



Introducing **Pedialyte AdvancedCare™**

Prebiotics, electrolytes, and two new flavors.
A great new solution for your young patients.

PREBIOTICS
to help promote digestive health

ELECTROLYTES
to help prevent dehydration due to diarrhea and vomiting

New Pedialyte AdvancedCare has PreActiv™ prebiotics to help promote digestive health, and all the electrolytes, zinc, and vital nutrients you expect from Pedialyte to help prevent dehydration due to diarrhea and vomiting. With two new kid-approved flavors—Cherry Punch (pictured) and Blue Raspberry—it is sure to be a hit with kids and their moms as well.

See back page to find out more about the scientific evidence on how prebiotics promote digestive health

- Gastroenteritis and its effects on gut flora
- Prebiotics & bifidogenic effect: the growth of good bacteria
- Safety and use of prebiotics during diarrhea
- Bifidogenic and non-bifidogenic effects of prebiotic GOS

For more information, visit abbottnutrition.com/pedialyte

Use Pedialyte oral electrolyte solution under medical supervision for the dietary management of dehydration due to diarrhea and vomiting.

PREBIOTICS RESEARCH OVERVIEW

	AUTHORS	TYPE OF STUDY	POPULATION	SCIENTIFIC EVIDENCE	STUDY CONCLUSIONS
Gastroenteritis and its effects on gut flora	Duodenal microflora in infants with acute diarrheal disease. <i>J Pediatr Gastroenterol Nutr.</i> 1986;5:721-5.				
	Househam KC, Mann MD, Mitchell J, Bowie MD.	Observational clinical study on the type and abundance of microflora during diarrhea	Male infants (n=17) 6 weeks to 1 year old with less than 48 hours of viral-related diarrhea admitted to hospital for rehydration	Duodenal aspirates showed abnormal bacterial overgrowth in 70% of infants with coliforms and bacteroides species significantly present in 53%. The abundance and overgrowth of abnormal bacteria were not different between those whose diarrhea resolved early or later than 5 days.	Based on these results and from studies reviewed within, it would appear that in the majority of infants with diarrhea, the duodenal microflora was abnormal.
Gastroenteritis and its effects on gut flora	Duodenal microflora in infants with acute and persistent diarrhea. <i>Arch D Child.</i> 1983;58:330-34.				
	Hill ID, Mann MD, Moore L, Bowie MD.	Observational clinical study of abnormal microflora between acute and persistent diarrhea	Male infants (n=21) 6 weeks to 1 year old with less than 48 hours of viral-related diarrhea before admission to hospital for rehydration	Infants with 72-hour self-limiting diarrhea had an abnormal overgrowth of organisms in the upper small bowel that was qualitatively and quantitatively similar to that of infants whose diarrhea persisted after 4 days in hospital.	The duodenal flora in infants with diarrhea differed markedly from that found in healthy infants. Normally, a duodenum transient flora may exist not exceeding 1x10 ⁴ organisms/ml. But in the present study 95% of infants' total bacterial count exceeded this abundance and may be regarded as abnormal.
Prebiotics & bifidogenic effect: the growth of good bacteria	Barcoded pyrosequencing reveals that consumption of galacto-oligosaccharides results in a highly specific bifidogenic response in humans. <i>PLoS One.</i> 2011;6(9):e25200.				
	Davis LM, Martinez I, Walter J, Goin C, Hutkins RW.	Single-blinded randomized study of different doses of galacto-oligosaccharide (GOS) on the fecal microbiota of healthy adults	18 adults consuming GOS at increasing dosage levels; 0, 2.5, 5.0, and 10.0g; each dose consumed for 3 weeks, with 2-week baseline period before and 2-week washout period at the end	Bifidobacteria family and genus significantly increased after a dose of 5.0g GOS compared to control, and in tandem, the family/genus of Bacteroidaceae, non-healthy bacteria, significantly decreased.	These results provide a comprehensive, high resolution analysis of the gut microbiota demonstrating that bifidobacteria family consistently increased in abundance in response to GOS feeding, and suggesting that GOS can be used to enrich bifidobacteria in the human gut with remarkable specificity.
Prebiotics & bifidogenic effect: the growth of good bacteria	Effects of prebiotic-containing infant formula on gastrointestinal tolerance and fecal microbiota in a randomized controlled trial. <i>JPEN J Parenter Enteral Nutr.</i> 2012;36(1):95S-105S.				
