



Probiotic Research Update July 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)
- Backed by strong clinical evidence
- 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



Labinic reduced mortality and surgical NEC in high risk babies (<28 weeks or <1000g) in Norway

Hapnes NC, Stensvold HJ, Dalen I, Guthe HJT, Støen R, Solevåg AL, Moltu SJ, Rønnestad A, Klingenberg C. Probiotics for extremely preterm infants: a Norwegian population-based study. Arch Dis Child Fetal Neonatal Ed. 2026 Apr 29:fetalneonatal-2025-330176

More evidence supporting the routine use of Labinic Probiotic Drops in preterm babies – this large study from Norway set out to review morbidity and mortality rates in extremely preterm /extremely low birthweight infants and the effect of routine probiotic supplementation.

** 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



Data on 1268 eligible infants was reviewed, with 53.3% of infants receiving routine probiotics within the first week of life. The time period for this analysis was from 2014-2021. In the first 2 years before Labinic was launched, Infloran was used. Since 2016 however Labinic has become the most frequently used neonatal probiotic in Norway's NICUs.

The authors used an IPTW method to balance characteristics between the non-probiotic and probiotic patient groups to minimise confounding, and creating a very large sample-size study.

The primary outcome of the study was all-cause mortality, which showed a significant 35% reduction (aOR 0.65). Frequent routine use of probiotics (>80%) was a key factor in reducing mortality in an Intention-To-Treat analysis, with a significant (60%) fall in surgical NEC (aOR 0.40). The reduction in all-cause mortality was not explained by reductions in surgical NEC or late-onset sepsis alone, leading the authors to comment that probiotic use may lead to greater "physiological resilience" through gut and immune maturation and probiotic effects.

Probiotic sepsis was rare, and most cases were seen in the Infloran period (1.06%). In the last 4 year period, where Labinic was the predominant probiotic, probiotic sepsis was "exceptionally rare" (0.21%) – a more than 5-fold reduction.

Comment from Biofloratech Ltd:

We are delighted to see yet another large study confirming that Labinic can significantly reduce all-cause mortality. The association of frequent use and reduction in death is fascinating and deserves further consideration. Whilst eligible babies had started feeds and probiotics within the first week, we have previously reviewed data showing the phenomenon of "probiotic colonisation" of NICUs, where probiotic strains are seen in stool before the infants has formally commenced them. Could this be a factor?

Likewise the reduction in all-cause mortality not fully explained by reductions in NEC or LOS is extremely valuable, implying a broader systemic effect of probiotics. We know that probiotics exert a wide range of effects on the gut but also on immune and neurological systems, and it is likely that these complex interactions, which are poorly understood, could be vital in developing further survival technologies for the most vulnerable patients.

Publication link [here](#)

Maternal and Neonatal Dysbiosis linked to inflammation, pregnancy outcomes and longer term impacts on child health

Ahmed U, Fatima F, Farooq HA. Microbial dysbiosis and associated disease mechanisms in maternal and child health. Infect Immun. 2025 Aug 12;93(8):e0017925



Since we started producing these updates, the evidence of the importance of dysbiosis on neonatal and paediatric health has continued to provide deeper understanding both of the mechanisms but also the clinical impact in the short and long term. It is well established that birth via Caesarean Section, now the most common mode of delivery in many hospitals, results in a microbiome which increases the risk of metabolic disease, allergies, asthma, inflammatory bowel disease and neurodevelopmental disorders for example in later life.

However what is emerging also is the impact of maternal dysbiosis on fetal wellbeing. Increased risk of premature birth, poor growth and increased risk of neonatal infections are all important issues faced by neonatologists/paediatricians.

The modification of these risk factors through the use of probiotics is an obvious choice, yet not in common use, despite for example the evidence that vaginal *Lactobacillus* is associated with reduced inflammation and better pregnancy outcomes.

Finally, and perhaps inevitably, the authors touch on the use of AI to predict and personalise risks arising from dysbiosis, and call for more mechanistic studies to investigate the role of the gut-vagina microbial axis and effects of wider dysbiosis. The application of dysbiosis treatments may be particularly valuable in low resource settings.

