

Weight, Obesity and Joint Health

Overview

- Body Mass Index greater than 40 is not correlated with early complications in patients undergoing primary total joint arthroplasty at an ambulatory surgical center [1].
- Focusing on management of preoperative comorbidities and custom surgical planning can achieve outcomes comparable to those of patients with normal BMIs at ambulatory surgical centers [1].
- BMI should not be used as an exclusion criterion for arthroplasty based on current evidence [1].
- A BMI of 45 is a safe cut-off for cementless total knee arthroplasty, though sample sizes were too small to draw conclusions for patients with a BMI greater than or equal to 45 [2].
- Body mass index does not affect clinical outcomes following arthroscopically assisted posterior latissimus dorsi tendon transfer for irreparable posterosuperior rotator cuff tears [3].
- No significant differences were observed between above-average and below-average BMI groups in clinical outcomes for posterior latissimus dorsi tendon transfer [3].
- BMI was not correlated with clinical improvements in posterior latissimus dorsi tendon transfer [3].
- Obesity is a systemic disease with profound inflammatory consequences on joint health, extending beyond being a mechanical burden on the knee [4].
- Increasing obesity severity is not associated with higher rates of postoperative stiffness following total knee arthroplasty [5].
- Increasing obesity severity is not associated with inferior outcomes following manipulation under anesthesia for stiffness after total knee arthroplasty [5].
- Concern for stiffness alone should not serve as a categorical barrier to total knee arthroplasty or manipulation under anesthesia when clinically indicated [5].
- WHO obesity class does not associate with the incidence of reoperations after total hip arthroplasty [6].
- WHO obesity class does not associate with the timing of reoperations after total hip arthroplasty [6].
- WHO obesity class does not associate with the invasiveness of reoperations after total hip arthroplasty [6].
- Current evidence does not support the routine use of tibial stem extensions in obese total knee arthroplasty patients due to insufficient, heterogeneous, and very low certainty data [7].

- Specific tibial stem extension designs may benefit selected populations of obese total knee arthroplasty patients [7].
- Obese and overweight patients converted to total hip arthroplasty at significantly higher rates compared with normal-weight patients after hip arthroscopy for femoroacetabular impingement syndrome [13].
- Patients with obesity had greater than 2-fold odds of conversion to total hip arthroplasty after hip arthroscopy for femoroacetabular impingement syndrome [17].
- Ten-year functional outcomes and revision rates of total hip arthroplasty do not justify restricting access to surgery on the basis of BMI [28].

How It Works

- High body mass index elevates the risk of both knee and hand osteoarthritis irrespective of metabolic status [23].
- The increased risk of knee osteoarthritis attributed to high BMI is more evident in metabolically healthy participants [23].
- Obesity and preexisting osteoarthritis are known risk factors for predicting poor outcomes and conversion to arthroplasty after knee arthroscopy [14].
- Following medial meniscus posterior root tear repair, osteoarthritis progression shows higher rates with elevated body mass index [20].
- Body mass index has a weak-to-moderate association with peri-incisional adiposity in primary total joint arthroplasty patients [10].
- Body mass index is not an appropriate proxy for the condition of peri-incisional adiposity in primary total joint arthroplasty patients [10].
- The soft tissue-to-bone ratio reflects local anatomical factors that directly influence surgical exposure and wound healing, outperforming body mass index in predicting periprosthetic joint infection in total knee arthroplasty [19].
- Focusing on management of preoperative comorbidities and custom surgical planning can achieve outcomes comparable to those of patients with normal body mass index at ambulatory surgical centers, questioning body mass index as an exclusion criterion [1].
- Body mass index of 45 is a safe cut-off for cementless total knee arthroplasty, although sample sizes were too small to draw conclusions in patients with a body mass index greater than or equal to 45 [2].
- Body mass index does not affect clinical outcomes following arthroscopically assisted posterior latissimus dorsi tendon transfer for irreparable posterosuperior rotator cuff tears, with no significant differences observed between above-average and below-average body mass index groups [3].
- Increasing obesity severity is not associated with higher rates of postoperative stiffness or inferior outcomes following manipulation under anesthesia after total knee arthroplasty [5].
- World Health Organization obesity class does not associate with incidence, timing, or invasiveness of reoperations after total hip arthroplasty [6].

