

# National Institute for Health and Care Excellence

Early submission

## Neonatal parenteral nutrition

### Search strategies

*NICE guideline tbc*

*Search strategies*

*July 2019*

*Early submission*

*Developed by the National Guideline Alliance which is part of the Royal College of Obstetricians and Gynaecologists*



## **Disclaimer**

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Local commissioners and/or providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#), and [Northern Ireland Executive](#). All NICE guidance is subject to regular review and may be updated or withdrawn.

## **Copyright**

© NICE 2019. All rights reserved. Subject to [Notice of Rights](#).

ISBN:

## Contents

<b>Literature search strategies</b> .....	<b>8</b>
1.1 What are the predictors for enteral feeding success? .....	8
Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	8
Databases: Embase; and Embase Classic .....	9
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	10
1.2 For those neonates where parenteral nutrition is required, what is the optimal timeframe for doing this? .....	11
Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	11
Databases: Embase; and Embase Classic .....	12
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	13
1.3 What are the most effective relative amounts of nitrogen and non-nitrogen energy (starting and target dose)?.....	14
1.4 What are the most effective relative amounts of carbohydrates and lipids (starting and target dose)? .....	14
Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	14
Databases: Embase; and Embase Classic .....	18
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	22
2.1 How many kcal/kg/day should be given to preterm and term babies receiving parenteral nutrition? .....	26
Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	26
Databases: Embase; and Embase Classic .....	27
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	28
3.1 What is the optimal target dosage for amino acids in preterm and term babies who are receiving parenteral nutrition and neonatal care?.....	29
3.2 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for amino acids? .....	29
3.3 What is the optimal target dosage for carbohydrates in preterm and term babies who are receiving parenteral nutrition and neonatal care?.....	29
3.4 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for carbohydrates? .....	29
3.5 What is the optimal target dosage for lipids in preterm and term babies who are	

receiving parenteral nutrition and neonatal care? .....	29
3.6 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for lipids?.....	29
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	29
Databases: Embase; and Embase Classic .....	33
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	36
3.7 What is the clinical effectiveness, efficacy, and safety of lipid formulations from different sources (for example, soya, fish oil, or mixed sources)? .....	40
3.8 What are the optimal target dosages for calcium and phosphate in preterm and term babies who are receiving parenteral nutrition and neonatal care? .....	40
3.9 What is the optimal ratio of phosphate to amino acid in preterm and term babies who are receiving parenteral nutrition and neonatal care?.....	40
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	40
Databases: Embase; and Embase Classic .....	42
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	43
3.10 What is the most effective and safe iron supplementation compared to no iron or different dosage/formulations in preterm and term babies who are receiving parenteral nutrition and neonatal care? .....	45
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	45
Databases: Embase; and Embase Classic .....	46
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	47
3.11 How much (if any) intravenous acetate should be provided to preterm and term babies who are receiving parenteral nutrition and neonatal care? .....	48
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	48
Databases: Embase; and Embase Classic .....	49
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	50
3.12 What is the effectiveness, efficacy and safety of standardised parenteral nutrition bags compared with individualised bags?.....	50
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	50
Databases: Embase; and Embase Classic .....	52
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment .....	53
4.1 What overall osmolality, concentration of calcium and glucose/dextrose in	

parenteral nutrition can determine whether to administer centrally or peripherally?.....	53
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	53
Databases: Embase; and Embase Classic.....	55
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment.....	56
5.1 In babies on parenteral nutrition, what is the optimal frequency of blood sampling for monitoring glucose, calcium, phosphate, potassium and serum triglycerides?.....	57
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	57
Databases: Embase; and Embase Classic.....	58
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment.....	60
6.2 What amount of enteral feed (measured in terms of ml/kg/d, or kcal/kg/d, or ratios in relation to PN and enteral feeds) indicates that parenteral nutrition is no longer required?.....	61
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	61
Databases: Embase; and Embase Classic.....	62
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment.....	63
7.1 Are nutrition care/support teams effective in providing parenteral nutrition in preterm and term babies?.....	64
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	65
Databases: Embase; and Embase Classic.....	66
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment.....	67
8.1 What are the most effective methods of information provision about PN, and what information and support about this do parents/carers perceive as useful? ..	68
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	68
Databases: Embase; and Embase Classic.....	70
Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment.....	72
Database: Web of Science – Conference Proceedings Citation Index- Science (CPCI-S).....	74
9.1 What are the general principles of neonatal parenteral nutrition?.....	74
Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations.....	74

Databases: Embase; and Embase Classic .....	75
Health economics global search .....	76
Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations .....	76
Databases: Embase; and Embase Classic .....	77
Database: Cochrane Central Register of Controlled Trials .....	78
Databases: Health Technology Assessment; and NHS Economic Evaluation Database .....	79

