsaicin or sports creams), topical NSAIDs, or lidocaine patches for tender points/fibromyalgia?
- What evidence supports opioids for tender points/fibromyalgia?

### **Appliances**

- What evidence supports kinesiotaping and taping for tender points/fibromyalgia?
- What evidence supports magnets and magnetic stimulation for tender points/fibromyalgia?
- What evidence supports orthotics for tender points/fibromyalgia?

### **Skilled Allied Health Provided Therapies**

- What evidence supports the use of acupuncture for tender points/fibromyalgia?
- What evidence supports manipulation or mobilization for tender points/fibromyalgia?
- What evidence supports massage for tender points/fibromyalgia?
- What evidence supports myofascial release for tender points/fibromyalgia?
- What evidence supports reflexology for tender points/fibromyalgia?

**Physical Modalities**

- What evidence supports hot or cold therapies for tender points/fibromyalgia?
- What evidence supports diathermy, infrared therapy, or ultrasound for tender points/fibromyalgia?
- What evidence supports low-level laser therapy for tender points/fibromyalgia?

**Electrical Therapies**

- What evidence supports the use of electrical therapies for tender points/fibromyalgia?
- What evidence supports the use of iontophoresis for tender points/fibromyalgia?

**Injection Therapies**

- What evidence supports prolotherapy or trigger point injections for tender point injections for tender points/fibromyalgia?

**Psychological Services**

- What evidence supports psychological evaluation for tender points/fibromyalgia patients?
- What evidence supports cognitive behavioral therapy for tender points/fibromyalgia?

**Rehabilitation for Delayed Recovery**

- What evidence supports biofeedback for tender points/fibromyalgia?
- What evidence supports hypnotherapy or relaxation training for tender points/fibromyalgia?
- What evidence supports work conditioning, work hardening, or early intervention programs for tender points/fibromyalgia?
- What evidence supports interdisciplinary pain rehabilitation programs (IPRPs) for tender points/fibromyalgia?
- What evidence supports other “ad hoc” functional restoration programs?

# **ELBOW**

## **Ergonomic Interventions for Elbow Musculoskeletal Disorders with an Occupational Basis**

- What evidence supports the use of ergonomic interventions for epicondylalgia or for ulnar neuropathies at the elbow?
- What evidence supports return-to-work programs for the treatment of acute, subacute or chronic elbow MSDs?

## **Work Activities**

- Is work restriction an effective treatment for Epicondylalgia or for Ulnar Neuropathies at the Elbow?

## **Special Studies, Diagnostic and Treatment Considerations**

- Are Antibodies effective for diagnosing elbow pain or confirming specific disorders of the elbow?
- What evidence is there for the use of Arthroscopy for diagnosing acute, subacute or chronic elbow pain? Osteoarthritis?
- What evidence supports bone scanning for select use in acute, subacute or chronic elbow pain, or for routine elbow evaluations?
- What evidence supports the use of computerized tomography (CT) in evaluating Acute, subacute or chronic elbow pain, osteonecrosis?
- What evidence supports the use of non-specific inflammatory markers for screening for inflammatory disorders in patients with subacute or chronic elbow pain?
- Are electro-diagnostic studies (Electromyography and Nerve conduction studies) effective in diagnosing subacute or chronic peripheral nerve entrapments?
- What evidence supports the use of MRI for diagnosing Osteonecrosis or for the routine evaluation of elbow joint pathology?
- What evidence is there for the use of X-rays for evaluating elbow pain?
- Is SPECT or PET effective in diagnosing elbow pain?
- What evidence supports diagnostic ultrasound for osteonecrosis, osteoarthritis, dysplasia and elbow fractures?

## **Initial Care**

- What evidence supports education for treatment of elbow disorders?

## **Contusions**

- Which treatments are most effective in treating elbow contusions?

## **Epicondylalgia**

### **Lateral Epicondylalgia (Lateral Epicondylitis, Tennis Elbow)**

#### **Medications**

- What evidence supports the use of NSAIDs for the treatment of acute, subacute, chronic or post-operative Epicondylalgia?
- Are NSAIDs effective for patients at risk for GI Adverse effects? Cardiovascular Adverse effects?

- What evidence supports the use of Acetaminophen for the treatment of elbow pain?
- What evidence supports the use of topical NSAIDs for the treatment of acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of opioids for the treatment of acute, subacute, chronic or post-operative lateral epicondylalgia?

### **Physical Methods/Rehabilitation**

- What evidence supports the use of tennis elbow bands, straps, braces or cock-up wrist braces for acute, subacute and chronic lateral epicondylalgia?
- What evidence supports the use of home exercises or physical or occupational therapy for the treatment of acute, subacute, chronic or post-operative epicondylalgia?
- Is the self-application of heat or cold effective for the treatment of acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of Iontophoresis for the treatment of acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of Ultrasound for the treatment of acute, subacute, chronic or post-operative epicondylalgia?
- Why is manipulation and mobilization not an effective treatment for acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of massage, including friction massage, for acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of magnets and pulsed electromagnetic field for acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of phonophoresis for acute, subacute, chronic or post-operative epicondylalgia?
- Is low-level laser therapy an effective treatment for acute, subacute, chronic or post-operative epicondylalgia?
- Is the use of acupuncture an effective treatment for acute, subacute, chronic or post-operative epicondylalgia?
- What evidence supports the use of biofeedback, transcutaneous electrical nerve stimulation, electrical nerve stimulation, and diathermy for acute, subacute, or chronic lateral epicondylalgia?

### **Injections**

- What evidence supports the use of glucocorticosteroid injections for acute, subacute, or chronic lateral epicondylalgia?
- What evidence supports the use of botulinum injections for acute, subacute, or chronic lateral epicondylalgia?
- What evidence supports the use of platelet-rich plasma or autologous blood injections for acute, subacute or chronic lateral epicondylalgia?
- Is the use of polidocanol injections an effective treatment for acute, subacute, or chronic lateral epicondylalgia?
- What evidence supports the use of periarticular lateral elbow hyaluronate and glycosaminoglycan injections for chronic lateral epicondylalgia?

## **Surgical Considerations**

- What evidence supports the use of lateral epicondylar release for chronic lateral epicondylalgia?
- What evidence supports the use of radiofrequency microtenotomy for chronic lateral epicondylalgia?

## **Olecranon Bursitis**

### **Special Studies, Diagnostic and Treatment Considerations**

- What evidence supports the use of fluid aspiration and analyses for the diagnosis of Olecranon Bursitis?
- What evidence supports the use of X-rays for the diagnosis of Olecranon Bursitis?

### **Initial Care and Activity Modification**

- What evidence supports the use of soft padding, soft elbow supports and ace wraps for the treatment of Olecranon Bursitis?
- What evidence supports the use of modifying activities in order to avoid direct pressure over the olecranon?

### **Medications**

- What evidence supports the use of NSAIDs for the treatment of olecranon bursitis?

### **Injection Therapies**

- Is the use of aspiration for infected bursa an effective treatment?
- What evidence supports the use of glucocorticosteroid injections for the treatment of olecranon bursitis?

### **Surgical Considerations**

- What evidence supports the use of surgical drainage or surgical resection to treat olecranon bursitis?

## **Elbow Fractures**

### **Special Studies, Diagnostic and Treatment Consideration**

- What evidence supports the use of X-rays for the diagnosis of elbow fracture?

### **Initial Care and Medications**

- What evidence supports the use of NSAIDs or Acetaminophen for the treatment of elbow fracture?
- Are opioids an effective treatment for select patients with pain from elbow fractures?

### **Cast Immobilization/Splints and Slings**

- What evidence supports the use of elbow slings for non-displaced and occult radial head fractures?
- What evidence supports the use of casts for select elbow fractures?

## **Surgery**

- Is surgery an effective treatment for elbow fractures?

## **Physical Methods/Rehabilitation**

- Is education after cast removal an effective treatment for elbow fracture?
- Is physical or occupational therapy an effective treatment for patients after cast removal?
- Is routine referral for physical and occupational therapy after cast removal for elbow fracture?

## **Elbow Dislocations**

### **Special Studies, Diagnostic and Treatment Considerations**

- What evidence supports the use of X-rays for the diagnosis of elbow dislocation?

### **Medications**

- What evidence supports the use of NSAIDs and Acetaminophen for elbow dislocation?
- What evidence supports the use of opioids for select patients with elbow dislocations?

### **Physical Methods/Rehabilitation**

- Is a posterior elbow splint or sling an effective treatment for a dislocated elbow?

### **Injections**

- Are anesthetic intraarticular injections an effective treatment for pre- or post-reduction pain in elbow dislocations?

## **Surgery**

- What evidence supports the use of general anesthesia to facilitate reduction of a dislocated elbow in select patients?
- What evidence supports the use of surgery for elbow joints that recurrently dislocate or are unstable after dislocation?

## **Elbow Sprain**

### **Special Studies, Diagnostic and Treatment Considerations**

- Are X-Rays an effective way to diagnose elbow sprain?

### **Medications**

- Are NSAIDs or Acetaminophen an effective treatment for elbow sprains?
- Are opioids an effective treatment for select patients with elbow sprains?

### **Physical Methods/Rehabilitation**

- What evidence supports the use of slings for elbow sprains?

## **Biceps Tendinosis (or Tendinitis) and Tears/Ruptures**

### **Special Studies, Diagnostic and Treatment Considerations**

- Are X-Rays an effective diagnostic tool for biceps tendinosis or ruptures?
- Is MRI an effective diagnostic tool for biceps tendinosis or ruptures?
- Is ultrasound an effective diagnostic tool for biceps tendinosis or ruptures?

### **Medications**

- What evidence supports the use of NSAIDs and Acetaminophen for biceps tendinosis and tears?
- What evidence supports the use of opioids for the treatment of biceps tendinosis and tears?

### **Physical Methods/Rehabilitation**

- What evidence suggests the use of slings and splints for biceps tendinosis, ruptures and post-operative patients?
- What evidence suggests the use of exercise for the treatment of biceps tendinosis and ruptures?

### **Surgery**

- Is surgical repair of distal biceps rupture an effective treatment?

## **Peripheral Nerve Entrapment (Ulnar Neuropathies at the Elbow)**

### **Special Studies, Diagnostic and Treatment Considerations**

- Are Electrodiagnostic studies an effective way to diagnose subacute and chronic peripheral nerve entrapment?
- Is EDS an effective diagnostic tool for diagnosis and pre-operative assessment of peripheral nerve entrapments?
- Are diagnostic ultrasound and MRI effective diagnostic tools in the evaluation and diagnosis of ulnar neuropathies?

### **Initial Care**

- Is the position of the elbow during sleep an effective way to treat nerve entrapments?
- Is elbow posture during work or avocational activities important in the treatment of peripheral nerve entrapment?

### **Activity Modification and Exercise**

- Is exercise an effective treatment of acute, subacute, chronic or post-operative ulnar neuropathy?

### **Medications**

- What evidence supports the use of NSAIDs and Acetaminophen for the treatment of acute, subacute, chronic or post-operative ulnar neuropathies at the elbow?
- What evidence supports the use of glucocorticosteroids (Oral or Injections) for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?
- What evidence supports the use of opioids for the treatment of acute, subacute, chronic or post-operative ulnar neuropathies at the elbow?

- What evidence supports the use of pyridoxine or other vitamins for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?
- What evidence supports the use of lidocaine patches for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?
- What evidence supports the use of ketamine for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?

### **Physical Methods/Rehabilitation**

- What evidence supports the use of magnets for the management of pain for acute, subacute or chronic ulnar neuropathies at the elbow?
- What evidence supports the use of nocturnal elbow splinting for treatment of acute, subacute, or chronic ulnar neuropathies?

### **Allied Health Therapies**

- What evidence supports Acupuncture, Biofeedback, Manipulation and Mobilization, Massage, Soft Tissue Massage, Iontophoresis, and Phonophoresis for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?
- What evidence supports the use of low-level laser therapy for the treatment of acute, subacute or chronic ulnar neuropathies at the elbow?
- Is ultrasound an effective treatment of acute, subacute or chronic ulnar neuropathies at the elbow?

### **Surgery**

- Is surgical release effective at treating ulnar neuropathies?

### **Radial Nerve Entrapment**

- Is exercise an effective treatment for acute, subacute, chronic, or post-operative radial nerve entrapment?
- Are NSAIDs and Acetaminophen effective treatments for acute, subacute, chronic, or post-operative radial nerve entrapment?
- What evidence supports the use of glucocorticosteroids to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of opioids to treat acute, subacute, chronic, or post-operative radial nerve entrapment?
- What evidence supports the use of vitamins (including pyridoxine) to treat acute, subacute, chronic, or post-operative radial nerve entrapment?
- What evidence supports the use of lidocaine patches to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of ketamine to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of magnets to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of elbow and wrist splinting to treat acute, subacute, or chronic radial nerve entrapment?



- What evidence supports the use of acupuncture, biofeedback, manipulation and mobilization, massage, soft tissue massage, iontophoresis, phonophoresis to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of low-level laser therapy to treat acute, subacute, or chronic radial nerve entrapment?
- What evidence supports the use of ultrasound to treat acute, subacute, or chronic radial nerve entrapment?
- Is surgery an effective treatment for acute, subacute, or chronic radial nerve entrapment?

## **Pronator Syndrome**

- Is exercise an effective treatment for acute, subacute, chronic, or post-operative pronator syndrome?
- What evidence supports the use of NSAIDs and Acetaminophen for acute, subacute, chronic, or post-operative pronator syndrome?
- What evidence supports the use of glucocorticosteroids for acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of vitamins (including pyridoxine) to treat acute, subacute, chronic, or post-operative pronator syndrome?
- What evidence supports the use of lidocaine patches to treat acute, subacute, or chronic radial pronator syndrome?
- What evidence supports the use of ketamine to treat acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of magnets to treat acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of elbow and wrist splinting to treat acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of acupuncture, biofeedback, manipulation and mobilization, massage, soft tissue massage, iontophoresis, phonophoresis to treat acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of low-level laser therapy to treat acute, subacute, or chronic pronator syndrome?
- What evidence supports the use of ultrasound to treat acute, subacute, or chronic pronator syndrome?
- Is surgery an effective treatment for acute, subacute, or chronic pronator syndrome?

