

Lactobacillus reuteri in the Management of Infantile Colic

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INTRODUCTION

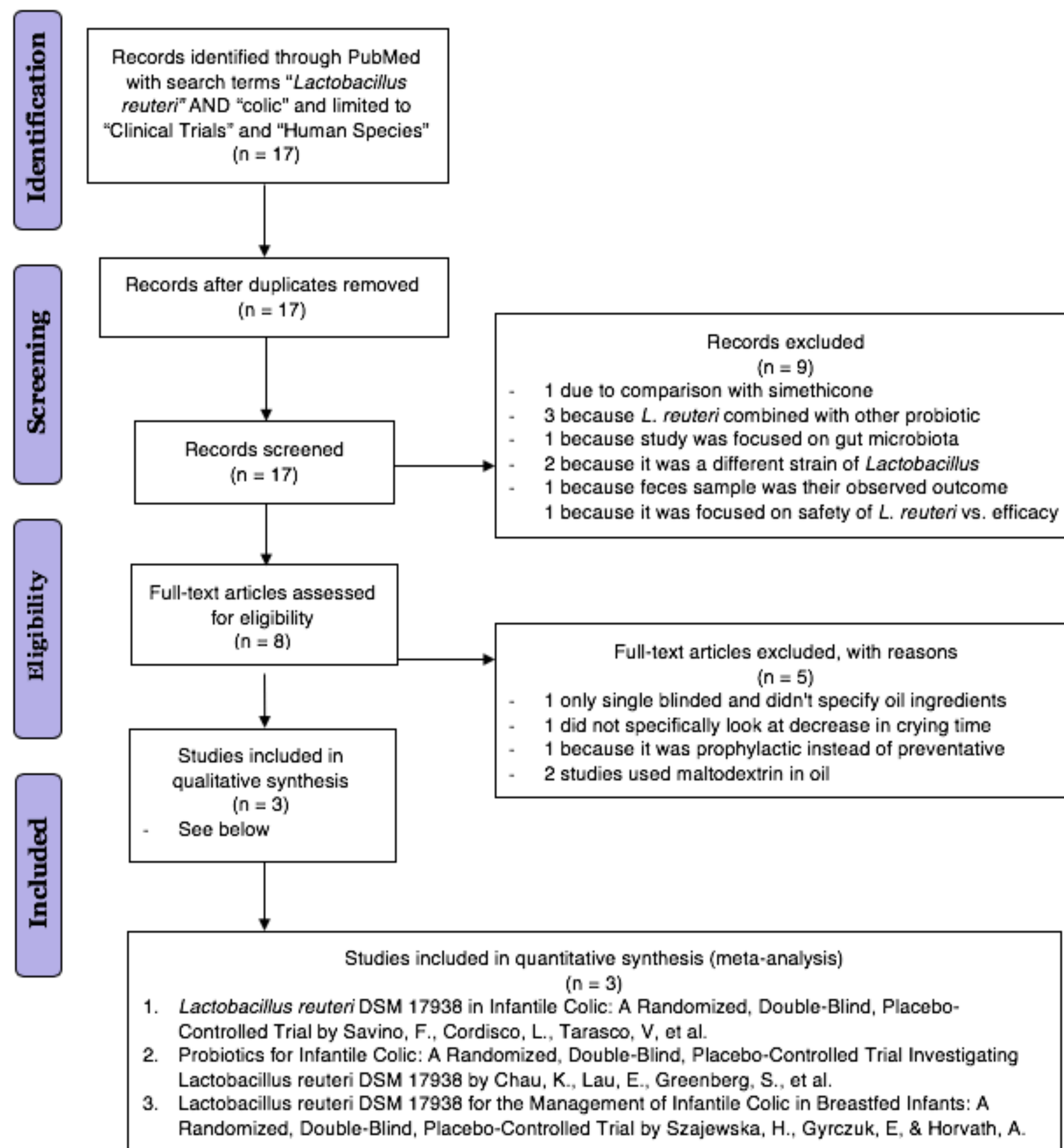
- Infantile colic (IC) is more than 3 hours of crying per day, over 3 days per week, for over 3 weeks, in an otherwise healthy, well-fed infant¹
- Affects as many as 1 in 4 newborns²
- Begins in the first 2 weeks of life and usually goes away without intervention by 3 or 4 months of age
- Has significant impacts on the infant, the parents, and clinicians^{3,4}
- Studies have found colic to be associated with maternal depression, shaken baby syndrome, and early cessation of breastfeeding⁵
- Gut microbiota of infants with colic have less bacterial diversity and lower concentrations of protective, anti-inflammatory bacteria, such as lactobacilli⁶
- Studies have revealed correlation of intestinal dysbiosis with IC^{2,7}
- Evidence suggests that *Lactobacillus reuteri* may lead to the resolution of IC

