

**Evaluation of The Functional Results of Single Bone  
Fixation with Intra-Medullary Flexible Nail in Both Bone  
Fractures of The Forearm in Children**

A thesis submitted for partial fulfillment of the requirements for  
the degree "Master of Science" in  
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## **SUMMARY**

Pediatric both bone fractures of the forearm are common. They are the third most frequent upper limb fractures in children after distal fractures of the radius and supracondylar fractures of the humerus. Due to the high incidence of fractures in children, it is important to treat them sufficiently and to recognize the potential psychosocial impact.

The movement of the forearm is rotatory. In children, the normal arc of forearm rotation is about 170 degrees. Pronation motion is around 80 degrees and supination is around 90 degrees. Management of both bone forearm fractures in children includes closed reduction and immobilization in a cast, intramedullary fixation by K-wires or ESIN and ORIF.

This prospective cohort study aimed to evaluate the functional results of single bone fixation using ESIN. It was held at Fayoum university hospital and included twenty-five patients all of them aged below 13 years old. They had single bone fixation and their forearm function was followed up after 3 months using the outcome grade score developed by Martus et al.

After follow-up for three months, the functional results were satisfactory. 24 patients had an excellent score while a single case lost about 9 degrees of pronation and was given a good score. A single case had delayed union of the ulna.

So, single bone fixation is considered a reliable method for treating both bone fractures in children. It is cost-effective with less surgical trauma, less operative time, and less radiation exposure.