# ***HIP AND GROIN***

## **Special Studies, Diagnostic and Treatment Considerations**

- Is testing for antibodies an effective diagnostic tool for those with suspicion of specific chronic or recurrent rheumatological disorders?
- For patients with suspicion of intraarticular bodies, labral tears, femoroacetabular impingement, or other subacute or chronic mechanical symptoms, is hip arthroscopy effective? What is the evidence supporting hip arthroscopy for diagnosing acute or chronic hip pain? Can hip orthoscopy, with or without chondroplasty, treat osteoarthritis?
- Do bone scans aid in diagnosing osteonecrosis, neoplasms, or other conditions with increased polyostothotic bone metabolism, for patients with acute, subacute or chronic hip pain in need of more than one joint evaluation?
- What evidence supports routine CT for evaluating hip pain, osteonecrosis (AVN), or recurrent dislocations, with or without contraindications for MRI?
- Are erythrocyte sedimentation rates or other inflammatory markers for screening for inflammatory conditions, for patients with subacute or chronic hip pain, effective?
- Do routine or non-routine helical CT scans effectively evaluate or diagnose osteonecrosis, acute, subacute or chronic hip pain?
- Does the evidence support using local anesthetic injections in order to diagnosis subacute or chronic hip pain?
- Can electromyography successfully diagnose subacute or chronic peripheral nerve entrapments of the hip and thigh?
- Does magnetic resonance imaging effectively diagnose femoroacetabular impingement, gluteus medius tendinosis, gluteus medius tears, trochanteric bursitis, post-arthroplastic chronic pain, periarticular masses, osteonecrosis, or hip pain?
- What does the evidence say about the use of magnetic resonance arthrogram imaging to diagnose labral tears, femoroacetabular impingement, gluteus medius tendinosis, gluteus medius tears, or trochanteric bursitis for patients with hip pain?
- Can x-ray imaging effectively diagnose hip pain, femoroacetabular impingement, dysplasia or osteonecrosis?
- What does the evidence recommend for diagnosing hip pain with SPECT or PET?
- Can ultrasound evaluate gluteus medius tendinopathies, greater trochanteric bursitis, greater trochanteric pain syndrome/lateral hip pain, groin strains, femoroacetabular impingement, hip instability, dislocation, ligamentum teres ruptures, labral tears, or post-arthroplasty chronic pain where peri-articular masses are suspected?

## **Ergonomic Interventions**

- What does the evidence say for ergonomic interventions to improve fall protection? Are ergonomic interventions effective in addressing groin or hip disorders?

## **Exercise**

- Does the evidence support regular aerobic exercise for treating hip osteoarthritis? Are stretching and strengthening exercises effective in treating hip osteoarthritis?
- Is aquatic therapy beneficial in treating those with hip osteoarthritis?
- What does the evidence say for treating persistent chronic hip pain with yoga?

## **General Principles of Treatment/Follow-up Visits**

- Can activity modification reduce or eliminate acute, subacute or chronic hip and groin pain?
- Does the evidence support using bed rest for treating unstable fractures, acute, subacute or chronic hip pain?

## **Medications**

- Are anti-depressants (NRIs or SSRIs) effective in treating hip osteoarthritis, acute, subacute or chronic hip pain?
- What does the evidence recommend for using anti-convulsant agents (such as Gabapentin, Pregabalin, Topiramate) for treating hip osteoarthritis, acute, subacute, or chronic hip pain? Does Gabapentin serve as an effective peri-operative management of hip pain over opioids?
- Do Bisphosphonates reducing osteoclastic activity aid in treating osteopenia-related hip fractures?
- What does the evidence say about using calcitonin for patients with hip fractures?
- Does the evidence support using NSAIDs or Acetaminophen to treat acute, subacute, chronic or post-operative hip pain? For patients at risk for gastrointestinal or cardiovascular adverse effects, are NSAIDs effective? Can NSAIDs prevent heterotopic bone formation after arthroplasty?
- Are opioids superior to other medications or other treatments for treating hip pain relief, hip functional improvement or hip osteoarthritis?
- Does the evidence support using skeletal muscle relaxants, compared to other medications, to treat hip pain?
- Can topical pain medications effectively treat hip pain? What does the evidence say about using lidocaine patches versus other treatments for those with trochanteric bursitis?
- What does the evidence say about using tumor necrosis factor-alpha blockers for hip pain or hip osteoarthritis?
- Does glucosamine sulfate, chondroitin sulfate or Methylsulfonylmethane effectively prevent hip osteoarthritis?
- Does research support the use of complementary or alternative treatments to treat hip pain?
- Does the evidence support using Diacerein to treat osteoarthritis over other medications?

## **Devices**

- Can canes and crutches alleviate hip and groin pain?
- Can magnets or magnetic stimulation effectively reduce osteoarthritis or hip pain?
- Does using orthotic shoe insoles reduce hip pain compared to other shoe lifts?

## **Allied Health Therapies**

- What does the evidence say about using acupuncture for chronic osteoarthritis of the hip compared to other treatments?
- Does home use of cryotherapies effectively address hip osteoarthritis?
- Is self-application of heat therapy effective for treating chronic hip pain?
- What evidence suggest using diathermy or infrared therapy to treat chronic hip pain?
- Is low-level laser therapy more effective at treating hip osteoarthritis compared with other treatments?

- Does evidence support manipulation or mobilization for hip fracture patients?
- Is massage therapy effective at treating chronic hip pain?
- Does evidence support using reflexology for treating hip osteoarthritis?

### **Electrical Therapies**

- What evidence suggests electrical stimulation therapy to treat acute, subacute or chronic hip pain?
- Is transcutaneous electrical nerve stimulation (TENS) an effective modality to control pain?

### **Injections**

- Does evidence support using intraarticular Glucocorticosteroid injections to treat hip osteoarthritis?
- Can intraarticular hip viscosupplementation injections for hip osteoarthritis?
- Does the evidence suggest using prolotherapy injections for acute, subacute or chronic hip pain?
- Can botulinum injections effectively treat hip osteoarthritis compared with other treatments?
- Are pre-operative autologous blood donations useful to reduce risks of blood borne pathogen transmission in the event of a blood transfusion?

### **Gluteus medius tendinosis and tears (“Rotator cuff of the hip”), Trochanteric Bursitis and Greater Trochanteric Pain Syndrome**

- Does the evidence support using Glucocorticosteroid injections to treat chronic trochanteric bursitis, greater trochanteric pain syndrome or gluteus medius tears with accompanying clinical bursitis?
- Are NSAIDs or Acetaminophen recommended for treating chronic trochanteric bursitis, greater trochanteric pain syndrome or gluteus medius tears with accompanying clinical bursitis?
- What evidence supports progressive exercise for chronic trochanteric bursitis, greater trochanteric pain syndrome or gluteus medius tears with accompanying clinical bursitis?
- Can surgical repair effectively treat gluteus medius tears?

### **Femoroacetabular Impingement, “Hip Impingement” and Labral Tears**

- Does the evidence support using NSAIDs, local Glucocorticosteroid injections or physical/occupational therapy for treating labral tears?
- Is arthroscopic surgery recommended for labral tears cases that fail conservative management?

### **Osteonecrosis**

- Is reducing or eliminating activities that provoke osteonecrotic symptoms, including avoidance of dysbaric exposures, recommended by evidence?
- Does evidence suggest non-weight-bearing activities for treating hip osteonecrosis?

- Does the evidence support aggressive targeting of coronary artery disease risk factors for treating hip osteonecrosis?
- Are Bisphosphonates effective at treating mild to moderate cases of hip osteonecrosis?
- Are NSAIDs more effective for treating hip osteonecrosis compared to other analgesics?
- Does the evidence suggest glucocorticosteroids for hip osteonecrosis?
- Is hyperbaric oxygen a viable treatment for hip osteonecrosis?
- Is core decompression surgery beneficial in treating hip osteonecrosis?
- Does the evidence recommend arthroplasty to treat hip osteonecrosis with collapse or unresponsive to non-operative treatment?

### **Hamstring and Hip Flexor Strains**

- Are x-rays or MRIs recommended to diagnose hamstring or hip flexor strains?
- Does the evidence support using NSAIDs over other medications for treating hamstring or hip flexor strains?
- For patients who perform high physical jobs or who cannot avoid job tasks thought to have resulted in the strain, are work limitations supported by evidence for hamstring or hip flexor strains?
- Does the evidence support using ice or heat wraps for treating hamstring flexor or hip flexor strains?
- Does the evidence support bed rest over other treatments for treating hamstring flexor or hip flexor strains?
- Are physical therapy or occupational therapy recommended for treating hamstring flexor or hip flexor strains?
- What evidence suggest progressive agility, trunk stabilization and icing (PATS) for treating hamstring or hip flexor strains?

### **Groin Strains and Adductor-Related Groin Pain**

- Are x-rays or MRIs recommended to diagnose groin strains or adductor-related groin pain?
- Does the evidence support using NSAIDs over other medications for treating groin strains or adductor-related groin pain?
- For patients who perform high physical jobs or who cannot avoid job tasks thought to have resulted in the strain, are work limitations supported by evidence for groin strains or adductor-related groin pain?
- Does the evidence support using ice or heat wraps for treating groin strains or adductor-related groin pain?
- Does the evidence support bed rest over other treatments for treating groin strains or adductor-related groin pain?
- Are physical therapy or occupational therapy recommended for treating groin strains or adductor-related groin pain?

### **Meralgia Paresthetica**

- Does the evidence support weight loss for obese patients to treat meralgia paresthetica?
- Are NSAIDs recommended over other medications for treating meralgia paresthetica?

- What evidence supports topical lidocaine patches to address meralgia paresthetica?
- Are Glucocorticosteroid injections recommended for treating meralgia paresthetica?
- Are nerve conduction studies an effective diagnostic tool to confirm meralgia paresthetica and to localize entrapment?
- Does the evidence suggest surgical release for treating meralgia paresthetica?
- Can spinal cord stimulators effectively treat meralgia paresthesia?

## **Lower Abdominal Strains**

- Are urine cultures and effective diagnostic tool for lower abdominal strains?
- Does the evidence suggest using NSAIDs over other analgesics to treat lower abdominal strains?
- What evidence suggest work limitations for patients with lower abdominal strains who perform highly physical jobs?
- Is bed rest an effective treatment for lower abdominal strains?
- Does the evidence recommend ice or heat for lower abdominal strains?
- Is physical or occupational therapy an effective treatment for lower abdominal strains?

## **Epididymo-Orchitis**

- Does evidence support culturing urine to diagnose epididymitis or epididymo-orchitis?
- Is needle aspiration recommended over other treatments for treating epididymitis or epididymo-orchitis?
- Are age-appropriate antibiotics or NSAIDs for treating epididymitis or epididymo-orchitis?
- Does evidence suggest work limitations for patients with epididymitis or epididymo-orchitis who have physical job demands?
- Is bed rest recommended to treat epididymitis or epididymo-orchitis?
- What evidence supports using ice or intermittent elevation to treat epididymitis or epididymo-orchitis?
- Are physical and occupational therapy recommended treatments for epididymitis or epididymo-orchitis?

## **Hip Fractures**

### **Surgical Considerations**

- Does the evidence support surgical treatments compared with traction for hip fractures?
- Is arthroplasty recommended for older patients with displaced femoral neck and subcapital fractures?
- What evidence suggest acupuncture while transporting hip fracture patients?
- Does the evidence recommend hip arthroplasty for moderate to severe arthritides, osteonecrosis, or substantially symptomatic hip dysplasia? Is hip arthroplasty an effective treatment for patients with bilateral disease who undergo simultaneous bilateral hip replacement?
- Is metal-on-metal hip resurfacing arthroplasty recommended for certain patients?
- What evidence supports acupuncture for hip arthroplasty patients?

- Does evidence support routine peri-operative or post-operative use of bisphosphonates or calcitonin after hip fracture?
- Is one day use of systemic antibiotics recommended for hip surgery?

### **Pre-Operative Education**

What evidence suggest pre-operative educational programs prior to hip arthroplasty?

### **Prevention of Venous Thromboembolic Disease**

- Does the evidence support prevention of venous thromboembolic disease for post-operative hip patients, particularly arthroplasty patients or other post-operative patients with prolonged reductions in activity?
- Are compression stockings an effective form of prevention for venous thromboembolic disease?
- What evidence suggest the use of lower extremity pump devices to prevent venous thromboembolic disease?
- Is low-molecular weight heparin a recommended treatment for preventing venous thromboembolic disease?
- Does the evidence support using factor Xa inhibitors to prevent venous thromboembolic disease over other treatments?
- Are warfarin and heparin effective forms of prevention for venous thromboembolic disease?
- Does the evidence support Aspirin consumption to prevent deep venous thrombosis?

### **Pre- and Post-Operative Rehabilitation, including Hip Arthroplasty and Hip Fractures**

- What evidence suggest pre-operative exercise programs for patients requiring hip arthroplasty who exhibit weakness or unsteady gait?
- Does the evidence support post-operative activity limitations after hip arthroplasty?
- Are late post-operative exercise programs for arthroplasty or hip fracture patients effective?
- Are vocational or avocational activities recommended by evidence after hip arthroplasty?

### **Psychological Services**

- Does the evidence suggest a psychological evaluation for chronic hip pain?
- For patients with subacute or chronic hip pain, does the evidence suggest cognitive behavioral therapy over other psychological services?

