



National Joint Registry

www.njrcentre.org.uk

Working for patients, driving forward quality

Patient Decision Aids for Joint Replacement Surgery

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Conflicts of Interest: None



The Mellanby Centre
for bone research



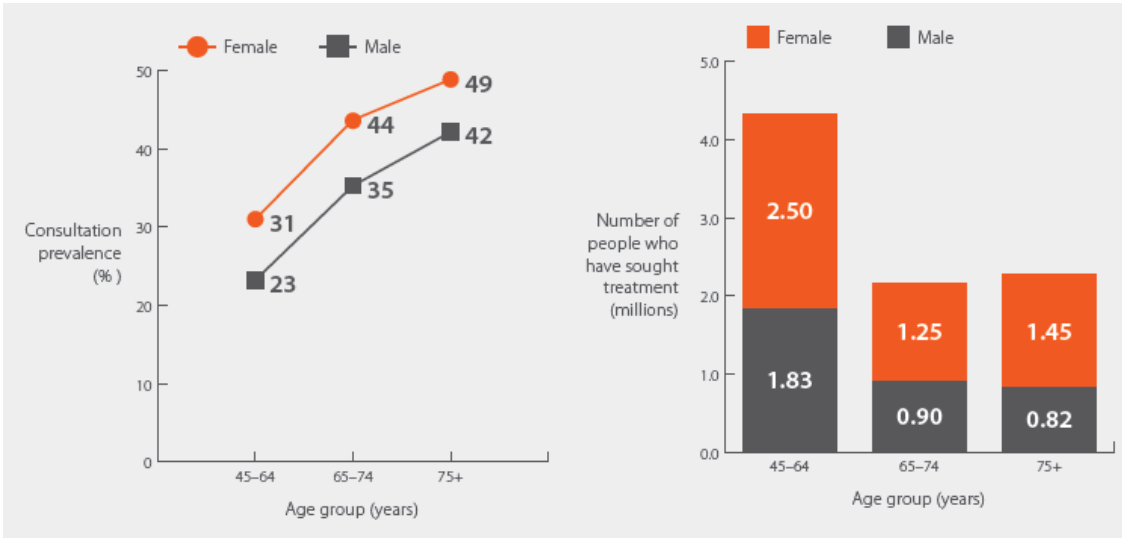
University of
BRISTOL



Outline

- What is a patient decision aid?
- Why joint replacement?
- What information and how might it be presented?
- Will it improve patient care?

Arthritis is Extremely Common



GP consultation figures from Arthritis Research UK

- Pain, stiffness, disability (9 million people)
- Total economic cost £15B/yr
- 7.5M working days lost
- Lifetime incidence
 - knee replacement 1 in 6 (=100,000/yr)
 - Hip replacement 1 in 8 (80,000/yr)

What is a Patient Decision Aid?

“patient decision aids are tools that provide **information** about treatment **options** and their associated relevant **outcomes**. These technologies also help patients to **personalise** this information, to appreciate the scientific **uncertainties** inherent in their choice, to clarify the personal value or desirability of potential **benefits** relative to potential **harms**, to **communicate** their values to their practitioners, and to gain skills in the steps of collaborative decision-making.”

Who Are Decision Aids For?

- Patients or other individuals who are making a health decision
- Practitioners guiding patients in making health decisions



What Do We Want To Achieve?

- Improve decision quality
- Provide information on the choices
- Prepare patient to make informed, value-based decisions
- (manage expectations)
- Not to advise on correct choice
- Not to replace the consultation



What Decision Aids Are Out There?

[IVF Predict](#)

Personalised prediction of the chance of having a live birth with IVF treatment

[Diabetes UK Risk Score](#)

Personalised calculation of your risk of developing Type 2 diabetes

[QDiabetes](#)

Calculates your risk of developing Type 2 diabetes over the next ten years

[QRISK](#)

Calculates your risk of a heart attack or stroke over the next ten years

[JBS3](#)

Personalised calculation of your cardiovascular disease (CVD) risk

[AF Stroke Risk](#)

Personal estimate of your stroke risk if suffering from atrial fibrillation (AF).

[FRAX](#)

This website calculates your risk of having a major osteoporotic fracture over a 10 year period.