# Literature search strategies

## 1.1 What are the predictors for enteral feeding success?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	or/1-2
4	PARENTERAL NUTRITION/
5	PARENTERAL NUTRITION, TOTAL/
6	PARENTERAL NUTRITION SOLUTIONS/
7	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
8	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
9	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
10	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
11	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
12	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
13	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
14	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
15	or/4-14
16	ENTERAL NUTRITION/
17	INTUBATION, GASTROINTESTINAL/
18	GASTROSTOMY/
19	JEJUNOSTOMY/
20	((enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
21	((Nasogastric\$ or gastrointestinal\$) adj3 (tube? or intubate\$ or nutrition\$ or feed\$ or fed\$)).ti,ab.
22	Gastrostom\$.ti,ab.
23	Jejunostom\$.ti,ab.
24	or/16-23
25	ENERGY INTAKE/
26	NUTRITIONAL STATUS/
27	MALNUTRITION/
28	((energy or volume? or kcal or kilocalorie? or nutrition\$) adj3 (goal? or target\$)).ti,ab.
29	((optimi\$ or success\$) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
30	((ml? or milliliter?) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
31	(feed\$ adj3 (tolera\$ or intolera\$)).ti,ab.
32	(malnutrition or malnourish\$).ti,ab.
33	early nutrition\$.ti,ab.
34	nutrition\$ support\$.ti,ab.
35	or/25-34
36	((Initiat\$ or Start\$ or Introduc\$ or Earl\$ or Advanc\$ or Achiev\$ or Establish\$ or Tolera\$ or Success\$ or Full\$) adj3 (enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
37	((Initiat\$ or Start\$ or Begin\$ or Introduc\$ or Earl\$ or Establish\$ or Predict\$ or Indicat\$ or Need\$) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
38	((Initiat\$ or Start\$ or Begin\$ or Introduc\$ or Earl\$ or Establish\$ or Predict\$ or Indicat\$ or Need\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)).ti,ab.
39	or/37-38
40	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$ or pre#mie? or premie or premies or (low adj3 birth adj3 weigh\$) or (low adj3 birthweigh\$) or LBW or VLBW or (small adj3 gestation\$ adj3 age?) or SGA or (grow\$ adj3 (restrict\$ or retard\$)) or IUGR or (critical\$ adj3 ill\$) or (necroti\$ adj3 enterocolit\$) or NEC or (intestin\$ adj3 fail\$) or short bowel? syndrome? or surgery or (surgical adj3 procedure?) or postoperati\$ or ((post or follow\$ or after) adj3 operati\$) or ((digest\$ or gastrointestinal) adj3 (defect\$ or abnormal\$ or anomal\$)) or (persistent adj3 (pulmonary hypertens\$ or fetal circulat\$)) or PPHN or (hypoxi\$ adj3 ischemi\$ adj3 encephalopath\$) or HIE or (meconium adj3 aspirat\$ or inhal\$)) or sepsis or septic?emi\$ or ((septic or endotoxic or toxic) adj3 shock) or ((intensive or critical) adj3 care) or NICU?) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
41	ADEPT.ti,ab.
42	SIFT.ti,ab.
43	or/41-42
44	3 and 15 and 24 and 35
45	3 and 15 and 36
46	3 and 24 and 39
47	3 and 24 and 40
48	3 and 15 and 43



## EARLY SUBMISSION

### Search strategies

#	Searches
49	or/44-48
50	limit 49 to english language
51	LETTER/
52	EDITORIAL/
53	NEWS/
54	exp HISTORICAL ARTICLE/
55	ANECDOTES AS TOPIC/
56	COMMENT/
57	CASE REPORT/
58	(letter or comment*).ti.
59	or/51-58
60	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
61	59 not 60
62	ANIMALS/ not HUMANS/
63	exp ANIMALS, LABORATORY/
64	exp ANIMAL EXPERIMENTATION/
65	exp MODELS, ANIMAL/
66	exp RODENTIA/
67	(rat or rats or mouse or mice).ti.
68	or/61-67
69	50 not 68

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	or/1-2
4	PARENTERAL NUTRITION/
5	TOTAL PARENTERAL NUTRITION/
6	PERIPHERAL PARENTERAL NUTRITION/
7	PARENTERAL SOLUTIONS/
8	INTRAVENOUS FEEDING/
9	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
10	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
11	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
12	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
13	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
14	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
15	or/4-14
16	ENTERIC FEEDING/
17	exp DIGESTIVE TRACT INTUBATION/
18	GASTROSTOMY/
19	JEJUNOSTOMY/
20	((enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
21	((Nasogastric\$ or gastrointestinal\$) adj3 (tube? or intubate\$ or nutrition\$ or feed\$ or fed\$)).ti,ab.
22	Gastrostom\$.ti,ab.
23	Jejunostom\$.ti,ab.
24	or/16-23
25	CALORIC INTAKE/
26	NUTRITIONAL STATUS/
27	MALNUTRITION/
28	((energy or volume? or kcal or kilocalorie? or nutrition\$) adj3 (goal? or target\$)).ti,ab.
29	((optimi\$ or success\$) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
30	((ml? or milliliter?) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
31	(feed\$ adj3 (tolera\$ or intolera\$)).ti,ab.
32	(malnutrition or malnourish\$).ti,ab.
33	early nutrition\$.ti,ab.
34	nutrition\$ support\$.ti,ab.
35	or/25-34
36	((Initiat\$ or Start\$ or Introduc\$ or Earl\$ or Advanc\$ or Achiev\$ or Establish\$ or Tolera\$ or Success\$ or Full\$) adj3 (enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
37	((Initiat\$ or Start\$ or Begin\$ or Introduc\$ or Earl\$ or Establish\$ or Predict\$ or Indicat\$ or Need\$) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
38	((Initiat\$ or Start\$ or Begin\$ or Introduc\$ or Earl\$ or Establish\$ or Predict\$ or Indicat\$ or Need\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)).ti,ab.
39	or/37-38
40	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$ or pre#mie? or premie or premies or (low adj3 birth adj3 weigh\$)

#	Searches
	or (low adj3 birthweigh\$) or LBW or VLBW or (small adj3 gestation\$ adj3 age?) or SGA or (grow\$ adj3 (restrict\$ or retard\$)) or IUGR or (critical\$ adj3 ill\$) or (necroti\$ adj3 enterocolit\$) or NEC or (intestin\$ adj3 fail\$) or short bowel? syndrome? or surgery or (surgical adj3 procedure?) or postoperati\$ or ((post or follow\$ or after) adj3 operati\$) or ((digest\$ or gastrointestinal) adj3 (defect\$ or abnormal\$ or anomal\$)) or (persistent adj3 (pulmonary hypertens\$ or fetal circulat\$)) or PPHN or (hypoxi\$ adj3 ischemi\$ adj3 encephalopath\$) or HIE or (meconium adj3 aspirat\$ or inhal\$) or sepsis or septic?emi\$ or ((septic or endotoxic or toxic) adj3 shock) or ((intensive or critical) adj3 care) or NICU?) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$).ti,ab.
41	ADEPT.ti,ab.
42	SIFT.ti,ab.
43	or/41-42
44	3 and 15 and 24 and 35
45	3 and 15 and 36
46	3 and 24 and 39
47	3 and 24 and 40
48	3 and 15 and 43
49	or/44-48
50	limit 49 to english language
51	letter.pt. or LETTER/
52	note.pt.
53	editorial.pt.
54	CASE REPORT/ or CASE STUDY/
55	(letter or comment*).ti.
56	or/51-55
57	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
58	56 not 57
59	ANIMAL/ not HUMAN/
60	NONHUMAN/
61	exp ANIMAL EXPERIMENT/
62	exp EXPERIMENTAL ANIMAL/
63	ANIMAL MODEL/
64	exp RODENT/
65	(rat or rats or mouse or mice).ti.
66	or/58-65
67	50 not 66

