CASE STUDY:
Neocate® Junior and Neocate® Splash for Taste Aversion Challenges

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Place of Work: Inpatient rehabilitation research hospital

Patient History: The patient presented as a 2-year-old male diagnosed at the age of 13 months with congestive heart failure due to viral dilated cardiomyopathy. Upon arrival to inpatient rehabilitation, the patient had a nasogastric (NG) tube in place and his parents reported that intake of nutrition by mouth (PO) had been minimal. The patient was receiving age appropriate amino acid-based formula (AAF) for both enteral and oral feeds to minimize malabsorption post reanastomosis. Patient had vomiting and diarrhea over the previous 1-2 days and his mom reported emesis with both tube feeds and oral intake of current AAF.

His past medical history included severe chronic malnutrition and developmental delays. Prior to diagnosis at 13 months, the patient was developing typically and meeting all milestones including self-feeding and drinking from bottle or sippy cup at 1 year of age. A left ventricular assist device was placed at the age of 27 months followed by orthotopic heart transplant at 29 months. The hospital course was complicated by bacteremia, occlusive clot in left internal jugular vein, and bowel obstruction. An exploratory laparotomy and ileocecectomy were performed with end ileostomy in March of 2019. A re-anastomosis was performed in April 2019, 2 weeks before patient arrived for acute inpatient rehabilitation.

Nutritional/Medical Management: Upon admission to inpatient rehabilitation the patient was reliant on enteral feeding to adequately meet his nutritional needs related to poor oral intake and emesis occurring almost immediately after PO formula feeding attempts. Post-pyloric feeding was under consideration as an avenue to ensure the patient would take in sufficient nutrients because of the concern for tube displacement caused by the frequency and consistency of episodes of emesis. The speech language pathologist that performed the initial evaluation of the patient reported that he showed no evidence of swallow dysfunction and emesis after feeding was likely the result of oral aversions, especially as the patient did not experience emesis when drinking free water.

Taking into consideration that the patient did not manifest oral aversions when drinking water, the nutrition team recommended the patient switch to Neocate® Junior for palatability. The patient was evaluated to require 120% of estimated nutrition needs due to history and diagnosis of severe protein-calorie malnutrition. He therefore received Neocate Splash Unflavored fortified with Neocate Junior Vanilla to 40 kcals/fl oz to keep total required volume low.

After the Neocate combination was introduced, the patient's episodes of emesis began to decrease and he was able to take in gradually increasing quantities of formula by mouth. By twelve days after admission, nine days after starting Neocate, the patient was transitioned to primarily PO formula intake with NG feeding remaining an option in the event of insufficient intake. Over the next three weeks the patient

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began to eat age appropriate foods by mouth as well as taking formula by mouth and his reliance on formula delivered via NG tube decreased to 35% of estimated nutrition needs.

Upon discharge from inpatient service, the patient continued to require Neocate Splash/Neocate Junior delivered via NG tube for nutrition support. The patient was transitioned to outpatient services and his PO intake increased resulting in age appropriate weight gain and growth. At approximately four weeks post discharge, the patient was able to end his reliance on the NG tube and it was removed.

Conclusion: The evidence in this case study illustrates that the taste/palatability of Neocate can help improve acceptance. This patient's improved acceptance on Neocate contributed markedly to his ability to overcome emesis related to taste aversion and resume age-appropriate growth after his hospitalization.

GROWTH FIGURES AND TABLES:

Weight for age CDC 2-20 years, boys

Date	Age	Weight	Percentile	Z-Score
April 2019	2 years	11.00kg	1.80	-2.10
May 2019	2 years	11.30kg	2.68	-1.93
June 2019	2 years	11.40kg	2.61	-1.94
July 2019	2 years	11.80kg	4.48	-1.70
August 2019	2 years	14.10kg	46.01	-0.10
September 2019	3 years	14.40kg	49.93	0.00
November 2019	3 years	15.40kg	65.76	0.41
January 2020	3 years	16.40kg	77.44	0.75

