**Functional Outcome Following Primary and Revision Total Hip and Knee Replacement**

**Abstract:**

The Royal Perth Hospital Elective Orthopaedics Department established the Joint Replacement Outcomes Project and it associated clinic JRAC (Joint Replacement Assessment Clinic) in 1998 to follow up all arthroplasty patients attending the hospital. Since its inception over 3,000 hip and knee replacement patients have been reviewed. This paper contrasts the functional outcome of primary and revision patients, and examines factors that may influence it.

Patients are assessed pre-operatively and at three, six, twelve and twenty-four months post operatively, and every five years from the date of their surgery. Data collection includes diagnosis, past medical history, operative data, post-op complications, patient questionnaires and functional outcome scores, as well as a standardised X-ray review. The assessment scores include the Harris Hip Score, Knee Society Score, SF 36 Health Survey, WOMAC and a patient satisfaction questionnaire. Only the Knee Society Score, Harris Hip Score and WOMAC results will be presented here.

In primary hip patients the Harris Hip Score improves significantly up to one year post surgery, with the largest increase occurring at three months. Post surgery improvement then plateaus between one and two years and between two and five years. Revision hip replacement patients display a significant improvement in the Harris Hip Score at three months post surgery, but improvement plateaus after this up to two years. The WOMAC score for pain, stiffness and physical function display a similar trend.

In primary knee patients the total Knee Society Score improves significantly over time up to one year post surgery for all components of the score, with the largest increase occurring at three months. Post surgery improvement then plateaus between 1 and 2 years. At 5 years post surgery both the total score and the function score significantly decrease while there is no change in the knee score component. The decrease in the Knee Society Score to five years probably reflects the older age of patients at the time of surgery. Again the WOMAC components display a similar trend. All components of the Knee Society Score measured in revision knee replacement patients significantly improve at three months post surgery, after which time no further significant improvement is noted.

A comparison of primary and revision hip and knee scores reveal a consistently higher score and a lower WOMAC score for both primary hip and knee patients at all time frames after surgery, indicating a better outcome for these patients. At pre-op revision hip patients were performing better than primary patients, reflecting the varying reasons why revision surgery is performed. This difference is not seen in knee patients.

This data displays the natural history of both primary and revision joint replacement surgery. Further work will determine those factors that influence revision outcome.