- Modern surgical practices and implant designs may have mitigated traditional obesity-related risks, showing minimal impact on loosening and mechanical failure in total knee arthroplasty [8].
- High body mass index is associated with comparable functional outcomes but higher mechanical failures in functionally aligned image-based robotic total knee arthroplasty [11].
- Obesity remains a critical risk factor for mechanical failures in total knee arthroplasty [11].
- A nonsignificant trend toward a higher complication rate was observed in patients with severe obesity (body mass index greater than or equal to 35 kg/m²) in robotic-assisted total knee arthroplasty [21].
- A statistically significant increase in arthrofibrosis was found in patients with a body mass index less than 25 kg/m² in robotic-assisted total knee arthroplasty [21].
- Findings support a body mass index-based approach to perioperative semaglutide use, particularly in patients with a body mass index greater than 30 [22].
- Type 2 diabetes is not an independent risk factor for reoperation when adjusted for body mass index in obese patients undergoing total hip arthroplasty [24].
- Obesity had a negative influence on lower extremity long bone fracture in-hospital outcomes in pediatric patients [9].
- Women had decreased odds of losing greater than five pounds before surgery despite increased odds of having preoperative bariatric surgery in the context of total joint arthroplasty disparities [12].

What the Evidence Shows

- BMI > 40 is not correlated with early complications in patients undergoing primary total joint arthroplasty at an ambulatory surgical center [1].
- BMI should not be used as an exclusion criterion for total joint arthroplasty at ambulatory surgical centers [1].
- BMI of 45 is a safe cut-off for cementless total knee arthroplasty, though sample sizes were too small to draw conclusions for patients with BMI ≥ 45 [2].
- BMI does not affect clinical outcomes following arthroscopically assisted posterior latissimus dorsi tendon transfer for irreparable posterosuperior rotator cuff tears [3].
- No significant differences were observed between above-average and below-average BMI groups in clinical improvements after arthroscopically assisted posterior latissimus dorsi tendon transfer [3].
- BMI is not correlated with clinical improvements after arthroscopically assisted posterior latissimus dorsi tendon transfer [3].
- Increasing obesity severity is not associated with inferior outcomes following manipulation under anesthesia (MUA) for stiffness after total knee arthroplasty [5].
- Concern for stiffness alone should not serve as a categorical barrier to total knee arthroplasty or MUA when clinically indicated [5].
- WHO obesity class does not associate with the incidence, timing, or invasiveness of reoperations after total hip arthroplasty [6].

- Modern surgical practices and implant designs may have mitigated traditional obesity-related risks of loosening and mechanical failure in total knee arthroplasty [8].
- Obesity has a negative influence on lower extremity long bone fracture in-hospital outcomes in pediatric patients [9].
- BMI has a weak-to-moderate association with peri-incisional adiposity in primary total joint arthroplasty patients [10].
- BMI is not an appropriate proxy for the condition of peri-incisional adiposity in primary total joint arthroplasty patients [10].
- Obesity remains a critical risk factor for mechanical failures in functionally aligned image-based robotic total knee arthroplasty [11].
- Women had decreased odds of losing greater than five pounds before total joint arthroplasty despite increased odds of having preoperative bariatric surgery [12].
- Obesity and preexisting osteoarthritis are risk factors for predicting poor outcomes and conversion to arthroplasty after knee arthroscopy [14].
- Obesity is associated with an increased risk of all-cause revisions and revision for instability or dislocation in patients receiving reverse total shoulder arthroplasty indicated for fractures [15].
- Semaglutide appears to be a safe alternative to bariatric surgery for weight management before total hip arthroplasty [16].
- Semaglutide is associated with similar implant survival and postoperative complication rates compared to bariatric surgery for weight management before total hip arthroplasty [16].
- Obese patients are at increased risk of higher rates of revision following unicompartmental knee arthroplasty [18].
- Dual mobility implants demonstrated excellent five-year survivorship with outcomes comparable or slightly superior to fixed-bearing constructs in morbidly obese patients undergoing primary total hip arthroplasty [25].
- Total weight loss percentage was higher in bariatric surgery patients compared to those undergoing immediate total knee arthroplasty [26].
- Lower body mass index and symptom burden are observed in modern hip arthroscopy patients, with improved patient-reported symptoms at the time of surgery [27].
- Elevated BMI is associated with weak-to-moderate increases in thromboembolic risk after total shoulder arthroplasty [29].
- Elevated BMI is not associated with infection or revision surgery risk after total shoulder arthroplasty [29].

