

Critical Review
Effects of oral stimulation and non-nutritive sucking therapies on transitioning to oral feeding in preterm infants.

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This critical review examines the effectiveness of combining non-nutritive suck (NNS) and oral stimulation (OS) therapies to improve the transition time of preterm infants from gavage feeding systems to oral feeding. In online searches, three randomized block designs, a non-randomized control trial and a randomized control trial were found. Subsequently, the level of evidence of the articles was determined, based on the reliability and validity of their methodologies and statistical analysis. Additionally, implications for clinical practice were established. Overall, the evidence supporting the use of this combined methodology in clinical practice is compelling.

Introduction

Non-nutritive suck (NNS) appears in-utero at 15-18 weeks gestation and is fully established by 34 weeks gestation (Poore, Zimmerman, Barlow, Wang, & Gu, 2008). It is a precursory skill that fetuses develop prior to feeding orally outside the uterus.

Preterm infants born prior to 34 weeks are placed on enteral or gavage feedings because they have not yet developed the ability to express milk through sucking (Rocha, Moreira, Pimenta, Ramos & Lucena, 2006). Prolonged use of gavage or enteral feeds is often linked to longer hospital stays, medical complications, future feeding challenges, family stress, growth challenges, poor neural development and speech and language impairments (Song et al., 2019).

Often the use of gavage feedings is prolonged in the hospital neonatal intensive care units (NICU). The transition times off these feeds and the development of the sucking mechanism to allow oral feedings can take weeks or months to complete (Song et al., 2019).

Transitioning these preterm infants off these feeds earlier is linked to better outcomes and earlier discharge from the hospital (Fucile, Gisel & Lau, 2002). Intervention that accelerates the development of the functional sucking behaviour is essential to developing oral feeding.

Infant oral feeding is a complex process and the breathe, suck, and swallow pattern is coordinated by the central pattern generator in the brain (Ferguson, 2020). (Ferguson, 2020)

