PRE OPERATIVE OPTIMIZATION IN ELECTIVE TJA

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DISCLOSURES

- Smith and Nephew---Fellowship funding
- Stryker----Fellowship funding

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WHAT'S CHANGING

- BCPI
- CJR
- Private Alternative Payment Programs
- Pressure to move procedures to outpatient/Same day discharge
  - Insurance
  - Hospitals
  - Patients

WHAT IS NOT CHANGING?

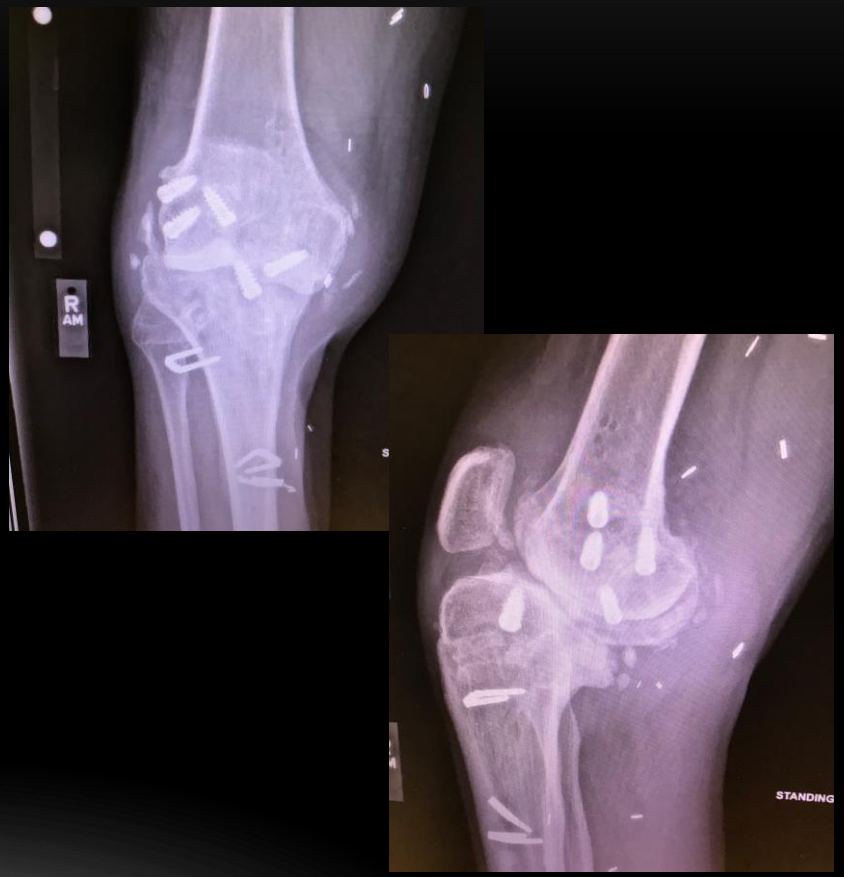
- Increasing volume of elective THA and TKA

J Bone Joint Surg Am. 2018 Sep 5;100(17):1455-1460. doi: 10.2106/JBJS.17.01617.

Projected Volume of Primary Total Joint Arthroplasty in the U.S., 2014 to 2030.

Sloan M[1], Premkumar A[2], Sheth NP[3].

- 71% growth in THA to 635K procedures in 2030
- 85% grouwth in TKA to 1.3 million procedures in 2030



IS IT SAFE?? COST EFFECTIVE??

Outpatient Total Hip Arthroplasty Has Minimal Short-Term

An Evaluation of the Safety and Effectiveness of Total Hip Arthroplasty as an Outpatient Procedure: A Matched-Cohort Analysis

Megan Richards,
Stéphane Poitras,

Review

The Shift to Same-Day Outpatient Joint Arthroplasty: A Systematic Review

Jeffrey D. Hoffmann, MD [a], Nicholas A. Kusnezov, MD [a], John C. Dunn, MD [a], Nicholas J. Zarkadis, DO [a,*], Gens P. Goodman, DO [a], Richard A. Berger, MD [b]

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[b] Department of Orthopaedic Surgery, Rush University Medical Center, Chicago, Illinois

Safe Sele
Risk Stra
Score"