### **Rehabilitation for Delayed Recovery**

- Is Biofeedback supported by evidence for treating chronic hip pain?
- Are interdisciplinary pain rehabilitation programs focused on behavioral or cognitive-behavioral approaches combined with conditioning exercise recommended for patients with chronic hip pain who demonstrate partial or total work incapacity?

## **Appendix - Anesthesia/Analgesia Techniques**

- What evidence supports using regional blocks during hip surgery?
- Are opioids an effective medication choice for post-operative pain control after hip surgery?
- Are COX-2 Selective NSAIDs an effective analgesic technique for hip surgery patients during the post-operative period?
- Does the evidence support single injections of extended release epidural morphine over parenteral or oral opioid medications after hip surgery?
- What evidence suggest spinal continuous anesthetic for hip surgery patients without contraindications?

## **Prevention of Adverse Effects**

- What evidence supports administering Tropisetron to control adverse effects of spinal opioid anesthesia?
- Is intravenous naloxone infusion in combination with opioid intrathecal infusion recommended by the evidence for prevention of adverse effects?
- Is propofol infusion, compared to other treatments, more effective at controlling nausea and emesis?
- Are phenothiazines recommended for preventing or controlling nausea and emesis?
- Does the evidence recommend nicardipine to induce hypotension?



# **KNEE**

## **Ergonomic Intervention**

- What evidence supports ergonomic redesign of the workplace (knee pads for kneeling activities, fall protection etc.) to facilitate recovery and prevent recurrence of knee disorders?

## **Diagnostic and Other Testing**

- Are antibodies superior to other tools for diagnosing knee pain with suspicion of chronic or recurrent Rheumatological disorder?
- What evidence suggests knee arthroscopy for treatment of knee disorders (acute knee pain, staging a surgical procedure etc.)?
- Is bone scan effective for selective or routine use of knee joint evaluations, acute, subacute, or chronic knee pain?
- Is computerized tomography (CT) useful imaging procedure for acute, subacute, or chronic knee pain?
- What evidence suggests systemic markers (C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), ferritin, and a total protein-albumin gap) for nonspecific inflammation disorders in subacute or chronic knee pain patients?
- Cytokines (See Chronic Pain Guideline).
- Are local anesthetic injections useful for diagnostic confirmation of knee conditions?
- Electromyography. (See Chronic Pain Guideline).
- Functional capacity evaluations. (See Chronic Pain Guideline).
- What evidence addresses magnetic resonance imaging (MRI) for acute, subacute, or chronic knee joint pathology?
- What evidence suggests MR arthrograms of select patients needing advanced meniscal and cartilage imaging?
- Is x-ray is the initial test for evaluation of most cases of knee pain?
- Has the saline load test has been used when there is a knee laceration to determine whether there has been penetration of the joint capsule?
- Have many of the usual causes of knee pain are better imaged with modalities other than ultrasound?

## **Initial Care**

- Are there quality studies of restrictions (work and home activity guidelines, initial modifications of occupational and non-occupational activities) for managing acute or chronic pain?

## **Knee Pain and Osteoarthritis**

- What evidence suggests activity modification for acute, subacute, or chronic knee pain?
- Is bed rest and non-weight bearing recommended for patients with acute, subacute, or chronic knee pain?
- Is exercises recommended for the prevention and treatment of osteoarthritis, including aerobic exercise, strengthening exercise, and flexibility?

- Is aquatic therapy beneficial for treatment of knee osteoarthritis?
- Is yoga beneficial for treatment of knee osteoarthritis compared to no program?

### **Medications**

- Are NSAIDs efficacious for treatment of acute, subacute, chronic, or post-operative knee pain or post-operative knee pain?
- Opioids (See Opioids Guideline)
- Are skeletal muscle relaxants recommended for acute, subacute, or chronic knee pain?
- What evidence suggests antidepressants medications for treatment of knee osteoarthritis or other knee pain?
- Are anti-convulsant agents efficacious for treatment of knee osteoarthritis or other knee pain?
- What evidence suggests tumor necrosis factor (TNF) for treatment of knee osteoarthritis or other knee pain?
- Are glucosamine, chondroitin, and methylsulfonylmethane efficacious for treatment of knee osteoarthritis or other knee pain?
- What evidence suggests complementary, alternative treatments, dietary supplements for the treatment of acute, subacute or chronic knee pain?
- Are herbal and other preparations (Willow Bark (Salix), Ginger Extract, Rose Hips, Camphora Molmol, Maleluca Alternifolia, Angelica Sinensis, Aloe Vera etc.) recommended for treatment of knee osteoarthritis or other knee pain?
- What evidence suggests diacerein for treatment of knee osteoarthritis or other knee pain?
- Are devices (bracing, sleeves/lateral wedges etc.) beneficial for treatment of moderate to severe chronic knee osteoarthritis?
- What evidence suggests orthoses for treatment of moderate to severe chronic knee osteoarthritis?
- Are canes and crutches effective for treatment of moderate to severe acute, subacute, or chronic knee pain?
- What evidence suggests motorized scooters for treatment of severe chronic knee osteoarthritis?
- Are magnets and magnetic stimulation recommended for treatment of acute, subacute and chronic knee pain?
- What evidence suggest pulsed electromagnetic fields for treatment acute, subacute and chronic knee pain?

### **Physical Methods**

- Is cold or cryotherapies recommended for treatment of acute, subacute and chronic knee pain?
- Is self-application of heat therapy recommended for treatment of acute, subacute and chronic knee pain?
- What evidence suggests ultrasound for treatment of severe chronic knee osteoarthritis?
- What evidence suggests phonophoresis for treatment of knee osteoarthritis or other knee pain?
- Is massage recommended for treatment of acute, subacute and chronic knee pain?

- What evidence suggests reflexology for treatment of severe chronic knee osteoarthritis?
- What evidence suggests acupuncture for treatment of for chronic osteoarthritis of the knee?
- What evidence suggests manipulation and mobilization for treatment of severe chronic knee osteoarthritis?
- Is manipulation under anesthesia recommended for treatment of severe chronic knee osteoarthritis?
- Is low-level laser treatment (LLLT) recommended for treatment of post-operative patients with significantly reduced range of motion?

### **Electrical Therapies**

- Are electrical stimulation therapies recommended for treatment of knee osteoarthritis or acute, subacute, or chronic knee pain?
- What evidence suggests iontophoresis for treatment of knee osteoarthritis?
- What evidence suggests interferential therapy for treatment of post-operative knee patients?
- What evidence suggests microcurrent therapy for treatment of post-operative total knee arthroplasty patients?
- Is percutaneous electric therapy recommended for treatment of severe chronic knee osteoarthritis?
- What evidence suggests transcutaneous electrical nerve stimulation (TENS) for treatment of acute, subacute and chronic knee pain?

### **Injections**

- Are platelet rich plasma injections effective for treatment of moderate to severe knee osteoarthritis?
- What evidence suggests viscosupplementation injections for treatment of moderate to severe acute, subacute, or chronic knee pain?
- What evidence suggests intraarticular glucocorticosteroid injections for knee osteoarthritis?
- Is tidal knee joint irrigation recommended for treatment of knee osteoarthritis?
- What evidence suggests radiation synovectomy for treatment of moderate to severe acute, subacute, or chronic knee pain?
- Are prolotherapy injections recommended for treatment of acute, subacute, or chronic knee pain?
- What evidence suggests botulinum injections for treatment of knee osteoarthritis or other knee disorders?
- Is autologous blood donation and blood transfusion effective to reduce transfusion needs for knee arthroplasty?
- What evidence suggests interleukin-1 receptor antagonists for treatment of moderate to treat rheumatoid arthritis?

### **Surgical Considerations for Knee Osteoarthritis**

- What evidence suggests chondroplasty and debridement for treatment of knee osteoarthritis?
- Is cartilage grafts, osteochondral autografts, and/or transplantation recommended for treatment of articular cartilaginous defects?

- Is knee arthroplasty recommended for treatment of moderate to severe arthritides?
- Are bisphosphonates and calcitonin recommended for attempt to reduce periprosthetic bone resorption in the immediate peri-operative period?

### **Other**

- Are antibiotics efficacious for knee surgery?
- Are glucocorticosteroid injections recommended after arthroscopy?
- What evidence suggests periarticular glucocorticoid injections for arthroplasty patients?

### **Education**

- Is pre-operative educational program effective prior to arthroplasty?

### **Pre- and Post-operative Rehabilitation**

- Is pre-operative rehabilitation exercise recommended for the treatment of knee arthroplasty?

### **Post-operative Activities and Sports**

- Are post-operative vocational or avocational activities recommended more for hip arthroplasty patients than knee arthroplasty?

### **Psychological Services**

- What evidence suggests psychological evaluation for chronic knee pain?

### **Rehabilitation for Delayed Recovery**

- Is biofeedback for treatment of chronic knee pain?
- Functional restoration

### **Work conditioning, Work hardening, and Early Intervention programs**

- Work Conditioning and Work Hardening Programs
- What evidence suggests early intervention (functional restoration) programs for treatment of chronic knee pain?

### **Interdisciplinary Pain Rehabilitation Programs:**

- What evidence suggests the interdisciplinary pain rehabilitation program (IPRP) for treatment of chronic knee pain?

### **Prevention of Venous Thromboembolic Disease**

- Is prevention of venous thromboembolic disease (VTED) recommended for post-operative knee patients, particularly arthroplasty patient or other post-operative patients?

### **Hamstring and Hip Flexor Strains** (See Hip and Groin Disorder guideline)

### **Iliotibial Band Syndrome**

- Are NSAIDs efficacious for treatment of iliotibial band syndrome?
- Is knee immobilization recommended for treatment of iliotibial band syndrome?

- What evidence suggests transverse friction massage for treatment of iliotibial band syndrome?
- What evidence suggests phonophoresis for treatment of iliotibial band syndrome?
- Are glucocorticoid injections use for treatment of iliotibial band syndrome?
- Are surgical procedures recommended for treatment of iliotibial band syndrome?

### **Quadriceps, Gastrocnemius and Soleus Strains**

- Is X-ray and/or MRI recommended for evaluation of severe quadriceps, gastrocnemius, or soleus strains?
- What evidence suggest work limitations for selective case of severe quadriceps, gastrocnemius, or soleus strains?
- Is bed rest recommended for treatment of quadriceps, gastrocnemius, or soleus strains?
- Are NSAIDs efficacious for treatment of quadriceps, gastrocnemius, and soleus strains?
- Is ice/heat recommended for treatment of quadriceps, gastrocnemius, or soleus strains?
- Are ace wraps recommended for treatment of quadriceps, gastrocnemius, or soleus strains?
- Does rehabilitation therapy work for treatment of quadriceps, gastrocnemius, or soleus strains?
- What evidence suggests progressive agility, trunk stabilization and icing (PATS) for treatment of quadriceps, gastrocnemius, or soleus strains?

### **Knee Sprains (including Medial and Lateral Collateral Ligaments; Anterior and Posterior Cruciate Ligaments)**

- Is X-ray and/or MRI recommended for evaluation of knee sprains?
- What evidence suggests ultrasound for evaluation of knee sprains?
- What evidence suggests work limitations for select knee sprains?
- Is bed rest and knee immobilization recommended for treatment of knee sprains?
- Are NSAIDs efficacious for treatment of knee sprains?
- Is ice/heat recommended for treatment of knee sprains?
- Are ace wraps and knee braces recommended for treatment of knee sprains?
- Does rehabilitation therapy work for knee sprains?
- What evidence suggests other modalities/injections for knee sprains?
- Is surgery recommended for grade III LCL tears?

### **Anterior and Posterior Cruciate Ligament Tears**

- Is X-ray recommended for evaluation of ACL tears?
- Is MRI recommended for evaluation of ACL tears?
- What evidence suggests ultrasound for evaluation of ACL tears?
- What evidence suggests initial care or functional bracing for treatment of non-operative anterior cruciate ligament injuries?

### **Rehabilitation After ACL Injury With or Without Reconstruction**

- What evidence suggest post ACL injury rehabilitation, home-based physical therapy for post-ACL operative repair patients, with or without surgical repair?

- What evidence suggest work limitations for selective case of ACL tears?
- Is bed rest and knee immobilization recommended for treatment of selective case of ACL tears?
- Are NSAIDs efficacious for treatment of ACL tears?
- Is ice/heat recommended for treatment of ACL tears?
- What evidence suggests other modalities/injections for treatment of ACL tears?
- Is surgery recommended for ACL reconstruction?

## **Meniscal Tears**

- Is X-ray recommended for evaluation of meniscal tears?
- Is MRI recommended for evaluation of meniscal tears?
- What evidence suggests work limitations, initial care for treatment of meniscal tears?
- Is bed rest and knee immobilization recommended for treatment of meniscal tears?
- Are NSAIDs efficacious for treatment of meniscal tears?
- Is ice/heat recommended for treatment of meniscal tears?
- Ace wraps, supports or sleeves for meniscal tears?
- Does rehabilitation therapy work for meniscal tears?
- What evidence suggests other modalities/injections for treatment of meniscal tears?
- Is exercise, physical therapy, and rehabilitation recommended for treatment of meniscal tear?
- What evidence suggests surgery for treatment of meniscal tears?

## **Knee Bursitis**

- Are special studies and diagnostic and treatment considerations (fluid aspiration and analyses, x-ray, or soft knee padding and ace wraps etc.) recommended for treatment of knee bursitis?
- What evidence suggests initial care and activity modification (initial care, activity modification, soft knee padding, ace wrap, modifying activities etc.) for treatment of knee bursitis?
- Are medications (NSAID) recommended for treatment of knee bursitis?
- What evidence suggests injection therapies (aspiration, glucocorticosteroid) for treatment of knee bursitis?
- Are surgical considerations (surgical drainage, surgical resection) recommended for treatment of knee or chronic knee bursitis?

## **Patellar Tendinosis, Patellar Tendinopathy (“Jumper’s Knee”), and Anterior Knee Pain**

- Is x-ray recommended for diagnosis or treatment of patellofemoral joint pain?
- Is ultrasound or MRI recommended for treatment of patellofemoral joint pain?

