

Obesity's Effects on Bones and Joints

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Obesity is an escalating health threat in the United States. It increases the risk of developing life-shortening conditions including heart disease, stroke, diabetes, sleep apnea and cancer. Excessive weight also affects the musculoskeletal system.

Obesity is generally defined as being more than thirty percent above one's ideal body weight. The rate of obesity is increasing across all demographic groups in the U.S. and is especially high in children. While many factors are to blame, certainly poor diets, fueled by processed and fast foods, and sedentary lifestyles are culprits.

Joint and Spinal Problems

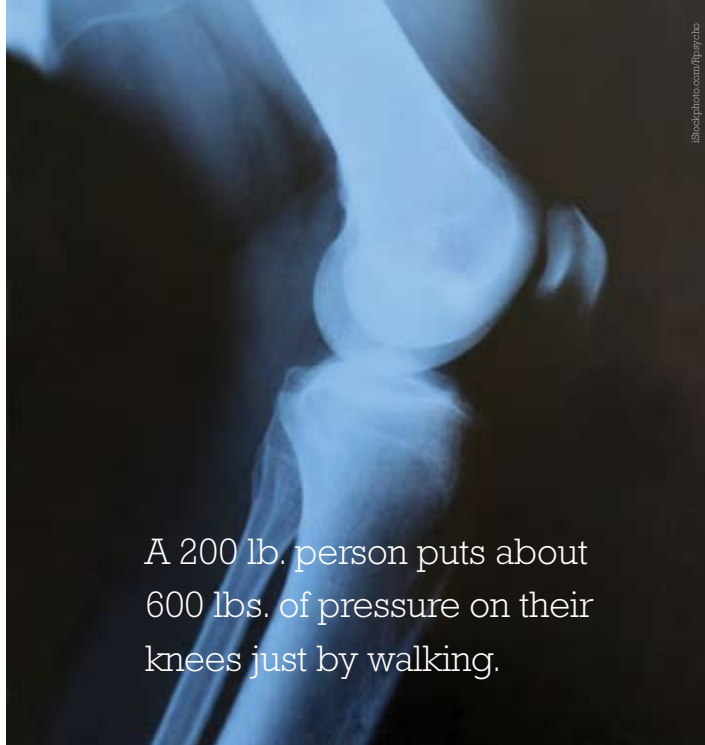
Obesity accelerates the wear on the joints and spine. In particular, osteoarthritis (wear-and-tear arthritis) of the knees is increased. Obese people have difficulty squatting (getting on and off the toilet, getting out of a car), running and climbing stairs. Biomechanically this is explained because the force on one's knees between the patella (kneecap) and its articulation with the rest of the knee is about three times your body weight with walking. When these other activities are undertaken, the forces can reach six to 10 times body weight. That is, the force on a 200-pound person's knees while walking is 600 pounds, and when they are climbing, running, squatting, etc. the force approaches 1200-2000 pounds. Multiply that by the number of years people are overweight and you get excessive wear and thus arthritis.

The corollary is true as well, and this provides a nice incentive to lose weight. The bang for the buck for the knees is 3-10 pounds of wear reduction for every pound lost! Simply losing 10-20 pounds can make a real difference in one's activity level. Moderate exercise and leg-strengthening exercises can reduce the effective joint forces as well.

Obesity also affects spinal mechanics. Truncal obesity with a panniculus (doctor-speak for a big gut) causes an anterior bending force and a compressive force on the spinal column, thus leading to disc pathology and back pain. Imagine wearing a backpack backwards with 50-75 pounds in it for a day and you get the idea.

Hip and Knee Replacements

As an orthopedist specializing in hip and knee replacements, I often see obese patients with severe knee arthritis. In fact, this



A 200 lb. person puts about
600 lbs. of pressure on their
knees just by walking.

is a wide-scale, increasing problem. Some are too overweight to physically perform surgery on, notwithstanding the inherently higher perioperative risks that they have. Sometimes we have no alternative but to suggest that they buy motorized scooters.

Many patients swear that they will lose weight after they get their knees replaced. I can count on one hand and personally remember the patients that I have operated on over the last dozen or so years who have actually done this. There was a well-researched paper in our most respected journal a few years ago that showed that the average weight loss one year after knee replacement was actually a six-pound weight gain.

Additionally, hip and knee replacements demonstrate wear in all the patients that get them, and obese patients, especially young ones, tend to wear out faster, necessitating additional "revision" operations which are usually more involved, to say the least.

Research shows that obese joint replacement patients do worse functionally than thinner patients overall. But, studies also show that obese joint recipients in the short term have equally high satisfaction scores with the procedures. It is clear that obese patients have more complications in the perioperative period, including anesthetic difficulties, infections, blood clots, medical problems and poorer functional outcomes.

In summary, obesity is bad for the musculoskeletal system. With the average lifespan increasing, it would be prudent to keep your weight at a reasonable level and to keep fit so that you may better enjoy those extra years without the pain and limitations of musculoskeletal wear.

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