Practical Considerations

- BMI should not be used as an exclusion criterion for primary total joint arthroplasty at ambulatory surgical centers [1].
- BMI of 45 is a safe cut-off for cementless total knee arthroplasty [2].

- Conclusions regarding safety cannot be drawn for patients with BMI ≥ 45 due to small sample sizes [2].
- No significant differences were observed between above-average and below-average BMI groups in clinical outcomes after arthroscopically assisted posterior latissimus dorsi tendon transfer [3].
- BMI was not correlated with clinical improvements after arthroscopically assisted posterior latissimus dorsi tendon transfer [3].
- Semaglutide and bariatric surgery have similar implant survival and postoperative complication rates for patients undergoing total hip arthroplasty [16].

Key Evidence

- [L3] Focusing on management of preoperative comorbidities and custom surgical planning can achieve outcomes comparable to those of patients who have normal BMIs at ASCs, questioning BMI as an exclusion criterion and advocating for more inclusive, evidence-based patient selection. [1] ([10.1016/j.arth.2025.08.065](https://doi.org/10.1016/j.arth.2025.08.065))
- [L3] However, the numbers were too small to draw conclusions in patients who have a BMI ≥ 45 . [2] ([10.1016/j.arth.2025.12.038](https://doi.org/10.1016/j.arth.2025.12.038))
- [L2] No significant differences were observed between above-average and below-average BMI groups, and BMI was not correlated with clinical improvements. [3] ([10.1016/j.xrrt.2025.100634](https://doi.org/10.1016/j.xrrt.2025.100634))
- [L5] Obesity is more than a mechanical burden on the knee; it is a systemic disease with profound inflammatory consequences on joint health. [4] ([10.1002/arj.70051](https://doi.org/10.1002/arj.70051))
- [L3] These findings suggest that increasing obesity severity is not associated with higher rates of postoperative stiffness or inferior outcomes following MUA and that concern for stiffness alone should not serve as a categorical barrier to TKA or MUA when clinically indicated. [5] ([10.1016/j.arth.2026.03.080](https://doi.org/10.1016/j.arth.2026.03.080))
- [L3] In this cohort of obese patients who underwent THA, the WHO obesity class was not associated with risk, invasiveness, or timing of reoperations. [6] ([10.1016/j.arth.2025.07.026](https://doi.org/10.1016/j.arth.2025.07.026))
- [L5] The authors conclude that current evidence does not support the routine use of tibial stem extensions in obese total knee arthroplasty patients due to insufficient, heterogeneous, and very low certainty data, though specific designs may benefit selected populations. [7] ([10.1016/j.arth.2025.11.056](https://doi.org/10.1016/j.arth.2025.11.056))
- [L3] These findings suggest modern surgical practices and implant designs may have mitigated traditional obesity-related risks. [8] ([10.1016/j.arth.2026.04.031](https://doi.org/10.1016/j.arth.2026.04.031))
- [L4] Overall, these findings suggested that obesity had a negative influence on lower extremity long bone fracture in-hospital outcomes. [9] ([10.1186/s12891-025-09349-6](https://doi.org/10.1186/s12891-025-09349-6))
- [L3] BMI has a weak-to-moderate association with peri-incisional adiposity in primary total joint arthroplasty patients. [10] ([10.1016/j.arth.2024.08.020](https://doi.org/10.1016/j.arth.2024.08.020))
- [L3] However, obesity remains a critical risk factor for mechanical failures. [11] ([10.1016/j.jisako.2025.100861](https://doi.org/10.1016/j.jisako.2025.100861))
- [L3] Women had decreased odds of losing greater than five pounds before surgery despite increased odds of having preoperative bariatric surgery. [12] ([10.1016/j.arth.2026.06.021](https://doi.org/10.1016/j.arth.2026.06.021))