## **Initial Care**

- What evidence suggests work limitations, initial care for treatment of patellofemoral joint pain?

- Is bed rest and knee immobilization recommended for treatment of patellofemoral joint pain?
- Are NSAIDs efficacious for treatment of patellofemoral joint pain?
- Is ice/heat recommended for treatment of patellofemoral joint pain?
- Ace wraps, supports or sleeves for patellofemoral joint pain?
- Does rehabilitation therapy work for patellofemoral joint pain?
- What evidence suggests other modalities/injections for treatment of patellofemoral joint pain?
- Is exercise recommended for treatment of patellofemoral joint pain?
- Does taping work for patellofemoral joint pain?
- What evidence suggests orthotics and knee splints for treatment of patellofemoral joint pain?
- What evidence suggests electrical stimulation for treatment of patellofemoral joint pain?
- Is manipulation and mobilization recommended for treatment of patellofemoral joint pain?
- Is acupuncture recommended for treatment of patellofemoral joint pain?
- What evidence suggests biofeedback for treatment of patellofemoral joint pain?
- Is glucocorticosteroid injections for treatment of patellofemoral joint pain?
- What evidence suggests platelet rich plasma for treatment of patellar tendinopathy?
- What evidence suggests aprotinin injections for treatment of patellar tendinopathy?
- Is prolotherapy suggested for treatment of patellar tendinopathy?
- What evidence suggests glycosaminoglycan injections for treatment of patellar tendinopathy?
- What evidence suggests percutaneous needle tenotomy for chronic tendinosis?
- Is extracorporeal shockwave therapy (ESWT) recommended for treatment of tendinosis?
- Is surgery recommended for patients with anterior knee pain?

# **CERVICAL AND THORACIC SPINE**

## **Diagnostic Tests**

- What evidence is there for the use of X-rays for diagnosing/evaluating Spondylolisthesis and acute, subacute, or chronic cervicothoracic pain?
- Is MRI an effective diagnostic tool for diagnosing acute, subacute, or chronic radicular syndromes?
- Is MRI an effective diagnostic tool for diagnosing/evaluating acute whiplash without neurological signs and non-specific cervicothoracic pain?
- What evidence supports the use of EMG in evaluating upper extremity symptoms?
- Is Surface EMG an effective diagnostic tool for diagnosing cervical and thoracic pain?
- What evidence warrants the use of discography in assessment of acute, subacute, or chronic cervicothoracic or radicular pain?
- Is MRI Discography an effective diagnostic tool for evaluating herniated discs?
- What evidence supports the use of SPECT to evaluate cervical and thoracic pain and related disorders?
- Are FCEs a useful diagnostic tool in evaluation of acute cervicothoracic pain, disabling cervical or thoracic pain, or post-surgical cervical or thoracic pain?
- Is Myeloscopy a useful tool for diagnosing acute, subacute, or chronic cervical, thoracic, radicular, or post-surgical spine pain?
- What evidence suggests the use of ultrasound in diagnosing cervical or thoracic pain?
- What evidence suggests the use of Thermography in diagnosing acute, subacute, spine pain, or radicular pain?
- Is Fluoroscopy an effective diagnostic tool for evaluating acute, subacute, or chronic cervical and thoracic pain?
- What evidence suggests the use of Videofluoroscopy for the Assessment of Acute, Subacute, or Chronic Cervical and Thoracic Pain

## **Initial Care**

- What evidence suggests the use of educational programs for the treatment and prevention of acute, subacute, or chronic cervicothoracic pain or radicular pain?

## **Activity Modification and Exercise**

- What evidence warrants the use of rest and/or immobilization for treatment of acute, subacute, or chronic cervicothoracic pain and radicular pain?
- Are pillows and sleep posture an effective treatment for acute, subacute, or chronic cervicothoracic pain?
- What evidence supports the use of mattresses or other sleeping surfaces for the treatment of acute, subacute, or chronic cervical and thoracic pain?
- Are aerobic exercises an effective way to treat acute, subacute, or chronic cervicothoracic pain and acute post-operative cervical pain?
- Are directional exercises an effective form of treatment of acute, subacute, chronic, or radicular cervical and thoracic pain?
- What evidence supports the use of stretching for the treatment and prevention of acute, subacute, or chronic cervicothoracic pain?



- What evidence suggests the use of strengthening and stabilization exercises for acute, subacute or chronic cervicothoracic pain?
- Is fear avoidance belief training effective during rehabilitation?
- What warrants the use of aquatic therapy for treatment of acute, subacute, or chronic cervicothoracic pain?
- Is yoga a viable treatment option for acute, subacute, or chronic cervicothoracic pain?

## **Medications**

- What evidence supports the use of NSAIDs for treatment of acute, subacute, chronic, or post-operative cervicothoracic pain and radicular pain?
- Are NSAIDs a warranted treatment option in patients at risk for GI adverse effects or cardiovascular adverse effects?
- What evidence suggests the use of acetaminophen for cervicothoracic pain?
- Is the use of anti-depressants an effective treatment option for acute, subacute, chronic, or post-operative cervicothoracic pain or radicular pain?
- What evidence supports the use of anti-epileptic agents for treatment of chronic cervicothoracic or radicular pain, neuropathic pain, or peri-operative pain?
- What evidence warrants the use of capsaicin, “sports creams”, and other creams or ointments in the treatment of acute, subacute, or chronic cervicothoracic, thoracic, or cervical pain?
- Is the use of lidocaine patches an effective treatment for acute, subacute, chronic, or postoperative cervical and thoracic pain?
- Is colchicine an effective treatment option for acute, subacute, or chronic cervicothoracic pain?
- What evidence supports the use of systemic glucocorticosteroids to treat acute severe radicular pain and acute, subacute, chronic, or post-operative cervicothoracic, cervical or thoracic pain?
- Are skeletal muscle relaxants an effective form of treatment for mild to moderate or moderate to severe acute cervicothoracic pain, subacute or chronic cervicothoracic pain, and acute radicular or post-surgical use?
- What evidence supports the use of opioids for the treatment of non-severe acute pain and acute severe pain?
- What evidence supports the limited use of opioids for post-operative pain, screening patients prior to continuation of opioids, and opioid dose limits in post-operative pain?
- Is the administration of opioids an effective treatment for subacute and chronic non-malignant pain and subacute or chronic severe pain?
- What evidence supports opioid dose limits in subacute and chronic pain, the use of an opioid contract, and urine drug screenings?
- What evidence supports the use of Complementary or Alternative Methods or Dietary Supplements, Etc. for acute, subacute, or chronic cervicothoracic pain?
- Is the use of vitamins a viable treatment option for acute, subacute, chronic, post-operative cervicothoracic pain or radiculopathy?

### **Allied Health Professionals, Physical and Occupational Therapy, Chiropractic, Etc.**

- What evidence supports the use of Physical Therapy, Occupational Therapy or Other Professionals for the treatment of Mild to Moderate Acute, Subacute, or Chronic Cervical and Thoracic Pain?

### **Devices**

- What evidence supports the use of magnets and magnetic stimulation for the treatment of acute, subacute, or chronic cervicothoracic pain?
- Is Iontophoresis a viable treatment option for acute, subacute, or chronic cervicothoracic pain or radicular pain, or other back-related conditions?

### **Physical Methods**

- Is acupuncture effective for the treatment of acute, subacute, or chronic cervicothoracic pain?
- What evidence advocates the use of cryotherapy in the treatment of acute cervicothoracic pain?
- What evidence supports the use of heat therapy for the treatment of acute, subacute, or chronic cervicothoracic pain and chronic spine pain?
- Is diathermy an effective treatment for cervicothoracic pain?
- What evidence supports the use of infrared therapy for the treatment of acute, subacute, chronic, or radicular cervicothoracic pain?
- What evidence supports the use of therapeutic ultrasound for the treatment of acute, subacute, or chronic cervicothoracic pain?
- What evidence supports the use of low-level laser therapy for the treatment of acute, subacute, or chronic cervicothoracic pain?
- What evidence supports the use of manipulation and mobilization for the treatment of acute, subacute, or chronic cervicothoracic pain?
- Is manipulation an effective treatment option for chronic cervicogenic headache pain, tension headaches, and radicular pain with/without neurological deficits?
- What evidence supports the use of MUA and MASM for the treatment of acute, subacute, or chronic cervicothoracic pain?
- Is massage therapy an effective treatment option for acute, subacute, or chronic cervicothoracic pain and chronic radicular syndromes?
- Is myofascial release an effective treatment option for acute, subacute, or chronic cervicothoracic pain or radicular pain or other back-related conditions?
- What evidence supports the use of neuroreflexotherapy for the treatment of acute, subacute, or chronic cervicothoracic pain with or without radiculopathy?
- What evidence supports the use of subcutaneous carbon-dioxide insufflations for the treatment of acute, subacute, or chronic cervicothoracic pain with or without radiculopathy?
- What evidence supports the use of traction for the treatment of acute, subacute, or chronic cervicothoracic pain with or without radiculopathy?

## **Electrical Therapies**

- Is interferential therapy an effective treatment option for acute, subacute, or chronic cervicothoracic pain with or without radicular pain?
- Is microcurrent electrical stimulation an effective treatment option for acute, subacute, or chronic cervicothoracic pain with or without radicular pain?
- What evidence supports the use of TENS or NMES for treatment of acute, subacute, or chronic cervicothoracic pain or acute radicular pain?
- Is high-voltage galvanic therapy a viable treatment option for chronic cervicothoracic pain?

## **Injection Therapies**

- What evidence supports the use of Botulinum Injections for treatment of Non-specific Acute, Subacute, or Chronic Cervical Pain, Cervical Myofascial Pain or Cervicogenic Headaches?
- What evidence supports the use of epidural glucocorticosteroid injections for treatment of acute, subacute, or chronic cervical radicular or non-radicular pain?
- Is Radiofrequency Neurotomy, Neurotomy, or Facet Rhizotomy an effective treatment for Chronic Cervicothoracic Pain or cervicogenic headaches?
- What evidence supports the use of radiofrequency lesioning for treatment of chronic cervical radiculopathy?
- What evidence supports the use of Facet Joint Hyaluronic Acid Injections for treatment of Acute, Subacute, or Chronic Cervicothoracic Pain with or with Radicular Pain Syndromes
- What evidence supports the use of Intradiscal Electrothermal Therapy for treatment of Acute, Subacute, or Chronic Cervicothoracic Pain with or with Radicular Pain Syndromes
- What evidence supports the use of Percutaneous Intradiscal Radiofrequency Thermocoagulation for treatment of Acute, Subacute, or Chronic Cervicothoracic Pain with or without Radicular Pain Syndromes
- What evidence supports the use of Prolotherapy Injections for treatment of Acute, Subacute, or Chronic Cervicothoracic Pain with or without Radicular Pain Syndromes

## **Surgical Considerations**

- What evidence supports the use of cervical discectomy for treatment of acute, subacute, or chronic radiculopathy?
- Is Discectomy an effective treatment option for Acute, Subacute, or Chronic Cervical or Thoracic Spine Pain without Radiculopathy
- Are alternative forms of discectomy an effective treatment option for cervical or thoracic radicular pain syndrome?
- Is Decompression Surgery an effective treatment option for Spinal Stenosis?
- What evidence supports spinal fusion for the treatment of chronic radiculopathy or degenerative spondylolisthesis?
- Is decompression surgery a viable treatment option for spinal stenosis/myelopathy?
- What evidence supports the use of pulsed electromagnetic field stimulation or autologous platelet gel for treatment of cervical spine fusion patients?
- Is Cervical or Thoracic Fusion an effective treatment option for Chronic Non-specific Cervical or Thoracic Pain?

- What evidence supports the use of disc replacement for the treatment of subacute or chronic cervical radiculopathy or myelopathy? Chronic non-specific cervical pain?
- What evidence supports the use of vertebroplasty for treatment of cervical or thoracic pain due to vertebral compression fractures?
- Is Kyphoplasty an effective treatment option for Cervical and Thoracic Pain Due to Vertebral Compression Fractures?
- What evidence supports the use of Spinal Cord Stimulators for Treatment of Chronic Cervicothoracic Pain with or without Radiculopathy

### **Rehabilitation for Delayed Recovery**

- What evidence supports the use of Chronic Pain Management/Functional Restoration Programs for treatment of subacute or Chronic Cervicothoracic Pain?

### **Work Rehabilitation Programs**

- Are Work Rehabilitation Programs an effective treatment option for acute, subacute, and Chronic Cervicothoracic Pain?
- What evidence supports the use of participatory ergonomic programs for the treatment of subacute or chronic cervicothoracic pain?

### **Psychological Evaluation**

- Is fear avoidance belief training an effective psychological treatment option for acute, subacute, or chronic cervicothoracic pain?
- What evidence supports the use of rehabilitation for patients with subacute or chronic cervicothoracic pain?

# **OPIOIDS**

## **Comprehensive History and Physical Evaluation**

- What evidence supports the need for a history and physical examination before prescribing opioids?

## **Workers in Safety-Sensitive Jobs**

- What evidence supports the use of opioids by workers in safety-sensitive jobs?

## **Acute Pain (up to 4 weeks)**

- What evidence supports the routine use of opioids for the treatment of non-severe acute pain?
- What evidence supports opioids for the treatment of acute, severe pain?
- What evidence supports the initial screening of patients prior to initiation of opioid use?
- What is the maximum daily oral opioid dose for patients in acute pain?

## **Post-Operative Pain (up to 4 weeks)**

- What evidence supports the limited use of opioids for post-operative pain?
- Is the screening of patients prior to continuation of opioids recommended?
- What is the recommended maximum daily oral opioid dose for post-operative pain patients?

## **Subacute (1-3 Months) and Chronic Pain (>3 Months)**

- What evidence supports the routine use of opioids for subacute and chronic non-malignant pain?
- What evidence supports the use of opioids for treatment of subacute or chronic severe pain?

