Total Hip Replacement: Optimising Outcomes for Patients with Co-Morbidities

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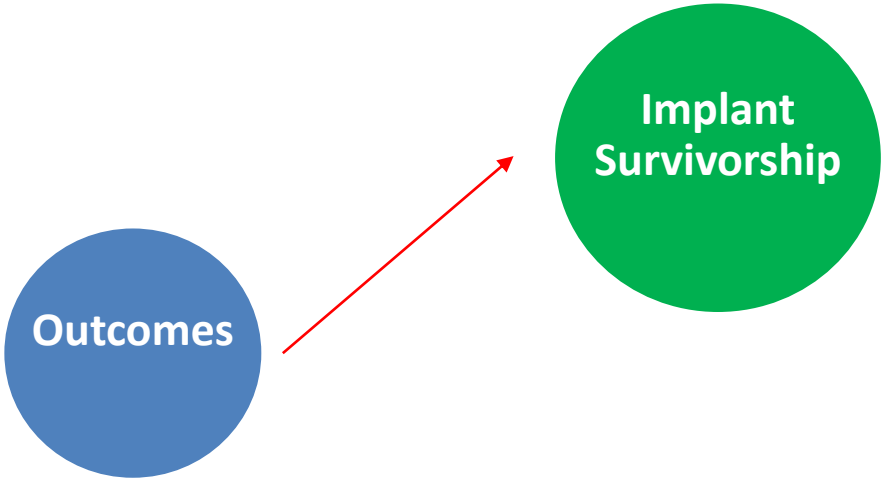
THIS IS MODERN MEDICINE

Learning Outcomes

- Contemporary success rate of total hip replacement
- Effect of-comorbidities on outcomes
- Optimising outcomes in these patients

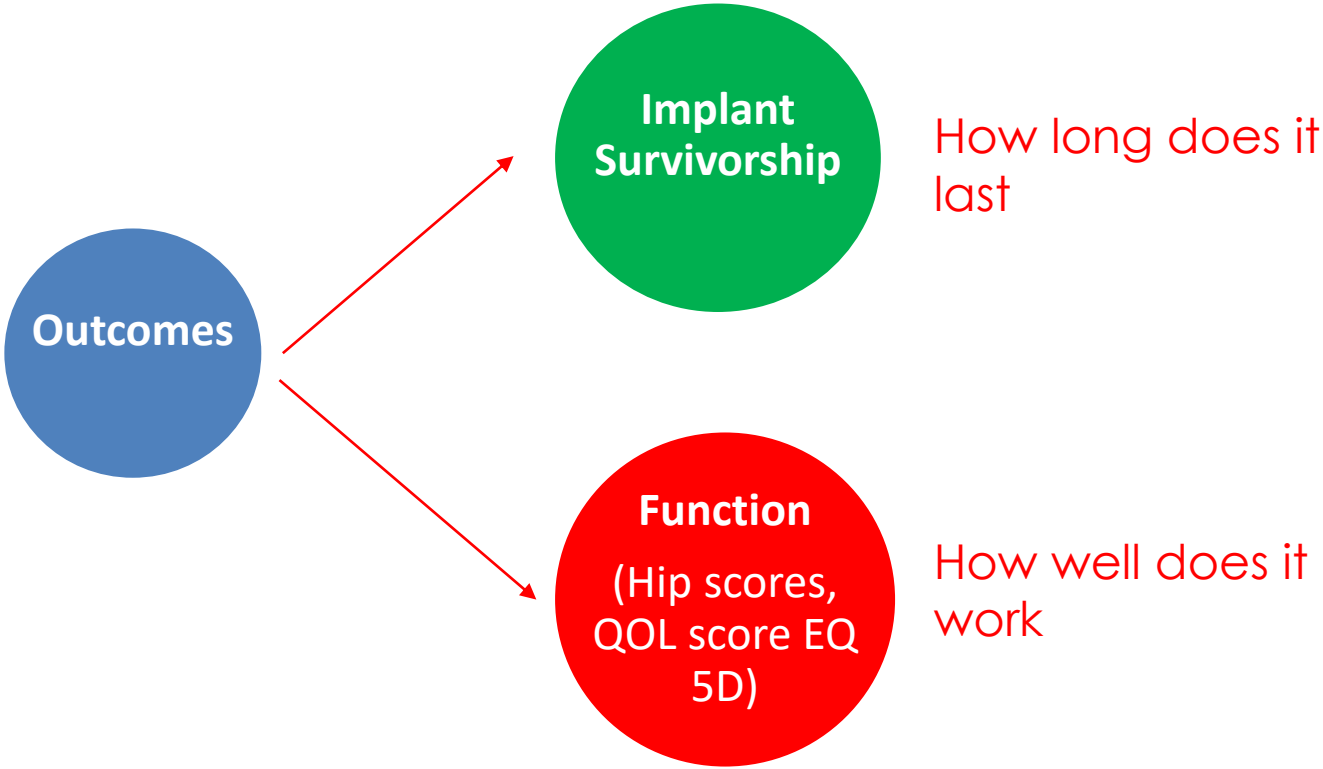
How Successful is Contemporary Total Hip Replacement?

