



Summary of NICE Guidelines

Title	Neonatal Parenteral Nutrition																										
NICE Reference	NG154																										
Previous NICE Reference (if applicable)	N/A																										
Date of Publication	26 th February 2020																										
Date of Review/Update by NICE	N/A																										
Date of Summary by Trainee	June 2023																										
Summary of Guidance (Max 250 words)	<p>Starting Neonatal Parenteral Nutrition (NPN):</p> <ul style="list-style-type: none"> - Preterm before 31+0 weeks - $\geq 31+0 - 36+6$ if insufficient progress with enteral feeds within 72h - -Preterm/term with insufficient feeding e.g., critical illness. - Preterm/term if enteral feeds stop in and do not restart within age specific timing. <p>Administration:</p> <ul style="list-style-type: none"> - Central venous catheter, only use peripheral venous access for short-term. - Protect bags, syringes and infusion sets from light. <p>Constituents of NPN: <i>Initial/Maintenance doses for preterm babies</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Constituent</th> <th rowspan="2">Unit of concentration</th> <th colspan="2">Initial dose from days after birth</th> </tr> <tr> <th>< 4 days</th> <th>≥ 4 days / maintenance dose for < 4 days</th> </tr> </thead> <tbody> <tr> <td>Glucose</td> <td>g/kg/day</td> <td>6.0-9.0</td> <td>9.0-16.0</td> </tr> <tr> <td>Amino acids</td> <td>g/kg/day</td> <td>1.5-2.0</td> <td>3.0-4.0</td> </tr> <tr> <td>Lipids</td> <td>g/kg/day</td> <td>1.0-2.0</td> <td>3.0-4.0</td> </tr> <tr> <td>Calcium</td> <td>mmol/kg/day</td> <td>0.8-1.0 (< 48h)</td> <td>1.5-2.0 (> 48h)</td> </tr> <tr> <td>Phosphate</td> <td>mmol/kg/day</td> <td>1.0 (< 48h)</td> <td>2.0 (> 48h)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> - Other constituents added in levels dependent on clinical need e.g., iron, vitamins, sodium, potassium, magnesium, trace elements. - Consider lipid emulsion over soy emulsion in NPN-associated liver disease. 	Constituent	Unit of concentration	Initial dose from days after birth		< 4 days	≥ 4 days / maintenance dose for < 4 days	Glucose	g/kg/day	6.0-9.0	9.0-16.0	Amino acids	g/kg/day	1.5-2.0	3.0-4.0	Lipids	g/kg/day	1.0-2.0	3.0-4.0	Calcium	mmol/kg/day	0.8-1.0 (< 48h)	1.5-2.0 (> 48h)	Phosphate	mmol/kg/day	1.0 (< 48h)	2.0 (> 48h)
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	<p>Monitoring NPN (minimum intervals providing no abnormal results):</p> <table border="1"> <thead> <tr> <th rowspan="2">Constituent</th> <th colspan="2">Frequency</th> </tr> <tr> <th>Increasing dose</th> <th>Maintenance reached</th> </tr> </thead> <tbody> <tr> <td>Blood Glucose</td> <td>1-2 hours after first NPN or each bag</td> <td>-</td> </tr> <tr> <td>Blood pH, potassium, chloride, calcium</td> <td>Daily</td> <td>Twice weekly</td> </tr> <tr> <td>Serum triglycerides, phosphate</td> <td>Daily</td> <td>Weekly</td> </tr> <tr> <td>Liver function</td> <td>Weekly</td> <td>Weekly</td> </tr> </tbody> </table> <p>Stopping NPN:</p> <ul style="list-style-type: none"> - Once enteral feeds are tolerable: <ul style="list-style-type: none"> • Preterm babies born before 28 weeks: 140 to 150 ml/kg/day; after 28 weeks: 120 to 140 ml/kg/day. 	Constituent	Frequency		Increasing dose	Maintenance reached	Blood Glucose	1-2 hours after first NPN or each bag	-	Blood pH, potassium, chloride, calcium	Daily	Twice weekly	Serum triglycerides, phosphate	Daily	Weekly	Liver function	Weekly	Weekly
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Impact on Lab (See below)	■ None																	
Lab professionals to be made aware <i>Please select/highlight appropriate choices</i>	Laboratory Manager X Chemical Pathologist X Clinical Scientist Biomedical Scientist																	
Please detail the impact of this guideline (Max 150 words)	<ul style="list-style-type: none"> - Currently no consensus for the monitoring of lipids under best practice guidelines in this format. The introduction of this recommendation therefore has scope to impact on laboratory practice. All other recommendations under the guideline are in keeping with existing clinical practice and are not likely to change but to reinforce existing methods. - There is a possibility for increased demand of POCT glucose meters in NPN monitoring if bleeding of babies is difficult. - Laboratory staff should be made aware in the review of monitoring results whether the baby is at a starting NPN dose or at their maintenance dose. 																	

Impact on Lab

- **None:** This NICE guideline has no impact on the provision of laboratory services
- **Moderate:** This NICE guideline has information that is of relevance to our pathology service and may require review of our current service provision.
- **Important:** This NICE guideline is of direct relevance to our pathology service and will have a direct impact on one or more of the services that we currently offer.

Written by: Shannon Rees

Reviewed by: Roanna George

Date: 27/07/2023

