



## Probiotic Research Update January 2026

This Update for Clinicians is sponsored by Biofloratech Ltd, manufacturer of Labinic Probiotic Drops for babies.

### Labinic is:

- A triple strain preparation (L. acidophilus, B. bifidum & B. infantis)
- Highly concentrated in MCT oil (allows small administration volumes)
- Very stable at room temp - shelf life for live probiotics guaranteed
- Manufactured to cGMP (Good Manufacturing Practice), cGPP (Good Pharmacy Practice) in specialist facilities holding an A-grade Manufacturing Pharmacy licence
- Widely used with an excellent safety profile
- Excellent value



\*\*\*\*\*

### NEC incidence significantly reduced to 2.7% in preterms given Labinic in large UK study

**Aveline A, Szatkowski L, Berrington J, Costeloe K, Ojha S, Fleming P, Battersby C. Evaluating the effect of probiotics on severe necrotising enterocolitis in preterm infants born before 32 weeks gestation in England and Wales: a propensity-matched population study. Lancet Reg Health Eur. 2025 Dec 22;62:101571**

This real world study, published January 2026, evaluated the use of probiotics in premature babies <32 weeks in the UK between 2016 and 2022. It included over 48,000 babies with a mean gestation of 29.4 weeks. Groups were propensity matched to control for confounding and the primary outcome was severe NEC. Babies born below 28 weeks and also below 1000g BW were evaluated for the impact of probiotics on NEC. 8293 babies exposed to probiotics were matched with an equal number unexposed.

Unsurprisingly the smallest and most premature babies had the highest rates of severe NEC.

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including "probiotic" are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



The data showed that the impact of giving probiotics routinely to preterm babies has been to significantly reduce severe NEC regardless of gestation or weight. There were also non-significant reductions in late-onset sepsis and increased survival to discharge. There was no evidence of harm.

In this very large population, the overall rate of severe NEC in the probiotic-exposed group was 3.3%, compared to 4.2% in those who did not get probiotics (OR 0.80). In babies <28 weeks severe NEC was reduced from 9.8% to 8.7% (OR 0.88) and in babies >28 weeks, from 1.7% to 1.0% (OR 0.59).

**The babies who received Labinic however had a rate of severe NEC of only 2.7%. Other probiotics named in the paper had higher rates of severe NEC.\***

Publication link [here](#)

\*\*\*\*\*

## Probiotic Use in England and Wales 2016-2022

**Aveline A, Szatkowski L, Berrington J, Costeloe K, Bottle A, Ojha S, Fleming P, Battersby C. Description of probiotic use in preterm infants in England and Wales 2016-2022. BMJ Paediatr Open. 2025 Jul 24;9(1):e003605**

This sister paper to the one above, from the same group, described the increasing use of probiotics in premature babies in the UK between 2016 and 2022. Rates of use increased from 9% to 54%. There were 51,363 babies born <32 weeks, and 48,048 were included in this analysis. In total 28.2% received probiotics, the vast majority (89.8%) within 14 postnatal days. The study only looked at babies in NICUs on postnatal day 3, omitting the fact that from 27 weeks upwards many babies are cared for in LNUs (Level 2) units. In general, Level 1 (SCBU) do not care for babies <32 weeks in the UK.

Interestingly babies who received their probiotics late (>14 days) had higher illness scores, and this is thought by the authors to be due to clinicians delaying administration of probiotics in sicker infants, particularly due to feed intolerance.

This point needs to be addressed, as it has been shown to be a factor in previous studies too. Other methods to administer probiotics that do not require volumes of milk to be placed in the stomach have been described (e.g. buccal administration) but are not routinely used (yet).

Taken with the results from the other paper, it is clear that there is still room for more babies (23% in this paper) to receive probiotics routinely, and ideally from as soon after birth as possible.

