



# Musculoskeletal Monthly

*An evidence-based newsletter related to the management of musculoskeletal disorders*

Effective and cost efficient management of patients with hip and knee osteoarthritis

Osteoarthritis (OA) is the most common cause of disability in the United States. Approximately 1/3 of all people over 60 years of age suffer from knee OA that limits their ability to rise from a chair, stand, walk and use stairs.<sup>1-3</sup> Thirty-four percent of people with knee OA also have hip OA and younger individuals (<40) are often affected.<sup>4-6</sup> The number of people with functional limitations caused by arthritis is projected to climb to 11.6 million in 2020<sup>7</sup> and the economic burden is staggering. In 2000 alone the cost associated with medical care related to OA was estimated at 60 billion dollars annually.<sup>8</sup>

**Diagnosis:** Although osteoarthritis is a disease that causes degeneration of articular cartilage and bony changes at the joints, many patients often have symptoms of knee OA prior to radiographic changes taking place. Further, 40% of people with radiographic findings that are typical of OA are asymptomatic.<sup>9, 10</sup> Because of this confounding factor, clinical correlation with radiographic findings is required for diagnosis.<sup>9</sup> Altman's criteria for the clinical diagnosis of OA have good sensitivity and specificity for the diagnosis of patients with OA and may be helpful for determining which patients may benefit from physical therapy<sup>4, 9</sup>:

**Table 1**

<b>Altman Classification of OA of the Knee</b> <b>Sn= .91 Sp= .86</b>
Knee pain and osteophytosis of the knee, plus one of the following:
Age >50
Morning Stiffness <30 minutes
Crepitus

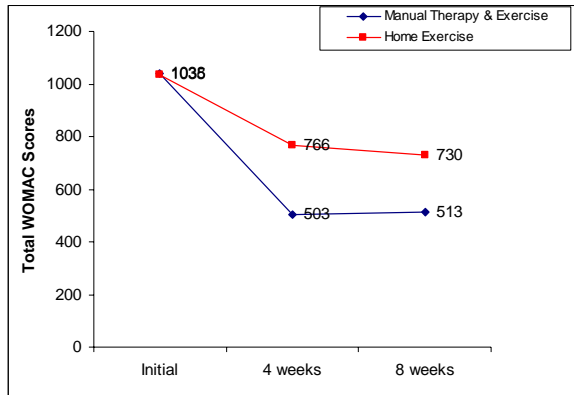
**Table 2**

<b>Altman's Criteria for Diagnosis of Hip OA</b> <b>Sn= .86 Sp= .75</b>
Hip pain and:
<15 IR and <115 flexion in hip joint
<i>OR</i>
>15 IR, pain with IR and AM stiffness <1 hr

Treatment for OA commonly consists of acetaminophen and non-steroidal anti-inflammatory medication, despite the fact that The advantage of oral NSAIDs (including COX 2 agents) over placebo for short term pain relief is small.<sup>11</sup> Because of the serious adverse effects associated with oral NSAIDs use, only limited use has been recommended.<sup>12</sup> In addition, traditional physical agents such as moist heat and ultrasound are not of significant therapeutic value.<sup>13, 14</sup> On the other hand, several interventions utilized by physical therapists *have* been shown to result in large treatment effects.

**Manual physical therapy**, consisting of joint and soft-tissue manipulation and mobilization, combined with exercise is more effective than a home exercise program alone for reducing pain and disability in patients with knee OA (figure 1). Patients frequently report a 20 – 40% relief of symptoms within 3 – 4 visits. In addition, patients treated with manual physical therapy and exercise are also less likely to be taking medication for their OA and more satisfied with care than their counterparts who received a home exercise program only.<sup>15</sup> This same treatment approach has been shown to decrease the number of injections (NNT=10) and total knee arthroplasty (TKA) procedures at 1 year. when compared to a placebo intervention and walking program (NNT= 7; 1 TKA is prevented for every

7 patients who receive manual physical therapy & exercise than would have otherwise been



realized with the alternative intervention).<sup>16</sup>

**Figure 1 WOMAC Disability Scores (lower score= less disability)** Deyle GD, Allison SC et al. Physical Therapy Treatment Effectiveness for Osteoarthritis of the Knee: A Randomized Comparison of Supervised Clinical Exercise and Manual Therapy Procedures Versus a Home Exercise Program. *Physical Therapy*. 2005;85:1301-1317