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	#1 or #2
4	MeSH descriptor: [PARENTERAL NUTRITION] this term only
5	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
6	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
7	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
8	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
9	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
10	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
11	#7 or #8 or #9 or #10
12	(nutrition* or feed* or fed*):ti,ab
13	#11 and #12
14	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
15	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)):ti,ab
16	(catheter* near/3 (nutrition* or feed* or fed*)):ti,ab
17	(drip? near/3 (nutrition* or feed* or fed*)):ti,ab
18	#4 or #5 or #6 or #13 or #14 or #15 or #16 or #17
19	MeSH descriptor: [ENTERAL NUTRITION] this term only
20	MeSH descriptor: [INTUBATION, GASTROINTESTINAL] this term only
21	MeSH descriptor: [GASTROSTOMY] this term only
22	MeSH descriptor: [JEJUNOSTOMY] this term only
23	((enteral* or tube? or oral* or sip) near/3 (nutrition* or feed* or fed*)):ti,ab
24	((Nasogastric* or gastrointestinal*) near/3 (tube? or intubate* or nutrition* or feed* or fed*)):ti,ab
25	Gastrostom*.ti,ab
26	Jejunostom*.ti,ab
27	#19 or #20 or #21 or #22 or #23 or #24 or #25 or #26

#	Searches
28	MeSH descriptor: [ENERGY INTAKE] this term only
29	MeSH descriptor: [NUTRITIONAL STATUS] this term only
30	MeSH descriptor: [MALNUTRITION] this term only
31	((energy or volume? or kcal or kilocalorie? or nutrition*) near/3 (goal? or target*)):ti,ab
32	((optimi* or success*) near/3 (nutrition* or feed* or fed*)):ti,ab
33	((ml? or milliliter?) near/3 (kg? or kilogram?) near/3 (d or day)):ti,ab
34	(feed* near/3 (tolera* or intolera*)):ti,ab
35	(malnutrition or malnourish*):ti,ab
36	early nutrition*:ti,ab
37	nutrition* support*:ti,ab
38	#28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37
39	((Initiat* or Start* or Introduc* or Earl* or Advanc* or Achiev* or Establish* or Tolera* or Success* or Full*) near/3 (enteral* or tube? or oral* or sip) near/3 (nutrition* or feed* or fed*)):ti,ab
40	((Initiat* or Start* or Begin* or Introduc* or Earl* or Establish* or Predict* or Indicat* or Need*) near/5 (parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
41	((Initiat* or Start* or Begin* or Introduc* or Earl* or Establish* or Predict* or Indicat* or Need*) near/5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)):ti,ab
42	#40 or #41
43	((preterm* or pre-term* or prematur* or pre-matur* or premie or premies or (low near/3 birth near/3 weigh*) or (low near/3 birthweigh*) or LBW or VLBW or (small near/3 gestation* near/3 age?) or SGA or (grow* near/3 (restrict* or retard*)) or IUGR or (critical* near/3 ill*) or (necroti* near/3 enterocolit*) or NEC or (intestin* near/3 fail*) or short bowel? syndrome? or surgery or (surgical near/3 procedure?) or postoperati* or ((post or follow* or after) near/3 operati*) or ((digest* or gastrointestinal) near/3 (defect* or abnormal* or anomal*)) or (persistent near/3 (pulmonary hypertens* or fetal circulat*)) or PPHN or (hypoxi* near/3 ischemi* near/3 encephalopath*) or HIE or (meconium near/3 aspirat* or inhal*)) or sepsis or septic?emi* or ((septic or endotoxic or toxic) near/3 shock) or ((intensive or critical) near/3 care) or NICU?) near/5 (parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
44	ADEPT:ti,ab
45	SIFT:ti,ab
46	#44 or #45
47	#3 and #18 and #27 and #38
48	#3 and #18 and #39
49	#3 and #27 and #42
50	#3 and #27 and #43
51	#3 and #18 and #46
52	#47 or #48 or #49 or #50 or #51

## 1.2 For those neonates where parenteral nutrition is required, what is the optimal timeframe for doing this?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 parenteral\$).ti,ab.
16	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) and parenteral\$).ti.
17	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-

## EARLY SUBMISSION

### Search strategies

#	Searches
	PN)).ti,ab.
18	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj5 (nutrition\$ or feed\$ or fed\$)).ti,ab.
19	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) and (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) and (nutrition\$ or feed\$ or fed\$)).ti.
20	((24 h\$ or 24h\$) adj5 parenteral\$).ti,ab.
21	or/15-20
22	*PARENTERAL NUTRITION/
23	*PARENTERAL NUTRITION, TOTAL/
24	*PARENTERAL NUTRITION SOLUTIONS/
25	or/22-24
26	TIME FACTORS/
27	(Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$).ti.
28	14 and 21
29	14 and 25 and 26
30	14 and 25 and 27
31	or/28-30
32	limit 31 to english language
33	LETTER/
34	EDITORIAL/
35	NEWS/
36	exp HISTORICAL ARTICLE/
37	ANECDOTES AS TOPIC/
38	COMMENT/
39	CASE REPORT/
40	(letter or comment*).ti.
41	or/33-40
42	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
43	41 not 42
44	ANIMALS/ not HUMANS/
45	exp ANIMALS, LABORATORY/
46	exp ANIMAL EXPERIMENTATION/
47	exp MODELS, ANIMAL/
48	exp RODENTIA/
49	(rat or rats or mouse or mice).ti.
50	or/43-49
51	32 not 50

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 parenteral\$).ti,ab.
15	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) and parenteral\$).ti.
16	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-

