



## ORIGINAL ARTICLE

# Comparison of the finger-feeding *versus* cup feeding methods in the transition from gastric to oral feeding in preterm infants<sup>☆,☆☆</sup>

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### KEYWORDS

Preterm;  
Sucking behavior;  
Feeding methods

### Abstract

**Objectives:** To assess the finger-feeding technique when compared with the cup feeding method during the early stage of preterm infant feeding transition regarding milk loss, milk ingestion period, and complications.

**Methods:** Experimental, randomized, prospective study including 53 preterm infants with gestation age < 37 weeks, clinically stable, and with a score of >28 points in the Oral Feeding Readiness Assessment Scale. The preterm babies were randomized to be included in the control group, which underwent the feeding transition using a cup or in the experimental group, which used the finger-feeding technique. The analysis of data was performed using Student's *t*-test to evaluate differences between mean values of the appointed variables, and Fischer's test for categorical variables; the asymmetric variables were assessed by the Kruskal-Wallis ANOVA test.

**Results:** When compared with the control group, the experimental group showed lower milk loss, longer milk ingestion time, and a lower frequency of complications during feeding. The significance level was set at 5%, with a confidence interval of 90%.

**Conclusion:** The finger-feeding technique was shown to be a better feeding transition method regarding efficacy when compared with cup feeding method, due to lower milk loss and fewer complication episodes.

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**PALAVRAS-CHAVE**

Prematuro;  
Aleitamento Materno;  
Métodos de  
alimentação

**Comparação entre o método sonda-dedo versus copo na transição alimentar do recém-nascido prematuro****Resumo**

**Objetivo:** Avaliar a técnica sonda-dedo em comparação ao copo no início da transição alimentar do prematuro quanto à perda de leite ofertado, tempo de ingestão e complicações.

**Métodos:** Estudo experimental, randomizado, não cego, prospectivo com 53 prematuros de idade gestacional <37 semanas, clinicamente estáveis e com escore >28 pontos na Avaliação da Prontidão para início da alimentação por via oral. Os prematuros foram randomizados para o Grupo Controle que realizou a transição alimentar com o copo e para o Grupo Experimental que utilizou a técnica sonda-dedo. Na análise dos dados, foram aplicados o teste t de Student para avaliar a diferença de médias e o teste exato de Fisher para as variáveis categóricas, enquanto para as variáveis assimétricas foi aplicado a Anova de Kruskal-Wallis.

**Resultados:** O grupo experimental apresentou em relação ao grupo controle, diferença significativa quanto a menor perda de leite, maior tempo de dieta e menor frequência de complicações. O nível de significância foi de 5% e poder de teste mínimo de 90%.

**Conclusão:** A técnica sonda-dedo mostrou-se um método alternativo de transição alimentar superior em sua eficiência quanto a menor perda de leite e menor incidência de complicações.

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**Introduction**

Preterm newborn face a difficult reality, which is that of adapting to extrauterine life.<sup>1-3</sup>

Breastmilk is the best food for preterm newborns, and it is always indicated, as it contains specific nutrients that will contribute to their maturation, representing an important factor in the protection against infections, leading to a better digestibility and absorption of these nutrients and promoting better brain development.<sup>4,5</sup>

However, in a neonatal intensive care unit (NICU), the preterm population cannot always be fed directly at the mother's breast, either due to clinical instability or the mother's absence.<sup>6,7</sup>

Furthermore, it is worth noting that preterm newborns have inadequate oral functions due to neurological immaturity, abnormal muscle tone, lack of muscle activity integration, and alterations in oral reflex coordination, leading to less active, irregular, and diminished strength reflexes and difficulty maintaining alertness. All these factors lead to the initial need to feed the preterm newborn through an alternative feeding route, as is the case of gastric tube feeding.<sup>8-10</sup>

The way the milk is offered to preterm infants is an important variable to consider. The advantages and disadvantages of the methods are discussed in terms of physiological stability and impact on exclusive breastfeeding.<sup>11-13</sup>

Several forms of feeding are used, such as cup, suction from a syringe with the gloved finger, transclatation, finger-feeding, *paladai*, and bottle, among others; scientific justification is necessary for all methods, but for the cup and the bottle, which have been widely studied.<sup>12-16</sup>

The use of techniques to mature the sensorimotor-oral system has been explored, so that the preterm newborn can undergo a safer and shorter transition to oral feeding.<sup>17</sup>

The finger-feeding method is a technique in which milk is supplied by suction to preterm infants through a gastric tube connected to a syringe and attached to the gloved small finger with adhesive tape. Although it is a widely used technique in several neonatal services, studies describing the technique, its indications, use, benefits, advantages, and disadvantages are still scarce.<sup>14,18-20</sup>

Therefore, it is necessary to enhance technologies that aim to improve the suction pattern and, consequently, the preterm infant's capacity of oral feeding, primarily directed to breastfeeding. The cup-feeding method has been indicated by the World Health Organization as the method of transition and/or oral feeding complementation for preterm infants, as it does not cause the nipple confusion phenomenon and does not influence the preterm infant's suction function.<sup>20,21</sup>

It should be noted that, in clinical practice and in the NICU routine, mothers are not always present, which is the reality of many health services. Due to maternal absence, the preterm infant is fed for long periods using the cup, without performing the suction function. As a result, this condition discourages maternal breastfeeding, because feeding preterm infant exclusively through the cup induces a modification in his/her oral behavior.<sup>22</sup> This change in sucking behavior is evident mainly in the difficulty in opening the mouth and the anteroposterior movement of the preterm infant's tongue. When the mother comes to the NICU to breastfeed the child, a change in the sucking behavior at the mother's breast is observed, delaying and impairing the breastfeeding process.

The authors highlight the search for scientific evidence regarding the techniques used as alternative methods to the cup for feeding of preterm infants, with emphasis on cases of maternal absence. Thus, it is emphasized that the suction function should be stimulated through training, as physiologically and safely as possible, similarly to the

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