Measuring Success after Total Hip Replacement….



How long does it last

Measuring Success after Total Hip Replacement….



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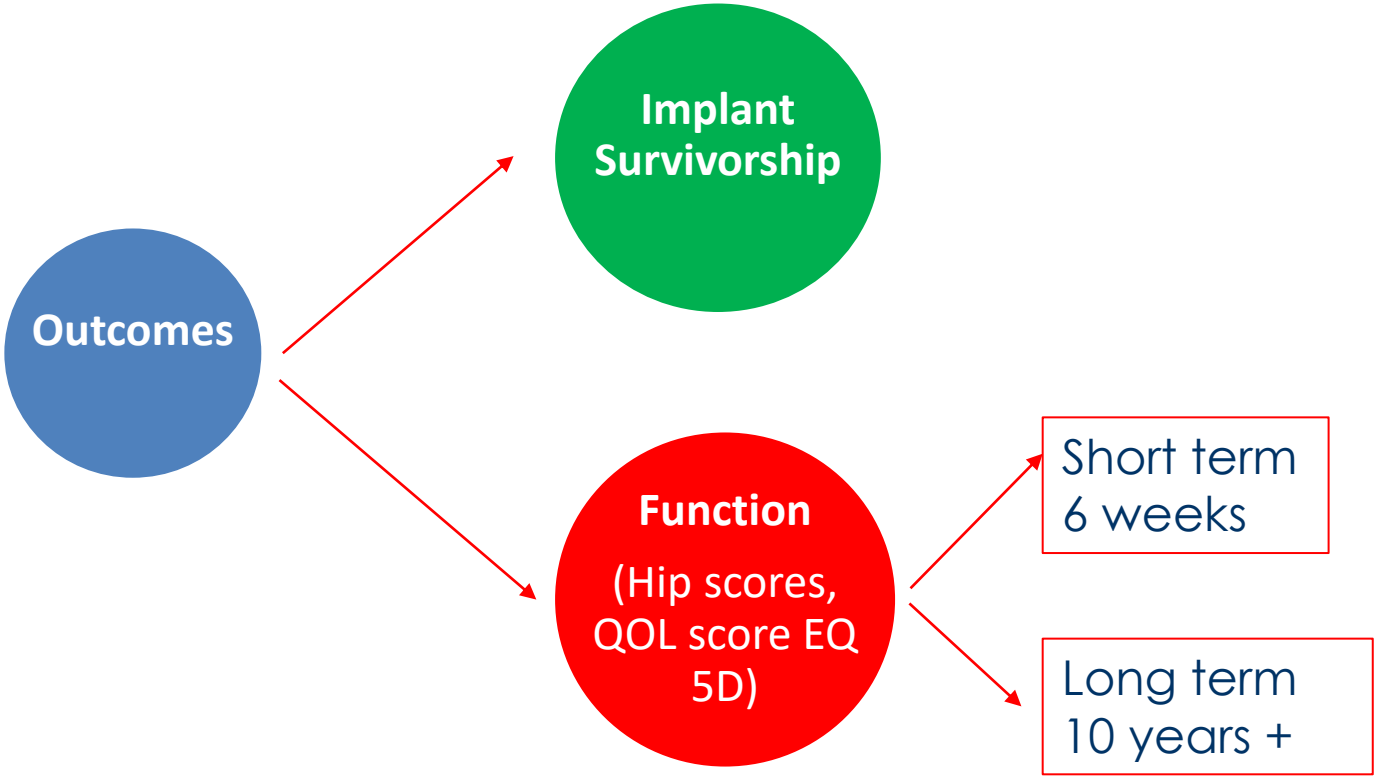
Measuring Success after Total Hip Replacement….



