



Joel R. Wolfe, MD
Jon D. Hop, MD
Sara Kane-Smart, MD
Michael A. Cheek, MD
Richard M. Howell, MD
Bruce A Stewart, MD
Brian W. Paff, DO
Mark E. Jacobson, MD

John I. Khoury, MD
Ann M. Monroe, MD
John W. Swartz, DO
Elizabeth Otten, PA-C
Chad Smith, PA-C
Brian Willie, PA-C
Lee Majeski, NP-C
Elizabeth Barnes, PA-C

How Will Weight Loss Affect Your Health?

Definition/Discussion of Obesity:

Body mass index (BMI) is a measure of body fat based on your height and weight, applying to men and women between the ages of 18-65. To determine your BMI use the formula below, or ask your physician.

Formula: Weight (lb) / [Height (in)]² x 703

Calculate BMI by dividing weight in pounds (lbs) by height in inches (in) squared and multiplying by a conversion factor of 703. Example: Weight = 150 lbs / Height = 5'5" (65")

Calculation: [150 ÷ (65)²] x 703 = 24.96BMI

BMI Table:

Underweight	Below 18.5
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obese	30.0 and Above
Morbidly Obese	40 and Above

For more information on calculating your BMI, visit
<https://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm>

Remember, this is only one way to assess your body weight, but it does not consider muscle mass. Please discuss with your primary care provider other options for assessing your specific situation.

How does obesity affect your entire body?

Obesity not only affects your bone and joint health, but also affects many organs throughout the entire body. Obesity has been linked to:

- High blood pressure
- Diabetes (type II) or insulin resistance
- Heart disease - including chest pain, heart attacks, and strokes
- Osteoarthritis
- Sleep apnea and other breathing problems
- Cancer - in women, especially breast, colon, gallbladder, and uterine cancer; in men, especially colon or prostate
- Elevated cholesterol
- Psychosocial effects - including depression and negative body image

How does obesity affect your joints, specifically?

Initially, osteoarthritis (OA) was considered just a "wear-and-tear" form of arthritis where as you get older, the joints begin to wear down due to use. Now, several risk factors have been identified for OA, including genetics, age, obesity, gender, muscle weakness, prior joint trauma, and work or sports activities. Of these risk factors, obesity is one that you can manage and work to change.

What people may not know, is that forces across the knee are three times your body weight while walking, up to six times your body weight while stair climbing, and can even be up to 10 times your body weight while jumping. These numbers are similar for the hip joint with three to five times added weight to the hip while walking. Therefore, losing 10 pounds can cause 30 to 50 pounds of extra weight to be relieved from the hip joint.

How Will Weight Loss Affect Your Health? (page two)

How does obesity affect your joints, specifically? (cont'd)

Not only does obesity affect the overall weight on your joints, but new studies show that the excess fat causes inflammation, which contributes to overall pain, including knee arthritis. This low-grade inflammation may inhibit repair of articular cartilage, and has been shown to even double the risk of chronic pain in the elderly.

What will weight loss do for your joints?

By eating healthier and increasing your exercise levels, weight loss can decrease the additional weight on the hips and knees, but has also been shown to improve pain and function, and mobility in the joints. One study shows that overweight women who lost only 11 pounds reduced their risk of developing knee osteoarthritis by half. Not only will it help with your knee and hip pain, but this may improve your quality of life. This not only will help your joint pain, but can also lower cholesterol, lower your blood pressure, risk of heart disease, risk of stroke, help with your sugar metabolism, increase your mental well-being, and lower your risk of developing cancer.

Getting Started!

