

Ten Things Physicians and Patients Should Question

1

Avoid performing routine post-operative deep vein thrombosis ultrasonography screening in patients who undergo elective hip or knee arthroplasty.

Since ultrasound is not effective at diagnosing unsuspected deep vein thrombosis (DVT) and appropriate alternative screening tests do not exist, if there is no change in the patient's clinical status, routine post-operative screening for DVT after hip or knee arthroplasty does not change outcomes or clinical management.

2

Don't use needle lavage to treat patients with symptomatic osteoarthritis of the knee for long-term relief.

The use of needle lavage in patients with symptomatic osteoarthritis of the knee does not lead to measurable improvements in pain, function, 50-foot walking time, stiffness, tenderness or swelling.

3

Don't use glucosamine and chondroitin to treat patients with symptomatic osteoarthritis of the knee.

Both glucosamine and chondroitin sulfate do not provide relief for patients with symptomatic osteoarthritis of the knee.

4

Don't use lateral wedge insoles to treat patients with symptomatic medial compartment osteoarthritis of the knee.

In patients with symptomatic osteoarthritis of the knee, the use of lateral wedge or neutral insoles does not improve pain or functional outcomes. Comparisons between lateral and neutral heel wedges were investigated, as were comparisons between lateral wedged insoles and lateral wedged insoles with subtalar strapping. The systematic review concludes that there is only limited evidence for the effectiveness of lateral heel wedges and related orthoses. In addition, the possibility exists that those who do not use them may experience fewer symptoms from osteoarthritis of the knee.

5

Don't use post-operative splinting of the wrist after carpal tunnel release for long-term relief.

Routine post-operative splinting of the wrist after the carpal tunnel release procedure showed no long-term difference in range of motion, grip or lateral pinch strength. In addition, the research showed no difference in wound complication rates.

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6

Avoid routine use of Continuous Passive Motion (CPM) after knee arthroplasty.

Two high quality studies (Beaupre 2001, Denis 2006) and five moderate quality studies (Can 2003, Chen 2013, Herbold 2014, MacDonald 2000, Montgomery 1996) compared the utilization of continuous passive motion during hospital stay to no utilization of continuous passive motion. The combined results provide strong evidence that the surgical outcomes for those who used continuous passive motion are not better than for those who did not use continuous passive motion.

Five of the seven studies measured outcomes of physical function and quality of life. Beaupre, Denis, Herbold, and MacDonald found no significant differences in a gamut of outcomes (WOMAC, SF-36, Timed “up + go” [TUG], functional independence measure [FIM], and Knee Society Score). Chen reported better quality of life in the group that did not use continuous passive motion. Knee range of motion was investigated by Beaupre, Denis, and Chen. Meta-analysis showed no differences in knee range of motion. Complications were evaluated by Beaupre and Denis and were not statistically different between groups. Beaupre, Can, Chen, MacDonald, and Montgomery demonstrated that pain and stiffness were not decreased by CPM, whereas Denis reported significantly less pain in the continuous passive motion group (12 points difference in VAS ranging from 0–100). Meta-analysis from Denis, Herbold, and Montgomery showed no differences in length of hospital stay.

One high quality study (Lenssen 2008) demonstrated no statistically significant benefits in functional outcome scores or range of motion with the use of continuous passive motion in conjunction with physical therapy compared to physical therapy alone. The continuous passive motion was used for 17 consecutive days after surgery (about 2 weeks after discharge).

CPM should not be used routinely for every knee arthroplasty, as there have been no differences in active knee range of motion, pain, function, or quality of life (Harvey, 2014). CPM has been used after manipulation under anesthesia performed after knee surgery, although there are no studies to support this in the arthroplasty literature (Bram, 2019).

7

Avoid routinely performing arthroscopy with lavage and/or debridement in patients with a primary diagnosis of symptomatic osteoarthritis of the knee.

None of the evidence we examined specifically included patients who had a primary diagnosis of meniscal tear, loose body, or other mechanical derangement, with concomitant diagnosis of osteoarthritis of the knee. The present recommendation does not apply to such patients.

There were three studies that met the inclusion criteria for this recommendation. The Kirkley et. al and Kalunian et. al studies comparing arthroscopic lavage to placebo were rated as moderate strength and the Moseley et al. study comparing arthroscopic lavage to sham arthroscopic surgery was rated as a high strength study.

Kirkley et al. reported that a large number of patients were not eligible for participation in their study (38%) largely due to the exclusion criteria of substantial knee malalignment. In some cases, patients declined participation. Kirkley et al. compared arthroscopic surgery to lavage and debridement combined with usual physical therapy and medical treatment, usual care. The authors used the pain, functional status and other symptoms subscales of the Arthritis Self-Efficacy Scale (ASES) and the McMaster-Toronto Arthritis Patient Preference Disability Questionnaire (MACTAR) at multiple time points (ranging from three months to two years). Out of 20 outcomes, only two were statistically significant in favor of surgery with lavage. Differences in AIMS pain were statistically significant at three months and differences in AIMS-Other Arthritis Symptoms subscale scores remained significant after two years. In summary, this randomized controlled trial demonstrated no benefit of arthroscopic surgery compared to physical therapy and medical treatment for osteoarthritis of the knee.

