In newborns, changing parenteral nutrition sets every 48 hours rather than every 24 hours did not increase infusate contamination

**QUESTION:** In newborn infants, does changing total parenteral nutrition fluid administration sets (TASs) every 48 hours, rather than every 24 hours, increase the rate of contamination of infusates (amino acid plus dextrose solution [AADS] or lipid emulsion)?

**Design**
Randomised (allocation not concealed), blinded (unclear), controlled trial.

**Setting**
A neonatal intensive care unit in Edmonton, Alberta, Canada.

**Patients**
166 infants who received total parenteral nutrition during a 12 month period. Infusate samples from 148 infants (89%) (mean gestational age 32.8 wks, mean birth weight 2036 g, mean postnatal age 12.9 d) were included in the analysis.

**Intervention**
53 infants were allocated to have their TAS changed every 24 hours. 113 infants were allocated to have their TAS changed every 48 hours. The TAS was changed by the bedside nurse assigned to the infant’s care. For both groups, bags containing AADS were changed daily, whereas lipid emulsion bottles were changed with the line sets. Line care was standardised across groups.

**Main outcome measures**
Infusates were assessed (3 times/wk for 2 wks) for contamination using microbiological cultures. Cultures were categorised as positive contamination (≥10 colony forming units/ml), questionable contamination (1–9 colony forming units/ml), or no growth.

**Main results**
A total of 2686 infusate samples were analysed. The overall bacterial contamination rate was 4.3% (3.0% for AADS and 5.6% for lipid emulsion). The 24 and 48 hour groups did not differ for bacterial contamination of AADS (3.1% of samples v 2.9%, p = 0.8*), or lipid emulsion (6.0% v 5.1%, p = 0.6*). The 24 hour group had a higher rate of fungal contamination of lipid emulsion than did the 48 hour group (3.1% v 0.5%, p < 0.01); however, when samples from 1 infant in the 24 hour group (who had candida septicemia and meningitis, with subsequent contaminated TAS fluid cultures) were omitted from the analysis, fungal contamination rates were similar (0.2% v 0.5%).

**Conclusion**
Among newborn infants receiving total parenteral nutrition, bacterial contamination of infusates (amino acid plus dextrose or lipid emulsion) was similar when fluid administration sets were changed every 48 hours or every 24 hours.

*p Value calculated from data in article.