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Measuring Success after Total Hip Replacement….

Lancet 2019; 393: 647–54

How long does a hip replacement last? A systematic review and meta-analysis of case series and national registry reports with more than 15 years of follow-up

Jonathan T Evans, Jonathan P Evans, Robert W Walker, Ashley W Blom, Michael R Whitehouse, Adrian Sayers**

Systematic review including case series and national joint registry data

228,888 hips reporting on 15 year survival or above

ODEP standard: 95% at 10 years

Current Evidence

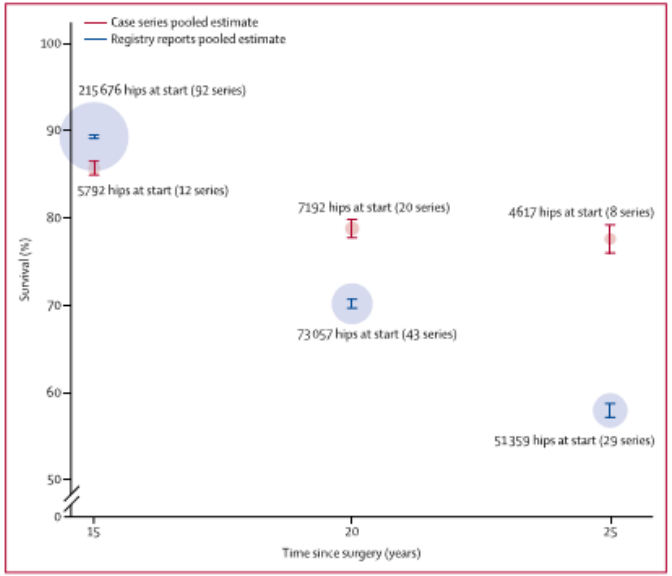

Figure 4: Comparison of pooled survival estimates from case series and registry reports at 15 years, 20 years, and 25 years

15 years…. 85%

20 years…. 75%

25 years…. 58%

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Current Evidence - Worldwide

Over half of patients who have a total hip replacement can expect their hip implant to last 25 years

- Avg age 67
- 55% Women
- 88% for Osteoarthritis

Current Evidence - Ireland

2010 – 2019: 75,399 THR and TKR (PUBLIC HOSPITALS ONLY)

Avg age: 70 in 2019 (up from 67)

93% if patients aged 50 or above

50% split male/female

increasing numbers

5590 in 2019

12325 in 2051 (predicted)

A study of population trends and future projections for the hip and knee arthroplasty service in the Republic of Ireland

Katie St John [a,*], Andrew Hughes [b], Joseph Queally [b,c]

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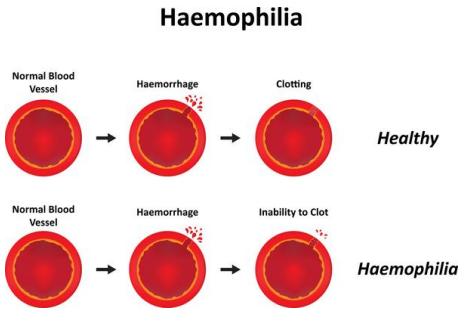
[b] Department of Orthopaedic Surgery, St James's Hospital, James Street, D08 NHY1, Dublin, Ireland
[c] School of Medicine, Trinity College Dublin, Dublin, Ireland

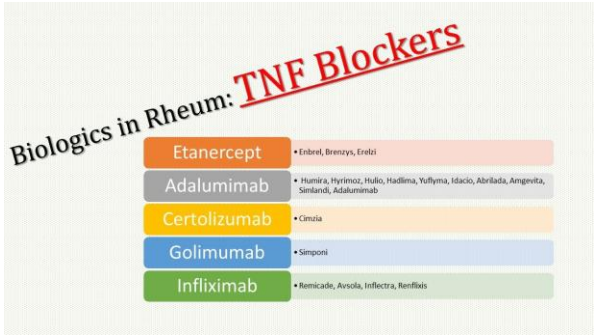
Increasing Numbers, Older Patients and more Co-Morbidities

How can we optimize outcomes in a more complex patient population?

