

# Impaired Metabolism, Obesity Double-Team OA

*Current OA treatments should be evaluated for their potential to exacerbate certain metabolic disorders.*

BY PATRICE WENDLING  
Chicago Bureau

CHICAGO — The presence of an impaired metabolism exacerbates the impact of obesity as a risk factor for developing knee osteoarthritis and is associated with reduced physical functioning, Mary Fran Sowers, Ph.D., reported at the 2004 World Congress on Osteoarthritis.

Such findings suggest that “the role of obesity with respect to osteoarthritis and functioning may extend mechanistically beyond that of just simple joint loading,” said Dr. Sowers, an epidemiology professor at the University of Michigan, Ann Arbor.

Current OA treatments should be evaluated for their potential to exacerbate these metabolic derangements, because this exacerbation is likely to diminish treatment efficacy. “An understanding of the added contribution of the obesity sub-

types could be very useful in guiding primary and secondary treatment efforts,” Dr. Sowers added at the meeting, sponsored by the Osteoarthritis Research Society International.

Researchers have identified several obesity subtypes, including individuals who are obese but metabolically healthy. This may occur in about 20% of obese persons and is characterized by large amounts of fat mass but normal insulin levels and favorable cardiovascular risk factor profiles.

Another risk group comprises individuals of normal weight who have metabolic profiles more typically seen in the obese. This risk group may account for about 15% of the general population and is characterized by low HDL cholesterol, higher triglyceride levels, and higher levels of inflammatory markers.

A community-based cohort of 775 women aged 43-53 years was evaluated for

metabolic obesity, defined on the basis of three body mass index (BMI) cutoff points and the presence of two or more of the following metabolic derangements: diabetes or fasting glucose greater than 125 mg/dL, serum C-reactive protein greater than 2 mg/L, HDL less than 45 mg/dL, triglycerides greater than 200 mg/dL, or a waist-hip ratio greater than 0.81 cm.

The investigators found that 34% of the women were not obese (BMI less than 26 kg/m<sup>2</sup>) and had no metabolic derangements.

Another 31% of the participants were overweight to obese (BMI 26-34 kg/m<sup>2</sup>) without a metabolic derangement, and an additional 15% were overweight/obese women who did have a metabolic derangement.

Finally, 12% were very obese (BMI greater than 34 kg/m<sup>2</sup>) without metabolic derangement, and 8% were very obese women who did have a metabolic derangement.

Among those without a metabolic derangement, the odds of having knee OA were increased among women who were

either overweight/obese (odds ratio 1.9) or very obese (OR 7.0), compared with women who were not obese and had no metabolic derangement.

But when obesity was associated with a metabolic derangement, the risk of knee OA was three times higher in overweight or obese women (OR 3.3) and nine times higher in very obese women (OR 9.0), compared with women who were not obese and had no metabolic derangement.

The impact of metabolic disorders and weight on OA risk was consistent across all four of the physical tests: speed measured during walking on gait mats, grip strength, timed walk, and timed stair climbing.

There was no loss in leg strength unless women had an impaired metabolism, and then the loss was most pronounced in individuals with the highest BMI.

Dr. Sowers proposed that metabolic disorders and obesity may affect leg strength by altering glycation products in the muscles, by allowing fatty infiltration of muscle tissue and compromising selective muscle fibers, or by causing innervation problems. ■

## Musculoskeletal Symptoms Improve After Gastric Bypass

BY PATRICE WENDLING  
Chicago Bureau

CHICAGO — Musculoskeletal symptoms are very common in the morbidly obese, but improve significantly as early as 6 months after gastric bypass surgery, Michele Hooper, M.D., said at the 2004 World Congress on Osteoarthritis.

In a study of 48 consecutive patients, 52% had complete resolution of musculoskeletal symptoms, in weight bearing and non-weight bearing sites, 6 months after surgery. Fibromyalgia symptoms resolved in 90% of patients.

Such benefits may even become more pronounced with time, as weight loss generally plateaus at 24 months and many of the patients were still obese at the time of the study.

While these highly motivated patients may not reflect the general obese population, the benefits seen with weight loss indicate that prevention and treatment of obesity could improve musculoskeletal health and function, said Dr. Hooper of University Hospitals of Cleveland.