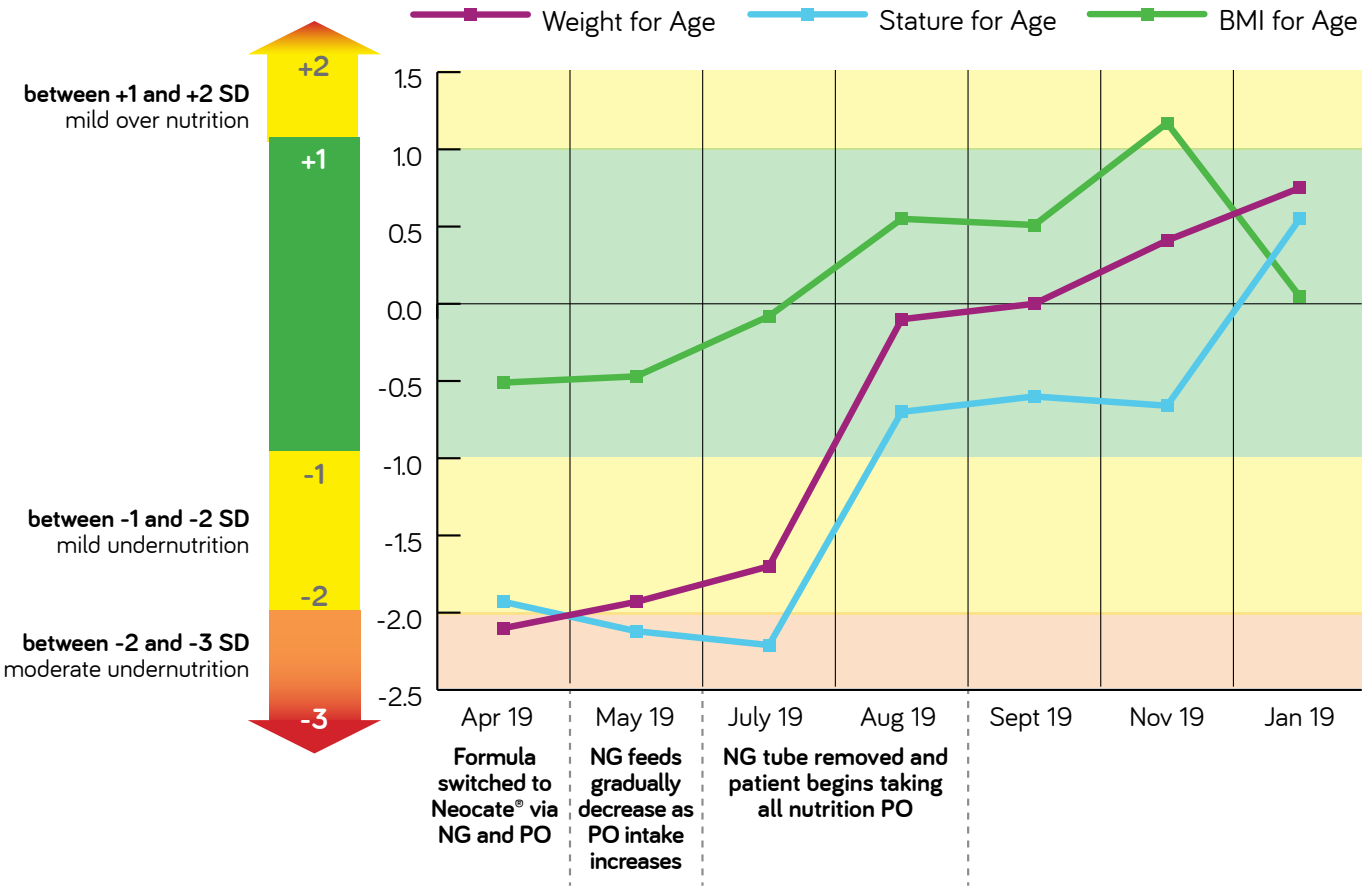
Stature for age CDC 2-20 years, boys

Date	Age	Height	Percentile	Z-Score
April 2019	2 years	85cm	2.66	-1.93
May 2019	2 years	85cm	1.69	-2.12
July 2019	2 years	86cm	1.37	-2.21
August 2019	2 years	92cm	24.18	-0.70
September 2019	3 years	93cm	27.47	-0.60
November 2019	3 years	94cm	25.48	-0.66
January 2020	3 years	100cm	70.87	0.55

BMI for age CDC 2-20 years, boys

Date	Age	BMI	Percentile	Z-Score
April 2019	2 years	15.2	31	-0.51
May 2019	2 years	15.6	32	-0.47
July 2019	2 years	16.0	47	-0.08
August 2019	2 years	16.7	71	0.55
September 2019	3 years	16.6	69	0.51
November 2019	3 years	17.4	88	1.17
January 2020	3 years	16.4	68	0.47

GROWTH FOR AGE (Z-Score):



Product Usage – Oral and tube feeding, 40 kcal/fl oz

Patient Profile – Growth failure or failure to thrive, Gastrointestinal symptoms, Feeding issues, Symptoms not resolved with other amino acid-based formula

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The opinions expressed are those of the authors of this case study and not necessarily reflective of the views of Nutricia North America. Formula choices were made independently prior to the authors' development of this patient case report.

Careful monitoring of growth and nutrition status is recommended when Neocate is used as a primary or sole source of nutrition for patients with complex systemic disease involving multiple diagnoses and intestinal disease, especially in combination with tube feeding and/or a history of prematurity.

Neocate® Junior and Neocate® Splash are indicated for the dietary management of cow milk allergy, multiple food allergies and related GI and allergic conditions, including short bowel syndrome, malabsorption, food protein-induced enterocolitis syndrome, eosinophilic esophagitis and gastroesophageal reflux.

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