	Holscher HD, Faust KL, Czerkies LA, et al.	Randomized clinical trial of formula with or without: 4g/L of GOS and fructo-oligosaccharides (FOS): 9:1	47 full-term (2-8 weeks old) breastfed infants compared to formula-fed infants (76); assessed their fecal bacterial, pH and SCFA at baseline, 3 weeks, and 6 weeks	Stool of infants fed prebiotic-enriched formula had a significantly higher abundance of bifidobacteria than those fed non-enriched formula, and neither the absolute number nor proportion of fecal bifidobacteria differed between prebiotic formula and breastfed infants.	"...feeding healthy, full-term infants a partially hydrolyzed whey formula with 4g/L of GOS/FOS results in a modification of the established microbiota that more closely resembles the breastfed infant."
Safety and use of prebiotics during diarrhea	A double-blind, placebo-controlled, randomized human study assessing the capacity of a novel galacto-oligosaccharide mixture in reducing travellers' diarrhea. <i>Eur J Clin Nutr.</i> 2010;64(2):146-52.				
	Drakoularakou A, Tzortzis G, Rastall RA, Gibson GR.	Randomized placebo-controlled, double blind of parallel design of daily consumption of 2.64g of GOS	159 healthy adults travelling for minimum of 2 weeks to a country of low or high risk for TD	Prebiotic mixture significantly reduced the incidence (23.5% vs. 38.5%) and duration by 51% of diarrhea, and the symptoms of abdominal pain while improving quality of life. No adverse events reported.	Consumption of the GOS mixture before and during visit of TD risk country showed a significant potential in preventing the incidence and symptoms of TD.
Safety and use of prebiotics during diarrhea	Efficacy of a new hypotonic oral rehydration solution containing zinc and prebiotics in the treatment of childhood acute diarrhea: a randomized controlled trial. <i>J Pediatr.</i> 2011 Feb;158(2):288-92.				
	Passariello A, Terrin G, De Marco G, et al.	Randomized placebo-controlled, single blind of parallel design	60 children aged 16-22 months observed at pediatrician offices with diarrhea lasting <24 hours and mild-moderate dehydration	A higher proportion of children recovered within 72 hours among those receiving the ORS+Zn+FOS (72.9%) compared with those receiving standard ORS (50%, p=0.01). No adverse events were observed in either of the two groups.	"This is an important and well-done, valid study that demonstrates the effectiveness of an ORS containing zinc and prebiotics in decreasing the duration of acute diarrhea in children." (John G. Frohna, MD, MPH. <i>J.Pediatr.</i> 2011;159(1):166-7).
Bifidogenic and non-bifidogenic effects of prebiotic GOS	Galacto-oligosaccharides have prebiotic activity in a dynamic in vitro colon model using a (13)C-labeling technique. <i>J Nutr.</i> 2012;142(7):1205-12.				
	Maathuis AJ, van den Heuvel EG, Schoterman MH, Venema K.	Normal (control) medium and unlabeled or (13)C-labeled GOS was added to a dynamic, validated model of the human proximal large intestine	Using (13)C-labeled GOS to exactly determine the microbial metabolites that result upon GOS fermentation, time, and specific microbiota members contributing to GOS fermentation	Bifidobacteria family was the primary members within the complex microbiota that fermented GOS in line with its prebiotic effect. GOS fermentation led to an increase in acetate (+49%) and lactate (+23%) compared with the control. The incorporation of the (13)C-labeled from GOS into the 16S-rRNA of the biomass of Bifidobacterium and Lactobacillus families occurred within 2-4 hours of adding the labeled GOS.	"Altogether, this is indicative of B. bifidum being able to incorporate the 13C label into its biomass, indicating that B. bifidum was directly stimulated by GOS."
Bifidogenic and non-bifidogenic effects of prebiotic GOS	Effects of galacto-oligosaccharide ingestion on the mucosa-associated mucins and sucrase activity in the small intestine of mice. <i>Eur J Nutr.</i> 2009 Dec;48(8):457-64.				
	Leforestier G, Blais A, Blachier F, et al.	Animal model examining intestinal alterations in mucosal structure and cell function	18 BALB/c mice/group received experimental diets with no oligosaccharide, lactose, or GOS for 4 weeks	Mice receiving GOS had significantly higher sucrose specific activity, which was a specific effect on mucosal epithelial cell. Jejunal villus height was not affected by GOS, but protein content and mucin content significantly increased.	"Our study clearly shows that GOS are able to modify some characteristics of the intestinal mucosa in BALB/c mice."