

July 01, 2020 1 min read

# Probiotic combination reduces mortality in preterm infants

Combination of *Lactobacillus* and *Bifidobacterium* were superior to single- at [probiotics](#) and helped reduced all-cause mortality in preterm, low-birthwei meta-analysis published in *Gastroenterology*.

Behnam Sadeghirad, PhD, PharmD, MPH, of the Michael G. DeGroot Institute at McMaster University in Hamilton, Canada, and colleagues sought to identify which probiotics were the most beneficial.

“A 2014 Cochrane review concluded that probiotics prevent severe [necrotizing enterocolitis] all-cause mortality in preterm infants, although the most effective formulation was unclear,” they wrote. “To build upon this growing evidence base, we performed a network meta-analysis to evaluate the relative effectiveness of various single-strain and multi-strain probiotic formulations on clinical outcomes among preterm, low-birthweight neonates.”

Investigators searched the literature for studies of single-strain and [multi-strain probiotic formulations on outcomes](#) of preterm, low-birthweight infants. The primary outcomes of the study were all-cause mortality, severe NEC and culture-proven sepsis.

Researchers identified 63 studies comprising 15,712 infants that fit their criteria.

Compared with placebo, a combination of one or more *Lactobacillus* and one or more *Bifidobacterium* was the only intervention with moderate- or high-quality evidence of reduced all-cause mortality (OR = 0.56; 95% CI, 0.39-0.8).

Among strains with moderate- or high-evidence for efficacy compared with placebo, combinations of *Lactobacillus* and *Bifidobacterium*, *Bifidobacterium animalis* subspecies *lactis*, *Lactobacillus reuteri*, or *Lactobacillus rhamnosus* significantly reduced severe NEC.

Additionally, researchers found that combination *Lactobacillus* and *Bifidobacterium* and *Saccharomyces boulardii* reduced the number of days to reach full feeding, and that single-strain *B. animalis* subspecies *lactis* or *L. reuteri* reduced the duration of hospitalization.

“Multicenter and large randomized controlled trials should be prioritized to distinguish between the efficacy of single- and multiple-strain probiotics among preterm infants,” Sadeghirad and colleagues wrote.

## PERSPECTIVE



**Gail Cresci, PhD, RD, LD**

In this compelling network meta-analysis of randomized trials testing for the effectiveness of single- versus multiple-strain probiotics on morbidity and mortality in preterm, low-birth weight infants, investigators found that *Lactobacillus* species and *Bifidobacterium* species were the only intervention with moderate- or high-quality evidence of reduced all-cause mortality compared to placebo. The past literature conflicts, going back and forth on whether probiotics are beneficial or not. Probiotics mechanism of action are strain specific; thus each strain behaves differently. Probiotic studies may also vary in the method of probiotic

## Visit the Rx Nutrition Resource Center

### Explore popular topics such as:

- Popular eating plans for patients with obesity
- Dietary therapies for Crohn's disease
- Symptoms of “keto flu”
- Mediterranean diet health effects

[READ NOW](#)

delivery and dosing, so when a meta-analysis attempts to lump all the studies together, there is so much heterogeneity amongst the studies that the effect may get diluted and no benefits may be found. However, this study was able to tease out and identify particular probiotic species and strains that were shown to have some benefit. Healthy term neonates are first colonized with *Lactobacillus* and *Bifidobacterium* in their gut. Literature supports that prematurity and critical illness are associated with disruptions in the infant gut microbiome, and this is associated with altered immunity and necrotizing enterocolitis. Thus, it is logical to attempt to restore the preterm gut microbiome with the probiotic species and strains they should be colonized with as a means to reduce mortality and improve growth.

**Gail Cresci, PhD, RD, LD**

Researcher

Department of Pediatric Gastroenterology, Hepatology and Nutrition

Cleveland Clinic Children's

**Disclosures:** Cresci reports no relevant financial disclosures.[probiotics](#)[preterm infant](#)**Visit the  
Rx Nutrition Resource Center****Explore popular topics such as:**

- Popular eating plans for patients with obesity
- Dietary therapies for Crohn's disease
- Symptoms of "keto flu"
- Mediterranean diet health effects

[READ NOW](#)