Nutritional Evaluation and Optimisation in Neonates (NEON) trial of amino acid regimen and intravenous lipid composition in preterm parenteral nutrition: a randomised double-blind controlled trial

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Plain English summary

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Plain English summary

Infants born extremely preterm (defined as born before 31 weeks of gestation) spend several weeks and months in intensive care and are subject to various complications relating to their prematurity. Outside the womb, meeting the nutritional demands of these infants presents challenges. Experts have called for changes in how we feed babies, but we do not know if giving more nutrition is better for babies. We studied two aspects of parenteral nutrition, a fluid used to feed babies through their veins to overcome gut immaturity. First, we compared a stepwise increase in protein intake with giving the baby what is the recommended daily intake. Second, we compared the type of fat currently used in parenteral nutrition with a newer combination of fat that has been shown to be less harmful to the liver. Babies were allocated to one or the other group by chance. This is so that both groups are similar at the start of the study so that any difference that is found at the end can be explained by the difference in the nutrition we gave them. Using special magnetic scans (to measure body muscle mass and fat in the liver) we studied the babies around the time of their due date. We found that, provided extremely preterm babies were fed milk from the start, giving the recommended daily intake of protein from birth instead of gradually increasing the intake did not result in any difference in muscle mass at term age. In addition, the new type of fat did not show any benefit over the old type of fat.

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