- Patient selection
- Modifiable risk factors
- Perioperative planning
- Patient Education/Consent

Increasing Numbers, Older Patients and more Co-Morbidities





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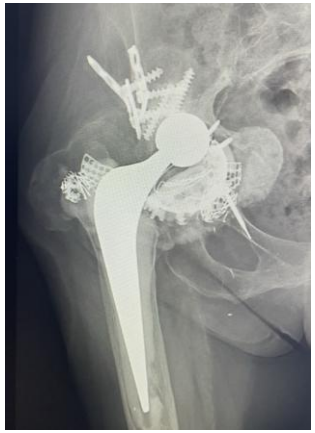
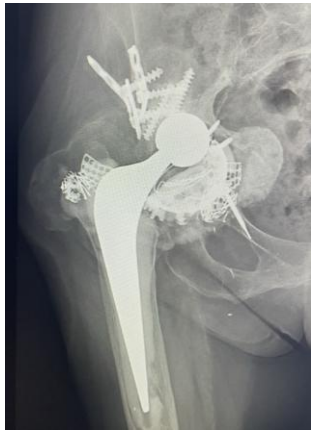
Why do Hip Replacements Fail?

Why do Hip Replacements Fail?



Loosening

Why do Hip Replacements Fail?



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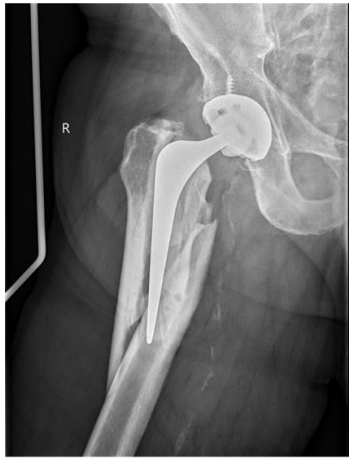

Fracture

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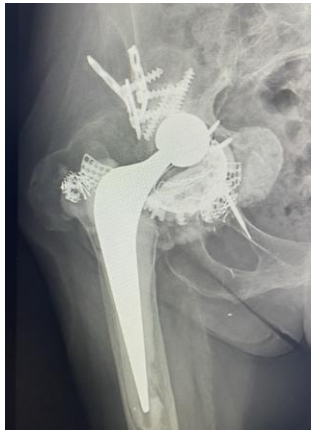
Why do Hip Replacements Fail?



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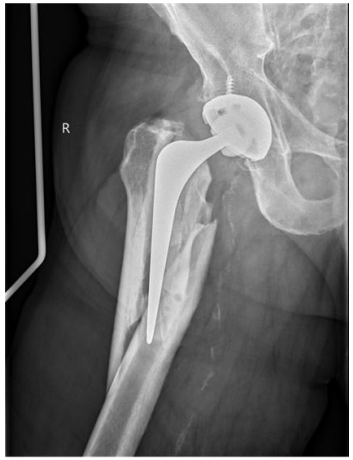

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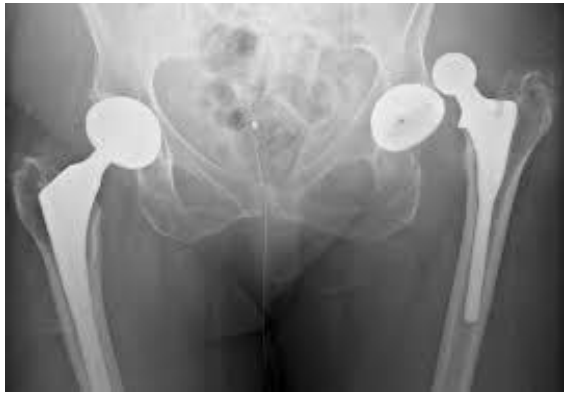

