

## Driving in a Short Arm Plaster Cast Steer a Patient off Course: A Randomised, Controlled, Crossover Study

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**Abstract :** There is currently insufficient evidence to make a conclusive statement about safety while immobilized in a short arm cast. There is a paucity of published literature on this topic. The purpose of this study is to specifically evaluate short arm casts and their effect on driving abilities, particularly steering and avoidance of obstacles. The ability to drive safely is extrapolated from this data. In this study, a randomised, controlled, crossover design was used to assess 30 subjects randomised into 2 groups. A Logitech force feedback steering column and simulated driving program with a standardised road course was used. Objective outcome measures were the number of times subjects drove off the track, the number of crashes, time to lap completion and subjective assessment on whether wearing a short arm plaster cast impeded their steering. Recruited subjects had no upper limb pathology. The side of the applied plaster cast was randomised. The mean lap completion time reduced with repetition, the difference being statistically significant. There was no significant difference in mean number of times subjects in casts drove off the track (3 with vs. 3.07 without casts), average number of crashes (1.27 vs 0.97). Steering ability was not reduced whilst a subject was immobilised in a short arm Plaster of Paris cast, despite subject's own impressions that their steering was impeded. This may help guide doctors in their advice to patients regarding driving in these casts.

**Keywords :** upper limb, arm injury, plaster cast, splint, driving, automobile, bone fracture

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