The NJR Patient Decision Aid

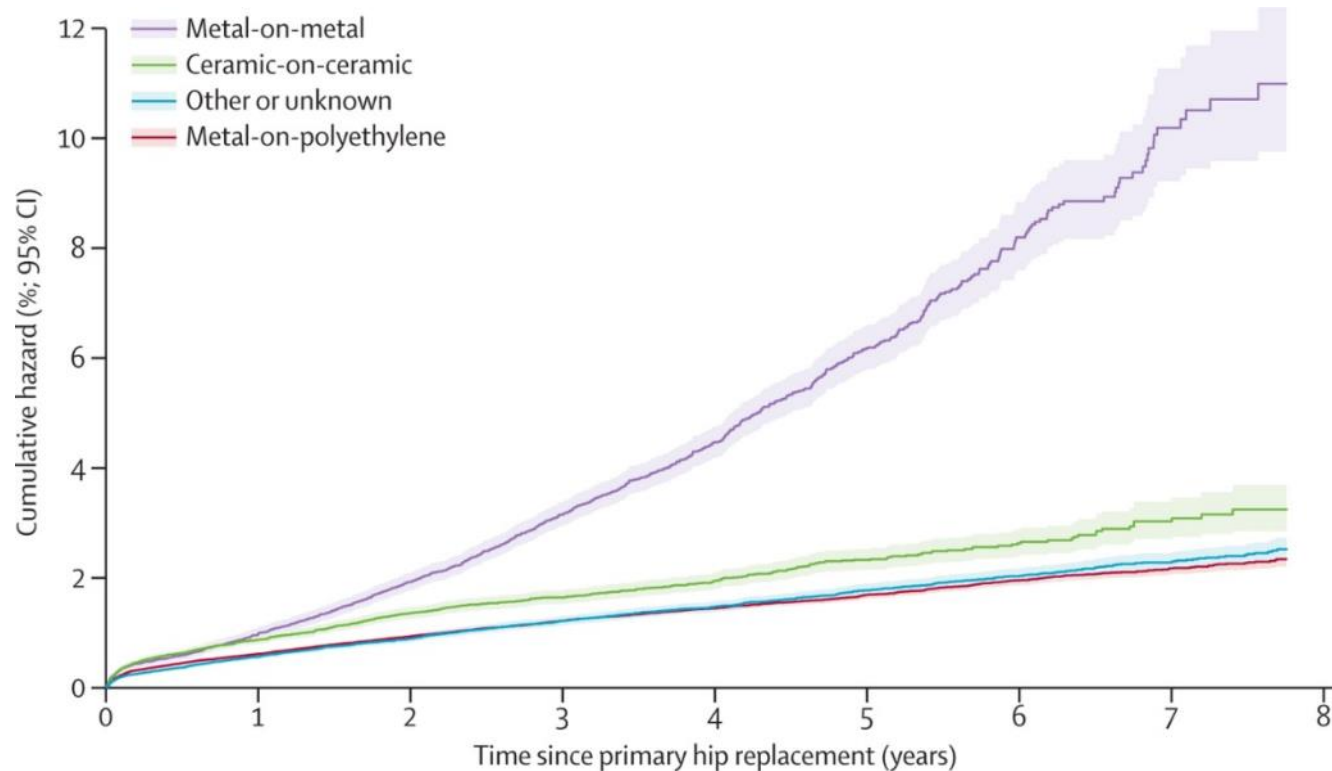
- Partnership between patients, analysts & clinicians
- Construct & validate a personalised risk algorithms for outcomes after joint replacement using NJR data
- Create a web-based, preference-sensitive, 'user interface' for patients and clinicians - (PDA)
 - Arthritis Research UK funded