Publication link [here](#)

Inflammatory changes leading to preterm labour caused by dysbiosis, not infection. Could *Lactobacillus crispatus* prevent spontaneous preterm labour?

Chan D, Bennett PR, Lee YS, Kundu S, Teoh TG, Adan M, Ahmed S, Brown RG, David AL, Lewis HV, Gimeno-Molina B, Norman JE, Stock SJ, Terzidou V, Kropf P, Botto M, MacIntyre DA, Sykes L. **Microbial-driven preterm labour involves crosstalk between the innate and adaptive immune response. Nat Commun. 2022 Feb 21;13(1):975**

We've gone back a few years to this paper from 2022 which described some of the mechanisms around vaginal depletion of *Lactobacillus* and the pro-inflammatory profile which is associated with cervical shortening (a known precursor to premature birth). Whilst about a third of prematurity is due to maternal or fetal health reasons, the majority of preterm labours are spontaneous and the reasons remain poorly understood.

Whilst inflammation has been consistently shown as a risk-factor present in preterm deliveries, it has been assumed that there must be an infectious cause for this, and the failure to pin down consistent bacterial evidence has led to theories about viral origins. Whilst there is plenty of evidence for ascending chorioamnionitis as a cause of preterm birth, it is not a universal cause, and

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the reason for it being triggered is not understood. This work builds on the evidence that an immune response to dysbiosis, not infection, may be a significant cause in spontaneous preterm labour

The authors demonstrated in a cohort of women at risk of preterm birth, that Lactobacillus depletion coupled with increased vaginal microbiota and higher vaginal IL-8, IL-6, IL-1 β and lower IL-10 increase the probability of preterm birth.

The proposed mechanism is that the maternal host response to the dysbiotic environment drives the processes leading to preterm labour.

Furthermore they describe that Lactobacillus crispatus may be protective against inflammation and is a candidate for preterm birth prevention.

Publication link [here](#)

Comment from Biofloratech Ltd:

L. crispatus and L. acidophilus used to be part of the same taxonomic group before DNA hybridization recognised that they are separate species. They are both Gram-positive rods, they are homofermentative lactic acid producers which suppresses pathogens, and they live in human mucosa. L. crispatus dominates the vaginal microbiome and is a high D-lactate producer. L. acidophilus NCFM is primarily a gastrointestinal organism, although it is found in the vaginal microbiome too, and it has strong evidence for its immune effects. Other vaginal Lactobacilli include L. gasseri and L. jensenii. There is good evidence that L. crispatus vaginal supplementation reduces bacterial vaginosis.

The Imperial College London-led FLIP2 trial will investigate whether L. crispatus can prevent preterm birth. Its predecessor, the FLIP1 study, showed that a L. crispatus pessary was safe, and reduced preterm birth in a high-risk population of women by 50%. [Link here](#)

The idea that “spontaneous” preterm labour may have a window preceding it, which may be quite prolonged, during which a developing dysbiosis leads to an immune response which, in some women (perhaps in a primed immune state and triggered by a “second hit” from e.g infection) is an attractive and evidence-based hypothesis. Given the substantial burden of prematurity on global health systems, we look forward to the results of FLIP2 (which should report in 2029) with great interest.



Bifidobacteria, breast milk and the development of the “gut resistome” in the first year

Samarra, A., Alcañiz, A.J., Martínez-Costa, C. et al. Breastfeeding and early Bifidobacterium-driven microbial colonization shape the infant gut resistome. Nat Commun 16, 6099 (2025)

After birth, the infant gut develops its “resistome” comprising all the antibiotic resistance genes (ARGs) it has encountered for example from vertical (maternal) transmission or via antibiotic exposure. The importance of ARGs is significant – it is estimated that 214,000 neonatal deaths a year are linked to sepsis from pathogens carrying ARGs, and it is poorly understood how the neonatal resistome changes into childhood and adult life too.