#	Searches
	PN)).ti,ab.
17	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) adj5 (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj5 (nutrition\$ or feed\$ or fed\$)).ti,ab.
18	((Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$) and (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) and (nutrition\$ or feed\$ or fed\$)).ti.
19	((24 h\$ or 24h\$) adj5 parenteral\$).ti,ab.
20	or/14-19
21	*PARENTERAL NUTRITION/
22	*TOTAL PARENTERAL NUTRITION/
23	PERIPHERAL PARENTERAL NUTRITION/
24	PARENTERAL SOLUTIONS/
25	INTRAVENOUS FEEDING/
26	or/21-25
27	TIME FACTOR/
28	(Initiat\$ or Start\$ or Introduc\$ or begin\$ or commenc\$ or inaugurat\$ or launch\$ or instigat\$ or establish\$ or set\$ up or timing or early or earlier or prompt\$ or quick\$ or speed\$ or rapid\$ or fast or delay\$ or late? or wait\$ or slow\$ or postpon\$ or put\$ off or defer\$ or push\$ back or belated\$).ti.
29	13 and 20
30	13 and 26 and 27
31	13 and 26 and 28
32	or/29-31
33	limit 32 to english language
34	letter.pt. or LETTER/
35	note.pt.
36	editorial.pt.
37	CASE REPORT/ or CASE STUDY/
38	(letter or comment*).ti.
39	or/34-38
40	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
41	39 not 40
42	ANIMAL/ not HUMAN/
43	NONHUMAN/
44	exp ANIMAL EXPERIMENT/
45	exp EXPERIMENTAL ANIMAL/
46	ANIMAL MODEL/
47	exp RODENT/
48	(rat or rats or mouse or mice).ti.
49	or/41-48
50	33 not 49

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE/
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT/
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	((Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon* or put* off or defer* or push* back or belated*) near/5 parenteral*):ti,ab
16	((Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon*

#	Searches
	or put* off or defer* or push* back or belated*) near/10 parenteral*):ti
17	((Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon* or put* off or defer* or push* back or belated*) near/5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)):ti,ab
18	((Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon* or put* off or defer* or push* back or belated*) near/5 (intravenous* or intra-venous* or IV or venous* or infusion?) near/5 (nutrition* or feed* or fed*)):ti,ab
19	((Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon* or put* off or defer* or push* back or belated*) near/10 (intravenous* or intra-venous* or IV or venous* or infusion?) near/10 (nutrition* or feed* or fed*)):ti
20	((24 h* or 24h*) near/5 parenteral*):ti,ab
21	#15 or #16 or #17 or #18 or #19 or #20
22	MeSH descriptor: [PARENTERAL NUTRITION] this term only
23	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
24	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
25	#22 or #23 or #24
26	MeSH descriptor: [TIME FACTORS] this term only
27	(Initiat* or Start* or Introduc* or begin* or commenc* or inaugurat* or launch* or instigat* or establish* or set* up or timing or early or earlier or prompt* or quick* or speed* or rapid* or fast or delay* or late? or wait* or slow* or postpon* or put* off or defer* or push* back or belated*):ti
28	#14 and #21
29	#14 and #25 and #26
30	#14 and #25 and #27
31	#28 or #29 or #30

### 1.3 What are the most effective relative amounts of nitrogen and non-nitrogen energy (starting and target dose)?

### 1.4 What are the most effective relative amounts of carbohydrates and lipids (starting and target dose)?

[Note: One combined search conducted for questions 1.3 and 1.4]

Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
19	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
22	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.

EARLY SUBMISSION  
Search strategies

#	Searches
26	or/15-25
27	NITROGEN/ and ratio?.ti,ab.
28	(ratio? adj10 nitrogen).mp.
29	exp PROTEINS/ and ratio?.ti,ab.
30	(ratio? adj10 (protein? or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein? or lactalbumin or lactoglobulin? or lactoferrin)).mp.
31	exp AMINO ACIDS/ and ratio?.mp.
32	(ratio? adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
33	or/27-32
34	(nitrogen adj5 (nonnitrogen or non-nitrogen)).mp.
35	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 nitrogen).mp.
36	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (protein? or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein? or lactalbumin or lactoglobulin? or lactoferrin)).mp.
37	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
38	or/35-37
39	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (nonnitrogen or non-nitrogen)).mp.
40	NITROGEN/ad [Administration & Dosage]
41	exp PROTEINS/ad [Administration & Dosage]
42	exp AMINO ACIDS/ad [Administration & Dosage]
43	or/40-42
44	exp LIPIDS/ and ratio?.ti,ab.
45	exp PROSTAGLANDINS/ and ratio?.ti,ab.
46	44 not 45
47	((ratio? or amount?) adj10 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or

#	Searches
	Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysosphospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholesterol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
48	or/46-47
49	exp CARBOHYDRATES/ and ratio?.ti,ab.
50	exp HEPARIN/ and ratio?.ti,ab.
51	exp GLYCOPEPTIDES/ and ratio?.ti,ab.
52	exp AMINOGLYCOSIDES/ and ratio?.ti,ab.
53	or/50-52
54	49 not 53
55	((ratio? or amount?) adj10 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Attractylolide or Digtonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglucoside? or Novobiocin or Nucleoside? or Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxyribose or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralose or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartarate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
56	or/54-55
57	FAT EMULSIONS, INTRAVENOUS/ and ratio?.ti,ab.
58	(ratio? adj10 macronutrient?).mp.
59	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 macronutrient?).mp.
60	or/58-59
61	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$



#	Searches
	or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholesterol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
62	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
63	exp LIPIDS/ad [Administration & Dosage]
64	exp PROSTAGLANDINS/ad [Administration & Dosage]
65	63 not 64
66	exp CARBOHYDRATES/ad [Administration & Dosage]
67	exp HEPARIN/ad [Administration & Dosage]
68	exp GLYCOPEPTIDES/ad [Administration & Dosage]
69	exp AMINOGLYCOSIDES/ad [Administration & Dosage]
70	or/67-69

## EARLY SUBMISSION

### Search strategies

#	Searches
71	66 not 70
72	ENERGY INTAKE/ and ratio?.ti,ab.
73	ENERGY METABOLISM/ and ratio?.ti,ab.
74	(energy adj10 ratio?).ti,ab.
75	or/72-74
76	14 and 26 and 33
77	14 and 26 and 34
78	14 and 26 and 38 and (39 or 61 or 62)
79	14 and 26 and 43 and (65 or 71)
80	or/76-79
81	14 and 26 and 48
82	14 and 26 and 56
83	14 and 57
84	14 and 26 and 60
85	14 and 26 and 61 and 62
86	14 and 26 and 65 and 71
87	or/81-86
88	14 and 26 and 75
89	80 or 87 or 88
90	limit 89 to english language
91	LETTER/
92	EDITORIAL/
93	NEWS/
94	exp HISTORICAL ARTICLE/
95	ANECDOTES AS TOPIC/
96	COMMENT/
97	CASE REPORT/
98	(letter or comment*).ti.
99	or/91-98
100	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
101	99 not 100
102	ANIMALS/ not HUMANS/
103	exp ANIMALS, LABORATORY/
104	exp ANIMAL EXPERIMENTATION/
105	exp MODELS, ANIMAL/
106	exp RODENTIA/
107	(rat or rats or mouse or mice).ti.
108	or/101-107
109	90 not 108