## **Discontinuation and Tapering Opioids**

- What evidence supports the discontinuation and/or tapering of opioids for patients who have reached meaningful functional recovery?

## **Breakthrough Pain**

- What evidence supports opioids for the treatment of breakthrough nonmalignant pain?

## **Intrathecal Drugs (“Pain Pumps”)**

- What evidence supports intrathecal drug delivery systems for chronic non-malignant pain conditions?

## **Financial Costs Associated with Opioid Usage**

- What are the financial costs associated with opioid use?

## **Comorbidities**

- What comorbidities exist from opioid use?

## Other Questions

- What evidence supports the screening of patients prior to the initiation of opioids for patients with subacute or chronic pain?
- What is the maximum daily oral opioid dose for patients with subacute and chronic pain?
- What evidence supports the use of an opioid treatment agreement (opioid contract, doctor/patient agreement, informed consent)?
- What evidence supports urine drug screening for patients who have been prescribed opioids for the treatment of subacute or chronic pain?
- Are opioids superior to other medications or other treatments for pain relief and functional improvement?
- Is screening for risk factors effective for reducing adverse effects of treatment from opioids?
- What is the dose–response relationship between morphine-equivalent dose and overdoses, fatalities, and other adverse effects?
- What evidence addresses the balance of risk and benefits of opioid use for acute, subacute, chronic, and postoperative pain?
- Are opioids efficacious for treatment of acute, subacute, chronic, and postoperative nonmalignant pain?
- Are opioid treatment agreements (opioid contract, doctor/patient agreement, or informed consent) effective?
- What is the prevalence of aberrant urine drug screening results among patients using opioids for treatment of chronic pain?
- What evidence supports the use of intrathecal drug delivery systems for treatment of chronic, nonmalignant pain?
- What tapering regimens are effective for weaning off opioids?

# OCCUPATIONAL ASTHMA

## Diagnostic Testing

- What evidence supports the use of Peak Expiratory Flow Rates – Serial Measures to diagnose asthma?
- What evidence supports the use of Nonspecific Bronchial Provocation Test to diagnose asthma?
- What evidence supports the use of Mannitol Bronchial Provocation Test to diagnose asthma?
- What evidence supports the use of IgE Specific Immunological Testing for High Molecular Weight Specific Antigens to diagnose asthma?
- What evidence supports the use of IgE Specific Immunological Testing for Low Molecular Weight Specific Antigens to diagnose asthma?
- Is Skin Prick Testing to High Molecular Weight Allergens effective to diagnose asthma?
- Is skin prick testing to low molecular weight allergens effective to diagnose asthma?
- Is skin prick testing to other allergens effective to diagnose asthma?
- What evidence supports the use of Specific Inhalational Challenge Testing for diagnosing asthma?
- What evidence supports Exhaled Nitric Oxide Testing for Diagnosis of Occupational Asthma to diagnose asthma?
- What evidence supports Exhaled Nitric Oxide Testing for Diagnosis of Asthma to diagnose asthma?
- What evidence supports Exhaled Nitric Oxide Testing for Selective Monitoring of Asthma to diagnose asthma?
- What evidence supports Nasal Lavage Fluid Testing for Diagnosis of Occupational Asthma for diagnosing asthma?
- What evidence supports Nasal Lavage Fluid Testing for Specific Allergen Testing and Monitoring of Symptomatic Workers for diagnosing asthma?

## Prevention and Exposure Control

- Does Management of Asthma (Persistence of Exposure) contribute to deterioration of asthma symptoms?
- Does Management of Asthma (Avoidance of Exposure) contribute to asthma recovery?
- What evidence supports Management of Sensitizer-induced Asthma (Reduction of Exposure to Low Molecular Weight Asthmagens) leading to adverse health outcomes.
- What evidence supports Management of Sensitizer-induced Asthma (Reduction of Exposure) will worsen asthma.
- Is Management of Irritant-induced Asthma (Reduction of Exposure) effective?
- Is Management of Asthma (Respiratory Protective Devices) effective?
- Is Management of Asthma (Anti-asthma Medications) effective?
- Is Management of Asthma (Pharmacological Treatment) effective?
- Is Management of Asthma (Immunotherapy) effective?

# **SHOULDER**

## **Ergonomic Interventions for Shoulder Disorders with an Occupational Basis**

- Are Ergonomic Interventions for Shoulder Disorders, Particularly Rotator Cuff Tendinopathies effective in prevention of rotator cuff tendinopathies?
- Is Typing Posture for Prevention and Treatment of Shoulder Disorders effective?
- Are Keyboarding Breaks for Patients with Shoulder Disorders and for Primary Prevention effective?
- Is Forearm Support for Typing to Prevent Neck/Shoulder Symptoms effective?
- Is Ergonomics Training in Moderate- or High-risk Manufacturing Settings effective?
- Is Ergonomics Training for Prevention of Musculoskeletal Disorders (MSDs) in Office Settings effective?

## **Return-to-Work Programs**

- Are Return-to-work Programs for Treatment of Subacute or Chronic Shoulder Disorders effective?

## **Activity Modification**

- Are Range-of-motion Exercises for Shoulder Pain effective?
- Are Strengthening Exercises for Shoulder Disorders effective?
- Are Aerobic Exercises for Shoulder Disorders effective?

## **Diagnostic Testing and Other Testing**

- Is using Antibodies for Diagnosing Shoulder Pain with Suspicion of Rheumatological Disorder effective?
- Are the use of Antibodies to Confirm Specific Disorders as a diagnostic test effective?
- Are Non-specific Inflammatory Markers for Screening for Inflammatory Disorders in Subacute or Chronic Shoulder Pain effective?
- Are X-rays for Acute, Subacute, or Chronic Shoulder Pain effective for evaluation?
- Is Diagnostic Arthroscopic Surgery for Shoulder Pain effective?
- Is Bone Scanning for Select Use in Acute, Subacute, or Chronic Pain effective to diagnose conditions with increased bone metabolism?
- Is Routine Use of Bone Scanning for Routine Shoulder Joint Evaluations effective in shoulder joint evaluations?
- Is Routine CT for Evaluating Acute, Subacute, or Chronic Shoulder Pain effective?
- Is Routine CT for Evaluation of Complex Proximal Humeral and Glenoid/Scapular Fractures effective?
- Is CT for Evaluating Patients with Osteonecrosis (AVN) effective?
- Is Routine Helical CT for Evaluating Acute, Subacute, or Chronic Shoulder Pain effective?
- Is Helical CT for Evaluating Osteonecrosis effective?
- Is Helical CT for Select Acute, Subacute, or Chronic Shoulder Pain effective?
- Is Electromyography for Diagnosing Subacute or Chronic Peripheral Nerve Entrapments effective?



- Is MRI for Diagnosing Rotator Cuff Tears, Tendinoses, Impingement, or Subacromial Bursitis recommended?
- Is MRI for Diagnosing Osteonecrosis (AVN) recommended?
- Is MR Arthrogram for Diagnosing Labral Tears in Patients with Subacute or Chronic Shoulder Pain effective?
- Is MR Arthrogram for Select Diagnosis of Impingement, Rotator Cuff Tendinosis or Tears, and Subacromial Bursitis in Patients with Subacute or Chronic Shoulder Pain effective?

## **Rotator Cuff Tendinopathies, Including Rotator Cuff Tendinitis, Rotator Cuff Tears, Supraspinatus Tendinitis, Calcific Tendinitis, Impingement Syndrome, Bicipital Tendinitis, Rotator Cuff Tears and Subacromial Bursitis**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is Ultrasound for Diagnosing Rotator Cuff Tears, Tendinoses, or Impingement effective?
- Is the use of an X-ray to Diagnose Shoulder Joint Pain effective?
- Is the use of either MRI and MRA to Diagnose Causes of Rotator Cuff Tears effective?
- Is the use of an Ultrasound to Diagnose Rotator Cuff Tears effective?

### **Initial Care**

- Are Over-the-counter Analgesics and Self-applications of Heat and Ice for Treatment of Rotator Cuff Tendinopathies recommended?
- Are Slings and Braces for Treatment of Rotator Cuff Tendinopathies recommended?

### **Medications**

- Are NSAIDs for Treatment of Acute, Subacute, or Chronic Shoulder Pain or Post-operative Pain effective?
- Is the use of Acetaminophen for Acute, Subacute, Chronic, or Post-operative Shoulder Pain recommended?
- Are NSAIDs for Patients at Risk for GI Adverse Effects recommended?
- Are NSAIDs for Patients at Risk for Cardiovascular Adverse Effects recommended?
- Are Norepinephrine Reuptake Inhibiting Anti-depressants for Subacute or Chronic Shoulder Girdle Pain, including Myofascial Pain Syndrome and Select Cases of Rotator Cuff Tendinopathy recommended?
- Are Norepinephrine Reuptake Inhibiting Anti-depressants for Acute Shoulder Pain effective?
- Are Selective Serotonin Reuptake Inhibitors for Acute, Subacute, or Chronic Shoulder Pain effective?
- Are Anti-convulsants for Subacute or Chronic Shoulder Pain recommended?
- Are Anti-convulsants for Acute Shoulder Pain recommended?
- Are Muscle Relaxants for Acute or Subacute Shoulder Pain with Significant Muscle Spasm recommended?
- Are Glucocorticosteroids for Treatment of Acute, Subacute, or Chronic Rotator Cuff Tendinopathies recommended?

- Are Capsicum Creams for Acute, Subacute, or Chronic Shoulder Pain recommended as a counter-irritant?
- Are the use of Topical NSAIDs, Topical Glyceryl Trinitrate, Lidocaine Patches, Eutectic Mixture of Local Anesthetics (EMLA), Other Creams/Ointments for Shoulder Joint Pain effective?

### **Devices/Physical Methods**

- Are Slings and Shoulder Supports for Acute Severe Shoulder Pain recommended?
- Are Slings and Shoulder Supports for Post-operative Shoulder Pain recommended?
- Are Slings and Shoulder Supports for Subacute or Chronic Shoulder Pain recommended?
- Is Taping or Kinesiotaping for Shoulder Pain effective?
- Are Magnets and Magnetic Stimulation for Acute, Subacute, or Chronic Shoulder Pain effective?
- Is Acupuncture for Chronic Rotator Cuff Tendinopathies, including Impingement Syndrome, or Post-operative Pain effective?
- Are Home Use of Cryotherapies for Acute, Subacute, Chronic, or Peri-operative Shoulder Pain effective?
- Is Self-application of Heat Therapy for Acute, Subacute, or Chronic Shoulder Pain effective?
- Is Diathermy or Infrared Therapy for Acute, Subacute, or Chronic Shoulder Pain effective?
- Is using Ultrasound for Acute, Subacute, or Chronic Shoulder Tendinopathies effective treatment?
- Is using Ultrasound for Calcific Tendinitis effective treatment?
- Is Low-level Laser Therapy for Rotator Cuff Tendinopathies effective for treatment?
- Is using Pulsed Electromagnetic Field for Rotator Cuff Tendinopathies effective treatment?
- Is Manual Therapy, Manipulation, or Mobilization for Acute, Subacute, or Chronic Rotator Cuff Tendinopathies effective for treatment?
- Is a Massage for Rotator Cuff Tendinopathies effective treatment?
- Is Reflexology for Shoulder Pain a recommended treatment?

### **Electrical Therapies**

- Is Interferential Therapy for Treatment of Rotator Cuff Tendinopathies recommended for treatment?
- Are there Other Electrical Stimulation Therapies for Treatment of Rotator Cuff Tendinopathies that are recommended for treatment?
- Is Extracorporeal Shockwave Therapy for Calcific Rotator Cuff Tendinitis recommended for treatment?
- Is Extracorporeal Shockwave Therapy for Acute, Subacute, or Chronic Non-calcific Rotator Cuff Tendinitis recommended for treatment?

### **Injections**

- Are Subacromial Glucocorticosteroid Injections for Acute, Subacute, or Chronic Rotator Cuff Tendinopathies recommended for treatment?

- Is the use of Subacromial EDTA Mesotherapy Injections for Shoulder Calcific Tendinitis effective for treatment?
- Are Subacromial Viscosupplementation Injections for Rotator Cuff Tendinopathies effective for treatment?
- Is Needling with or without Extracorporeal Shockwave Therapy for Calcific Rotator Cuff Tendinitis effective for treatment?
- Is Bursoscopy for Calcific Rotator Cuff Tendinitis recommended for treatment?

### **Surgical Considerations**

- Is Rotator Cuff Repair for Small, Medium, or Large Tears recommended for treatment?
- Is Addition of Claviclectomy or Subacromial Decompression to a Rotator Cuff Repair for Isolated Supraspinatus Tears effective treatment?
- Is Rotator Cuff Repair for Acute Massive Tears recommended for treatment?
- Is Rotator Cuff Repair for Chronic Massive Tears recommended for treatment?
- Is Rotator Cuff Repair for Massive Tears Using Porcine Xenograft Material recommended for treatment?
- Is Rotator Cuff Repair for Massive Tears Using Tissue Augmentation recommended for treatment?
- Is Subacromial Decompression Surgery for Impingement Syndrome/Rotator Cuff Tendinosis recommended for treatment?

### **Post-Operative Rehabilitation: Rotator Cuff Tendinopathy**

- Are Exercise or Rehabilitation Programs for Post-operative Rotator Cuff Tendinopathy effective?
- Is Post-operative Acupuncture for Rotator Cuff Tendinopathy effective for patients?
- Is Surgery for Select Patients with Bicipital Tendon Tears recommended?

### **Pectoral Strains and Tears**

- Is Surgery for Patients with Complete Tears or Ruptures of the Pectoralis Insertion recommended?

### **Shoulder Dislocation and Instability**

#### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of an X-ray to Diagnose Shoulder Dislocation or Instability effective?
- Is the use of a CT to Diagnose Fracture after Dislocation recommended?
- Is the use of an MRI to Diagnose Shoulder Dislocation or Instability recommended?