The NJR Resource

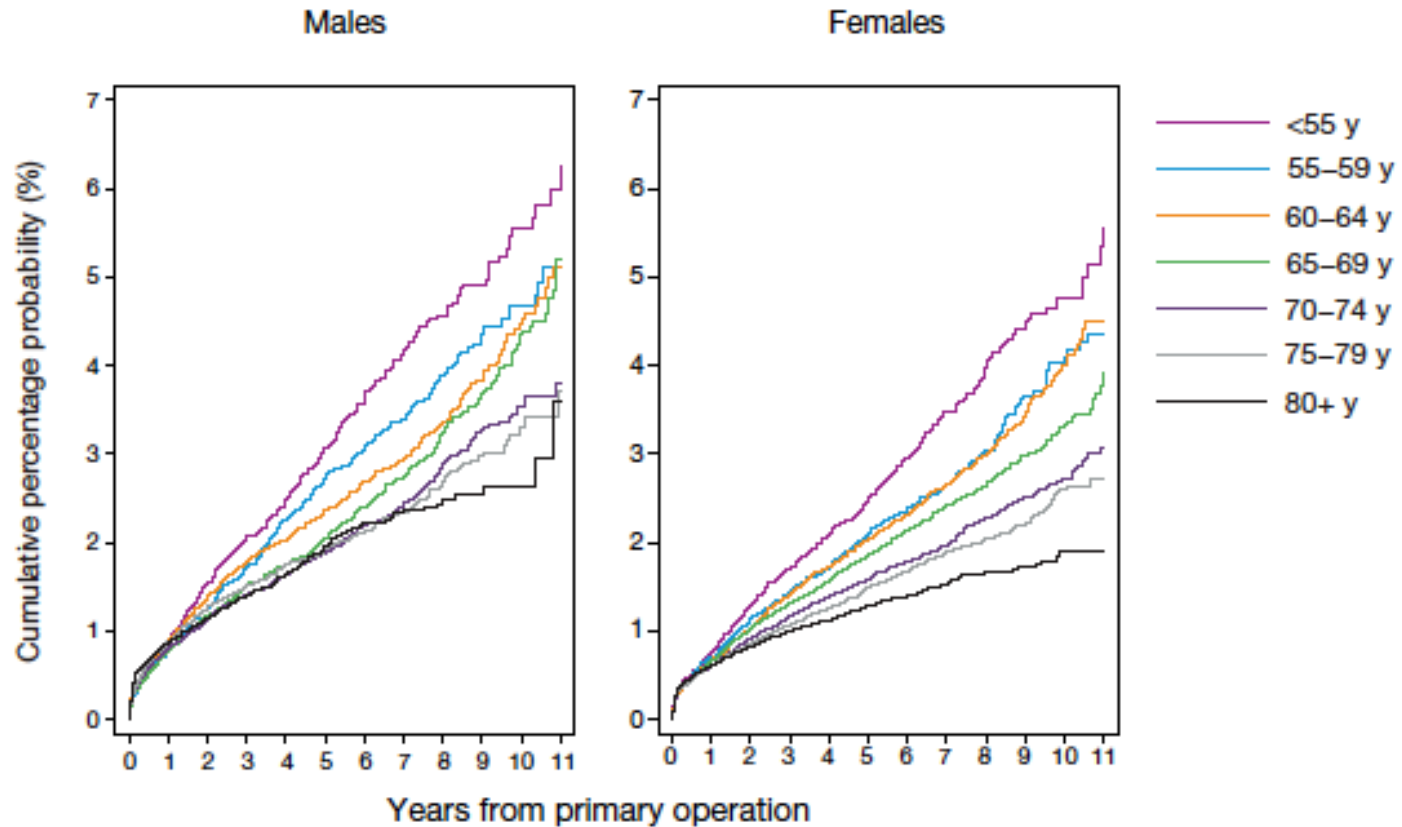


- Largest joint replacement register in the world
- Shoulder, elbow, hip, knee, ankle replacement
- ~2.3 million records
- >200,000 new cases/year
- Outcomes include death, revision, & PROMS
- Data linkage through NHS ID
- Uniquely powerful resource

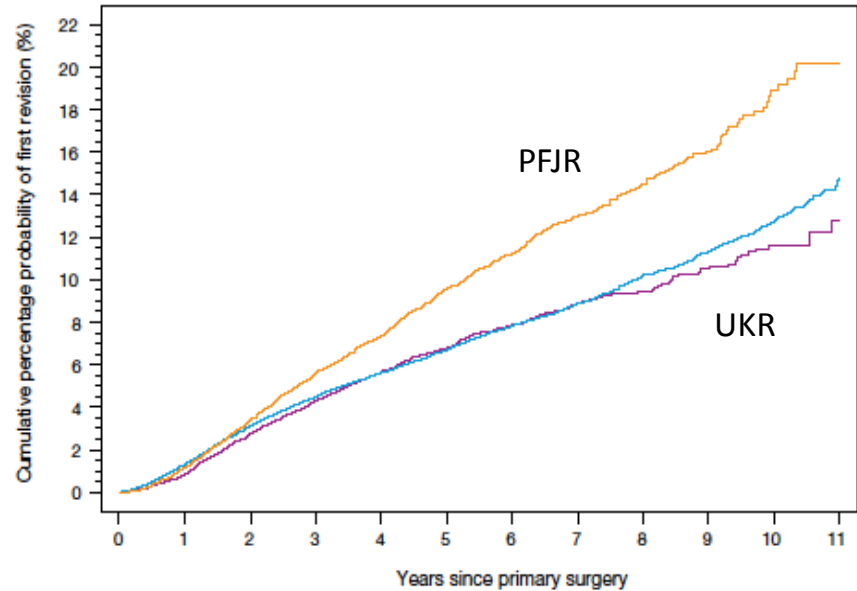
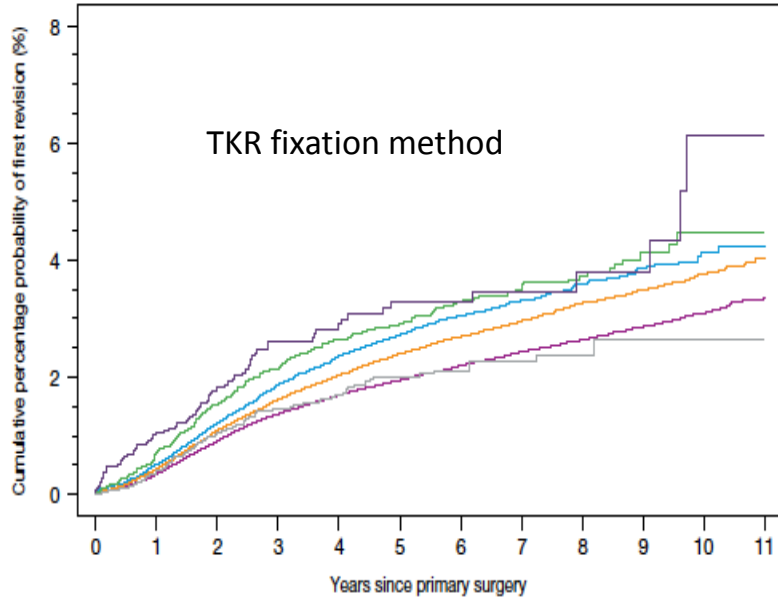
Hip Replacement Failure Rates