CLINICAL QUESTION

Is *Lactobacillus reuteri* more effective than placebo in reducing crying time in breastfed infants with colic?

METHODS

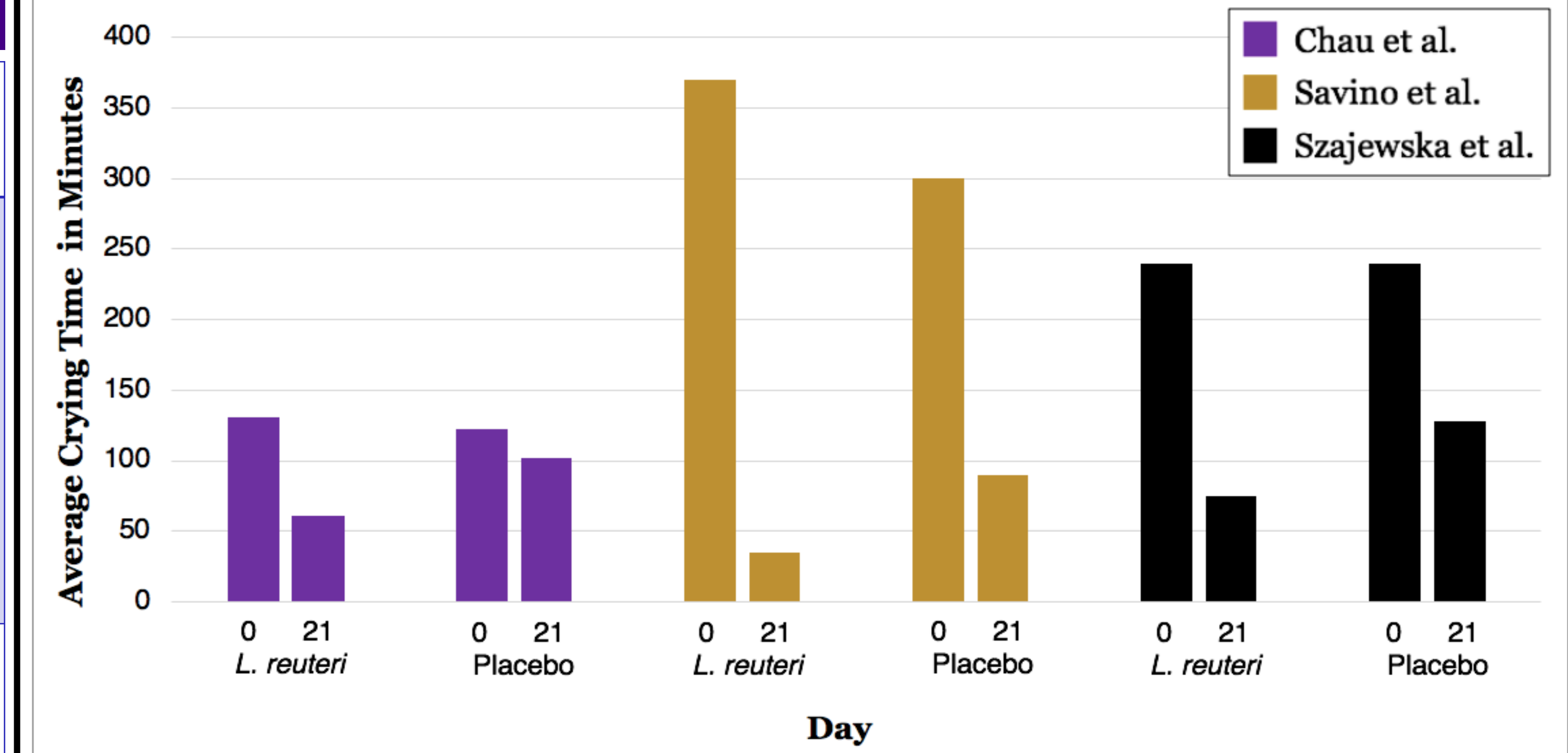
Figure 1: PRISMA Flow Diagram



RESULTS

	Study 1 Chau et al. ⁸	Study 2 Savino et al. ⁹	Study 3 Szajewska et al. ¹⁰
Objective	Investigated <i>Lactobacillus reuteri</i> DSM 17938 for treating infant colic vs. placebo in Canadian infants	To test the efficacy of <i>Lactobacillus reuteri</i> in treating infantile colic and to evaluate its relationship to gut microbiota	To determine if the administration of <i>Lactobacillus reuteri</i> is beneficial in the treatment of breastfed infants with infantile colic
Study Design	Double-blind, Placebo controlled RCT	Double-blind, Placebo controlled RCT	Double-blind, Placebo controlled RCT
Test Number	24	25	40
Control Number	28	21	40
Probiotic Treatment	Suspension of freeze-dried <i>L. reuteri</i> DSM 17938 1x10 ⁸ per 5 drops in a mixture of sunflower oil, medium-chain triglyceride oil, & silicon dioxide	Suspension of freeze-dried <i>L. reuteri</i> DSM 17938 1x10 ⁸ per 5 drops in a mixture of sunflower oil & medium-chain triglyceride oil	Suspension of freeze-dried <i>L. reuteri</i> DSM 17938 1x10 ⁸ per 5 drops in a mixture of sunflower oil & medium-chain triglyceride oil with added vitamin D3
Placebo Treatment	Combination of sunflower oil, medium-chain triglyceride oil, & silicon dioxide	Combination of sunflower oil & medium-chain triglyceride oil	Combination of sunflower oil & medium-chain triglyceride oil, with vitamin D3 added
