



Mario Cerioli

Private practitioner – Cremona

Culla ©, an environment for enhancing the experience of children with cerebral palsy: a case study.

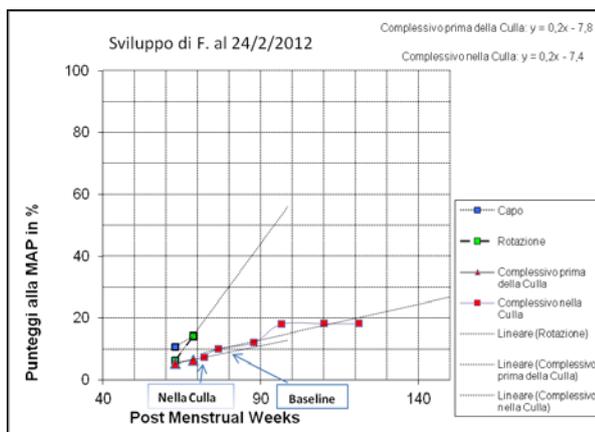
Background:

There is no evidence available that the re-educational techniques currently applied are able to develop the postural control of children with brain damage. However, literature does suggest that a greater wealth of postural activities tends to improve their efficiency. (Woollacott M *et al*, 2005). This suggests that the postural experience of very small children should have a greater intensity. However, at the current time, children with motor development disorders can pass as much as 4 or 5 hours a day immobile and therefore they learn to not use their body. Indeed, children learn by choosing responses to suit the environment and the specific actions (grasping an object, rolling or standing up, etc.) in the actual experience, and in doing so they coordinate various fragments of segmental movements originally not connected to one another (primary variability) and not an end in themselves.

The Culla (cot) was designed and built to improve early stage experience in children with motor development disorder. This pioneering device takes the baby through very slow oscillations of 1 degree per second.

Purpose: To verify efficacy in the promotion of postural development, over a 2 – 3 year period, the Culla will be used by ten or so children with motor development disorder (cerebral palsy, motor retardation in patients with genetic disorders).

Methods and subjects: One of the children who used the Culla is a little girl with bilateral cerebral palsy (GMFCS: 5°), as a consequence of a cerebral birth trauma at term. The study of the little girl's evolution was conducted using the research on a single subject method, primarily using the Postural Adjustment Measurement (PAM), an as yet non-standardised quantitative scale. Indeed, as the current time, there are no adequately sensitive, standardised, specific quantitative scales available. After the initial assessment and a second assessment just after the start of use of the Culla, to identify the baseline, filmed assessments were performed every two months.



Results and discussion: There was a very promising initial phase (after one month of using the Culla, the PAM score had undergone a significant increase, with a steeper gradient of the overall development line than at baseline). During this period, the coefficient of development improved from 0.2 to 0.6. Unfortunately, in the months that followed, the little girl, who was on treatment with phenobarbital, suffered from recurrent digestive problems and respiratory tract disorders associated with fever, requiring repeated stays in hospital. In this period, the little girl was reluctant to do anything but cuddle with members of her family. This drastically reduced the use of the Culla and the development of postural control reverted to a far more modest trend. The observations conducted every two months did not reveal any adverse reactions to use of the cot, indeed, as in all other children observed so far, there was an improvement in primary variability.

The Culla is therefore proving an environment rich in experience opportunities for children with motor development disorders: the observations currently in our possession suggest that it improves, above all, primary variability. However, the child must be in satisfactory conditions of health to use the Culla regularly.

References

Woollacott M, Shumway-Cook A, Hutchinson S, Ciol M, Price R, Kartin D (2005)

Effect of balance training on muscle activity used in recovery of stability in children with cerebral palsy: a pilot study.

Developmental Medicine & Child Neurology 2005, 47: 455–461

Further information and video available on: http://www.riabilitazioneinfantile.eu/culla_bambinitrattati.html GF first, second, third and fourth video

ceriolim@aliceposta.it