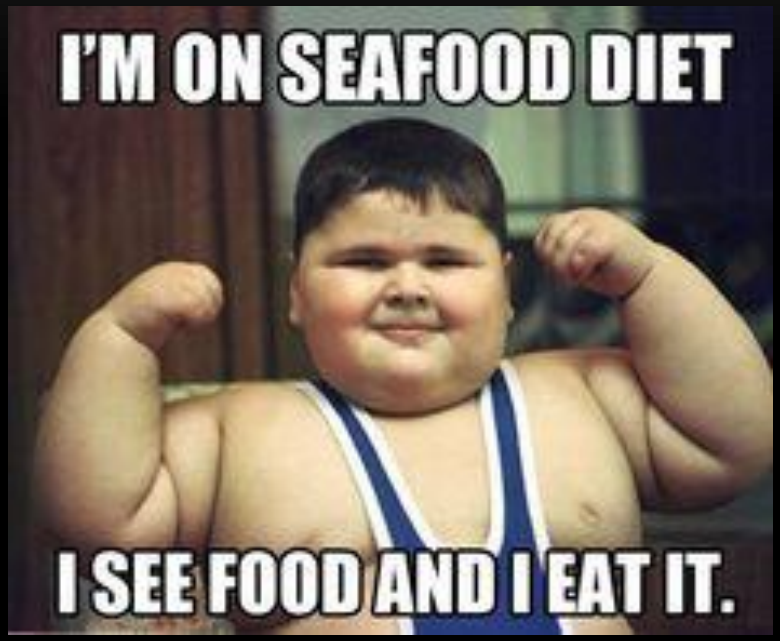
R. Michael
Alexander L. Kuzma, MD [c], Peter Caccavallo, MD, MS [d]

PRE OPERATIVE OPTIMIZATION

- The question is not how to manage/prevent a problem but rather how to manage/prevent such complications with an ***orthopaedic*** patient.
- Diabetes Management
- Smoking Cessation
- Obesity
- Anticoagulation/DVT Prophylaxis
- Rheumatologic Medication Management
- Preoperative Urine Screening
- Antiplatelets
- Coronary Stents
- MRSA Screening/Infection Prevention
- Nutrition

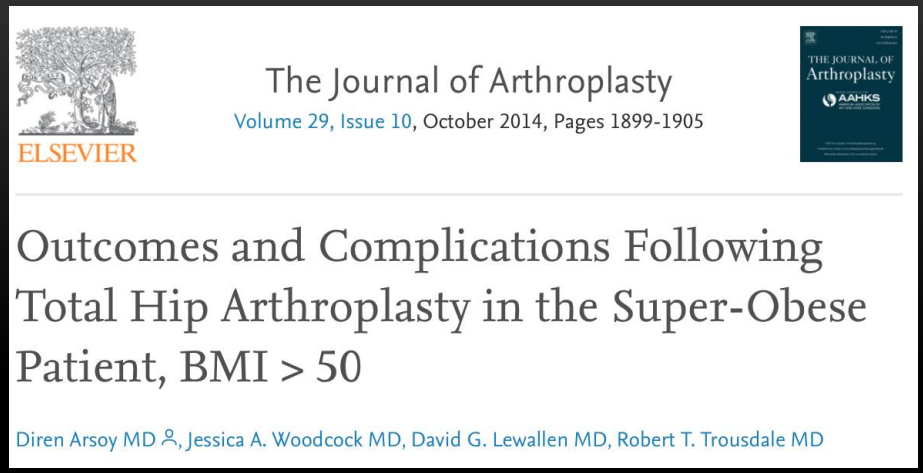
OBESITY

- Major health concern in USA
- Associated with increased risk for
  - DM
  - Heart disease
  - HTN
  - Poor nutrition
  - Early mortality
  - Need for TJA



OBESITY

- Percent body fat seems to be a better predictor than BMI
- However BMI increase does lead to a greater rate of complications:
  - > 40 kg/m2 increases infection risk by 3.3 times
  - > 50 kg/m2 increases infection by 21 times
- Bariatric surgery may not alter risks enough to offset problems with the procedure
  - Can alter nutrition status



ELSEVIER

The Journal of Arthroplasty

Volume 29, Issue 10, October 2014, Pages 1899-1905

Outcomes and Complications Following Total Hip Arthroplasty in the Super-Obese Patient, BMI > 50

Diren Arsoy MD, Jessica A. Woodcock MD, David G. Lewallen MD, Robert T. Trousdale MD

The Effects of Lower-Extremity Total Joint Replacement for Arthritis on Obesity

Christian Heisel, MD; Mauricio Silva, MD; Mylene A Dela Rosa, BS; Thomas P Schmalzried, MD