Age	< 5 months	2 – 16 weeks	3 weeks to 6 months
Gestational Age at Delivery	≥ 37 weeks	Term	Full-term
Feeding Type	Exclusively breastfed	Exclusively breastfed	Predominantly breastfed
Follow-up Period	Day 7, 14, 21	Day 7, 14, 21	Day 7, 14, 21, 28
Conclusion	Infants in <i>L. reuteri</i> group experienced more reduction in crying time compared to placebo	<i>L. reuteri</i> improves symptoms of infantile colic in breastfed infants with colic	<i>L. reuteri</i> reduces crying time in predominantly breast-fed infants with colic
NNT – Day 7, 14, 21, 28	8, 3, 2, N/A	2, 3, 4, N/A	7, 2, 2, 3

Figure 2: Average Crying Time from Baseline to Day 21



CONCLUSIONS

- *L. reuteri* is significantly more effective than placebo in reducing crying-time in infants with colic
- No adverse effects were seen in those receiving *L. reuteri*
- The findings can only truly be applied to breastfed infants
- Future studies need to address formula-fed infants
- Future studies should improve sample size, and find ways to verify daily diary tracking and product administration
- There is some suggestion *L. reuteri* given prophylactically could prevent the development of colic,^{11,12} but more studies are needed in this area in order to draw any conclusions
- Based on the findings of this analysis, breastfed infants with established colic should be treated with *L. reuteri* supplementation

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