Influence of Age & Sex on THR Revision



Knee Replacement Failure Rates



Will Joint Replacement Work For Me?



- Which choice of implant will work best?
- How quickly will I get better?
- Will it get rid of all my pain?
- Will I be able to do all my usual things?
- What can I do on it?
- What can't I do on it?
- How long will it last?
- What can go wrong?

Our Patient Panels



*Photos used with permission

Feedback From Patient Panels on Other Patient Decision Aids

*I find it frustrating if the website
doesn't tell you what's required up
front*

*I want to know how long the form will take
to complete. Progress markers are useful*

*I don't like a crowded appearance. Avoid too
much information on the screen at once*

*I dislike smiley and sad faces in
providing feedback*

*I like the colour scheme and presentation
of the Diabetes UK Risk Score*

Patient Decision Aid Outputs

- Patient and clinician understand the personalised risks
- Flexible models based on:
 - fixed risk factors, such as age, sex, ASA grade
 - modifiable risk factors, such as BMI, prosthesis, anaesthetic choices
- Below are sketches of potential output formats.....

Output Formats

- Patient panels presented with ways to represent fractions of the population (e.g 7 out of 10 people)
 - mixed response when using smiley and sad faces
 - preference for stick figures or, simply, “traffic lights”



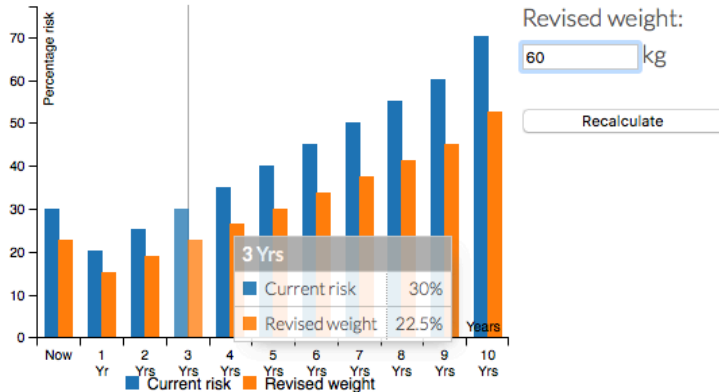
- One output format does not suit all patients

Presenting the Results

- Representation of intervention options explored:

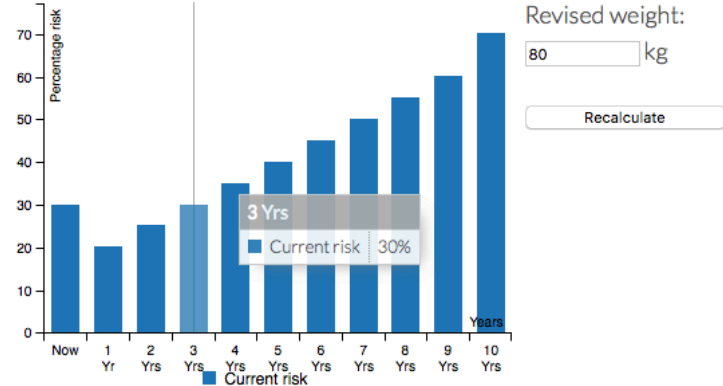
What can I do to decrease my risk?