Publication link [here](#)

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including "probiotic" are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



## Comment from Biofloratech Ltd:

*Probiotics given to preterm babies significantly reduce severe NEC. These real world results, in a very large and carefully matched population, showed that preterm babies who received Labinic had a low rate of severe NEC which was even lower than the overall rate in the study population, and also much lower than the other main probiotic used, which is a useful hypothesis generating comparison.\**

*It is clear from the results that the premature babies of England and Wales have clinically, safely and cost-effectively benefited from being given Labinic, which remains the most popular choice. The reduction in suffering is great news for babies and their families.*

*The number of babies receiving the different probiotics is described in the second paper. Over the last 3 months (92 days) of the study period, 629 babies received Labinic (daily cost 80p\*), whereas 264 babies received ProPrems (daily cost £6.39\*). The savings on NHS neonatal budgets from switching to Labinic are also important. This is not theory or marketing, this is real world data and a true value proposition.*

*As Biofloratech enters its 10<sup>th</sup> year of manufacturing Labinic for babies, we are delighted that our original vision to create Labinic as a cost-effective and outcome-changing product for the most vulnerable babies continues to be proven in important, independent and peer-reviewed studies around the world.*

\*\*\*\*\*

## No difference in gut dysbiosis between oral and IV antibiotics given as a single-dose

**Kelly, S. A., Nzakizwanayo, J., Rodgers, A. M., Zhao, L., Weiser, R., Tekko, I. A., McCarthy, H. O., Ingram, R. J., Jones, B. V., Donnelly, R. F., & Gilmore, B. F. (2021). Antibiotic Therapy and the Gut Microbiome: Investigating the Effect of Delivery Route on Gut Pathogens. ACS Infectious Diseases, 7(5), 1283-1296**

This study, from 2021, is one of very few that describes the differences between the effect of intravenous and oral antibiotic on gut dysbiosis. Amoxycillin was one antibiotic (other was levofloxacin) given to rats, with stool samples collected over the next 13 days at different time-points and compared with untreated samples.

The initial dysbiosis occurred 24 hrs after antibiotic administration with maximal effect 48-72hrs. There were notable increases in Proteobacteria (6-fold), which are Gram negative and include pathogenic Enterobacteria such as E. coli and Klebsiella pneumonia, which are of particular neonatal sepsis relevance. Diversity and species richness declined significantly and over similar time-points for both oral and IV dosing. Dysbiosis was more pronounced with amoxycillin than with levofloxacin.

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including "probiotic" are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



Interestingly however, Lactobacillaceae increased after exposure to amoxycillin, but only after oral rather than IV administration. Lactobacillaceae, which include Lactobacillus, are known to reduce gut inflammation and reduce gut pathogens.

The dysbiosis was persistent at the samples taken 8 days after treatment, with significant reductions in diversity and richness, although the group treated with IV antibiotics showed some signs of a faster recovery of diversity.

This study shows that the route of administration of antibiotics does not differently affect the development of dysbiosis. However the proliferation of Lactobacillaceae with only oral amoxycillin, and a slower resolution of dysbiosis with the oral route, mean that minimising exposure to antibiotics is always an important consideration to protect the fragile gut microbiome.

Full text link [here](#)

\*\*\*\*\*

## Impact of antibiotics and probiotics on the gut microbiome in preterm babies

**Raymond Kiu, Elizabeth M. Darby, Cristina Alcon-Giner, Antia Acuna-Gonzalez, Anny Camargo, Lisa E. Lamberte, Sarah Phillips, Kathleen Sim, Alexander G. Shaw, Paul Clarke, Willem van Schaik, J. Simon Kroll & Lindsay J. Hall. Impact of early life antibiotic and probiotic treatment on gut microbiome and resistome of very-low-birth-weight preterm infants. Nature Communications (2025) 16:7569**

This study examined 2 cohorts of 34 very low birthweight premature infants, with one cohort exposed to probiotics. All babies were on human breast milk. Some babies received initial empirical Penicillin and Gentamicin in line with national (NICE UK) guidance, and weekly stool samples were analysed. There were significant differences between the groups who were and were not given probiotics. The probiotic exposed babies were dominated by Bifidobacteria, whereas the non-probiotic group showed higher levels of pathogens including Escherichia, Klebsiella, Enterobacter and Staphylococcus haemolyticus, the latter declining over the first 3 weeks.