#### **Initial Care**

- Are OTC Analgesics for Treatment of Shoulder Dislocation effective?
- Is Self-application of Heat or Ice for Treatment of Shoulder Dislocation effective?
- Are Slings, Including an External Rotation Brace, for Initial Treatment Acutely for Shoulder Dislocation recommended?

## **Medications**

- Are NSAIDs and Acetaminophen for Acute, Subacute, or Chronic Shoulder Dislocation or Post-operatively recommended?
- Are Opioids for Pain Management for Select Patients with Acute Shoulder Dislocations recommended?
- Are Opioids for Acute, Severe Post-operative Shoulder Pain from Shoulder Dislocation recommended?
- Are Opioids for Pain Management of Subacute or Chronic Pain from Shoulder Dislocation recommended?
- Are Other Medications for Chronic Pain Management of Shoulder Instability recommended?
- Are Other Medications for Acute, Subacute, or Post-operative Pain Management of Shoulder Dislocation recommended?

## **Devices/Physical Methods**

- Are Slings for Acute Rehabilitation and Treatment of Acute Shoulder Dislocations recommended?
- Are Slings for Treatment of Shoulder Instability effective?
- Is Self-application of Heat or Cryotherapies for Treatment of Shoulder Dislocation effective?
- Is Acupuncture for Treatment of Chronic Pain from Shoulder Instability effective?
- Is Education and Exercise for Treatment of Shoulder Dislocation or Instability effective?
- Are Other Physical Methods for Treatment of Shoulder Dislocation or Instability recommended?
- Is Taping, Magnets, Pulsed Electromagnetic Frequency, or Interferential Therapy for Treatment of Shoulder Dislocation recommended?

## **Injections**

- Are Injections for Treatment of Acute Shoulder Dislocation recommended?

## **Surgical Considerations**

- Is the Relocation of Dislocated Shoulders recommended?
- Is Surgery for First Traumatic Anterior Shoulder Dislocation recommended?
- Is Surgery for Multidirectional Instability recommended?
- Is Arthroscopic Lavage for Shoulder Dislocations recommended?

## **Post-Operative Rehabilitation: Shoulder Instability and Dislocation**

- Is Accelerated Rehabilitation for Patients after Arthroscopic Bankart Repairs recommended?
- Is Accelerated Rehabilitation for Post-operative Shoulder Instability Patients recommended?
- Is Rehabilitation for Post-operative Shoulder Instability Patients recommended?

## **Superior Labral Anterior Posterior and Labral Tears**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of MR Arthrography to Diagnose Superior Labral Anterior Posterior or Other Labral Tears effective?

### **Initial Care**

- Are OTC Analgesics for Treatment of Superior Labral Anterior Posterior or Other Labral Tears effective?
- Is Self-application of Heat or Ice for Treatment of Superior Labral Anterior Posterior or Other Labral Tears effective?
- Are Slings for Treatment of Severe Symptomatic Superior Labral Anterior Posterior or Other Labral Tears effective?

### **Medications**

- Are NSAIDs or Acetaminophen for Pain Management for Superior Labral Anterior Posterior or Other Labral Tears effective?
- Are Opioids for Pain Management for Select Patients with Superior Labral Anterior Posterior or Other Labral Tears effective?
- Are Other Medications for Pain Management of Superior Labral Anterior Posterior or Other Labral Tears effective?

### **Devices/Physical Methods**

- Is Acupuncture for Chronic Pain from Superior Labral Anterior Posterior or Other Labral Tears effective?
- Other Modalities for Treatment of Superior Labral Anterior Posterior or Other Labral Tears
- Is Taping, Magnets, Pulsed Electromagnetic Frequency, or Interferential Therapy for Treatment of Superior Labral Anterior Posterior or Other Labral Tears effective?

### **Injections**

- Are Injections for Treatment of Superior Labral Anterior Posterior or Other Labral Tears effective?

### **Surgical Considerations**

- Is Arthroscopic or Open Surgery for Labral or Superior Labral Anterior Posterior Tears effective?
- Is Rehabilitation for Patients after Arthroscopic or Open Labral and Superior Labral Anterior Posterior Tear Repairs recommended?

## **Acromioclavicular Sprains and Dislocations**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of an X-ray to Diagnose Acromioclavicular Sprains or Dislocations effective?

### **Initial Care**

- Are OTC Analgesics for Treatment of Acromioclavicular Sprains or Dislocations effective?
- Is Self-application of Heat or Ice for Treatment of Acromioclavicular Sprains or Dislocations effective?

- Are Slings for Treatment of Acromioclavicular Sprains or Dislocations effective?

### **Medications**

- Are Over-the-counter (OTC) Medications and NSAIDs for Pain Management of Acromioclavicular Sprains or Dislocations effective?
- Are Opioids for Pain Management for Select Patients with Acromioclavicular Sprains or Dislocations effective?

### **Devices/Physical Methods**

- Are Slings or Shoulder Immobilizers, but not compressive immobilizers, for Treatment of Severe Acromioclavicular Sprains or Dislocations effective?
- Is Therapy for Treatment of Severe Acromioclavicular Sprains or Dislocations effective?
- Are Other Modalities for Treatment of Acromioclavicular Sprains or Dislocations effective?
- Is Taping, Magnets, Pulsed Electromagnetic Frequency, or Interferential Therapy for Treatment of Acromioclavicular Sprains or Dislocations recommended?

### **Injections**

- Are Injections for Treatment of Acute Isolated Acromioclavicular Sprains or Dislocations effective?
- Are Injections for Consideration of Distal Clavicle Resection for Select Patients effective?

### **Surgical Considerations**

- Is Surgical Repair of Acromioclavicular Joint Separation – Grades IV to VI – recommended?
- Is Routine Surgical Repair of Acromioclavicular Joint Separation – Grade III- recommended?
- Is Surgical Repair of Acromioclavicular Joint Separation for Select Patients – Grades III- recommended?
- Is Non-operative Management of Acromioclavicular Joint Sprain – Grades I to II- recommended?
- Is Rehabilitation for Patients after Surgical Repair of AC Separations recommended?

## **Shoulder (Glenohumeral and Acromioclavicular Joint) Osteoarthritis**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of an X-ray to Diagnose Degenerative Joint Disease recommended?

### **Initial Care**

- Are OTC Analgesics for Treatment of Osteoarthritis effective?
- Is Self-application of Heat or Ice for Treatment of Osteoarthritis effective?
- Are Slings for Treatment of Osteoarthritis effective?

### **Medications**

- Are NSAIDs and Acetaminophen for Pain Management of Osteoarthritis effective?
- Are Opioids for Pain Management for Select Patients with Severe Osteoarthritis effective?

- Are Other Medications for Pain Management of Osteoarthritis effective?
- Are Over-the-counter Nutraceuticals for Pain Management of Osteoarthritis effective?

### **Devices/Physical Methods**

- Are Slings and Functional Braces for Post-operative Treatment of Osteoarthritis effective?
- Is Acupuncture for Treatment of Select Patients with Chronic or Post-operative Osteoarthritis effective?
- Manual Therapy, Mobilization, Manipulation, or Massage for Treatment of Osteoarthritis of the Shoulder
- Are Hot or Cold Therapies for Treatment of Osteoarthritis effective?
- Are Other Modalities for Treatment of Shoulder Osteoarthritis recommended?
- Are Taping and Magnets for Treatment of Shoulder Osteoarthritis effective?

### **Injections**

- Are Intra-articular Glucocorticosteroid Injections for Shoulder Glenohumeral or Acromioclavicular Joint Osteoarthritis effective?
- Are Intra-articular Glenohumeral Viscosupplementation Injections for Shoulder Osteoarthritis effective?
- Are Prolotherapy Injections for Treatment of Shoulder Osteoarthritis effective?

### **Surgical Considerations**

- Are Arthroscopy for Evaluation and Treatment of Shoulder Osteoarthritis effective?
- Is Chondroplasty for Treatment of Shoulder Osteoarthritis effective?
- Is Distal Clavicle Resection for Treatment of Acromioclavicular Joint Pain effective?
- Is Total Shoulder Arthroplasty or Resurfacing for Moderate to Severe Arthritides effective?

## **Shoulder Fractures**

### **Proximal Humeral Fractures**

- Is a Non-operative Treatment for Proximal Humeral Fractures effective?
- Is a Surgical Treatment for Proximal Humeral Fractures effective?
- Is Arthroplasty for Proximal Humeral Fractures effective?
- Is Early Mobilization for Proximal Humeral Fractures recommended?
- Is Education and Exercises for Proximal Humeral Fractures recommended?
- Is Self-Training for Proximal Humeral Fractures recommended?

### **Clavicular Fractures**

- Is a Non-operative Treatment for Clavicular Fractures recommended?
- Is Surgical Treatment for Clavicular Fractures recommended?
- Is Low-intensity Pulsed Ultrasound for Treatment of Type I Clavicular Fractures recommended?
- Is Low-intensity Pulsed Ultrasound for Treatment for Other Clavicular Fractures recommended?
- Is Early Mobilization for Clavicular Fractures recommended?

- Is Education and Exercises for Clavicular Fractures recommended?

## **Adhesive Capsulitis (“Frozen Shoulder” and “Painful Stiff Shoulder”)**

### **Special Studies, Diagnostic and Treatment Considerations**

- Are X-rays effective in the diagnosis of Adhesive Capsulitis?

### **Initial Care**

- Are Over-the-counter Analgesics and Self-applications of Heat and Ice for Treatment of Adhesive Capsulitis recommended?
- Are Slings and Braces for Treatment of Adhesive Capsulitis effective?

### **Medications**

- NSAIDs and Acetaminophen for Pain Management of Adhesive Capsulitis
- Are Opioids for Pain Management for Select Patients with Adhesive Capsulitis effective?
- Are Over-the-counter Nutraceuticals for Treatment of Adhesive Capsulitis effective?
- Are Oral Glucocorticosteroids for Treatment of Adhesive Capsulitis effective?
- Are Other Medications for Pain Management of Adhesive Capsulitis in Select Patients recommended?

### **Education, Exercise, and Therapy and Continuous Passive Motion**

- Is Exercise, Education, and Therapy for Treatment of Adhesive Capsulitis effective?
- Is Continuous Passive Motion for Treatment of Adhesive Capsulitis effective?
- Is Mobilization and/or Manual Therapy for Treatment of Adhesive Capsulitis effective?
- Is Manipulation under Anesthesia for Treatment of Adhesive Capsulitis in Select Patients effective?
- Is Acupuncture for Treatment of Adhesive Capsulitis in Select Patients effective?
- Is Shortwave Diathermy for Treatment of Adhesive Capsulitis effective?
- Are Other Physical Methods for Treatment of Adhesive Capsulitis recommended?
- Are Magnets for Treatment of Adhesive Capsulitis effective?
- Is Taping or Pulsed Electromagnetic Frequency for Treatment of Adhesive Capsulitis effective?

### **Injections**

- Are Glucocorticoid Injections for Treatment of Adhesive Capsulitis effective?
- Are Suprascapular Nerve Blocks for Treatment of Adhesive Capsulitis effective?
- Is Hydrodilatation for Treatment of Adhesive Capsulitis in Select Patients effective?

### **Surgical Considerations**

- Is Arthroscopy for Treatment of Adhesive Capsulitis effective?
- Is Open Release of Contractures for Select Patients with Adhesive Capsulitis effective for treatment?



## **Osteonecrosis**

### **Medications**

- Are Bisphosphonates to Treat Osteonecrosis effective?
- Are NSAIDs for Pain Management of Osteonecrosis effective?
- Are Glucocorticoids (including Injections) for Treatment of Osteonecrosis effective?

### **Physical Methods**

- Is Hyperbaric Oxygen for Treatment of Osteonecrosis effective?

### **Surgical Considerations**

- Is Core Decompression for Treatment of Osteonecrosis effective?
- Is Arthroplasty for Treatment of Osteonecrosis effective?

## **Brachial Plexus Injuries**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of an X-ray to Diagnose Brachial Plexopathies effective?
- Is the use of an MRI to Diagnose Brachial Plexopathies effective?

## **Trigger Points/Myofascial Pain**

### **Activities and Activity Alteration**

- Is Aerobic Exercise for Trigger Points/Myofascial Pain effective?
- Are Stretching Exercises for Trigger Points/Myofascial Pain effective?
- Are Strengthening Exercises for Trigger Points/Myofascial Pain effective?
- Is Inclusion of Fear Avoidance Belief Training for Trigger Points/Myofascial Pain effective?
- Is Aquatic Therapy for Myofascial Pain/Trigger Points effective?
- Is Yoga for Trigger Points/Myofascial Pain effective?

### **Medications**

- Are NSAIDs and Acetaminophen for Treatment of Acute, Subacute, or Chronic Myofascial Pain/Trigger Points effective?
- Are NSAIDs for Patients at Risk for GI Adverse Effects effective?
- Are NSAIDs for Patients at Risk for Cardiovascular Adverse Effects effective?
- Are Norepinephrine Reuptake Inhibitor Anti-depressants for Trigger Points/Myofascial Pain effective?
- Are Selective Serotonin Reuptake Inhibitors, Bupropion, or Trazodone for Trigger Points/Myofascial Pain effective?
- Is Duloxetine for Muscle Tenderness and Trigger Points effective?
- Are Anti-convulsant Agents for Trigger Points/Myofascial Pain effective?
- Is Gabapentin or Pregabalin for Trigger Points/Myofascial Pain effective?
- Are Glucocorticosteroids for Trigger Points/Myofascial Pain effective?
- Are Muscle Relaxants for Trigger Points/Myofascial Pain effective?