Orthopedics. 2005;28(2):157-159 https://doi.org/10.3928/0147-7447-20050201-18

Effect of Body Mass Index on Complications and Reoperations After Total Hip Arthroplasty

Wagner, Eric R. MD[1,a]; Kamath, Atul F. MD[1,b]; Fruth, Kristin M. BS[1,c]; Harmsen, William S. MS[1,d]; Berry, Daniel J. MD[1,e]

JBJS: February 3, 2016 - Volume 98 - Issue 3 - p 169-179
doi: 10.2106/JBJS.O.00430
Scientific Articles

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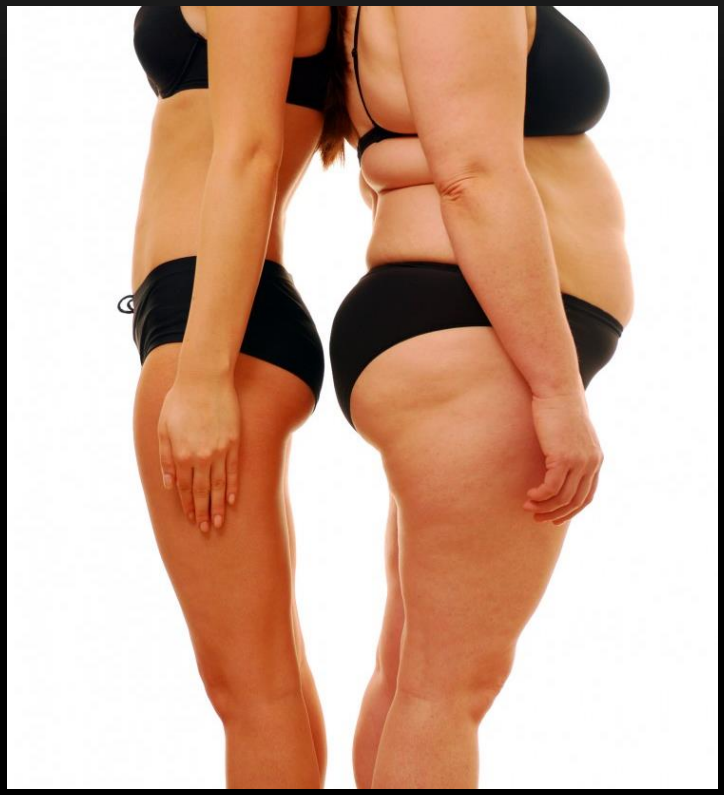
OBESITY

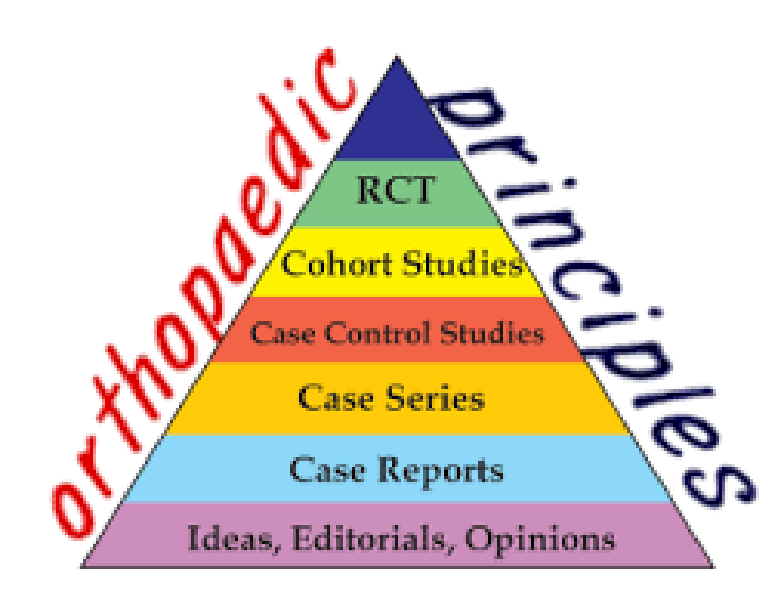
- Weight loss plan:
  - BMI 30-40 → celebrate!!!
  - BMI 40-50 → suggest weight loss and nutrition consult
    - Need to have minimal co-morbidities for surgery
  - BMI > 50 → preventative medicine clinic referral



