Introduction:
Arthrodesis is a classical treatment of rheumatoid wrist. When both wrists are severely involved, one may discuss a double arthrodesis (whose position is still debated: both in neutral position or one in extension and one in flexion), a double prosthesis, or the association of one arthrodesis and one prosthesis. Our aim was to assess the functional result of bilateral wrist arthrodesis in neutral position.

Patients / Methods:
This retrospective study involved seven patients (1 male, 6 female) mean aged 46 years (28-69), who underwent bilateral wrist arthrodesis for inflammatory disease (6 rheumatoid arthritis, 1 juvenile arthritis). The mean follow-up was 5 years.

They were assessed both clinically and radiographically: upper limb goniometry, Jebsen hand function test (questionnaire based on the daily activities), measurement of pinch and grasp force (Jamar) and functional evaluation according to Buck-Gramcko and Lohmann, AP and lateral X-rays.

Results:
The average position of wrist arthrodesis was 2° of flexion [(-5°)-(+10°)] and 6° of ulnar deviation [(-5°)-(+20°)]. All wrists were fused. At follow-up, 3 patients have returned to their work, 1 has found a new placement, 1 was considered as disabled, 1 was housewife and 1 retired. The Jebsen hand function test showed that the 7 patients were able to do 32 out of the 49 gestures (65%). For daily activities, there were 3 excellent, 2 good and 2 fair results. Buck-Gramcko and Lohmann test showed a mean result of 6,8/10 points [2-10], which corresponded to a good result. All patients were satisfied with the operation.

Conclusion:
After bilateral wrist arthrodesis in neutral position, patients are able to perform daily activity gestures. Perineal care was possible in 5 out of 7 patients, despite no wrists has been fused in flexion. Only hard and precise gestures were sometimes difficult, because of apprehension and loss of fine dexterity. Bad results were due to
metacarpo-phalangeal deviation and grasp force decrease; indeed grasp force decreased of 80% in relation to that of a sample of non-operated RA patients. Wrist fusion in neutral position allows all gestures, even perineal care. Bilateral wrist arthrodesis is a valuable alternative for bilateral prosthesis or to the association arthrodesis-prosthesis. It does not expose the patient to mechanic complications of wrist prostheses.