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## Functional results of Modular Prosthesis Replacement for Malignant Tumors of the Extremities

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### Background:

The objective of this study was to determine the long-term function and complications associated with segmental resections performed for malignant bone tumors reconstructed with Modular Prostheses.

### Methods and Materials:

We retrospectively reviewed the records of 166 patients with Modular Prosthesis Replacement from 2002 to 2012. There were 92 males and 74 females. Mean age at the time of diagnosis was 39 years (range 7-75 years). Diagnoses included 64 osteosarcomas, 58 metastatic lesions, 38 chondrosarcomas, 4 Ewing's sarcomas, 2 synovial sarcomas. 166 primary and 24 revision Modular Prostheses were placed with 56 in the distal femur, 32 in the proximal femur, 30 in the proximal tibia, 19 in the proximal humerus, 9 in the distal radius, 5 in the femur diaphysis, 5 in the distal tibia, 5 in the distal humerus, 2 in the diaphysis humerus, 2 in the proximal ulna, 1 in the proximal radius. Mean follow-up was 5,4 years (range 1-10 years). Treatment was individualized depending on patient presentation. The MSTS and TESS scores were used to calculate functional results.

### Results:

13 patients (7,8%) had died at last follow-up. 21 patients (12,7%) had had local tumor relapses. 20 patients (10,5%) had had prostheses failures and 21 patients (11,1%) had had infection complications. 11 patients (6,6%) had had amputations. The mean MSTS score for the upper extremity were (67 ± 9) %, for low extremity (76 ± 16) %. The mean TESS score for the upper extremity were (70 ± 11) %, for low extremity (79 ± 15) %.

### Conclusion:

The Modular Prosthesis Replacement for malignant bone tumors has a high rate of good functional results at long-term follow-up. Patients who underwent revision surgery had worse function than patients who retained their initial Modular Prosthesis Replacement.

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