DIABETES AND HYPERGLYCEMIA

- There have been many studies linking diabetes with increased risk
  - Deep infection
  - MI
  - DVT
  - PE
  - Readmission
  - Mortality
  - Length of stay
  - Cost

DIABETES AND HYPERGLYCEMIA



Study limitations:

- Retrospective studies
- Wide variance of study designs and outcome measures
- Lack of correction for comorbidities
- Inconsistent patient populations
- Small N of complication rates

DIABETES AND HYPERGLYCEMIA

Two questions:

- Is it truly a risk factor?
  - YES

- What *is* the risk factor?
  - Hyperglycemia
  - Diabetes
  - Uncontrolled diabetes
  - Diabetes with secondary disease

JBJS Rev. 2016 Feb 16;4(2). pii: 01874474-201602000-00003. doi: 10.2106/JBJS.RVW.O.00044.

The Effect of Diabetes Mellitus on Total Joint Arthroplasty Outcomes.

Hogan C[1], Bucknell AL, King KB.

Author information

1 1Department of Orthopedics, University of Colorado School of Medicine, Aurora, CO 2Orthopaedic Service, Veterans Affairs Eastern Colorado Health Care System, Denver, CO.

DIABETES AND HYPERGLYCEMIA

What's a good cutoff?

- A1c <8.0
- 90% of qid BS <180
- Is fructosamine a better marker? >292 micromole/L

- PICK A NUMBER and BE CONSISTENT

SOCIAL FACTORS

- LIVING ENVIRONMENT
  - LOCATION
  - LEVELS

SOCIAL FACTORS

- SOCIAL SUPPORT
  - FAMILY
  - FRIENDS

J Arthroplasty. 2019 Jun 24. pii: S0883-5403(19)30624-2. doi: 10.1016/j.arth.2019.06.033. [Epub ahead of print]

The Role of Social Support and Psychological Distress in Predicting Discharge: A Pilot Study for Hip and Knee Arthroplasty Patients.

Zeppieri KE[1], Butera KA[2], Iams D[3], Parvataneni HK[4], George SZ[5].

The Connection Between Strong Social Support and Joint Replacement Outcomes

Mark M. Theiss, MD; Michael W. Ellison, MS; Christine G. Tea, RN, MSN; Julia F. Warner, RN, MSN; Renee M. Silver, RN, MSN; Valerie J. Murphy, RN, MSN

Orthopedics. 2011;34(5):e50-e58
https://doi.org/10.3928/01477447-20110317-02

TOOLS?

RAPT

Risk Assessment and Prediction Tool (RAPT)

	Value	Score
1. What is your age group?	50-65 years 66-75 years > 75 years	=2 =1 =0
2. Gender?	Male Female	=2 =1
3. How far, on average, can you walk? (a block is 200 meters)	Two blocks or more (+/- rests) 1-2 blocks (the shopping centre) Housebound (most of the time)	=2 =1 =0
4. Which gait aid do you use? (more often than not)	None Single point stick Crutches/frame	=2 =1 =0
5. Do you use community supports? (home help, meals-on wheels, district nurse)	None or one per week Two or more per week	=1 =0
6. Will you live with someone who can care for you after your operation?	Yes No	=3 =0
	Your score (out of 12)	

KEY:Scores < 6 high risk..... prediction: discharge extended inpatient rehabilitation
Scores > 9 low risk..... prediction: discharge directly home
Scores 6-9 medium risk ....prediction: additional intervention to discharge directly home

Patient's expectation of discharge destination is also a determinant. The prediction indicated by the score is discussed with the patient and a destination plan agreed to.

Patient's preference	Prediction (Score)	Agreed destination
.....	.....	.....

Clin Orthop Relat Res. 2015 Feb;473(2):597-601. doi: 10.1007/s11999-014-3851-z.

Does the Risk Assessment and Prediction Tool predict discharge disposition after joint replacement?

Hansen VJ[1], Gromov K, Lebrun LM, Rubash HE, Malchau H, Freiberg AA.

OARA(OUTPATIENT ARTHROPLASTY RISK ASSESSMENT)

Table 2
OARA Score.

Comorbidity Areas	Possible Points
General Medical	180
Hematological	325
Cardiac	385
Endocrine	165
Gastrointestinal	185
Neurological/Psychological	185
Renal/Urology	220
Pulmonary	250
Infectious Disease	65

OARA, Outpatient Arthroplasty Risk Assessment.