Babies exposed to antibiotics showed a complex but interesting response. In the probiotic exposed babies, Staphylococcus increased initially but otherwise Bifidobacterium dominated, with no overall changes in diversity between the antibiotic and non-antibiotic exposed babies. The non-probiotic exposed group had a more varied microbiome through the sampling period.

The results not only show that probiotic administration leads to less pathogenic dominance, but also helps to reduce carriage of multi-drug resistant bacteria. Through the study period, there was an increase in the abundance of antibiotic resistance genes (ARGs) in the non-probiotic exposed group, which the authors think would have come from hospital-acquired bacteria (rather than

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including "probiotic" are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



being de-novo), but this was not seen in the babies who received probiotics, where there were significantly fewer ARGs detected.

They conclude that probiotics have an important role in antibiotic stewardship and infection control measures.

Full text link [here](#)

\*\*\*\*\*

## **Prophylactic probiotics (especially Bifidobacterium) during antibiotic courses can reduce risks of antibiotic resistance in all age groups**

**Mazandarani M, Lashkarbolouk N, Ejtahed HS, Qorbani M. Effect of probiotics and synbiotics on antimicrobial resistance in frequent infections: a systematic review of clinical trials. Ann Med Surg (Lond). 2025 Nov 26;88(1):698-717**

Antibiotic resistant genes (ARGs) in bacteria continue to be a growing problem globally. This systematic review including 47 studies included both adult and paediatric studies, with ages ranging from 2-65 years, and 19 of the studies were in children. The studies in children showed that, in particular, the administration of Lactobacillus and Bifidobacteria were particularly effective – and the same effect was found in the adult GI infection studies where probiotics were given prophylactically. Children who received probiotics during antibiotic treatments for urinary tract infections showed a reduced risk of recurrence as well as resistance. The same reduction in recurrence and resistance was shown for respiratory infections.

Studies which looked at the microbiota of preterm infants were included, with two studies reporting a reduction in ARGs and one reporting an increase. It is postulated that early antibiotic exposure which reduced microbial diversity led to increased risk of resistant strains. The use of Bifidobacterium infantis significantly reduced ARGs and reduced gut inflammation. The studies in extremely preterm infants showed that probiotic supplementation with Bifidobacterium enhanced colonisation protection against establishment of ARGs.

This review lends weight to the concept of routine probiotic supplementation during antibiotic treatment in all age groups as a way to reduce the trend of growing ARGs.

Full text link [here](#)



## Maternal-Infant microbiome axis influences neonatal immune development

**Mukherjee A. The maternal-infant microbiome axis as an epigenetic and immunometabolic orchestrator: redefining early-life programming and precision interventions for lifelong women's and children's health. Infect Immun. 2026 Jan 13;94(1):e0050225**

This interesting review describes the transfer of microbial metabolites that pass from the mother to the fetus or neonate and how they interact with the immune system as well as factors that disrupt this process, such as antibiotics and/or caesarean section. Early microbial exposure is important for immune tolerance development and the metabolic products such as SCFAs interact with regulatory T cells, which reduces the risks of allergic or autoimmune disorders. The effects on metabolic programming are described, with disruption increasing the risk of obesity and dyslipidaemia.

In summary, the axis is central to the short- and long-term health of the infant to establish immune tolerance and balance of metabolic and neurological functions. There are multiple disruptive threats in the newborn period, and more research is needed to understand best how to reverse these events.

Full text link [here](#)

\*\*\*\*\*

## Probiotic modulation of the maternal microbiome

**Tye KD, Liu X, Huang C, Li C, Wu C, Lin J, Yu Y, Lin X. Probiotic modulation of maternal gut and milk microbiota and potential implications for infant microbial development in the perinatal period. Front Cell Infect Microbiol. 2025 Dec 11;15:1715989**

This small study aimed to improve understanding of whether probiotic use during pregnancy could change the microbiome composition in mothers, and whether this in turn might influence the neonatal gut. It looked at the impact of giving pregnant mothers probiotics from 32 weeks until 40 weeks gestation. There was no placebo used for the group who did not receive probiotics. Regular stool samples were collected from mothers and babies, along with breast milk samples at 6 months post-partum. The results showed that the maternal microbiome in the probiotic-supplemented group was different. There was evidence of vertical transmission from mother to baby, but it was not determined by what mechanism this was occurring. The highest richness of observed species in the infant was on the day of delivery, and then declined rapidly, indicating initial maternally derived colonisation followed by neonatal colonisation. The authors concluded that the use of probiotic supplements in pregnancy was able to influence the neonatal gut.