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
22	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	or/14-24

EARLY SUBMISSION  
Search strategies

#	Searches
26	NITROGEN/ and ratio?.ti,ab.
27	(ratio? adj10 nitrogen).mp.
28	PROTEIN/ and ratio?.ti,ab.
29	(ratio? adj10 (protein? or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein? or lactalbumin or lactoglobulin? or lactoferrin)).mp.
30	exp AMINO ACIDS/ and ratio?.ti,ab.
31	(ratio? adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocystine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
32	or/26-31
33	(nitrogen adj5 (nonnitrogen or non-nitrogen)).mp.
34	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 nitrogen).mp.
35	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (protein? or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein? or lactalbumin or lactoglobulin? or lactoferrin)).mp.
36	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocystine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
37	or/34-36
38	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (nonnitrogen or non-nitrogen)).mp.
39	NITROGEN/do [Drug Dose]
40	PROTEIN/do [Drug Dose]
41	exp AMINO ACIDS/do [Drug Dose]
42	or/39-41
43	exp LIPID/ and ratio?.ti,ab.
44	exp PROSTAGLANDIN/ and ratio?.ti,ab.
45	43 not 44
46	((ratio? or amount?) adj10 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic

#	Searches
	Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
47	or/45-46
48	exp CARBOHYDRATE/ and ratio?.ti,ab.
49	exp HEPARIN/ and ratio?.ti,ab.
50	exp GLYCOPEPTIDE/ and ratio?.ti,ab.
51	exp AMINOGLYCOSIDE/ and ratio?.ti,ab.
52	or/49-51
53	48 not 52
54	((ratio? or amount?) adj10 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Aggrecan? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan? or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartarate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
55	or/53-54
56	MACRONUTRIENT/ and ratio?.ti,ab.
57	(ratio? adj10 macronutrient?).mp.
58	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 macronutrient?).mp.
59	or/56-58
60	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (Lipid? or intralipid? or Ceroid

#	Searches
	or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholesterol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrostachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
61	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj10 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Attractyliside or Digitonin or Acetyldigoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan? or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
62	exp LIPID/do [Drug Dose]
63	exp PROSTAGLANDIN/do [Drug Dose]
64	62 not 63
65	exp CARBOHYDRATE/do [Drug Dose]
66	exp HEPARIN/do [Drug Dose]
67	exp GLYCOPEPTIDE/do [Drug Dose]
68	exp AMINOGLYCOSIDE/do [Drug Dose]
69	or/66-68
70	65 not 69

#	Searches
71	CALORIC INTAKE/ and ratio?.ti,ab.
72	ENERGY METABOLISM/ and ratio?.ti,ab.
73	(energy adj10 ratio?).ti,ab.
74	or/71-73
75	13 and 25 and 32
76	13 and 25 and 33
77	13 and 25 and 37 and (38 or 60 or 61)
78	13 and 25 and 42 and (64 or 70)
79	or/75-78
80	13 and 25 and 47
81	13 and 25 and 55
82	13 and 25 and 59
83	13 and 25 and 60 and 61
84	13 and 25 and 64 and 70
85	or/80-84
86	13 and 25 and 74
87	79 or 85 or 86
88	limit 87 to english language
89	letter.pt. or LETTER/
90	note.pt.
91	editorial.pt.
92	CASE REPORT/ or CASE STUDY/
93	(letter or comment*).ti.
94	or/89-93
95	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
96	94 not 95
97	ANIMAL/ not HUMAN/
98	NONHUMAN/
99	exp ANIMAL EXPERIMENT/
100	exp EXPERIMENTAL ANIMAL/
101	ANIMAL MODEL/
102	exp RODENT/
103	(rat or rats or mouse or mice).ti.
104	or/96-103
105	88 not 104

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
#1	MeSH descriptor: [Infant, Newborn] this term only
#2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
#3	MeSH descriptor: [Premature Birth] this term only
#4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born)):ti,ab
#5	MeSH descriptor: [Infant, Premature] explode all trees
#6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
#7	(pre?mie? or premie or premies):ti,ab
#8	MeSH descriptor: [Infant, Low Birth Weight] explode all trees
#9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
#10	((LBW or VLBW) near/5 infan*):ti,ab
#11	MeSH descriptor: [Intensive Care, Neonatal] this term only
#12	MeSH descriptor: [Intensive Care Units, Neonatal] this term only
#13	NICU?:ti,ab
#14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
#15	MeSH descriptor: [Parenteral Nutrition] this term only
#16	MeSH descriptor: [Parenteral Nutrition, Total] this term only
#17	MeSH descriptor: [Parenteral Nutrition Solutions] this term only
#18	MeSH descriptor: [Administration, Intravenous] this term only
#19	MeSH descriptor: [Infusions, Intravenous] this term only
#20	MeSH descriptor: [Catheterization, Central Venous] this term only
#21	MeSH descriptor: [Catheterization, Peripheral] explode all trees
#22	#18 or #19 or #20 or #21
#23	(nutrition* or feed* or fed*):ti,ab
#24	#22 and #23
#25	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
#26	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)):ti,ab

