

# FORMULA SWITCH LEADS TO ENTERAL FEEDING TOLERANCE IMPROVEMENTS IN CHILDREN WITH DEVELOPMENTAL DELAYS

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## BACKGROUND & OBJECTIVES

Children with developmental delays are often dependent upon enteral nutrition. Gastroenterologists are commonly involved in the management of children with developmental delays who are reliant upon enteral nutrition yet frequently challenged by tolerance issues. Common clinical practice issues encountered include: vomiting, constipation, diarrhea, abdominal distention, and inability to reach adequate feeding volumes.

100% whey, peptide-based diets have been shown to empty from the stomach faster than products with intact casein and use of such products has been associated with reduced vomiting in children with cerebral palsy (Fried, 1992<sup>1</sup>).

The aim of our study was to retrospectively review cases of feeding intolerance which were managed by switching to a 100% whey peptide-based (Peptamen Junior<sup>®</sup>) formula frequently used for GI compromised children with developmental delays.

## DEMOGRAPHICS

Medical records reviewed	375
Medical records of subjects that met criteria	13
Females, Males	7, 6
Age at time of formula change, years (Mean, Range)	8.4 (2.4-13.9)
Fed by gastrostomy, Number (%)	10 (77%)
Fed by jejunostomy, Number (%)	3 (23%)
Nissen fundoplication, Number (%)	11 (85%)
Medications used to manage feeding intolerance, Number	8

Peptide Formula Fed After Switch	Number of Children
Peptamen Junior <sup>®</sup>	6
Peptamen Junior <sup>®</sup> 1.5	6
Peptamen Junior <sup>®</sup> Prebio <sup>1TM</sup>	1

1. Fried, Decrease in gastric emptying time and reduced episodes of regurgitation in children with cerebral palsy. *J Ped* 124 (4) 1992.

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## METHODS

A retrospective chart review of children with developmental delays who suffered from feeding intolerance while receiving intact protein formulas was conducted following IRB approval. Electronic medical records of children with developmental delays on enteral feeding were surveyed and medical records of cases that met criteria for the study were evaluated.

### Inclusion Criteria:

- Diagnosis of developmental delay
- Age 13 months to < 18 years at time of switch
- Prescribed to receive 90% or more of energy needs via tube feeding
- On tube feedings for 2 or more weeks prior to formula switch
- Switched to a 100% whey, peptide-based formula from an intact protein (non- infant formula) tube feeding due to feeding intolerance

### Exclusion criteria:

- Abdominal surgery or change in tube position within 30 days prior to switch
- Any infection within two weeks prior to switch
- Documented cow's milk protein allergy at time of switch
- Medical record lacking documentation on reason for, or response to, switch

### Data collected included:

- Enteral formula regimens: products, volumes and feeding schedules
- Defined categories of feeding intolerance exhibited before and after formula change: vomiting, diarrhea, constipation, inability to tolerate prescribed volumes of feedings, abdominal distention
- Medications used to manage feeding tolerance
- Assessments by healthcare provider as to any change in tolerance, categorized as: • Improved • No change • Worsened

## RESULTS

Eight medications were identified to manage feeding intolerance prior to formula switch. After formula switch, 6 of these 8 medications (75%) were used in fewer subjects and none were increased.

After switching to a Peptamen Junior<sup>®</sup> formula, 5 of 7 (71%) subjects were able to tolerate increased feeding volumes.

All subjects that had concomitant poor weight gain on an intact protein formula (n=4) achieved an increase in weight after switch.

## RESULTS

All but 1 of the subjects (12 of 13, or 92%) had improvements in feeding tolerance that were attributed to change to the 100% whey, peptide formula. The other subject had an improvement in feeding tolerance however the improvement was attributed to the venting of the stomach via gastrostomy which was implemented at the same times as the feeding switch.

Time to tolerance improvement was within 7 days for 75% (9 of 12) of subjects.

### Feeding tolerance parameters changes (figure 1):

- 100% had improved weight gain (5 of 5)
- 100% had a decrease in diarrhea (3 of 3)
- 86% had improvement in vomiting (6 of 7)
- 75% had improvement in gagging & retching (3 of 4)
- 63% had improvement in high residual volumes (5 of 8)
- 43% had a decrease in constipation (3 of 7)

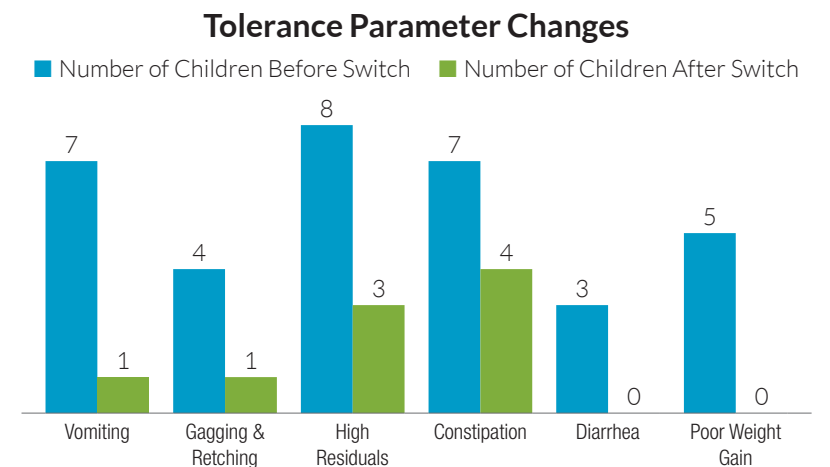


Figure 1

## CONCLUSION

Switching from intact protein enteral feedings to 100% whey, peptide-based formulas improved multiple different symptoms of feeding intolerance in a population of children with developmental delay. Most improvements occurred within a week of formula change.