

# WEIGHT IMPROVEMENT WITH THE USE OF PROTEIN AND ENERGY ENRICHED NUTRITIONAL FORMULA IN INFANTS WITH A PROLONGED PICU STAY



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## PURPOSE

To achieve nutritional intake goals in critically ill infants is difficult. The use of an energy- and nutrient-dense formula (ENDF) is one way to help minimize risk of inadequate nutrient intake, since the use of standard infant formula for this patient group provides inadequate nutrient levels. The present study aimed to assess weight gain and gastrointestinal events in infants with an extended pediatric intensive care unit (PICU) stay while they were receiving ENDF (Fortini™) for an extended period.

## DESIGN

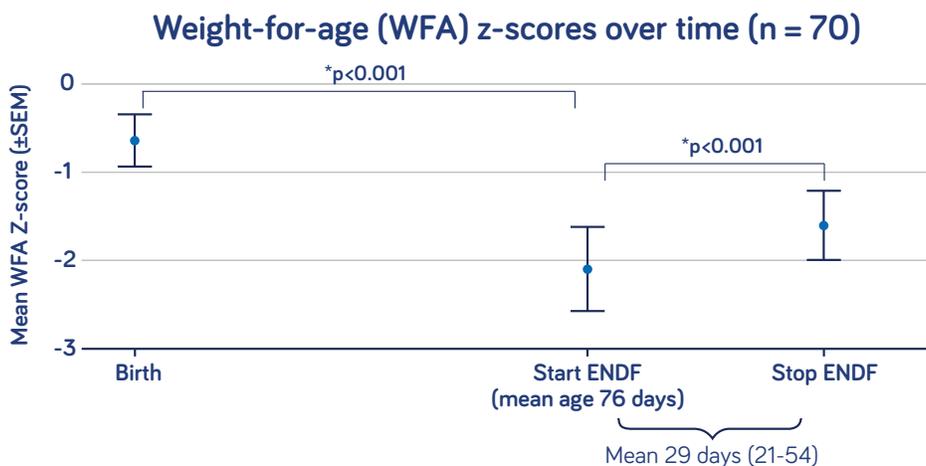
Retrospective data from infants who were admitted to PICU between 2007-2017 (Erasmus Medical Center, Rotterdam, The Netherlands) were analyzed. Data reviewed included demographics, nutritional intakes and the duration of ENDF use. Part of the inclusion criteria were the specific age of the infants (not younger than 37 post-menstrual weeks and not older than 12 months), an extended PICU stay ( $\geq 14$  days) as well as a minimum of 14 days feeding with ENDF. Human milk was the preferred feeding choice, but when human milk was not available, ENDF was started at the discretion of the clinician. Weight-for-age (WFA) z-scores were calculated at the start and at the end of ENDF use and compared to birth WFA z-scores. Feeding tolerance of ENDF was assessed using markers including gastric residual volume and symptoms such as vomiting, constipation and diarrhea.

## OUTCOMES

Seventy infants met the inclusion criteria of the study. Overall, the median use of ENDF was 30 days (interquartile range [IQR]: 21–54) and median PICU duration was 50 (IQR: 35–83) days. Post-cardiac surgery, respiratory, cardiac and neurological conditions were the main reasons for admission. Mean WFA z-score significantly increased during ENDF use (0.48, SD 1.10,  $p < 0.001$ ). Further analysis revealed that lower WFA z-scores when starting ENDF were associated with greater increases in WFA z-score following ENDF use. The number of infants with a WFA z-score  $< -2$  had decreased from 33 (47%) to 23 (33%) after the use of ENDF. Overall, 93% of infants gained weight and 71% of infants showed an increased WFA z-score. Only 5 infants had constipation and 3 infants were treated for vomiting.

## CONCLUSIONS

The use of ENDF was overall well tolerated and significantly supported growth markers (weight gain & WFA z-scores) of a vulnerable patient group of critically-ill infants, for an extended PICU stay.



Fortini™ is well tolerated and supports weight improvement in the majority of infants with prolonged PICU stays.

Fortini is for the dietary management of term infants and young children from 0 to 18 months of age or up to 198 lbs (9 kg) with or at risk of growth failure, increased energy requirements, and/or fluid restrictions due to conditions such as: congenital heart disease, chronic lung disease, respiratory syncytial virus, neurological syndrome or neuro-disabilities, cystic fibrosis, non-organic failure to thrive. Fortini is known in other countries as Infatrini. For US healthcare professionals

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