#	Searches
#27	(catheter* near/3 (nutrition* or feed* or fed*)):ti,ab
#28	(drip? near/3 (nutrition* or feed* or fed*)):ti,ab
#29	#15 or #16 or #17 or #24 or #25 or #26 or #27 or #28
#30	MeSH descriptor: [Nitrogen] this term only
#31	MeSH descriptor: [Proteins] explode all trees
#32	MeSH descriptor: [Amino Acids] explode all trees
#33	#30 or #31 or #32
#34	ratio*:ti,ab
#35	#33 and #34
#36	(ratio* near/10 nitrogen):ti,ab
#37	(ratio* near/10 (protein* or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein* or lactalbumin or lactoglobulin* or lactoferrin)):ti,ab
#38	(ratio* near/10 ("amino acid*" or Alanine or "Pantothenic Acid" or Lysinoalanine or Mimosine or "Chloromethyl Ketone*" or "Aspartic Acid" or "Isoaspartic Acid" or "N-Methylaspartate" or "Potassium Magnesium Aspartate" or Glutamate* or "1-Carboxyglutamic Acid" or "Glutamic Acid" or "Sodium Glutamate" or Pemetrexed or "Polyglutamic Acid" or "Pyrrolidonecarboxylic Acid" or Arginine or "Argininosuccinic Acid" or "Benzoylarginine-2-Naphthylamide" or "Benzoylarginine Nitroanilide" or Homoarginine or Nitroarginine or "omega-N-Methylarginine" or "Tosylarginine Methyl Ester" or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or "Aminoisobutyric Acids" or Isoleucine or Leucine or Valine or "2-Amino-5-phosphonovalerate" or Valsartan or Dextrothroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or "N-Formylmethionine" or "p-Fluorophenylalanine" or Thyroxine or Thyronine* or Diiodothyronine* or Triiodothyronine or Tryptophan or "5-Hydroxytryptophan" or Tyrosine or Betalain* or Betacyanin* or Diiodotyrosine or Melanin* or Methyltyrosine* or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine* or "Imino Acid*" or "Azetidinecarboxylic Acid" or Proline or Captopril or Fosinopril or Hydroxyproline or "Technetium Tc 99m" or Isodesmosine or "NG-Nitroarginine Methyl Ester" or Citrulline or Cystathionine or Cystine or "Diaminopimelic Acid" or Homocystine or "2-Aminoacidic Acid" or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or "Cysteic Acid" or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or "S-Adenosylhomocysteine" or "S-Adenosylmethionine" or "Buthionine Sulfoximine" or Selenomethionine or "Vitamin U" or Penicillamine or "S-Nitroso-N-Acetylpenicillamine" or Thiorphan or Tiopronin or Aminobutyrate* or "gamma-Aminobutyric Acid" or Pregabalin or Vigabatrin or Aminocaproate* or "Aminocaproic Acid" or Norleucine or Diazooxonorleucine or "Aminolevulinic Acid" or Canavanine or Creatine or Phosphocreatine or Glycine* or Allylglycine or "Glycocholic Acid" or "Glycodeoxycholic Acid" or "Glycochenodeoxycholic Acid" or Sarcosine or Homoserine or Kynurenine or "Oxamic Acid" or "Phosphoamino Acid*" or "Quisqualic Acid")):ti,ab
#39	#35 or #36 or #37 #38
#40	(nitrogen near/5 (nonnitrogen or non-nitrogen)):ti,ab
#41	((Dose* or Dosage* or Regimen* or Amount* or Optimal* or Optimis* or Requir* or Target* or Rate* or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 nitrogen):ti,ab
#42	((Dose* or Dosage* or Regimen* or Amount* or Optimal* or Optimis* or Requir* or Target* or Rate* or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 (protein* or conalbumin or ovalbumin or avidin or ovomucin or phosvitin or whey or casein* or lactalbumin or lactoglobulin* or lactoferrin)):ti,ab
#43	((Dose* or Dosage* or Regimen* or Amount* or Optimal* or Optimis* or Requir* or Target* or Rate* or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 ("amino acid*" or Alanine or "Pantothenic Acid" or Lysinoalanine or Mimosine or "Chloromethyl Ketone*" or "Aspartic Acid" or "Isoaspartic Acid" or "N-Methylaspartate" or "Potassium Magnesium Aspartate" or Glutamate* or "1-Carboxyglutamic Acid" or "Glutamic Acid" or "Sodium Glutamate" or Pemetrexed or "Polyglutamic Acid" or "Pyrrolidonecarboxylic Acid" or Arginine or "Argininosuccinic Acid" or "Benzoylarginine-2-Naphthylamide" or "Benzoylarginine Nitroanilide" or Homoarginine or Nitroarginine or "omega-N-Methylarginine" or "Tosylarginine Methyl Ester" or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or "Aminoisobutyric Acids" or Isoleucine or Leucine or Valine or "2-Amino-5-phosphonovalerate" or Valsartan or Dextrothroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or "N-Formylmethionine" or "p-Fluorophenylalanine" or Thyroxine or Thyronine* or Diiodothyronine* or Triiodothyronine or Tryptophan or "5-Hydroxytryptophan" or Tyrosine or Betalain* or Betacyanin* or Diiodotyrosine or Melanin* or Methyltyrosine* or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine* or "Imino Acid*" or "Azetidinecarboxylic Acid" or Proline or Captopril or Fosinopril or Hydroxyproline or "Technetium Tc 99m" or Isodesmosine or "NG-Nitroarginine Methyl Ester" or Citrulline or Cystathionine or Cystine or "Diaminopimelic Acid" or Homocystine or "2-Aminoacidic Acid" or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or "Cysteic Acid" or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or "S-Adenosylhomocysteine" or "S-Adenosylmethionine" or "Buthionine Sulfoximine" or Selenomethionine or "Vitamin U" or Penicillamine or "S-Nitroso-N-Acetylpenicillamine" or Thiorphan or Tiopronin or Aminobutyrate* or "gamma-Aminobutyric Acid" or Pregabalin or Vigabatrin or Aminocaproate* or "Aminocaproic Acid" or Norleucine or Diazooxonorleucine or "Aminolevulinic Acid" or Canavanine or Creatine or Phosphocreatine or Glycine* or Allylglycine or "Glycocholic Acid" or "Glycodeoxycholic Acid" or "Glycochenodeoxycholic Acid" or Sarcosine or Homoserine or Kynurenine or "Oxamic Acid" or "Phosphoamino Acid*" or "Quisqualic Acid")):ti,ab
#44	#41 or #42 or #43
#45	((Dose* or Dosage* or Regimen* or Amount* or Optimal* or Optimis* or Requir* or Target* or Rate* or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 (nonnitrogen or non-nitrogen)):ti,ab
#46	MeSH descriptor: [Nitrogen] this term only and with qualifier(s): [administration & dosage - AD]
#47	MeSH descriptor: [Proteins] explode all trees and with qualifier(s): [administration & dosage - AD]
#48	MeSH descriptor: [Amino Acids] explode all trees and with qualifier(s): [administration & dosage - AD]
#49	#46 or #47 or #48