## **Devices/Physical Methods**

- Is Taping and Kinesiotaping for Trigger Points/Myofascial Pain effective?
- Are Magnets and Magnetic Stimulation for Trigger Points/Myofascial Pain effective?
- Is Acupuncture for Chronic Trigger Points/Myofascial Pain effective?
- Is Home Use of Cryotherapies for Trigger Points/Myofascial Pain effective?
- Is Self-application of Heat Therapy for Trigger Points/Myofascial Pain effective?
- Is Diathermy for Trigger Points/Myofascial Pain effective?
- Is Infrared Therapy for Trigger Points/Myofascial Pain effective?
- Is Ultrasound for the Treatment of Trigger Points/Myofascial Pain effective?
- Is Low-level Laser Therapy for Trigger Points/Myofascial Pain effective?
- Is Manipulation and Mobilization for Trigger Points/Myofascial Pain effective?
- Is Massage for Trigger Points/Myofascial Pain effective?
- Is Mechanical Massage Device for Trigger Points/Myofascial Pain effective?
- Is Myofascial Release for Trigger Points/Myofascial Pain recommended?

## **Electrical Therapies**

- Is High Voltage Galvanic Therapy, H-Wave Stimulation, Interferential Therapy, Microcurrent, or Iontophoresis for Trigger Points/Myofascial Pain effective?
- Is PENS for Trigger Points/Myofascial Pain effective?
- Is TENS for Trigger Points/Myofascial Pain effective?

## **Injection Therapies**

- Are Trigger Point Injections Using Local Anesthetic effective?
- Are Trigger Point Injections Using Glucocorticosteroids effective?
- Are Botulinum Injections for Trigger Points/Myofascial Pain recommended?

## **Psychological Services**

- Is Psychological Evaluation for Chronic Trigger Points/Myofascial Pain effective?
- Is Biofeedback for Trigger Points/Myofascial Pain effective?

## **Appendix - Thoracic Outlet Compression Syndrome (TOS)**

### **Special Studies, Diagnostic and Treatment Considerations**

- Is the use of an X-ray to Diagnose TOS effective?
- Is the use of an MRI or CT to Diagnose TOS effective?
- Are Electrodiagnostic Studies to Diagnose TOS effective?

# **HAND, WRIST, AND FOREARM**

## **Carpal Tunnel Syndrome (CTS)**

### **Ergonomic Intervention**

- What ergonomic intervention are effective (split keyboard, rotator cuff etc.) for CTS and common distal upper extremity Tendinosis in numerous occupational settings?
- What types of return-to-work programs (for subacute or chronic hand, wrist, or forearm) are found in the United States?
- What evidence supports work restrictions on patients with CTS?

### **Specific Treatment Interventions**

- Is exercises (gliding exercise, tendon-gliding, tendon gliding, nerve-gliding, nerve gliding etc.) beneficial for treatment of acute, subacute, chronic CTS and rehabilitation of post-operative CTS patients with significant deficits?
- Is yoga beneficial for treatment of CTS patients?

### **Medications**

- Are NSAIDs recommended for treatment of acute, subacute, chronic or post-operative management of CTS-related Pain?
- What evidence supports systematic glucocorticosteroids for acute, subacute, and chronic carpal tunnel syndrome?
- Are diuretics effective for routine treatment of CTS?
- Opioids (see Opioids chapter)
- Are vitamins (including pyridoxine; vitamin B<sub>6</sub>) effective in treatment of CTS patients?
- Are topical medications (lidocaine or lidocaine patch etc.), including lidocaine patches effective for treatment of acute, subacute or chronic CTS?
- Is gabapentin (Neurontin, Fanatrex, Gabarone, Neupentin, Neogab, Horizant etc.) recommended for treatment of CTS?

### **Diagnostics**

- What evidence supports electro diagnostic studies (EDS) for diagnosis, initial evaluation, and pre-operative assessment of CTS?
- What evidence supports ultrasound and high resolution sonography for the evaluation and diagnosis of CTS?
- How does MRI and Diffusion Tensor Imaging compare to EDS for the diagnosis of CTS?
- What evidence supports instruments for monitoring the progress of patients with CTS?

### **Physical Methods/Rehabilitation**

- What evidence suggests magnets for treatment of CTS-related pain?
- Are there recommendations for or against the use of wrist splints for acute, subacute or chronic CTS?

### **Allied Health**

- What evidence supports acupuncture for treatment of acute, subacute or chronic CTS?
- What biofeedback method is affective for treating CTS patients?

- Is low level laser therapy (LLLT) effective for treatment of CTS?
- What evidence suggests manipulation and mobilization for treatment of CTS?
- Is there evidence of efficacy for massage (soft tissue massage) as a treatment for CTS?
- Is therapeutic touch effective for treatment of CTS-related pain?
- What evidence suggests self-applied ice as a treatment for CTS?
- Is self-applied heat effective treatment for CTS patients?
- Is diathermy a type of heat treatment that has been effective for CTS patients?
- What evidence suggest ultrasound (therapeutic) for treatment for CTS-related pain?

### **Electrical Therapies**

- What evidence suggests Phonophoresis as a treatment for acute, subacute, and chronic CTS?
- What evidence suggests Iontophoresis for acute, subacute, or chronic treatment of CTS?

### **Injection Therapies**

- Are intracarpal Glucocorticosteroid Injections or “Steroid Injections” effective therapy for treatment of acute CTS with fracture, or subacute and chronic CTS-related pain?
- Are intramuscular Glucocorticosteroid injections effective for treatment of CTS?
- Are insulin injections efficacious for treatment of acute, subacute, and chronic CTS?
- Are botulinum injections beneficial for treatment of acute, subacute, and chronic CTS?

### **Surgery/Carpal Tunnel Surgical Release**

- Is carpal tunnel surgical release superior to injection for treatment of subacute or chronic CTS-related pain?
- Are perioperative antibiotics effective for patients undergoing carpal tunnel release?
- Are anesthetic techniques effective for carpal tunnel release and other hand surgery?

## **TRIANGULAR FIBROCARILAGE COMPLEX (TFCC)**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis and treatment of acute, subacute, and chronic TFCC tears?
- Is MRI recommended for diagnosis and treatment of acute, subacute, and chronic TFCC tears?
- How does diagnostic arthroscopy combine with surgical repair or other diagnostic tools for diagnosis and treatment of acute, subacute, chronic TFCC?

### **Initial Care**

- Is rest recommended for treatment of acute, subacute, and chronic TFCC tears?
- Is splinting superior to ice, heat or rest for treatment of acute, subacute, and chronic TFCC tears?
- Is cold recommended for controlling pain associated with TFCC tears?
- Is heat recommended for controlling pain associated with TFCC tears?

## **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of acute, subacute, and chronic TFCC tears?
- Opioids (see Opioids chapter).

## **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of TFCC tears?

## **Surgery**

- Is arthroscopic surgery recommended for treatment of open surgical repair for subacute or chronic TFCC tears?
- Is open surgical repair recommended for subacute or chronic TFCC tears?
- What evidence suggest ulna shortening and wafer procedures for chronic TFCC tears?

# **CRUSH INJURIES AND COMPARTMENT SYNDROME**

## **Diagnostics**

- What evidence suggests X-rays for diagnosis and treatment of crush injuries or compartment syndrome related pain?
- Is MRI recommended for diagnosis and treatment of crush injuries or compartment syndrome related pain?

## **Initial Care**

- Is rest recommended for treatment of crush injuries or compartment syndrome related pain?
- Is splinting superior to ice, heat or rest for treatment crush injuries or compartment syndrome related pain?
- Is cold recommended for controlling pain associated with crush injuries or compartment syndrome related pain?
- Is heat recommended for controlling pain associated with crush injuries or compartment syndrome related pain?

## **Medications**

- Are NSAIDs/acetaminophen efficacious for controlling pain associated with crush injuries or compartment syndrome related pain?
- Opioids (see Opioids chapter).

## **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of the recovery or post-operative phases of crush injuries or compartment syndrome?
- What evidence suggests hyperbaric oxygen for treatment of acute, subacute, and chronic crush injuries or compartment syndrome?

## **Surgery**

- Is general surgery recommended for treatment of open surgical repair for subacute or chronic crush injuries or compartment syndrome?

- Is emergency fasciotomy recommended for subacute or chronic crush injuries or compartment syndrome?

## **KIENBÖCK DISEASE**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis of Kienböck disease?
- Is MRI recommended for diagnosis of Kienböck disease?
- Is screening for systemic disorders recommended for patients with Kienböck disease?

### **Initial Care**

- Is splinting recommended for treatment of acute, subacute, and chronic Kienböck disease?
- Is cold recommended for controlling pain associated with chronic Kienböck disease?
- Is heat recommended for controlling pain associated with acute, subacute, and chronic Kienböck disease?

### **Medications/Topical Medication**

- Are NSAIDs/acetaminophen efficacious for treatment of acute, subacute, and chronic Kienböck disease?
- Are topical medications efficacious for treatment of acute, subacute, and chronic Kienböck disease?
- Opioids (see Opioids chapter).

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of Kienböck disease?

### **Surgery**

- Is surgical repair recommended for treatment of open surgical repair for subacute or chronic Kienböck disease?

## **WRIST SPRAIN**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis of wrist sprain and potential fractures?
- Is MR arthrography recommended for diagnosis of wrist sprain?

### **Initial Care**

- Is rest or relative rest recommended for treatment of wrist sprain?
- Is splinting or immobilization recommended for treatment of wrist sprain and potential fractures?
- Is cold or self-application of ice recommended for controlling pain associated with wrist sprain and potential fractures?
- Is heat or self-application of heat recommended for controlling pain associated with wrist sprain and potential fractures?

## **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of wrist sprain and potential fractures?
- Opioids (see Opioids chapter)

## **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of wrist sprain?

## **Surgery**

- Is general surgery recommended for treatment of acute, subacute, and chronic wrist sprain?

## **MALLET FINGER**

### **Diagnostics**

- Is x-ray recommended for diagnosis and treatment for Mallet Finger?
- What evidence suggests ultrasound for diagnosis and treatment of Mallet Finger?

### **Initial Care**

- Is splinting recommended for diagnosis of acute, subacute Mallet Finger?

### **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of Mallet Finger?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of Mallet Finger?

### **Surgery**

- Is surgical interventions for mallet finger with displaced fractures recommended for treatment of Mallet Finger?
- Is surgical interventions for failed splinting cases of mallet finger recommended for subacute or chronic of Mallet Finger?

## **FLEXOR TENDON ENTRAPMENT**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis of flexor tendon entrapment?

### **Initial Care**

- Is splinting or immobilization recommended for treatment of select cases of acute, subacute, or chronic flexor tendon entrapment?

### **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of flexor tendon entrapment related pain?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of flexor tendon entrapment related pain?

### **Injection Therapies**

- Are glucocorticosteroids recommended for treatment of flexor tendon entrapment related pain?

### **Surgery**

- Is surgery (open release) recommended for persistent or chronic flexor tendon entrapment?

## **EXTENSOR COMPARTMENT TENOSYNOVITIS**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis and treatment of thumb extensor compartment tenosynovitis?
- Is MRI recommended for diagnosis and treatment of thumb extensor compartment tenosynovitis?

### **Initial Care**

- Is splinting or immobilization recommended for treatment of acute and subacute thumb extensor compartment tenosynovitis?

### **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of acute and subacute extensor compartment tenosynovitis?

### **Injection Therapies**

- Are glucocorticosteroids recommended for treatment of flexor tendon entrapment related pain?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of
- Are iontophoresis recommended for treatment of flexor tendon entrapment related pain?
- Is manipulation and mobilization for treatment of flexor tendon entrapment related pain?
- What evidence suggest massage for treatment of flexor tendon entrapment related pain?
- Is acupuncture for treatment of flexor tendon entrapment related pain?

### **Surgery**

- Is surgical release recommended for persistent or chronic flexor tendon entrapment related pain?

## **ULNAR NERVE ENTRAPMENT AT THE WRIST**

### **Diagnostics**



- What evidence suggests electrodiagnostic studies for diagnosis and treatment of acute, subacute, or chronic ulnar neuropathy at the wrist?
- Is MRI recommended for diagnosis of ulnar nerve entrapment at the wrist?
- What evidence suggests ultrasound for treatment of ulnar nerve entrapment at the wrist?
- Is CT recommended for diagnosis of ulnar nerve entrapment at the wrist?

### **Initial Care**

- Is activity modification recommended for treatment of ulnar nerve entrapment at the wrist?
- Is splinting or immobilization recommended for treatment of ulnar nerve entrapment at the wrist?
- Is cold or self-application of ice recommended for controlling pain associated with ulnar nerve entrapment at the wrist?
- Is heat or self-application of heat recommended for controlling pain associated with ulnar nerve entrapment at the wrist?
- Is manipulation and mobilization for treatment of ulnar nerve entrapment at the wrist?

### **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of ulnar nerve entrapment at the wrist?

### **Injection Therapies**

- Are glucocorticosteroids recommended for treatment of ulnar nerve entrapment at the wrist?

### **Physical Methods/Rehabilitation**

- What evidence suggests iontophoresis for treatment of ulnar nerve entrapment at the wrist?
- What evidence suggest massage for treatment of ulnar nerve entrapment at the wrist?
- Is acupuncture for treatment of ulnar nerve entrapment at the wrist?
- Is exercise needed in the recovery of post-operative phases of ulnar nerve entrapment at the wrist?

### **Surgery**

- Is surgical decompression recommended for treatment of open surgical repair for subacute or chronic ulnar nerve entrapment at the wrist?

## **RADIAL NERVE ENTRAPMENT**

### **Diagnostics**

- What evidence suggests electrodiagnostic studies for diagnosis and treatment of radial nerve motor neuropathy?

### **Initial Care**

- Is splinting or thumb spica recommended for treatment of acute, subacute, or chronic radial nerve compression neuropathy?
- Is cold or self-application of ice recommended for controlling pain associated with acute, subacute, or chronic radial neuropathy at the wrist?

