

Weight Loss Best Medicine for People with Knee Osteoarthritis



Saturday, November 5, 2011

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According to research presented this week at the American College of Rheumatology Annual Scientific Meeting in Chicago, weight loss combined with exercise reduces pain and improves mobility in people with knee osteoarthritis.

Study lead author, Stephen P. Messier, PHD, at Wake Forest University comments, "Long-term intensive diet and moderate exercise can improve mobility and reduce pain by as much as 50 percent."

Knee osteoarthritis is a common form of osteoarthritis and is caused by cartilage breakdown in the knee joint. Factors that increase the risk of knee osteoarthritis - including being overweight, age, injury or stress to the joints, and family history - can increase the risk of knee osteoarthritis.

Losing weight by monitoring diet is potentially one of the best treatments for controlling pain associated with knee OA. Researchers from Wake Forest University in North Carolina recently conducted a long-term study that evaluated the impact of weight loss with or without exercise in reducing pain caused by OA. The researchers also measured function and mobility in older, overweight adults with knee osteoarthritis.

The researchers conducted the Intensive Diet and Exercise for Arthritis trial that measured 454 overweight adults with pain caused by knee osteoarthritis. Participants were selected randomly to lose weight in 18-months by either diet restriction only, or combining dietary restrictions with exercise. These groups were compared to an exercising-only control group. The researchers set a weight loss goal for the diet groups of at least 10 percent of body weight and required the exercise groups to participate in one hour of low-to-moderate walking and resistance training three days a week. The researchers compared the changes between the groups after the 18-month trial.

A total of 399 participants, or 88 percent, completed the study. Researchers determined that 85 percent of all participants had bilateral knee OA. Average age was 65.6 - of which 72 percent were female and 81 percent were white. Weight loss results included 11.4 percent for the diet plus exercise group, and 9.5 percent for the diet only group. The exercise-only group lost 2.2 percent of their body weight.

Measures of pain, function, and mobility were all improved to a greater degree in the diet plus exercise group. The researchers concluded that intense weight loss coupled with exercise led to the greatest improvement in people with knee OA, with a reduction in pain by approximately 50 percent.

Dr. Messier further comments, "Clinicians can tell their patients that they will see marked improvement in pain and function in six months or less with intensive diet and exercise. Significant between-group differences, however, may not appear (between diet, exercise, and diet combined with exercise) until 18 months. This underscores the need for long-term studies to detect clinically and statistically meaningful results."

The American College of Rheumatology is an international professional medical society that represents more than 8,000 rheumatologists and rheumatology health professionals around the world. Its mission is to advance rheumatology. The ACR/ARHP

Annual Scientific Meeting is the premier meeting in rheumatology. For more information about the meeting, visit www.rheumatology.org/education. Follow the meeting on Twitter by using the official hashtag: #ACR2011.

Editor's Notes: Stephen P. Messier, PHD, will present this research during the ACR Annual Scientific Meeting at McCormick Place Convention Center at 12:15 pm on Sunday, November 6 in Room W 375db.

What does this mean? Of course exercise is beneficial as our previous work has shown but intensive diet and exercise is better. Despite these findings, exercise including sports has been shown to relieve osteoarthritis pain.

Presentation Number: 722

The Intensive Diet and Exercise for Arthritis Trial: 18-Month Clinical Outcomes

Stephen P. Messier, (Wake Forest University, Winston-Salem, NC)

Barbara J. Nicklas, (Winston-Salem, NC)

Claudine Legault, (Wake Forest University School of Medicine, Winston-Salem, NC)

Shannon Mihalko, (Wake Forest University, Winston-Salem, NC)

Gary D. Miller, (Wake Forest University, Winston-Salem, NC)

Paul DeVita, (East Carolina University, Greenville, NC)

Mary Lyles, (Wake Forest University School of Medicine, Winston-Salem, NC)

David J. Hunter, (Royal North Shore Hospital, Sydney, Australia)

Felix Eckstein, (Paracelsus Medical University, Salzburg, Austria)

Jeff D. Williamson, (Wake Forest University School of Medicine, Winston-Salem, NC)

J. Jeffery Carr, (Wake Forest University School of Medicine, Winston-Salem, NC)

Richard F. Loeser, (1Wake Forest University, Winston-Salem, NC)

Background/Purpose: Obesity is the most prevalent modifiable risk factor, and dietary induced weight loss potentially the best non-

pharmacologic treatment for symptomatic knee osteoarthritis (OA) symptoms. We report the clinical outcomes of a long-term study designed to test the hypothesis that intensive weight loss, either with or without exercise, will reduce pain and improve function compared to an exercise only control group in older, overweight and obese adults with symptomatic knee OA .

Method: The Intensive Diet and Exercise for Arthritis trial (IDEA) was a prospective, single-blind, randomized controlled trial that enrolled 454 overweight and obese (BMI = 27-42 kg/m²) older (age > 55 yrs) adults with pain and radiographic evidence of tibiofemoral OA (KL = 2-3). Participants were randomized to one of three 18-month interventions: intensive dietary restriction-only (D); intensive dietary restriction-plus-exercise (D+E); or exercise-only control (E). The weight loss goal for the two diet groups was > 10% of baseline body weight, and the exercise intervention consisted of low to moderate intensity walking and resistance training 3 d/wk for 1 hr/d. We used an intention-to-treat analysis to compare changes between groups at 18 month follow-up (FU18) after adjusting for gender, baseline BMI, and baseline values of the dependent variable using repeated measures ANCOVA.

Result: Mean (SD) baseline descriptive characteristics of the cohort included: age, 65.6 (6.2) yrs.; BMI, 33.6 (3.7) kg/m²; %female, 72; %white, 81. Bilateral knee OA was evident in 85% of the participants. A total of 399 (88%) participants completed the study (returned for FU18 testing). Mean weight loss was: D+E, 10.6 kg (11.4%); D, 8.9 kg (9.5%); E, 2.0 kg (2.2%). WOMAC pain (baseline, FU 18, %change) was significantly less ($p < 0.0004$) at FU18 in the D+E group (6.7,3.3; 51%) compared to the D (6.6, 4.8; 27%) and E (6.1, 4.4; 29%) groups. Similarly, WOMAC function was significantly ($p = 0.003$) better in the D+E group (24.6,13.0; 47%) relative to the D (24.8,17.3; 30%) and E (23.1,17.5; 24%) groups. Walking speed (m/s), our measure of mobility, was significantly ($p = 0.004$) faster in the D+E group (1.20, 1.34; 12%) than in the D (1.18, 1.30; 10%) and E (1.23, 1.30; 6%) groups. There

was no significant difference between the groups on the SF-36 physical or mental health scales.

Conclusion: The IDEA trial shows that intensive weight loss with excellent long-term retention is possible in this population and, when combined with low to moderate intensity exercise, results in an approximate 50% reduction in pain accompanied by significant improvements in function and mobility. These data provide evidence that the best recommendation for long-term symptom reduction in overweight and obese persons with knee OA is intensive weight loss combined with low to moderate intensity exercise.

Disclosure: S. P. Messier, None; B. J. Nicklas, None; C. Legault, None; S. Mihalko, None; G. D. Miller, None; P. DeVita, None; M. Lyles, None; D. J. Hunter, None; F. Eckstein, Chondrometrics, 4 ; J. D. Williamson, None; J. J. Carr, None; R. F. Loeser, None.

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