The authors set out to investigate the changes in the first year, analysing over 265 faecal samples from 66 mothers and their infants. ARGs were present in all samples. They demonstrated that Bifidobacterium, in conjunction with breastfeeding, directly influence the ARG load. Caesarean section delivery had an effect on the resistome at day 7 and the impact of breastfeeding was to create longer term reductions in ARG load in association with high levels of Bifidobacteria, and lower levels of pathogenic bacteria including E. coli, Enterococcus faecalis.

The impact of antibiotic exposure due to Caesarean section and higher levels of ARGs is concerning, and there is increased levels of Staph, Enterococcus and Klebsiella associated with higher ARG carriage.

In summary, this work shows how vulnerable the newborn gut is to external dysbiotic influences, the transmission of ARGs from mothers and the impact of Bifidobacteria and breast milk as critical modifiers of the infant gut resistome.

Publication link [here](#)

Reduction in neonatal use of antibiotics in the US, but overall no change in use between 2015 and 2023

Barbara Keino, Taniece Eure, Rebecca Alkis Ramirez, Joelle Nadle, Jane E Lee, Monica Lehmann, Lyndzie Sardenga, Christopher A Czaja, Helen Johnston, Melissa Kellogg, et al. Antimicrobial Use in U.S. Hospitals: Comparison of 2015 and 2023 Prevalence Surveys, Open Forum Infectious Diseases, 2026; ofag450

This survey, done in 2023, followed on from an identical survey performed in 2015. 218 hospitals participated, and 98.6% of them had an antimicrobial stewardship team, an increase from the previous survey.



Half of patients in hospital received antibiotics, unchanged from the previous survey. Most were given broad-spectrum antimicrobials. The exception to this was in neonatal units, where use of antibiotics significantly declined from 23.4% (2015) to 17.1% (2023) ($p=0.04$).

However there were increased rates of antibiotic use in labour wards and post-delivery wards, up from 24.4% to 32.8% which was also significant ($p<0.001$). Caesarean section was the most common surgical procedure for which antibiotics were given as prophylaxis, and this had increased slightly from the 2015 data, with treatments for UTI also slightly increased.

The authors compared their data to non-US sources, showing that antibiotic use in the US was higher than in Europe (42.4% vs 36.7% for receiving ≥ 1 antimicrobial on the day of the survey).

We've include this paper in this research update because it demonstrates the scale of antibiotic use in hospitals, and it follows on from the previous article on the resistome in demonstrating the enormous challenges of managing antibiotic stewardship to reduce ARGs. In our previous research newsletter, we highlighted a study which showed that administration of *Lactobacillus* and *Bifidobacteria* were effective in reducing ARGs.

Full text link [here](#)

Premature babies and probiotic invasive infection.

Patel RM, Bennett MM, Canvasser J, Greenberg RG, Ahmad KA, Tolia VN. Probiotic-Associated Invasive Infection Among Preterm Infants. JAMA Netw Open. 2026 Jul 1;9(7):e2626530

The fallout from the FDAs warning based on a case report of probiotic sepsis continues. This study aimed to look at how common invasive probiotic infection is. The authors used data from the Pediatrix Group in North and Central America for babies between 22+0 and 32+6 weeks gestation born between 2016 and 2023.

Data from 107,505 infants were included, and 19,900 (19%) received probiotics. 11 ($<0.01\%$) developed invasive infection with *Lactobacillus* or *Bifidobacteria*. 3 of those were not receiving probiotics. The incidence of probiotic sepsis was 0.04% (1 in 2500 very preterm babies) and only 1 probiotic-associated death (1 in 19,900), in line with previous reports.

Full text link [here](#)

In an accompanying commentary, Scottoline and Jordan reviewed the implication of this data. NEC in the US affects 7-12% of VLBW babies (about 3500-6000 babies a year, of whom about 400 die and in survivors increased rates of neurological and GI impairments). They describe the dramatic decline in the use of probiotics after the FDA intervention, and the more recent reports of



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increased incidence of NEC in units who stopped using probiotics. NEC, whilst relatively uncommon, is considerably more prevalent than probiotic sepsis.

Full text link [here](#)

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.**

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