EARLY SUBMISSION  
Search strategies

#	Searches
#50	MeSH descriptor: [Lipids] explode all trees
#51	ratio?:ti,ab
#52	#50 and #51
#53	MeSH descriptor: [Prostaglandins] explode all trees
#54	ratio?:ti,ab
#55	#53 and #54
#56	#52 not #55
#57	((ratio? or amount?) near/10 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or "Fatty Acid?" or "Omega-3" or "Omega-6" or "Linolenic Acid?" or "Docosahexaenoic Acid?" or "Eicosapentaenoic Acid?" or "Ricinoic Acid?" or Triolein or Caprylate? or "Decanoic Acid?" or Decanoate? or "Eicosanoic Acid?" or Endocannabinoid? or Eicosanoid? or "Arachidonic Acid?" or "Hydroxyeicosatetraenoic Acid?" or "eicosatetraenoic Acid?" or Isoprostane? or Neuroprostane? or Leukotriene? or "SRS-A" or Thromboxane? or "Eicosatetraenoic Acid?" or "Eicosatrienoic Acid?" or Lipoxin? or "Linoleic Acid?" or Lubiprostone or Capsaicin or "Erucic Acid?" or "Oleic Acid?" or "Undecylenic Acid?" or Gefarnate or Ionomycin or Oxylipin? or "Sorbic Acid?" or "Heptanoic Acid?" or "Atorvastatin Calcium" or Heptanoate? or "Lauric Acid?" or Laurate? or Mupirocin or "Mycolic Acid?" or "Mycophenolic Acid?" or "Myristic Acid?" or Myristate? or "Palmitic Acid?" or Palmitate? or "Palmitoyl Coenzyme A" or "Prostanoic Acid?" or "Sodium Morrhuate" or "Stearic Acid?" or Stearate? or "Thioctic Acid?" or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or "Cord Factor?" or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or "Polyisoprenyl Phosphate Sugar?" or "Polyisoprenyl Phosphate Monosaccharide?" or "Polyisoprenyl Phosphate Oligosaccharide?" or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or "ATP Binding Cassette Transporter Sub-Family G Member 5" or "ATP Binding Cassette Transporter Sub-Family G Member 8" or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or "Phosphatidic Acid?" or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or "Phospholipid Ether?" or Plasmalogen? or "Platelet Activating Factor" or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or "Dihydroxyvitamin D3" or Azacosterol or Cholesterol or Dehydrocholesterol? or Desmosterol or "19-Iodocholesterol" or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or "25-Hydroxyvitamin D2" or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)):ti,ab
#58	#56 or #57
#59	MeSH descriptor: [Carbohydrates] explode all trees
#60	ratio?:ti,ab
#61	#59 and #60
#62	MeSH descriptor: [Heparin] explode all trees
#63	MeSH descriptor: [Glycopeptides] explode all trees
#64	MeSH descriptor: [Aminoglycosides] explode all trees
#65	#62 or #63 or #64
#66	ratio?:ti,ab
#67	#65 and #66
#68	#61 not #67
#69	((ratio? or amount?) near/10 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or "Muramic Acid?" or "Acetylmuramyl-Alanyl-Isoglutamine" or "Neuraminic Acid?" or "Sialic Acid?" or "N-Acetylneuraminic Acid" or "Deoxy Sugar?" or Deoxyglucose or "Fluorodeoxyglucose F18" or Deoxyribose or Fucose or Rhamnose or Sucrose or "High Fructose Corn Syrup" or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin? or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or "AC133 Antigen" or "ADAM* Protein?" or Fertilin? or "Cholesterol Ester Transfer Protein?" or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloster or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or "3-O-Methylglucose" or Thioglucoside? or Glucosinolate? or "Glycosylated Hemoglobin A" or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or "Adenosine Diphosphate" or "O-Acetyl-ADP-Ribose" or "Cyclic ADP-Ribose" or "Cytidine Diphosphate Diglyceride?" or "Guanosine Diphosphate" or "Uridine Diphosphate" or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or "Quillaja Saponin?" or Solanine? or "Teichoic Acid?" or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or "Imino Sugar?" or "Imino Furanose?" or "Imino Pyranose?" or "1-Deoxynojirimycin" or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or "Hypromellose Derivative?" or Methylcellulose or "Carboxymethylcellulose Sodium" or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or "Hydroxyethyl Starch Derivative?" or Trehalose or Glycosaminoglycan? or Chondroitin or "Dermatan Sulfate" or "Heparitin Sulfate" or "Hyaluronic Acid" or "Keratan Sulfate" or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or "Pentosan Sulfuric Polyester" or Bambermycin? or "Lipid A" or "O Antigen?" or Prebiotic? or Prodigiozan



