

## Plain summary of results

Mother's own breastmilk is best for preterm babies, but many mothers cannot produce enough milk to meet their baby's needs. Clinicians use either donor human milk or specialised preterm formula to supplement the shortfall. Hospitals vary widely in how long they use donor milk and there is little evidence on whether longer use improves babies' growth and feeding outcomes. This study compared using donor human milk for short period (until babies tolerated full milk feeds) versus long-term (until 36 weeks of gestation or discharge, if earlier), when mother's own breastmilk supply was limited.

The main aim was to see if it was possible to run a randomised study comparing different ways of using donor milk, and whether babies were still being fed mother's own breastmilk at 36 weeks of gestation or at discharge (if they went home earlier). We also collected information on babies' growth and health. This study helps to fill a gap, as no previous studies have tested different donor milk approaches while looking at breastfeeding outcomes.

Between June 2021 and March 2023, 135 babies from two neonatal units in the North East of England took part in HUMMINGBIRD trial. Of these, 69 babies received donor human milk up to 36 weeks of gestation when there was not enough mother's own milk; while 66 babies received donor milk until they tolerated full feeds and then received preterm formula if needed.

The findings show that although the proportion of babies receiving mother's own breastmilk at 36 weeks of gestation or discharge (if earlier) was similar in both groups, it was a lot higher compared to previous years. There were no differences in growth and health outcomes between the groups. Interviews with mothers showed that they found expressing of breast milk often hard. Donor milk either helped mothers feel reassured or, for some, created discomfort that encouraged them to express more. Supporting the use of donor milk may also reinforce message about the importance of breast milk over formula. Our study showed that running this type of randomised trial is feasible and that donor milk was generally well accepted. The length of time donor milk is used may not by itself affect how much mother's own milk babies get, but it can influence families and staff in many ways and the effect will depend on care setting.