
**Orthotic Management of Clonus**

Paul T Charlton[1]

1 - Peacocks Medical Group

Correspondence: paul@peacocks.net

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Introduction and aims

Clonus is a clinical presentation of uninhibited rapid repeating muscle contractions seen in the presence of upper motor neuron disturbance. Clonus can be both disabling and distressing to patients. This presentation is of a hemiplegic patient presenting with clonus in the calf complex and describes how modifying orthotic intervention can control the clonus and improve function. This case report demonstrates how clonus can be managed by modifying orthotic intervention. Clonus responds positively to stretching the affected muscle, both in inhibiting onset and stopping the presentation once initiated. An orthosis may be used to provide stretch however the resultant position may need to be accommodated for function.

Methods

In the case presented, the patient had clonus in her calf despite wearing a well-tuned AFO. Stretch was increased by increasing dorsiflexion of the AFO from 2 degrees to 7 degrees however the pitch of the shoe then needed to be modified to optimize function. Stretch was applied by adding spacers between the calf section of an existing rigid AFO and the patient's calf until the stretch was such that clonus was inhibited. A new AFO was produced to the new angle and tuned to optimize gait. Outcome measures used were ten metre timed walk, Timed up and Go (mean values presented over three repetitions of tasks) and impact on Activity Specific Balance Confidence Scale comparing the original to the modified AFO.

Results

All outcome measures demonstrated improvements following the change in AFO design (see table 1).

Table 1

| | Original AFO | Modified AFO |
|---|---|---|
| 10MTW | 17 steps 30.8 seconds | 14 steps 21.3 seconds |
| TUG | 29.6 | 23.1 |
| Activity Specific Balance Confidence Scale | 21.875 | 73.75 |

## Conclusion

This case study suggests that adjustments to orthotic intervention may have a positive effect on patients presenting with clonus.