- [L3] Obese and overweight patients converted to THA at significantly higher rates compared with normal-weight patients. [13] ([10.1177/03635465251400355](#))
- [L5] Obesity and preexisting osteoarthritis are known risk factors for predicting poor outcomes and conversion to arthroplasty after knee arthroscopy, but the study lacks a control group and specific procedural details to determine if the surgery itself drives progression versus patient factors. [14] ([10.1016/j.arthro.2025.04.036](#))
- [L3] Obesity has an increased risk of all-cause revisions and revision for instability or dislocation in patients receiving rTSA indicated for fractures. [15] ([10.1016/j.jse.2025.05.036](#))
- [L3] Semaglutide appears to be a safe alternative to bariatric surgery for weight management before THA, with similar implant survival and postoperative complication rates. [16] ([10.1016/j.arth.2025.08.068](#))
- [L3] However, patients with obesity had >2-fold odds of conversion to THA. [17] ([10.1177/03635465251392585](#))
- [L3] Based on AOANJRR data, obese patients are at increased risk of higher rate of revision following UKA. [18] ([10.1177/2325967125s00336](#))
- [L3] Unlike BMI, the STiB ratio reflects local anatomical factors that directly influence surgical exposure and wound healing. [19] ([10.1016/j.arth.2025.09.022](#))
- [L1] Following MMPRT repair, repairs show progression of osteoarthritis with higher rates seen with elevated BMI. [20] ([10.1002/arj.70028](#))
- [L2] However, a nonsignificant trend toward a higher complication rate was observed in patients with severe obesity (BMI ≥ 35 kg/m²), while a statistically significant increase in arthrofibrosis was found in patients with BMI <25 kg/m². [21] ([10.1016/j.jisako.2025.100927](#))
- [L3] Our findings support a BMI-based approach to perioperative semaglutide use, particularly in patients who have a BMI >30. [22] ([10.1016/j.arth.2025.09.056](#))
- [L2] High BMI elevates the risk of both knee and hand osteoarthritis irrespective of metabolic status, and the increased risk of knee osteoarthritis attributed to high BMI is more evident in metabolically healthy participants. [23] ([10.1186/s12891-026-09495-5](#))
- [L2] Overall, T2DM is not an independent risk factor for reoperation when adjusted for BMI. [24] ([10.1186/s12891-026-09568-5](#))
- [L3] In morbidly obese patients, DM implants demonstrated excellent five-year survivorship with outcomes comparable or slightly superior to fixed-bearing constructs. [25] ([10.1016/j.arth.2026.03.075](#))
- [L1] Total weight loss % was higher in bariatric surgery patients (28.7%, $P < 0.001$). [26] ([10.1016/j.arth.2026.05.033](#))
- [L4] This multicenter data set has demonstrated improved patient-reported symptoms at the time of surgery, a decrease in mean patient BMI, and an increase in symptom duration reported prior to surgery. [27] ([10.1002/ksa.12745](#))
- [L3] The ten-year functional outcomes and revision rates of THA do not justify restricting access to surgery on the basis of BMI. [28] ([10.1016/j.arth.2025.07.044](#))

- [L3] Elevated BMI was associated with weak-to-moderate increases in thromboembolic risk after TSA but not infection or revision surgery. [29] ([10.1016/j.jse.2026.05.022](https://doi.org/10.1016/j.jse.2026.05.022))

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