

The Impact of Obesity on Orthopedic Upper Extremity Surgery



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KEYWORDS

• Obesity • Hand • Upper extremity • Surgery • Complication • Management
• Carpal tunnel syndrome • Arthritis

KEY POINTS

- Obesity is widespread in America and has effects on all medical specialties, including surgery of the hand and upper extremity.
- Obese patients are at risk for injuries of the upper extremity, carpal tunnel syndrome, and hand and wrist osteoarthritis.
- Intraoperative and anesthetic considerations should include the physiology of the obese as well as patient positioning and regional anesthetic difficulties, and perioperative antibiotics should be considered.
- Postoperative complications can include fracture healing complications, including malunion, and wound healing issues, including infection.
- Some recent literature suggests surgery of the hand and upper extremity may be somewhat immune to the postoperative complications seen in other regions of the body.
- There is limited literature that evaluates the postoperative complications and outcomes specific to hand and upper extremity surgery.

INTRODUCTION

The prevalence of obesity is increasing in the United States¹ (Figs. 1 and 2). It is estimated that approximately one-third (36.5%) of adult Americans are obese, defined as body mass index (BMI) greater than 30 kg/m². The obesity rate is higher among middle aged (40–59 years) and older adults (>60 years) than among younger adults (20–39 years).² The prevalence of obesity differs with race, sex, and socioeconomic status. Women of higher socioeconomic status are less

likely to be obese, whereas non-Hispanic black and Mexican-American men of higher socioeconomic status are likely to have obesity.³ No statistically significant correlations have been identified between level of education and obesity in men. However, there is a significant correlation among women, showing that women with a college education are less likely to have obesity compared with women who are less educated.⁴ Patients with higher BMIs have a greater likelihood of experiencing comorbid health conditions.^{4,5} These comorbidities can negatively affect the

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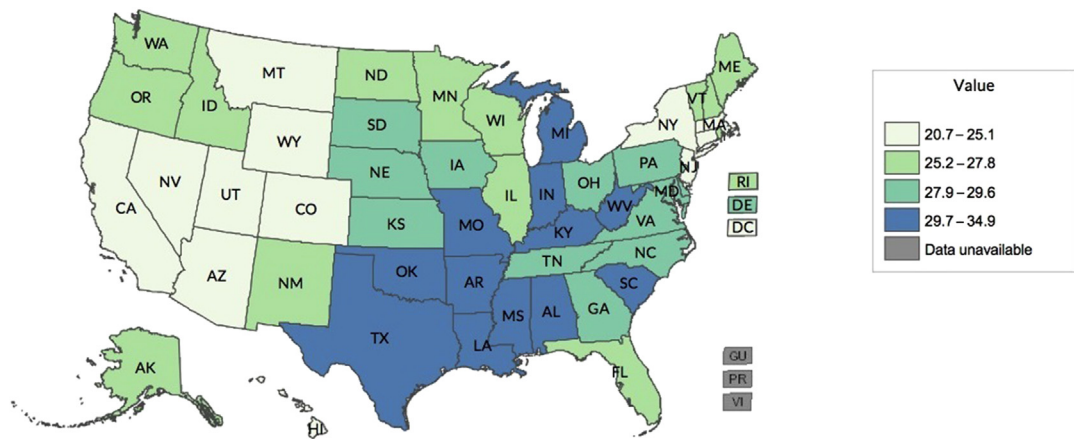


Fig. 1. Percentage of adults with obesity in 2011. Obese is defined as a body mass index (BMI) greater than or equal to 30; BMI was calculated from self-report weight and height (kg/m^2). Respondents reporting weight less than 23 kg (50 pounds) or greater than or equal to 295 kg (650 pounds), height less than 90 cm (3 feet) or greater than or equal to 240 cm (8 feet), or BMI less than 12 and greater than or equal to 100 were excluded. (From Centers for Disease Control and Prevention (CDC). National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Data, trends and maps [online]. Available at: <https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html>. Accessed January 01, 2018.)

health of obese patients and increase the cost of care compared with the nonobese population.² Given the prevalence of obesity and the continued societal pressure to provide high-quality care at low cost, physicians need to familiarize themselves with considerations pertinent to their specialty for proper management and treatment of obese patients.⁶ Research across a myriad of medical specialties is available to guide treatment.⁷ The orthopedic literature

has shown that implementation of specific perioperative measures makes it possible for virtually all obese patients to undergo indicated orthopedic procedures.⁸ These measures can reduce difficulties often encountered while performing procedures on obese patients, leading to better outcomes, pain relief, and better quality of life for patients.⁹ This article specifically reviews the existing literature on obesity and its impact on orthopedic upper extremity surgery.

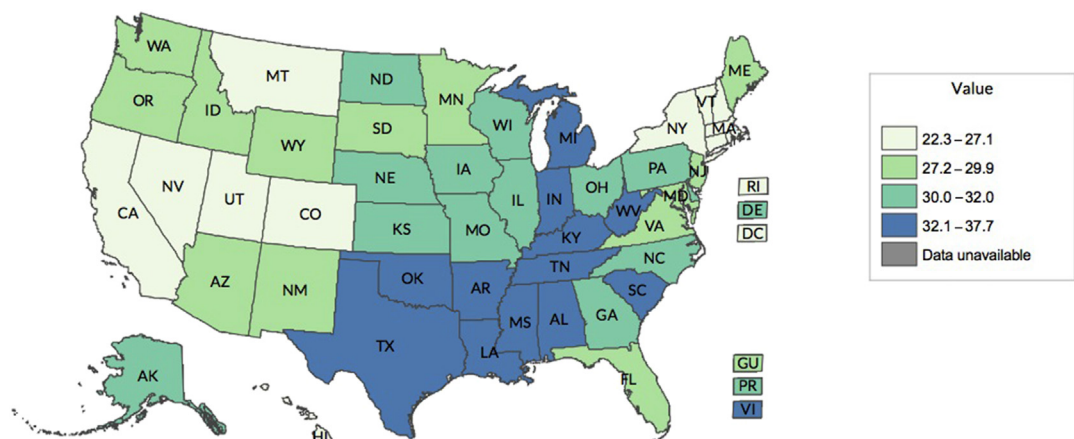


Fig. 2. Percentage of adults with obesity in 2016. Obese is defined as a BMI greater than or equal to 30; BMI was calculated from self-report weight and height (kg/m^2). Respondents reporting weight less than 23 kg (50 pounds) or greater than or equal to 295 kg (650 pounds), height less than 90 cm (3 feet) or greater than or equal to 240 cm (8 feet), or BMI less than 12 and greater than or equal to 100 were excluded (From Centers for Disease Control and Prevention (CDC). National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Data, trends and maps [online]. Available at: <https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html>. Accessed January 01, 2018.)

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