

Assessment of Transfer Boards

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Objectives



Transfer boards are assistive devices that allow an individual with mobility challenges to transfer between bed and chair, or other similar support surfaces. This study investigates characteristics of different transfer boards.

Design

Three different transfer boards (straight, curved and bone shaped) were evaluated. Boards were assessed by measuring:

1) The force required to extract the board from behind the subject whilst sat in a wheelchair (pulling force) using a Primus RS Dynamometer.

2a) The force required to insert the board underneath the subject (insertion force), using a Lafayette Hand-Held Dynamometer.

2b) The force required to extract the boards from under the subject (extraction force), using ES-PS01 force measurement scale.

For 2a and 2b, the boards were placed on two standard commercial chairs arranged at 90° to each other.

3) Stability using a 3 axial ALC300 Biometric accelerometer attached to the under surface of each board.

Results

Ten healthy adult volunteers took part. Results are summarised in table 1.

Test		Straight board	Curved board	Bone shaped board
1	Pulling force (N)	39.1*	129.6	71.1
2a	Insertion force (kg)	3.1	4.7	3.5
2b	Extraction force (kg)	1.5	2.8	1.7
3	Stability**	320	276	292

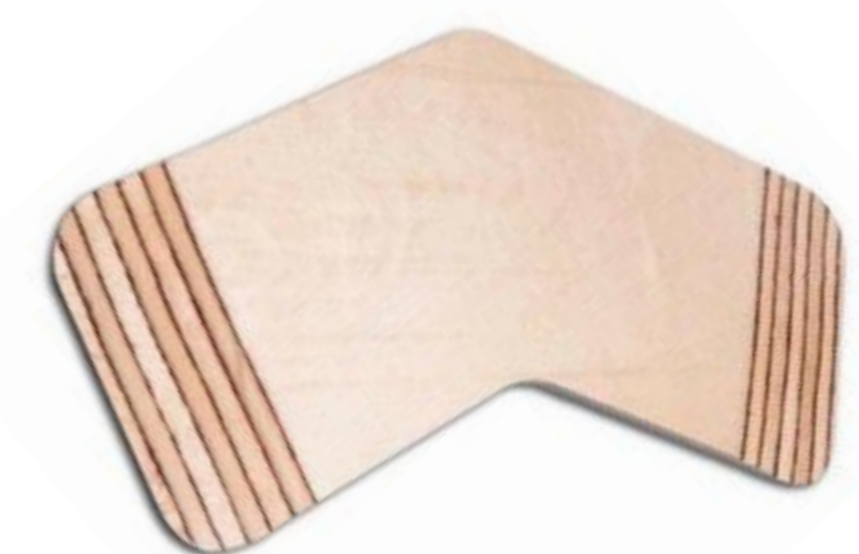
Table 1. Summary of the results. Data reported as Mean.

*The straight board had a slot in it which people used and thus reduced the pulling force required. However, such a slot could cause skin damage during transfers.

**The lower the stability value measured, the greater the stability.



Bone shaped Board




Curved Board




Straight Board

Conclusions

Overall the bone shaped board performed well. It was the easiest to extract from behind the subject. It was as easy to insert and extract as the straight board, and was nearly as stable as the curved board. It therefore offers the best overall solution compared to the other two boards.

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