Orthopaedic outcome measures are used to evaluate the effect of operative interventions.
Tools

- Generic quality-of-life questionnaires
- Disease-specific quality-of-life questionnaires
- Hip-specific outcome measures
- General short-term clinical measures
Use

- **research** purposes to compare prostheses, surgical techniques, methods of fixation and types of peri-operative care. They are also used for
- **audit** to allow comparison between surgeons, departments, institutions and countries.
How to define outcome after surgery

- mortality
- morbidity
- clinical findings
- radiological findings
- Postoperative complications
- rates of re-operation
- pain
- length of hospital stay and
- health-related quality-of-life
Categories of outcome measures

• **Generic**  (health-related quality of life)

• **Disease specific**  (patient’s perceptions of a single disease entity)

• **Joint specific**  (disability relating to a particular joint irrespective of the underlying pathology)
Validation of outcome measures

- For an outcome measure to be meaningful, it must be psychometrically evaluated and shown to be
  - reliable
  - valid
  - sensitive to change
Validity

Tests of validity assess whether the survey measures what it is proposed to measure
Generic quality-of-life outcome measures

Generic outcome measures aim to assess all dimensions of health-related quality-of-life
Generic quality-of-life outcome measures

Five dimensions

• physical health
• psychological health
• social relationship
• Perceptions
• function and well-being
Generic quality-of-life outcome measures

- SF-36
- SF-12
- the Nottingham health profile12 and
- the European quality-of-life 5-dimension (EuroQol) questionnaire
The SF-36 score

Eight health concepts:
- bodily pain
- physical functioning
- role limitations due to physical health
- general health
- Mental health
- Vitality
- social functioning
- role limitations
The SF-12 score

A short form of the SF-36 score

Advantages
  Efficiency
  Cost

Disadvantages
  less construct validity and sensitivity
  less precise score
The Nottingham health profile questionnaire

- a self administered questionnaire
- developed in English
- two parts
  - Part I contains 38 ‘yes/no’ items covering six dimensions: pain, physical mobility, emotional reactions, energy, social isolation and sleep
  - Part II has seven ‘yes/no’ questions concerning problems of daily living
The EuroQol questionnaire

• self-administered
• Part I: 15 questions, five health dimensions: mobility, self care, usual activities, pain and depression
• Part II: patient’s perception of their overall health and contains a 100-point visual analogue scale
• Problem: restricted response format
Disease-specific quality-of-life outcome measures

- patient-centred information about a particular disease
- Western Ontario and McMaster Universities (WOMAC) osteoarthritis index
- arthritis impact measurement scales
The WOMAC osteoarthritis index

- WOMAC 3.1
- self-administered
- 24 questions covering three dimensions: pain, stiffness and physical function
The WOMAC osteoarthritis index

• WOMAC 3.1
• self-administered
• 24 questions covering three dimensions: pain, stiffness and physical function
The WOMAC osteoarthritis index

The index has been extensively evaluated in patients undergoing hip replacement and has been shown to be

responsive
high *internal consistency* and
acceptable *test-retest reliability*
The arthritis impact measurement scale

• developed in American English to measure outcome in patients with rheumatic disease
• It has since been shown to be sensitive in patients with osteoarthritis.
Hip-specific outcome measures

- Objective
- Subjective (OHS)
- Subjective and objective
Harris hip score

• Assessment is performed by a surgeon and consists of eight questions and a physical examination
• Questions are grouped into three categories: pain, function and level of activity
• physical examination involves assessing the range of movement of the hip

Maximum score 100 (best possible score)
The Oxford hip score

- 12 questions which assess pain and functional ability and each question has five Likert-type response choices.
- The overall score ranges from 12 to 60 with a higher score indicating greater disability.
The Oxford hip score

- extensively used
- highly sensitive for patients undergoing primary and revision THR
- internally consistent
- reproducible and
- valid
Summary

The most psychometrically evaluated

- generic measure is the SF-36 score
- disease specific measure is the WOMAC index
- hip-specific measure is the OHS
Summary

• The **choice** of which generic and specific questionnaire to use depends on several factors including the **aim of the study**, the **level of observation** required, the **funding** available and the **context** of the study.

• **Long-term** follow-up is required, and therefore **simple, short** questionnaires may make long-term studies more feasible.
Knee specific outcome measure

- Oxford knee score
- The Knee Society Clinical Rating System

Outcome measures for orthopaedic interventions on the hip.

Thank you