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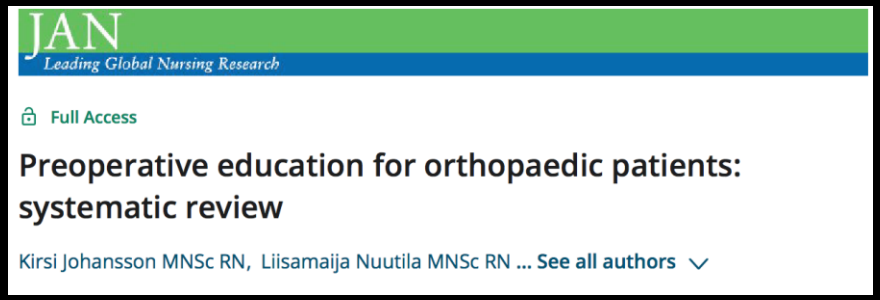
PATIENT SELECTION

Unilateral, uncomplicated, primary hip or knee arthroplasty	ASA 1 or 2 and approved by Anesthesiologist on chart review	Pre-operative Body Mass Index < 35 kg/m^2	Age < 70 years at time of surgery	Pre-operative hemoglobin > 12 g/dL
No history of seizure disorder, active liver disease, or active kidney disease (preoperative GFR >60)	Well-controlled non-insulin dependent diabetics with HgA1c <7	Non-smoker, drinks less than 14 alcoholic beverages per week	No history of cardiopulmonary disease that would necessitate inpatient monitoring after surgery	No history of DVT, PE, TIA/stroke, MI, or other thromboembolic event
Preoperative ambulatory status does not require the use of a walker or wheelchair	No chronic pre-operative opioid medication use or history of opioid addiction	Patients are not currently classified as disabled or on SSD	No history of significant nausea with opiate use	No contraindications to IV or oral NSAID use

Not immunocompromised or taking immunomodulatory medications (i.e. RA patients)	Assistance available at home after discharge from KASC on a 24 hour basis for at least the first 3 days postop	Patient must be willing and able to have a spinal anesthetic	No other condition or circumstance that would preclude rapid discharge from the ASC after surgery

PATIENT EDUCATION

- Small class sessions with nursing educator
- Powerpoint + education booklet
- Patients must have a “Joint Coach”
- What to expect before, during, after surgery
- Medication rundown
- Who to call
- All of the education they would normally get in a hospital happens **PREOP**



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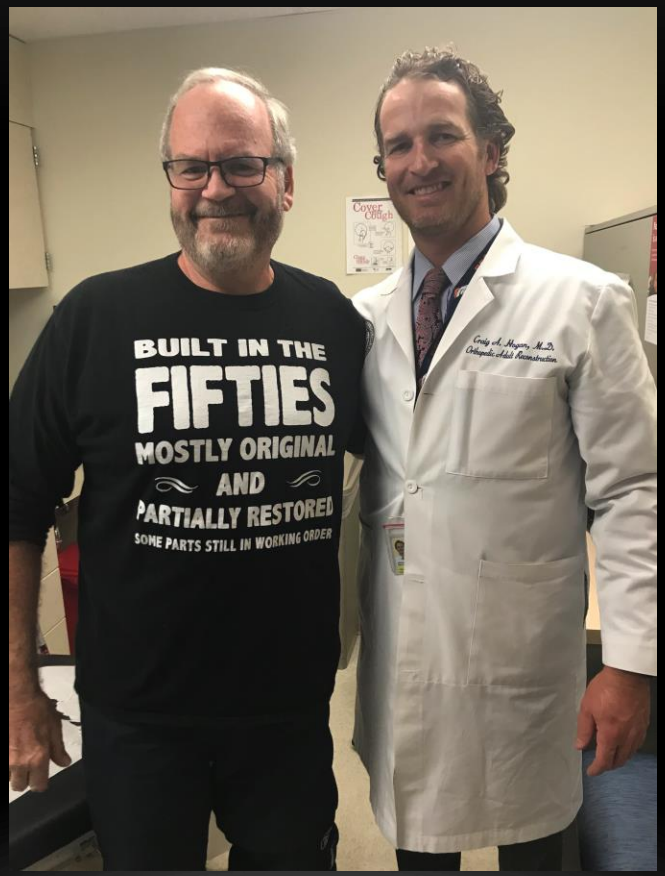
SUMMARY

- OPTIMIZATION OF PATIENT MEDICALLY
- SOCIAL FACTORS
- EDUCATION

- PATIENT SELECTION

THANK YOU



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