Bad News: Being Morbidly Obese Quadruples the Risk of Back Pain

Good News: Adding 20 Minutes of Daily, Light Exercise Can Reduce Back Pain Risk by 32%

Study Provides the First Accurate Look into the Relationship between Back Pain, Obesity and Exercise

New Orleans—Americans who are morbidly obese have a four-fold increased risk of back pain, yet adding just 20 minutes of light exercise each day can lower that risk by a surprising 32 percent, according to a new study presented at the 28th Annual Meeting of the North American Spine Society (NASS).

“Historically, based on anecdotal evidence and very limited studies, spine specialists have told overweight patients that losing a relatively modest amount of weight or even marginally increasing their exercise can help reduce their risk of back pain,” said Michael L. Reed, PT, DPT, OCS, MTC, a spine specialist with Hospital for Special Surgery and NASS Annual Meeting Program Co-Chair. “This large, precise study finally provides the hard data we need to back up those beliefs and really help to put weight behind our words as we make these recommendations to our patients.”

This study, “Does Physical Activity Influence the Relationship Between Low Back Pain and Obesity?” was awarded with a 2013 “Outstanding Paper” Award from The Spine Journal, the top-rated spine journal in the world.

The researchers performed a cross-sectional U.S. population-based study of a cohort of 6,796 adults from the 2003-2004 National Health and Nutrition Examination Survey (NHANES). Lower back pain (LBP) status was determined by questionnaire response. BMI was calculated during physical examination and divided here into four groups (normal weight 25, overweight 25-30, obese 31-35, and morbidly obese 36+). Summary measures of physical activity were computed based on intensity cut-offs, percentile intensities, and bout. Demographics, social history, and comorbid health conditions were used to build adjusted-weighted logistic regression models constructed using Akaike Information Criterion (AIC). All displayed estimates are significant at level 0.05.

Demographic information, an in-depth health questionnaire, physical examination details and seven-day free-living physical activity monitoring using accelerometry (ActiGraph AM-7164).

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The researchers concluded that in the U.S. population, the risk of low LBP increases in step with BMI from 2.9% for normal BMI (20-25), to 5.2% for overweight (26-30), 7.7% for obese (31-35), and 11.6% for morbidly obese (36+). Smoking is consistently the strongest predictor of LBP across the BMI spectrum (OR 1.6-2.9). Physical activity also modulates these risks. In the overall model, the best physical activity predictors of LBP are in the moderate and high intensity ranges with small effects (OR 0.98 and 0.996 per SD increase, respectively). When broken down by BMI, time spent in sedentary and moderate activity ranges demonstrates more robust influences on LBP status in the overweight, obese and ultra-obese groups.

“Perhaps the best news out of this study is that big gains can be made by making some incredibly modest changes in activity,” said lead author Matthew Smuck, MD, Chief of PM&R and Associate Professor at the Stanford University School of Medicine.

The study found:

- When the average, overweight person stops being sedentary and starts moving (including even very light activity such as folding clothes or walking slowly) he or she will remain active, on average, for 1 hour and 53 minutes. Simply extending this average by seven minutes—to two hours—reduces the risk of back pain by 17 percent.

- For overweight Americans, increasing the amount of time in moderate activity (examples include: brisk walk, water aerobics, riding a bike, ballroom dancing, and general gardening) by less than 20 minutes/day can reduce back pain risk by 32 percent.

- Also, simply pushing just a little harder during a bout of exercise is very beneficial. For people who are morbidly obese, the average duration of time spent doing a moderately-intensive activity (examples include brisk walking, water aerobics, bike riding, ballroom dancing and general gardening) was found to be 1.3 minutes. Extending this average time at or above the moderate activity intensity range by less than one additional minute every time they exercise reduces their odds of having back pain by 38 percent.

The study’s authors are Matthew W. Smuck, MD; Ming-Chih Kao, PhD, MD; Nikhraj Brar, MD; Agnes Martinez-Ith; Jongwoo Choi, MD; and Christy Tomkins-Lane, PhD. FDA Device/Drug Status: This abstract does not discuss or include any applicable devices or drugs.

More than 3,000 spine professionals are meeting at the NASS 28th Annual Meeting in New Orleans, October 9-12, 2013 at the Ernest N. Morial Convention Center. The North American Spine Society is a multidisciplinary medical organization dedicated to fostering the highest quality, evidenced-based and ethical spine care by promoting education, research and advocacy. NASS is comprised of more than 8,000 members from several disciplines, including orthopedic surgery, neurosurgery, physiatry, neurology, radiology, anesthesiology, research and physical therapy. For more information, visit www.spine.org and find NASS on: NASS Facebook and NASS Twitter.

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