Dislocation

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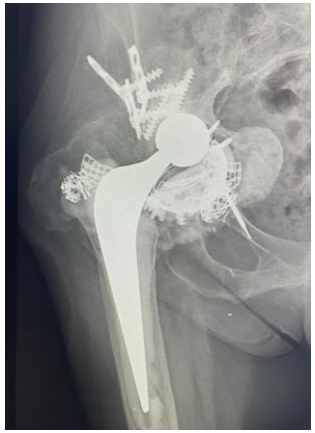
Why do Hip Replacements Fail?



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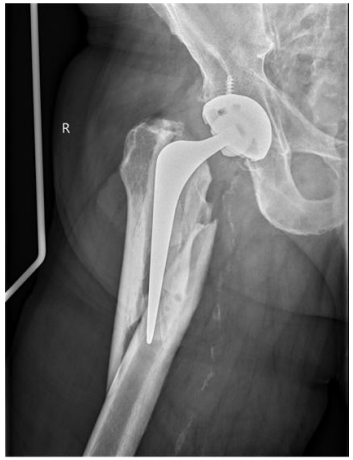

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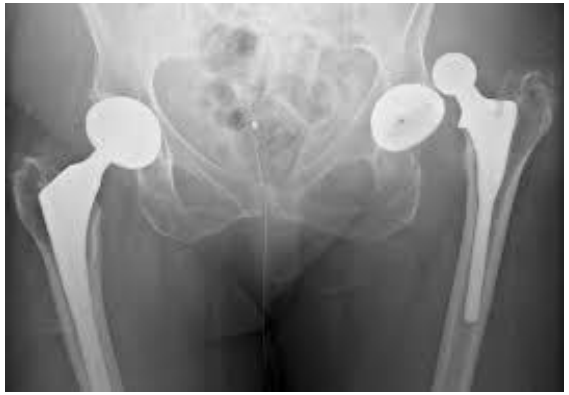
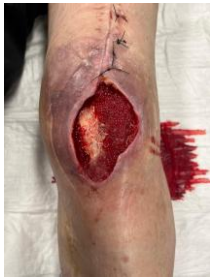


Dislocation



Infection

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What is the Effect of Common Co-Morbidities ?

Obesity

Diabetes

Kidney Disease

Malnutrition

Obesity

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The Effect of Obesity on Having a Hip Replacement

Osteoarthritis and Cartilage

OARSI

Osteoarthritis and Cartilage 28 (2020) 31–44

Greater risks of complications, infections, and revisions in the obese versus non-obese total hip arthroplasty population of 2,190,824 patients: a meta-analysis and systematic review

J.R. Onggo † *, J.D. Onggo †, R. de Steiger ‡, R. Hau † §

Systematic review/meta-analysis looking at

- non-obese (BMI < 30)
- obese (BMI >30)
- morbidly obese (BMI >40)

2,190,824 patients

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The Effect of Obesity on Having a Hip Replacement

Increased risk of complications	Obese (>30)	Morbidly Obese > 40
all complications	1.53	2.68
revisions	1.44	2.17 (3-8%)
infection	2.71	3.69 (2% – 4 %)
dislocation	1.72	2.12

Infection… major problem for patient, doctors, healthcare system

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The Effect of Obesity on Having a Hip Replacement

Obesity and morbid obesity (BMI > 40) in particular significantly increases the risk of complications after total hip replacement

? Proceed with hip replacement v ?delay/trial of weight loss to reduce BMI/risks

Optimising Outcomes in Obese Patients

Patients must be informed of risks and be given opportunity to reduce BMI, particularly if BMI > 40

Signpost or refer to GP or weight loss program

? Role for GLP 1 agonists

Optimising Outcomes in Obese Patients

Retrospective study comparing Semaglutide versus placebo, complications after total hip and knee replacement

7 051 versus 34, 524

Decreased risk of

periprosthetic joint infection (2.1% versus 3.0 %)

90 day readmission (7 5 versus 9.4%)

Semaglutide Use Prior to Total Hip Arthroplasty Results in Fewer Postoperative Prosthetic Joint Infections and Readmissions