We want to help you get started with your weight loss. Therefore, we would like to refer you back to your primary care doctor for a more in-depth discussion of what activity levels will work best for you. A diet that is plant based and avoids processed/pre-packaged foods, including red meats will help your weight loss goal. Any additional activity is beneficial to your overall health and it is important to "start low and go slow," but a goal of increased activity for 30 minutes or more daily will be beneficial. Most health benefits will be gained with at least two and a half hours of moderate-intensity physical activity per week. People at a healthy body weight, but are gradually gaining weight can gradually increase their activity level to a moderate-intensity aerobic activity of at least 300 minutes a week and/or reduce their calorie intake. People who are trying to lose weight should do more activity, and gradually increase their minutes or intensity levels as they become more comfortable. An example of moderate activity includes brisk walking at roughly 3 miles per hour. More benefits can be gained with increased activity. A combination of diet and regular aerobic and weight lifting exercises is important for your weight loss goal, and your long-term health. Weight lifting can help to strengthen the bones. We understand that weight loss can be difficult, but we believe it will be very important for your joints, as well as for your overall health. Your doctor may help you find the proper resources, but we have put together a list to help get you started. Please contact your insurance company, as many provide resources or discounts to aid in weight loss.

(Free) Smart Phone Apps:

- *MyFitnessPal* - tracks calories and activity
- *Lose It!* - tracks your meals, exercise, and nutrition
- *Fooducate* - rates overall healthiness of food with the help of a barcode scanner
- *Locavore* - helps you find local, seasonal produce
- *CSPI Chemical Cuisine* - helps you make healthy decisions about the food you eat
- *Endomondo Sports Tracker* - tracks distance-based sports
- *East This, Not That! The Game* - helps you learn about healthier fast food choices

Websites:

- www.weightwatchers.com - provides support from group meetings to online tools
- www.loseit.com - customized weight loss plan by tracking calories and providing support
- www.webmd.com - provides resources to healthy living
- www.livestrong.com - provides resources and online support for weight loss, calorie tracker, and exercises
- <http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm> - BMI calculator
- <http://www.priorityhealth.com/member/handbook/member-discounts/healthfit-west-mich> - Priority Health discounts
- <http://www.bcbs.com/blue-365-healthy-deals/> - BlueCross BlueShield discounts
- http://healthinfo.spectrumhealth.org/conditions/bariatric/tools/41_calorieburncalc - Calories burned with activity

How Will Weight Loss Affect Your Health? (page three)

Local resources in West Michigan:

- TOPS (Take Off Pounds Sensibly) - low cost peer-led program that encourages healthy lifestyle management
- Holland Hospital Center for Good Health - offers 5 week fitness programs with a wellness coach, options to meet with a dietician, or personal trainer.
- Spectrum Health Zeeland Community Hospital - Healthy Weighs to Live - programs to help aid in weight loss, eating the right foods, and providing medical evaluations.
- Medical Weight Loss Clinic - a personalized nutritional consult to help you meet your goals.
- Curves - a fitness facility specifically designed for women to provide training and a weight loss program.
- Surgical Weight Loss Team at Spectrum Health - Lakeshore Bariatrics
- MVP Sports Plex - 10 week long weight loss challenge, nutrition sessions
- Overeaters Anonymous - support group meetings to help you meet your goals
- Check with your insurance company. They may offer discounts on equipment, gym memberships, classes, etc.

Sources:

Bartlett, Susan. *Role of Body Weight in Osteoarthritis*. John Hopkins Arthritis Center, updated 27 March 2012. Web. March 2014.

Cohen, Jennifer. *The 8 Best Smart Phone Apps for Weight Loss*. Forbes, August 2012. Web. March 2014.

Harms, S., Larson, R., Sahmoun, A. E., Beal, J. R. "Obesity increases the likelihood of total joint replacement surgery among younger adults." *International Orthopaedics* 31(1) (2007): 23-26. Web. March 2014.

Health Effects of Obesity. Stanford Hospital & Clinics, 2009. Web. March 2014.

Jacques, Jacqueline. *The Wear and Tear of Obesity: The Burden of Weight in Joint Disease*. Obesity Action Coalition, Web. March 2014.

Koonce, Ryan C., Bravman, Jonathan T. "Obesity and Osteoarthritis: More Than Just Wear and Tear." *Journal of the American Academy of Orthopaedic Surgeons* 21 (2013): 161-169. Web. March 2014.

Savory, Carlton. G. *The Weight of Obesity*. Hughston Clinic, Web. March 2014.

U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Web. April 2014.

Weight Loss Programs in West Michigan. The Health & Wellness Program at Grand Valley State University, updated 22 January 2014. Web. March 2014.