- Is heat or self-application of heat recommended for controlling pain associated with acute, subacute, or chronic radial neuropathy at the wrist?
- Is manipulation and mobilization needed in the recovery of post-operative phases of acute, subacute, or chronic radial neuropathy at the wrist?

### **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of acute, subacute, or chronic radial nerve compression neuropathy?
- Opioids (see Opioids chapter).

### **Physical Methods/Rehabilitation**

- Is iontophoresis needed in the recovery of post-operative phases of acute, subacute, or chronic radial neuropathy at the wrist?
- Are massages or friction massages needed in the recovery of post-operative phases of acute, subacute, or chronic radial neuropathy at the wrist?
- Is acupuncture needed in the recovery of post-operative phases of acute, subacute, or chronic radial neuropathy at the wrist?
- Is exercise needed in the recovery of post-operative phases of patients with functional deficits: CTS and other disorders?

### **Injection Therapies**

- Are glucocorticosteroids recommended for treatment of acute, subacute, or chronic radial nerve compression at the wrist?

### **Surgery**

- Is surgery release recommended for subacute or chronic cases of radial nerve compression neuropathy that persist despite other interventions?

## **NON-SPECIFIC HAND, WRIST, AND FOREARM PAIN**

### **Diagnostics**

- What evidence suggests electrodiagnostic studies for the evaluation of non-specific hand, wrist, or forearm pain in patients with paresthesias or other neurological symptoms?
- What evidence suggests x-ray for the evaluation of non-specific hand, wrist, or forearm pain?

### **Initial Care**

- Is rest or relative rest recommended for treatment of acute, subacute, or chronic radial nerve compression neuropathy?
- Is splinting or splint recommended for treatment of acute or subacute non-specific hand, wrist, or forearm pain?
- Is cold or self-application of ice recommended for acute or subacute non-specific hand, wrist, or forearm pain?
- Is heat or self-application of heat recommended for acute or subacute non-specific hand, wrist, or forearm pain?

## **Medications**

- Are NSAIDs/acetaminophen recommended for control of pain associated with acute or subacute non-specific hand, wrist, or forearm pain?
- Opioids (see Opioids chapter).

## **Physical Methods/Rehabilitation**

- Is exercise recommended for treatment of acute, subacute, or chronic non-specific hand, wrist, or forearm pain?
- Is physical therapy or occupational therapy recommended for treatment of acute, subacute, or chronic non-specific hand, wrist, or forearm pain?

## **SCAPHOID FRACTURES**

### **Diagnostics**

- What evidence suggests using x-rays for diagnosing scaphoid fractures?
- Is MRI recommended for diagnosing scaphoid fractures?
- Is bone scanning recommended for diagnosing scaphoid fractures?
- What evidence suggests using computed tomography (CT) for diagnosing scaphoid fractures?
- Is high-spatial resolution sonography recommended for diagnosis scaphoid fractures?
- Does ultrasound/osteogenic protein adjuvant effectively accelerate bone graft healing for scaphoid fractures?

### **Initial Care**

- Is splinting recommended for treatment of scaphoid tubercle fractures?
- Is cast immobilization or wrist casting recommended for treatment of stable scaphoid fractures?

### **Medications**

- Are NSAIDs/acetaminophen effective for treatment of scaphoid fractures?

### **Physical Methods/Rehabilitation**

- Does physical or occupational therapy after cast removal aid in the recovery of post-operative phases of scaphoid fractures?
- What evidence suggests education after cast removal for treatment of scaphoid fractures?

### **Surgery**

- Is surgical fixation recommended for treating displaced scaphoid fractures?

### **Other**

- What evidence suggests non-union scaphoid fractures for treatment of scaphoid fractures?

## **DISTAL PHALANX FRACTURES AND SUBUNGUAL HEMATOMA, TUFT FRACTURES**

### **Diagnostics**

- What evidence suggests X-rays for diagnosis and treatment of tuft fractures?
- Is MRI recommended for diagnosing tuft fractures?
- What evidence suggests using computed tomography (CT) for diagnosing tuft fractures?
- Does ultrasound/osteogenic protein adjuvant effectively accelerate bone graft healing for tuft fractures?
- Is bone scanning recommended for diagnosing tuft fractures?

### **Initial Care**

- Is trephination (nail repair or laceration repair) recommended for treatment of subungual hematoma?
- Does the evidence support using protective splinting for distal phalanx fractures?

### **Medications**

- Are NSAIDs/acetaminophen effective for treating tuft fractures?
- Does the evidence support post-trephination antibiotic prophylaxis for open fractures?

### **Physical Methods/Rehabilitation**

- Is routine physical or occupational therapy effective for tuft fractures?

### **Injection Therapies**

- Are tetanus immunization statuses recommended to be updated for open fractures?

### **Surgery**

- What evidence suggests retrograde percutaneous Kirschner-wire fixation for treatment of open fractures?

## **MIDDLE AND PROXIMAL PHALANGEAL AND METACARPAL FRACTURES**

### **Diagnostics**

- What evidence suggests X-rays for diagnosing phalangeal or metacarpal fractures?
- Is MRI recommended for diagnosing phalangeal or metacarpal fractures?
- Does the evidence support using CT for diagnosis of metacarpal fractures?
- What evidence suggests ultrasound for diagnosis of metacarpal fractures?
- Is bone scan recommended for diagnosis of metacarpal fractures?

### **Initial Care**

- Is digital block recommended for treatment of middle and proximal phalangeal or metacarpal fractures?
- What evidence suggests immobilization for treating phalangeal or metacarpal fractures?

- Is ice or self-application of ice recommended for treatment of phalangeal or metacarpal fractures?
- Is early mobilization suggested for treatment of phalangeal or metacarpal fractures?

### **Medications**

- Are NSAIDs and acetaminophen effective for treating phalangeal or metacarpal fractures?
- Is antibiotic prophylaxis recommended for open phalangeal fractures?

### **Injection Therapies**

- Are tetanus immunization statuses recommended to be updated for open phalangeal fractures?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of phalangeal or metacarpal fractures?
- Is taping recommended for treatment of phalangeal or metacarpal fractures?

### **Surgery**

- What evidence suggests percutaneous fixation for treatment of phalangeal or metacarpal fractures?
- Is operative fixation recommended for treatment phalangeal or metacarpal fractures?

## **DISTAL FOREARM FRACTURES, COLLES' FRACTURE**

### **Diagnostics**

- What evidence suggests X-rays for diagnosing suspected distal forearm fractures?
- Is MRI recommended for diagnosing distal forearm fractures?
- Does the evidence support using CT for diagnosis and classification of occult and complex distal forearm fractures?

### **Initial Care**

- What evidence suggests early immobilization effectively treat non-displaced or minimally displaced radius fractures?
- Does using functional braces or splinting over traditional casting for non-displaced or minimally displaced distal radius fracture?
- Is casting/bracing for non-displaced or minimally displaced colles' fractures effective?
- What evidence suggests closed reduction technique for displaced distal radial fractures?
- Are functional braces effective for displaced distal radial fractures compared with traditional casting?
- What evidence supports hematoma block analgesia for manipulation of acute displaced distal forearm fractures?

### **Medications**

- Are NSAIDs effective in treating acute colles' fractures?

## **Physical Methods/Rehabilitation**

- Is exercise recommended for treatment of acute displaced distal forearm fractures?
- Can use of low frequency electromagnetic fields effectively stimulate bone healing of distal radial fractures?
- What evidence supports use of physical or occupational therapy after cast removal for acute colles' fracture for patients with functional deficits unable to return to work?
- What evidence suggests education after cast removal for treatment of acute displaced distal forearm fractures?

## **Surgery**

- Can closed reduction or external fixation effectively treat severely displaced extra-articular fractures?
- Does the evidence suggest using cast immobilization to treat moderately displaced extra-articular fractures?
- What evidence supports the use of medullary pinning as an alternative to external fixation?
- Is Bone Cement an effective alternative to external fixation?
- Can open reduction and internal fixation via dorsal or volar plating stabilize fractures?
- What evidence supports triangular fibrocartilage complex repair for treating distal radial fractures?

## **GANGLION CYST**

### **Diagnostics**

- What evidence suggests x-rays for diagnosis and treatment of dorsal or volar wrist ganglia?
- Is MRI recommended for diagnosis and treatment of wrist pain with suspected occult dorsal or volar wrist ganglia
- What evidence suggests ultrasound for treatment of chronic wrist pain with suspected occult dorsal or volar wrist ganglia?

### **Initial Care**

- Is non-operative management (no treatment) an effective treatment for acute asymptomatic wrist and hand ganglia?
- Is aspiration only (without other interventions) an effective treatment for acute cosmetic and ganglia related pain?
- Is aspiration with steroids an effective treatment for wrist ganglia?
- What evidence suggests the use of aspiration and multiple punctures of the cyst wall as a treatment for wrist ganglia?
- What evidence suggests the use splinting after aspiration for acute or subacute dorsal or volar wrist ganglia?
- Is hyaluronidase instillation after aspiration an effective treatment for wrist ganglia?
- Are aspiration and sclerosing agent's effective treatments for wrist ganglia?
- Is arthroscopic vs. open excision an effective treatment for wrist ganglia?

## **Medications**

- Are NSAIDs/acetaminophen efficacious for treatment of wrist ganglia?

## **HAND OR ARM VIBRATION SYNDROME (HAVS)**

### **Diagnostics**

- What evidence suggests the use of cold provocation test, cold stress thermography (finger skin temperature, infrared, dynamic infrared, laser doppler imaging), finger systolic blood pressure, vibrotactile threshold testing, thermal aesthesiometry, or nerve conduction velocity studies to diagnose hand arm vibration syndrome?
- What evidence suggests the use of serologic tests (thrombomodulin, soluble intracellular adhesion molecule 1 [s1-CAM 1]) to diagnose hand arm vibration syndrome?

### **Initial Care**

- What evidence suggests the use of calcium channel blockers for advanced subacute or chronic hand arm vibration syndrome?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of hand arm vibration syndrome?

## **LACERATION MANAGEMENT**

### **Diagnostics**

- What evidence suggests x-rays for evaluation of lacerations with suspected fracture or foreign body?
- Is ultrasound effective for evaluation of suspected superficial foreign bodies?
- What evidence suggests CT for evaluation of suspected superficial foreign bodies?

### **Initial Care**

- What evidence suggests wound cleansing, irrigation and debridement as a treatment for superficial foreign bodies?
- What evidence suggests sterile or clean clove use during wound cleaning?
- What evidence supports local infiltration plus topical anesthetic or digital block for finger laceration repair?
- What evidence supports follow-up care (local infiltration for extremity wound repair, non-surgical management of non-complicated hand lacerations less than 2cm in linear length, surgical referral for hand lacerations with evidence of nerve injury etc.) or laceration management?

### **Medications**

- What evidence supports Antibiotic Prophylaxis in Uncomplicated Hand and Forearm Lacerations?
- What evidence supports Use of Topical Antimicrobials for Wound Care?
- What evidence supports NSAIDs or Acetaminophen for Upper Extremity Post-laceration Repair?

### **Physical Methods/Rehabilitation**

- Is exercise needed in the recovery of post-operative phases of post-laceration repair?

## **HUMAN BITES, ANIMAL BITES AND ASSOCIATED LACERATIONS**

### **Diagnostics**

- What evidence suggests routine wound culture and sensitivity for the diagnosis of animal and human bites?

### **Initial Care**

- What evidence supports blood borne pathogen protocol for human bites?
- What evidence supports prophylactic antibiotics for dog bite wounds?
- What evidence supports prophylactic antibiotics for uncomplicated human bite wounds?
- What evidence supports prophylactic antibiotics for uncomplicated cat bite wounds?
- What evidence supports laceration repair for dog-bite wounds?

## **HAND/FINGER OSTEOARTHRISIS**

### **Diagnostics**

- What evidence suggests X-rays for evaluating hand osteoarthritis?

### **Initial Care**

- Is relative rest recommended for treatment of chronic hand osteoarthritis?
- Can self-application of ice effectively treat chronic hand osteoarthritis?
- Can self-application of heat effectively treat chronic hand osteoarthritis?
- Is splinting effective for treating hand osteoarthritis?

### **Physical Methods/Rehabilitation**

- What evidence suggest exercise for acute flares or chronic hand osteoarthritis?

### **Medications**

- Are NSAIDs effective in treating chronic osteoarthritis?
- Is acetaminophen supported by evidence for treating acute flares of hand osteoarthritis?
- Opioids (see Opioids chapter).
- Does the evidence support using topical NSAIDs for the treatment of hand osteoarthritis?
- What evidence suggest capsaicin for chronic hand osteoarthritis?
- Does the evidence support low-level laser therapy for hand osteoarthritis?

### **Injection Therapies**

- What evidence supports using intraarticular glucocorticosteroid injections for chronic hand osteoarthritis?
- Are prolotherapy injections effective at treating subacute hand osteoarthritis?

### **Surgery**

- Does the evidence support using reconstructive surgery for select patients with trapeziometacarpal arthrosis?



## **POST-OPERATIVE REHABILITATION OF PATIENTS WITH FUNCTIONAL DEFICITS: CTS AND OTHER DISORDERS**

### **Rehabilitation**

- What evidence suggests soft bandages during post-operative rehabilitation?
- Does the evidence support NSAIDs during post-operative rehabilitation?
- What evidence suggests Arnica for post-operative rehabilitation?
- Are cooling blankets effective during post-operative rehabilitation?
- Does the evidence suggest exercise during post-operative rehabilitation for patients with functional deficits?

## **DUPUYTREN'S DISEASE**

### **Treatments**

- What evidence suggests radiotherapy for prevention of progression of Dupuytren's disease?
- Do collagenase injections effectively treat Dupuytren's disease?
- Does the evidence support using 5-fluorouracil for recurrence of Dupuytren's disease in surgical patients?
- What evidence suggests NSAIDs to treat post-operative swelling from surgery for Dupuytren's disease?
- Can percutaneous needle fasciotomy treat Dupuytren's contracture?