Full text link [here](#)

\*\*\*\*\*

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including "probiotic" are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



## Optimisation of the Maternal Microbiome can improve pregnancy outcomes.

Barnea ER, Nazareth A, Purandare CN, Pinheiro-Borovac A, Carluccio RD, Purandare NC, McAuliffe FM; FIGO Reproductive Endocrinology and Infertility Committee Members. Optimizing Maternal Microbiome: Role in Improved Conception and Pregnancy Outcome. *Reprod Med Biol.* 2026 Jan 12;25(1):e70014

This recently published work is a detailed literature review examining the impact of various microbiomes on pregnancy outcomes. The authors conclude that an optimal microbiome can enhance fertility and reduce important complications of pregnancy such as miscarriage, premature birth and even congenital infections. Interventions which result in sub-optimal microbiomes include the use of antibiotics, exposure to potentially harmful medications, malnutrition and obesity for example.

The section on the newborn microbiome is interesting especially considering the paper reviewed above. The authors quote the publication of Soderborg et al ([link here](#)) who showed a sterile meconium at birth which is quickly colonised. Timing for research sampling is clearly important. The authors describe the disruptive effects of Caesarean section delivery on the microbiome, which is well known and not just due to lack of seeding, but also due to antibiotic exposure prior to the procedure.

Finally, they describe interventions which support a healthier microbiome such as a “Mediterranean Diet”. Whilst the use of probiotics in healthy women did not impact on their metabolic health or pregnancy rates, there is evidence for benefits of dietary manipulation and the use of probiotics during pregnancy including improving lipid profiles and glycaemic control. Breastfeeding remains central and vitally important in maintaining the healthy infant gut.

Full text link [here](#)

+++++

**\* Non-randomised studies can provide evidence of comparative effects...to answer a broader range of questions about the effects of the interventions in routine settings [NICE Methods ECD9 2022](#)**

**\*\* Cost per baby per day (January 2026):**

**Labinic® £0.80**

**ProPrams® £6.39\*\*\***

**\*\*\*Source: East of England Neonatal Probiotic Guideline 2025**

**6.39/0.8 = 7.98**

**Errors and omissions excepted**

\*\* DISCLAIMER: This brief review was produced for Biofloratech Ltd who manufacture, and supply, Labinic Drops, a multispecies liquid probiotic food supplement. This review is written in technical language and is only intended for professional use. The content is not intended to advertise nor to describe any health claim for Labinic Drops, and all words including “probiotic” are used purely in their scientific WHO-approved forms. The purpose of the review is to stimulate discussion, debate and formulate research questions for the future. [www.biofloratech.com](http://www.biofloratech.com)



**This technical newsletter for Health Professionals was commissioned by Biofloratech Ltd who manufacture Labinic® Drops, a liquid multi-strain probiotic containing Lactobacillus acidophilus, Bifidobacterium (longum subspecies) infantis and Bifidobacterium bifidum in a total daily recommended dose of 2 billion cfu/day.**

**Labinic is manufactured to stringent high-quality control standards in a cGMP and cGPP compliant, licenced manufacturing pharmacy.**

**Labinic has an excellent safety profile and is widely used in NHS (UK) and in neonatal units overseas.**

**We are pleased to see further evidence of its use and effectiveness published in clinical papers and we confirm that we have had no influence over any publications describing use of Labinic.**

Thank you for reading this update, we hope you found it interesting. Please feel free to share with healthcare and other professional colleagues. **All disclaimers are fully applied. No health claims are made, the information provided is purely for education and information for Healthcare Professionals.**

Biofloratech Ltd