She reported on 47 women and one man, mean age 44 years, who were evaluated before and 6 months after laparoscopic or open Roux-en-Y surgery.

The mean weight of the women before surgery was 292 pounds (body mass index 51 kg/m<sup>2</sup>) and 202 pounds (BMI 36 kg/m<sup>2</sup>) after the procedure. The male patient lost 103 pounds and had a BMI of 54 kg/m<sup>2</sup> and 39 kg/m<sup>2</sup>, respectively.

The percentage of patients with comorbid conditions at baseline decreased after weight loss: hypertension (52% vs. 14%), sleep apnea (46% vs. 14%), depression (33% vs. 14%), gastroesophageal reflux disease (31% vs. 11%), type 2 diabetes (30% vs. 7%), and asthma (30%

vs. 7%). Ninety percent of fibromyalgia symptoms resolved.

The dramatic resolution of fibromyalgia symptoms may be due to a decrease in comorbid syndromes, particularly depression, and an increase in physical activity, Dr. Hooper said at the meeting, which was sponsored by the Osteoarthritis Research Society International.

Lower extremity musculoskeletal symptoms improved with weight loss, with the exception of hip and trochanteric bursitis complaints.

Upper extremity symptoms improved, with the exception of epicondylitis.

The proportion of patients affected by symptoms decreased significantly as follows: knee symptoms (75% at baseline vs. 44% after weight loss); ankle/foot (46% vs. 8%); shoulder (40% vs. 27%); lumbar spine (38% vs. 15%); hand (35% vs. 21%); carpal tunnel syndrome (31% vs. 15%); hip joint (23% vs. 15%); trochanteric bursitis (29% vs. 17%); and epicondylitis (13% vs. 4%).

At 6 months, scores on the Western Ontario and McMaster University Osteoarthritis (WOMAC) composite index improved 67% from baseline. WOMAC subscales improved for pain (51%), function (74%), and stiffness (64%).

Short Form-36 Health Survey scores significantly improved in seven of eight domains measured, and the remaining one domain, general health, was close to normal at baseline.

“The WOMAC osteoarthritis index offers significant potential for assessing musculoskeletal outcomes in obese subjects after gastric bypass surgery, and should be explored further,” Dr. Hooper said.

“The SF indicates that obesity is associated with a poor quality of life, which improves significantly after weight loss associated with gastric bypass surgery.” ■

## Nearly 40% of Arthritis Patients Endure Physical Limitations

BY TIMOTHY F. KIRN  
Sacramento Bureau

SAN ANTONIO — An analysis of the 2002 National Health Interview Survey data has put a specific figure on what clinicians probably already knew intuitively: Almost 40% of arthritis patients have significant physical limitations.

Findings from the survey, which asked the respondents if a physician had ever diagnosed them as having arthritis, indicated that an estimated 21% of U.S. adults had been told they had arthritis.

If the patients responded that they had arthritis, they were then asked if they had any limitations and were asked 12 specific questions about those limitations.

Overall, 38% of the respondents said that they were limited by their condition.

Extrapolated to the population, the figures translate into an estimated 43 million Americans with arthritis, of whom 16 million have limitations from their disease, said Jennifer M. Hootman, Ph.D., an epidemiologist with the Centers for Disease Control and Prevention, Atlanta, at the annual meeting of the American College of Rheumatology.

Among those who reported limitations, 69% reported at least one of the nine specific functional limitations, and 31% either did not specify or reported only that they had limitations in at least one of three general activities, without being specific.

The most common specific limitation was being unable to stoop or bend, reported by 49% of those with limitations.

Others included: inability to stand for 2 hours (47%), walk a quarter of a mile (37%), push a heavy object (32%), climb stairs (30%), and lift and carry 10 pounds (23%).

The general activity that was reported to be limited most commonly was shopping, reported by 17% of those with limitations.

The good news is that of the factors that were found to be asso-

ciated with physical limitations from arthritis, the most important one, being overweight, defined as a body mass index of greater than 25, was modifiable, Dr. Hootman noted in her presentation.

“Common sense says reducing weight can improve disability,” Dr. Hootman said.

The survey responses did not identify whether the individuals interviewed had osteoarthritis or rheumatoid arthritis. ■

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