Matthew L. Magruder, MD [a] · Michael J. Miskiewicz, BS [b] · Ariel N. Rodriguez, MD [a] · Michael A. Mont, MD [c]

THE JOURNAL OF ARTHROPLASTY

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Optimising Outcomes in Obese Patients

Step 9 Trial

Once-Weekly Semaglutide in Persons with Obesity and Knee Osteoarthritis

Authors: Henning Bliddal, M.D., Harold Bays, M.D., Sébastien Czernichow, M.D., Ph.D., Joanna Uddén Hemmingsson, M.D., Ph.D., Jøran Hjelmesæth, M.D., Ph.D., Thomas Hoffmann Morville, M.D., Ph.D., Anna Koroleva, M.D., +5, for the STEP 9 Study Group* Author Info & Affiliations

Published October 30, 2024 | N Engl J Med 2024;391:1573-1583 | DOI: 10.1056/NEJMoa2403664
VOL. 391 NO. 17 | **Copyright © 2024**

Semaglutide v placebo (diet and exercise guidance only)
407 patients, 68 weeks
WT loss 13.7% versus 3.2%

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Optimising Outcomes in Obese Patients

WT loss 13.7% versus 3.2%

Significantly improved

- Pain
- Functional scores
    - Womac knee score (41.7 v 27.5 change in score)
    - SF-12 (12 v 6.5 change in score)

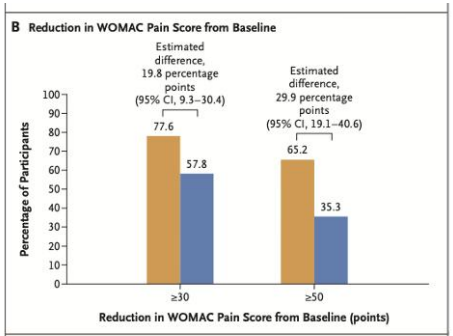

Figure 2. Reduction in Body Weight and WOMAC Pain Score at Week 68.
The estimated percentages and differences were derived from a logistic-regression model according to the treatment policy estimand. The confidence intervals for the differences were obtained with the use of the delta method. P values are reported for confirmatory secondary end-point analyses only, on the basis of odds ratios estimated from the same logistic-regression model. The odds ratios for these end points are provided in Table S3 in the Supplementary Appendix.

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Beacon Obesity and Bariatric Service

Beacon Hospital Obesity Care Pathway

Level 3 & 4 Service – Irish Obesity Model of Care

GP / Consultant Referral
(BMI ≥30 or ≥27 with co-morbidities)

↓

Specialist MDT Assessment

↓

LEVEL 3: Medical Obesity Care

- Dietetic medical nutrition therapy
- Behaviour change support
- Obesity pharmacotherapy (if indicated)
- Metabolic risk optimisation

↓

LEVEL 4: Bariatric Surgery Pathway

- Structured preparation
- Bariatric surgery
- Long-term follow-up

Patients may move up or down the pathway depending on clinical need.

Mr. William Robb Consultant Upper GI Surgeon –Oesophago-Gastric Cancer, Bariatric and General Surgeon

Mr. Waqas Butt Consultant General, Upper GI & Bariatric Surgeon

Dr. Matilde Mijares Zamuner, Consultant Endocrinologist

Jessica Mellotte Clinical Specialist Dietitian Obesity and Bariatric Surgery

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What will the Service offer/ How to refer?

- Specialist medical & surgical obesity care.
- Safe prescribing, support and monitoring of obesity pharmacotherapy.
- Pre- and post-bariatric surgery pathways.
- Identification of nutritional risk, behavioural and lifestyle modification and exercise therapy.

When to Refer

- BMI 30
- Complex obesity with related co-morbidities.
- Patients who wish to be considered for pharmacotherapy or bariatric surgery.
- Excess or dysfunctional adipose tissue impacting function, QOL, pain, or metabolic health.

