

## Long-term audit of patient-reported outcomes following joint replacement surgery

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### Objective:

To monitor patient-reported outcomes over a five-year period following total hip and total knee replacement surgery conducted at a specialist joint replacement centre of excellence.

### Methods:

The Horder Centre is a specialist orthopaedics hospital, with a firm commitment to ensuring continuous quality improvement in patient care. To facilitate this, we monitored all patients attending The Horder Centre for unilateral total knee replacement surgery (TKR; n=396), or total hip replacement surgery (THR; n=1219). Patients attending between January 1998 and June 2000 were included in the audit. Prior to surgery, patients were asked to complete paper questionnaires, including an Oxford Knee<sup>1</sup> (or Hip<sup>2</sup>) score. In addition, they were asked for a self-reported pain score by indicating the level of pain they were currently experiencing on a line labelled 0–10 (where 0 is no pain, and 10 is extreme pain). Patients were contacted by post at one year post-operatively and again during the summer of 2005 (between 5 and 7\_ years post-operatively) and asked to complete repeat questionnaires and to give their perception of pain, mobility, symptoms and overall satisfaction. Oxford scores were revised, based on the work by Pynsent et al<sup>3</sup>, giving a percentage deficiency score (0-100%) as opposed to a score between 12 and 60 points; this also allows for one question to be omitted by patients without being excluded from the analysis. Based on pre-surgery revised Oxford scores, patients were split into decile groups for analysis.

### Results:

The average age of patients undergoing TKR was 73 years; for THR it was 70 years. Average length of stay was 9.7 days (TKR) and 10.1 days (THR). For both cohorts, revised Oxford scores were significantly lower at both time points post-operatively, compared to pre-operatively, and improvements at one year were enhanced at five-years. Self-reported problems prior to and following surgery showed significant improvements in pain, stiffness, limp and mobility problems for both cohorts (see table).

	TKR cohort			THR cohort		
	Pre-surgery	One-year post.	Five-years post.	Pre-surgery	One-year post.	Five-years post.
ROS (%)	61.28	21.22 *	22.54 *	60.97	8.93 *	6.16 *†
<i>Proportion of patients reporting...</i>						
Pain	85.6%	7.3% *	6.1% *	81.3%	11.2% *	19.8% *†
Poor mobility	69.4%	4.0% *	6.3% *	72.0%	9.7% *	18.6% *†
Stiffness	46.5%	17.9% *	11.6% *†	43.4%	13.8% *	17.4% *
Limp	35.6%	2.8% *	3.8% *	47.6%	16.2% *	10.6% *†

ROS – Revised Oxford Score, mean.

\* Significant decrease compared to pre-surgery proportion (P<0.001)

† Significant difference compared to one-year post operative proportion (P<0.001).

Five-years post-operatively, patients expressed high levels of satisfaction (89.4% for TKR patients; 90.0% for THR patients), and reported great improvements in their symptoms (93.8% TKR; 76.7% THR).

### Conclusions:

TKR and THR confer both short-term (one year) and long-term (five year) benefits to patients, with significant reductions in the degree of pain and suffering experienced. Patients express high levels of satisfaction as symptoms are reduced, and they are more able to return to a normal life. This project has enabled us to form a benchmark for long-term improvement in patient reported outcomes; The Horder Centre has now commenced on a continuous audit programme, to monitor long-term changes for patients attending for joint replacement surgery, using these results as a benchmark.