

NTrainer[®] for developing non-nutritive sucking in premature and newborn infants

TECHNOLOGY

The NTrainer[®], developed by [Innara Health](#)[™], is a specially designed pacifier (or dummy) to help develop and monitor progress of non-nutritive sucking ability in premature (born before gestational age of 37 weeks) and newborn infants.

Poorly developed non-nutritive sucking in premature infants is common and is also found in newborns that have spent time in neonatal intensive care units having been fed through a nasogastric tube. Non-nutritive sucking is regarded as a precursor in developing oral feeding skills. Difficulties with oral feeding are common in premature infants and failure to transition to breast or bottle feeding can slow weight gain.

The NTrainer[®] device is a silicone pacifier with a computer-controlled air pump to make the nipple pulsate and stimulate the infant's lips and tongue. The device provides quantitative assessment of an infant's non-nutritive sucking and administers therapy to help improve it. The treatment is given either during nasogastric tube feeding or before breast or bottle feeding to facilitate sucking behaviour.

The company expect CE marking and UK launch of the device in late 2013.



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POTENTIAL FOR IMPACT

Currently there is a lack of tools to determine a premature infant's readiness to start oral feeding. The NTrainer[®] is the first system designed to both help develop non-nutritive sucking and to measure progress. According to the company, the technology has the potential to help reduce the reliance on nasogastric tube feeding and lead to a faster transition to breast or bottle feeding. This in turn could lead to shorter stays in neonatal intensive care units and hospital wards, as hospitals are unlikely to discharge infants until successful feeding is established. This may reduce costs associated with hospital stay.

Further research, including into the possible effects upon later breastfeeding, is required before widespread use in NHS.

EVIDENCE

PUBLISHED PAPERS AND ABSTRACTS

Barlow SM, Burch M, Venkatesan L *et al.* Frequency modulation and spatiotemporal stability of the sCPG in preterm infants with RDS. *International Journal of Pediatrics* 2012; 581-538. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3408657>

Barlow SM, Finan DS, Lee J *et al.* Synthetic orocutaneous stimulation entrains preterm infants with feeding difficulties to suck. *Journal of Perinatology* 2008; 28: 541-548. <http://www.nature.com/jp/journal/v28/n8/full/jp200857a.html>

Poore M, Zimmerman E, Barlow SM *et al.* Patterned orocutaneous therapy improves sucking and oral feeding in preterm infants. *Acta Paediatrica* 2008; 97(7):920-7. <http://www.ncbi.nlm.nih.gov/pubmed/?term=ntrainer+non+nutritive+sucking>

COMPLETED

ClinicalTrials.gov. Evaluating patterned oral somatosensory entrainment stimulation using the NTrainer on oral feeding performance. <http://clinicaltrials.gov/show/NCT01069718> Accessed 20th March 2013.

ONGOING STUDIES

ClinicalTrials.gov. Trial of patterned oral somatosensory entrainment for shortening time to oral feeding. <http://clinicaltrials.gov/show/NCT01158391> Accessed 20th March 2013.

INFORMATION FROM

This Alert is based on information from the company and a time-limited internet search.