Referrals can be sent to:

✉ obesityandbariatrics@beaconhospital.ie

GP's can refer directly to the service via health link

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Diabetes

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The Effect of Diabetes on Having a Hip Replacement

The impact of glycaemic control and diabetes mellitus on perioperative outcomes after total joint arthroplasty
Milford MH, Viens N, Cook C, Vail T, Bolognesi M

2009 Jul;91(7):1621-9

Retrospective review looking at complications in diabetic patients who had a total joint replacement

- no diabetes 920,555
- controlled diabetes 105485
- uncontrolled diabetes 3973

The Effect of Diabetes on Having a Hip Replacement

Increased risk of complications in uncontrolled diabetes versus controlled diabetes

CVA 3.42 (odds ratios)
UTI 1.47
Transfusion 1.19

Infection 2.28 (0.7 % versus 2.4%)
Death 3.23

Increased length of stay (1-2 days)

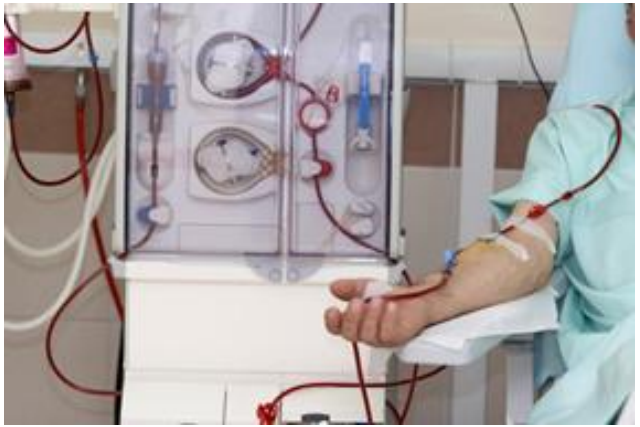
Optimising Outcomes in Diabetic Patients

Preoperative control important…… HBA1c should be < 7% (preassessment clinic gatekeeping)

Perioperative control (endocrine team input)

Manage other co-morbidities typical with diabetes

Chronic Kidney Disease



The Effect of Chronic Kidney Disease on having a Hip Replacement

Effect of chronic kidney disease on outcomes of total joint arthroplasty: a meta-analysis

Chang-Wan Kim[1†], Hyun-Jung Kim[2†], Chang-Rack Lee[1*], Lih Wang[3] and Seung Joon Rhee[4]

Meta-analysis looking at looking at complications after total joint replacement in patients with and without chronic kidney disease

Prevalence 8 – 16%

27 studies, 100,000 patients

The Effect of Diabetes on Having a Hip Replacement

Increased risk of complications in patients with chronic kidney

Mortality	**1.89,**	**(higher if on dialysis 4.2)**
Infection	**1.37**	**(no difference if on dialysis)**
Revision risk	**2.15**	**(increased only if on dialysis)**

Optimising Outcomes in Chronic Kidney Disease Patients

Risk stratification

Optimising renal function before, during and after surgery

Dialysis available in Beacon

Malnutrition

The Effect of Malnutrition on having a Hip Replacement

Preoperative Malnutrition Negatively Correlates With Postoperative Wound Complications and Infection After Total Joint Arthroplasty:

A Systematic Review and Meta-Analysis

Gu A, Malahias A, Strigelli V, Nocon A, Sculco TP, Sculco K

J of Arthroplasty 2018

Meta-analysis looking at looking at complications after total joint replacement in patients with malnutrition.

20 studies that investigated serological malnutrition

low albumin <3.5 g/dl

low total lymphocyte count <1500 cells/mm3

prevalence of 5- 30%

The Effect of Malnutrition on having a Hip Replacement

Increased risk of complications in patients with malnutrition

Delayed wound healing	2.176
Wound infection	up to 5

The Effect of Malnutrition on having a Hip Replacement

If malnutrition suspected, assess with albumin/total lymphocyte count

Delay surgery until albumin >3.5g/dl, TLC > 1500

Summary

Total Hip Replacement is generally a successful procedure

95% satisfaction

60% can expect their hip replacements to last 25 years

Older patients more medical co-morbidities

Recognising co-morbidities, advising re risks and optimizing care pre and perioperatively critical to achieving best outcomes

BMI >40 …. Consider GLP1 agonist treatment as part of a program

HBA1C < 7

Thank you

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