There are some things that you can do to decrease your risk, such as losing weight. Your surgeon may also be able to decrease your risk through decisions for your operation.

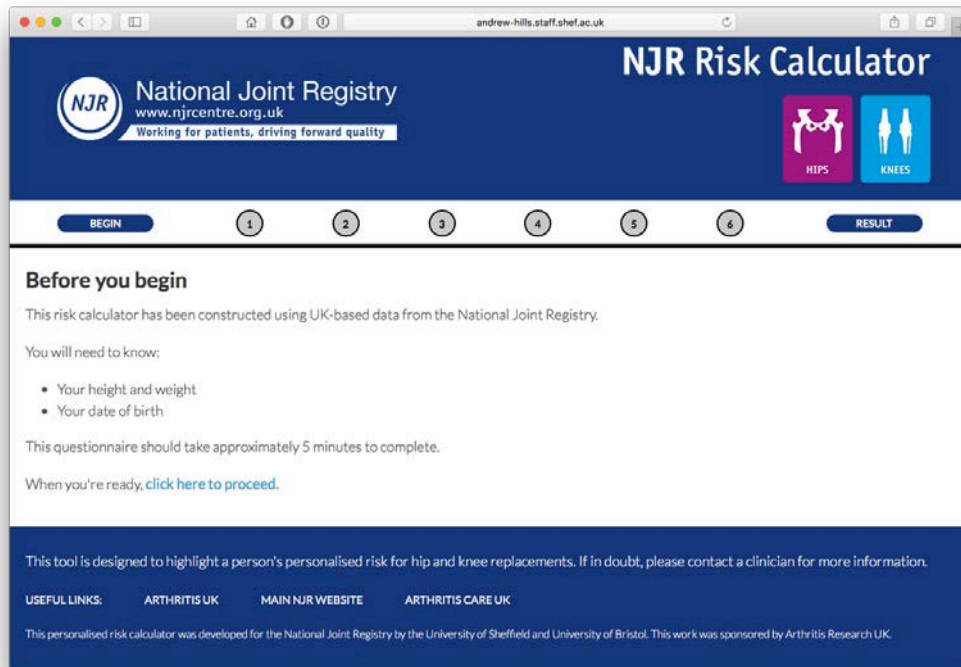


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Demonstration



The screenshot shows a web browser window displaying the NJR Risk Calculator. The browser's address bar shows the URL `andrew-hills.staff.shef.ac.uk`. The page header features the National Joint Registry (NJR) logo on the left, with the text "National Joint Registry" and "www.njrcentre.org.uk" below it, and the tagline "Working for patients, driving forward quality". On the right side of the header, the text "NJR Risk Calculator" is displayed above two icons: a pink icon for "HIPS" and a blue icon for "KNEES". Below the header is a navigation bar with a "BEGIN" button on the left, six numbered steps (1-6) in the center, and a "RESULT" button on the right. The main content area is titled "Before you begin" and contains the following text: "This risk calculator has been constructed using UK-based data from the National Joint Registry. You will need to know: • Your height and weight • Your date of birth. This questionnaire should take approximately 5 minutes to complete. When you're ready, [click here to proceed](#)." At the bottom of the page, there is a dark blue footer with the text: "This tool is designed to highlight a person's personalised risk for hip and knee replacements. If in doubt, please contact a clinician for more information." Below this, there are "USEFUL LINKS:" followed by "ARTHRITIS UK", "MAIN NJR WEBSITE", and "ARTHRITIS CARE UK". At the very bottom, a small line of text reads: "This personalised risk calculator was developed for the National Joint Registry by the University of Sheffield and University of Bristol. This work was sponsored by Arthritis Research UK."

andrew-hills.staff.shef.ac.uk

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NJR Risk Calculator

HIPS KNEES

BEGIN 1 2 3 4 5 6 RESULT

Before you begin

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You will need to know:

- Your height and weight
- Your date of birth

This questionnaire should take approximately 5 minutes to complete.

When you're ready, [click here to proceed](#).

This tool is designed to highlight a person's personalised risk for hip and knee replacements. If in doubt, please contact a clinician for more information.

USEFUL LINKS: ARTHRITIS UK MAIN NJR WEBSITE ARTHRITIS CARE UK

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Will it Improve Patient Care?

- 2 years into 3 year development programme
- Next phase to determine
 - Do patients like it?
 - Does it change decisions?
 - Does it reduce costs?

Summary



Happiness isn't about
Choices, it's making
the Right decision
without much of a
choice.

Carlton Glenn D'Silva

meetville.com

**It is better to be approximately
right than precisely wrong**



Warren Buffet