

# Intramedullary nail fixation versus locking plate fixation for adults with a fracture of the distal tibia: the UK FixDT RCT

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## Plain English summary

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## Plain English summary

The shin bone (tibia) is the most commonly broken major bone in the leg. Injuries in the lower part of the shin bone (distal tibia) nearly always require hospital admission and usually require surgery, resulting in prolonged periods (months) away from work and social activities.

Existing research suggested that modern 'locking' plate fixation and intramedullary (IM) nail fixation are the most common types of operation performed for this fracture. However, it was not clear which provides the better outcome for patients.

In this study, we asked 321 adult patients, who were having surgery for a fracture of the distal tibia, to have either IM nail fixation or locking plate fixation. The decision about which type of fixation to use was made using randomisation, which is a process similar to tossing a coin. The patients reported their own outcome at 3, 6 and 12 months after their fracture using the Disability Rating Index (DRI). We also collected information on quality of life, complications and costs from patient-completed questionnaires and other NHS sources.

The DRI score of both groups of patients improved in the months after their surgery, although patients were not back to normal, even 1 year later. The patients who had IM nail fixation of their tibial fracture recovered more quickly than the patients with locking plate fixation, but there were no differences between the treatments after 6 months. There was no difference in the number of complications suffered by each group, but further surgery was more common in the locking plate group. The economic analysis showed that IM nail fixation was cheaper than locking plate fixation.

This important study shows that IM nail fixation provides slightly better quality of life for patients in the 12 months following a fracture of the distal tibia and costs less than locking plate fixation. If surgery to fix the distal tibia is required, IM nail fixation is the preferred treatment.

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