Kalunian et al. included a large number of enrolled patients from one institution with intraarticular crystals in their knee. They compared arthroscopic lavage with 3,000 ml saline to lavage with 250 ml saline. There were not any statistically significant differences in VAS and WOMAC pain scores between the two treatment groups.

The Moseley et al. study raised questions regarding its limited sampling (mostly male veterans) as well as the number of potential study participants who declined randomization into a treatment group. In this RCT, the effects of arthroscopy with debridement or lavage were not statistically significant in the vast majority of patient oriented outcome measures for pain and function, at multiple time points from one week to two years following surgery.

Collectively all three included studies did not demonstrate clinical benefit of arthroscopic debridement or lavage. The work group also considered the potential risks to patients (anesthesia intolerance, infection, and venous thrombosis) associated with surgical intervention.

It was agreed that the lacking evidence for treatment benefit and increased risks from surgery were sufficient reasons to recommend against arthroscopic debridement and/or lavage in patients with a primary diagnosis of osteoarthritis of the knee.

8

Do not transfuse asymptomatic postoperative hip fracture patients with a hemoglobin higher than 8g/dl.

Two high strength studies (Carson et al and Carson et al) support this recommendation. Carson et al (FOCUS trial) is the largest (n=2016) and most robust study to address transfusion threshold in hip fracture patients. FOCUS considered patient-centered and clinically important outcomes in a prospective, randomized, multicenter, controlled trial. This study showed that a restrictive transfusion threshold of hemoglobin 8g/dl in asymptomatic hip fracture patients with cardiovascular disease or risk factors resulted in no significant difference in primary or secondary outcomes at 30 or 60 days including mortality, independent walking ability, residence, other functional outcomes, cardiovascular events, or length of stay. Carson's 1998 trial was also a high strength study and was the pilot study that led to FOCUS. Symptoms or signs that were considered indicative of anemia appropriate for transfusion were chest pain that was deemed to be cardiac in origin, congestive heart failure, and unexplained tachycardia or hypotension unresponsive to fluid replacement.

9

Avoid routine use of therapy following carpal tunnel release.

Routine post-operative therapy after carpal tunnel release was examined in two moderate quality studies. These studies (Pomerance 2007 and Provinciali 2000) addressed the need for supervised therapy in addition to a home program in the early postoperative period.

The studies compared in-clinic or therapist supervised exercise programs in addition to a home program to a home program alone. The studies were somewhat limited by an incomplete description of who delivered home programs, exercise/education content and dosage, and treatment progression. Pomerance (2007) compared a two-week program directed by a therapist combined with a home program alone and found no additional benefit in terms of grip or pinch strength in comparison to the home program alone. Provinciali (2000) compared one-hour sessions over 10 consecutive days of in-clinic physiotherapy comprising a multimodal program with a home program that was progressed in terms of strength/endurance. No benefit was found in outcome when measured by a CTS-specific patient reported instrument.

10

Avoid routine use of opioids for treatment of knee osteoarthritis, hip osteoarthritis, low back pain, or rotator cuff injury.

The use of opioids is not recommended without a thorough evaluation, consideration of alternative medications, treatments, review of all current medications and discussions of risks of opioid therapy and potential interactions with current medications for other conditions. Other treatment modalities are effective and avoid the risks associated with the use of opioids. Opioid prescriptions should be for a limited period with the lowest effective dose that provides meaningful pain relief and improved function with manageable side effects.

How This List Was Created (1–5)

The American Academy of Orthopaedic Surgeons (AAOS) routinely develops evidence-based clinical practice guidelines as valuable tools to advance the physician-patient communications process and enhance the diagnosis and treatment of musculoskeletal conditions. AAOS physician volunteer work groups develop evidence-based clinical practice guidelines to serve as an educational tool based on an assessment of the current scientific and clinical information and accepted approaches to treatment. The most recent approved clinical practice guidelines have been published in the *Journal of Bone and Joint Surgery*. AAOS staff, led by the medical director, conducted a review of the approved clinical practice guidelines previously developed by the work groups and selected a variety of topics frequently used in orthopaedic surgical practice. After input from the orthopaedic specialty society leaders and approval from the AAOS Presidential Leadership and Board of Directors, the final five topics were selected for this campaign. The AAOS disclosure and conflict of interest policy can be found at www.aaos.org.

How This List Was Created (6–10)

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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About the American Academy of Orthopaedic Surgeons

The American Academy of Orthopaedic Surgeons (AAOS) is proud to be a partner in the *Choosing Wisely*® campaign. As the premier provider of education for orthopaedic surgeons and allied health professionals, the Academy champions the interests of patients and advances the highest quality of bone and joint health. The more than 37,000 orthopaedic surgeon members aim to increase people's quality of life by improving mobility, reducing pain and returning patients to their jobs and hobbies.



The AAOS has been a leader in developing quality improvement and safety programs—from the “Sign Your Site” campaign aimed at eliminating wrong-site surgery to the introduction of evidence-based clinical practice guidelines and appropriate use criteria to enhance the diagnosis and treatment of musculoskeletal conditions. By partnering in the *Choosing Wisely* campaign, the AAOS hopes to facilitate dialogue between patients and physicians about appropriately using diagnostic and therapeutic interventions and avoiding those that are unnecessary.

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