Likewise, a similar large effect for reducing pain and disability lasting up to 6 months is observed in patients with hip OA who are treated with manual physical therapy and stretching compared to those receiving exercise alone.<sup>17</sup>

Robert S. Wainner, PT, PhD, OCS, ECS,  
FAAOMPT

John D. Childs, PT, PhD, MBA, OCS,  
FAAOMPT

1. Dieppe P. Osteoarthritis: time to shift the paradigm. This includes distinguishing between severe disease and common minor disability. *Bmj* 1999;318(7194):1299-300.
2. Gelber AC, Hochberg MC, Mead LA, Wang NY, Wigley FM, Klag MJ. Joint injury in young adults and risk for subsequent knee and hip osteoarthritis. *Ann Intern Med* 2000;133(5):321-8.
3. Lethbridge-Cejku M, Helmick CG, Popovic JR. Hospitalizations for arthritis and other rheumatic conditions: data from the 1997 National Hospital Discharge Survey. *Med Care* 2003;41(12):1367-73.
4. Altman R, Alarcon G, Appelrouth D, et al. The American College of Rheumatology criteria for the classification and reporting of osteoarthritis of the hip. *Arthritis Rheum* 1991;34(5):505-14.
5. Lanyon P, Muir K, Doherty S, Doherty M. Assessment of a genetic contribution to osteoarthritis of the hip: sibling study. *Bmj* 2000;321(7270):1179-83.
6. O'Reilly SC, Muir KR, Doherty M. Occupation and knee pain: a community study. *Osteoarthritis Cartilage* 2000;8(2):78-81.
7. Peat G, McCarney R, Croft P. Knee pain and osteoarthritis in older adults: a review of community burden and current use of primary health care. *Ann Rheum Dis* 2001;60(2):91-7.
8. Elders MJ. The increasing impact of arthritis on public health. *J Rheumatol Suppl* 2000;60:6-8.
9. Altman R, Asch E, Bloch D, et al. Development of criteria for the classification and reporting of osteoarthritis. Classification and reporting of osteoarthritis of the knee. Diagnostic and Therapeutic Criteria Committee of the American Rheumatism Association. *Arthritis Rheum* 1986;29(8):1039-49.
10. Balint G, Szebenyi B. Diagnosis of osteoarthritis. Guidelines and current pitfalls. *Drugs* 1996;52 Suppl 3:1-13.
11. Towheed TE, Judd MJ, Hochberg MC, Wells G. Acetaminophen for osteoarthritis. *Cochrane Database Syst Rev* 2003(2):CD004257.
12. Bjordal JM, Ljunggren AE, Klovning A, Slordal L. Non-steroidal anti-inflammatory drugs, including cyclo-oxygenase-2 inhibitors, in osteoarthritic knee pain: meta-analysis of randomized placebo controlled trials. *BMJ Online First* 2004(23 November 2004):doi: 10.1136/bmj.38273.626655.63.
13. Brosseau L, Yonge KA, Robinson V, et al. Thermotherapy for treatment of osteoarthritis. *Cochrane Database Syst Rev* 2003(4):CD004522.
14. Welch V, Brosseau L, Peterson J, Shea B, Tugwell P, Wells G. Therapeutic ultrasound for osteoarthritis of the knee. *Cochrane Database Syst Rev* 2001(3):CD003132.
15. Deyle GD, Allison SC, Matekel RL, et al. Physical therapy treatment effectiveness for osteoarthritis of the knee: a randomized comparison of supervised clinical exercise and manual therapy procedures versus a home exercise program. *Phys Ther* 2005;85(12):1301-17.
16. Deyle GD, Henderson NE, Matekel RL, Ryder MG, Garber MB, Allison SC. Effectiveness of manual physical therapy and exercise in osteoarthritis of the knee. A randomized, controlled trial. *Ann Intern Med* 2000;132(3):173-81.
17. Hoeksma HL, Dekker J, Runday HK, et al. Comparison of manual therapy and exercise therapy in osteoarthritis of the hip: a randomized clinical trial. *Arthritis Rheum* 2004;51(5):722-9.