#	Searches
	or Proteoglycan? or Aggrecan? or "CD44 Antigen?" or Versican? or "Heparan Sulfate Proteoglycan?" or "Small Leucine-Rich Proteoglycan?" or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or "Sugar Acid?" or "Ascorbic Acid" or "Dehydroascorbic Acid" or "Diketogulonic Acid" or "Glucaric Acid" or Gluconate? or "Glyceric Acid?" or "Diphosphoglyceric Acid?" or Diphosphoglycerate or Tartrate? or Tartrate? or "Uronic Acid?" or Glucuronate? or "Glucuronic Acid" or "Hexuronic Acid?" or "Iduronic Acid" or "Sugar Alcohol?" or Dithioerythritol or Dithiothreitol or Erythritol or "Erythrityl Tetranitrate" or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or "Phytic Acid" or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or "Sugar Phosphate?" or "Dihydroxyacetone Phosphate" or Glycerophosphate? or Glycerolphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or "Glucose-6-Phosphate" or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or "Phosphoribosyl Pyrophosphate" or Ribosemonophosphate? or Ribulosephosphate? or "Polyisoprenyl Phosphate" or "Dolichol Monophosphate Mannose"):ti,ab
#70	#68 or #69
#71	MeSH descriptor: [Fat Emulsions, Intravenous] this term only
#72	ratio?:ti,ab
#73	#71 and #72
#74	(ratio? near/10 macronutrient?):ti,ab
#75	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 macronutrient?):ti,ab
#76	#74 or #75
#77	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or "Fatty Acid?" or "Omega-3" or "Omega-6" or "Linolenic Acid?" or "Docosahexaenoic Acid?" or "Eicosapentaenoic Acid?" or "Ricinoleic Acid?" or Triolein or Caprylate? or "Decanoic Acid?" or Decanoate? or "Eicosanoic Acid?" or Endocannabinoid? or Eicosanoid? or "Arachidonic Acid?" or "Hydroxyeicosatetraenoic Acid?" or "eicosatetraenoic Acid?" or Isoprostane? or Neuroprostane? or Leukotriene? or "SRS-A" or Thromboxane? or "Eicosatetraenoic Acid?" or "Eicosatrienoic Acid?" or Lipoxin? or "Linoleic Acid?" or Lubiprostone or Capsaicin or "Erucic Acid?" or "Oleic Acid?" or "Undecylenic Acid?" or Gefarnate or Ionomycin or Oxylipin? or "Sorbic Acid?" or "Heptanoic Acid?" or "Atorvastatin Calcium" or Heptanoate? or "Lauric Acid?" or Laurate? or Mupirocin or "Mycolic Acid?" or "Mycophenolic Acid?" or "Myristic Acid?" or Myristate? or "Palmitic Acid?" or Palmitate? or "Palmitoyl Coenzyme A" or "Prostanoic Acid?" or "Sodium Morrhuate" or "Stearic Acid?" or Stearate? or "Thioctic Acid?" or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or "Cord Factor?" or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or "Polyisoprenyl Phosphate Sugar?" or "Polyisoprenyl Phosphate Monosaccharide?" or "Polyisoprenyl Phosphate Oligosaccharide?" or Lipofuscin or Lipopolysaccharide? or "O Antigen?" or Lipoprotein? or Apolipoprotein? or "ATP Binding Cassette Transporter Sub-Family G Member 5" or "ATP Binding Cassette Transporter Sub-Family G Member 8" or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or "Phosphatidic Acid?" or Glycerophospholipid? or Glycerolphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or "Phospholipid Ether?" or Plasmalogen? or "Platelet Activating Factor" or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or "Dihydroxyvitamin D3" or Azacosterol or Cholesterol or Dehydrocholesterol? or Desmosterol or "19-Iodocholesterol" or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or "25-Hydroxyvitamin D2" or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?):ti,ab
#78	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/10 (Carbohydrate? or "Amino Sugar?" or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or "Muramic Acid?" or "Acetylmuramyl-Alanyl-Isoglutamine" or "Neuraminic Acid?" or "Sialic Acid?" or "N-Acetylneuraminic Acid" or "Deoxy Sugar?" or Deoxyglucose or "Fluorodeoxyglucose F18" or Deoxyribose or Fucose or Rhamnose or Sucrose or "High Fructose Corn Syrup" or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or "AC133 Antigen" or "ADAM* Protein?" or Fertilin? or "Cholesterol Ester Transfer Protein?" or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyliside or Digitonin or Acetyldigoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or "3-O-Methylglucose" or Thioglucoside? or Glucosinolate? or "Glycosylated Hemoglobin A" or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or "Adenosine Diphosphate" or "O-Acetyl-ADP-Ribose" or "Cyclic ADP-Ribose" or "Cytidine Diphosphate Diglyceride?" or "Guanosine Diphosphate" or "Uridine Diphosphate" or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or "Quillaja Saponin?" or Solanine or "Teichoic Acid?" or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or "Imino Sugar?" or "Imino Furanose?" or "Imino Pyranose?" or "1-Deoxynojirimycin" or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellulose or Cellulose or "Hypromellose Derivative?" or Methylcellulose or "Carboxymethylcellulose Sodium" or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or "Hydroxyethyl Starch Derivative?" or Trehalose or Glycosaminoglycan? or

#	Searches
	Chondroitin or "Dermatan Sulfate" or "Heparitin Sulfate" or "Hyaluronic Acid" or "Keratan Sulfate" or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or "Pentosan Sulfuric Polyester" or Bambermycin? or "Lipid A" or "O Antigen?" or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or "CD44 Antigen?" or Versican? or "Heparan Sulfate Proteoglycan?" or "Small Leucine-Rich Proteoglycan?" or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or "Sugar Acid?" or "Ascorbic Acid" or "Dehydroascorbic Acid" or "Diketogulonic Acid" or "Glucaric Acid" or Gluconate? or "Glyceric Acid?" or "Diphosphoglyceric Acid?" or Diphosphoglycerate or Tartrate? or Tartronate? or "Uronic Acid?" or Glucuronate? or "Glucuronic Acid" or "Hexuronic Acid?" or "Iduronic Acid" or "Sugar Alcohol?" or Dithioerythritol or Dithiothreitol or Erythritol or "Erythrityl Tetranitrate" or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or "Phytic Acid" or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or "Sugar Phosphate?" or "Dihydroxyacetone Phosphate" or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or "Glucose-6-Phosphate" or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or "Phosphoribosyl Pyrophosphate" or Ribosemonophosphate? or Ribulosephosphate? or "Polyisoprenyl Phosphate" or "Dolichol Monophosphate Mannose"):ti,ab
#79	MeSH descriptor: [Lipids] explode all trees and with qualifier(s): [administration & dosage - AD]
#80	MeSH descriptor: [Prostaglandins] explode all trees and with qualifier(s): [administration & dosage - AD]
#81	#79 not #80
#82	MeSH descriptor: [Carbohydrates] explode all trees and with qualifier(s): [administration & dosage - AD]
#83	MeSH descriptor: [Heparin] explode all trees and with qualifier(s): [administration & dosage - AD]
#84	MeSH descriptor: [Glycopeptides] explode all trees and with qualifier(s): [administration & dosage - AD]
#85	MeSH descriptor: [Aminoglycosides] explode all trees and with qualifier(s): [administration & dosage - AD]
#86	#83 or #84 or #85
#87	#82 not #86
#88	MeSH descriptor: [Energy Intake] this term only
#89	MeSH descriptor: [Energy Metabolism] this term only
#90	#88 or #89
#91	ratio?:ti,ab
#92	#90 and #91
#93	(energy near/10 ratio?):ti,ab
#94	#92 or #93
#95	#14 and #29 and #39
#96	#14 and #29 and #40
#97	#14 and #29 and #44 and (#45 or #77 or #78)
#98	#14 and #29 and #49 and (#81 or #87)
#99	#95 or #96 or #97 or #98
#100	#14 and #29 and #58
#101	#14 and #29 and #70
#102	#14 and #73
#103	#14 and #29 and #76
#104	#14 and #29 and #77 and #78
#105	#14 and #29 and #81 and #87
#106	#100 or #101 or #102 or #103 or #104 or #105
#107	#14 and #29 and #94
#108	#99 or #106 or #107

## 2.1 How many kcal/kg/day should be given to preterm and term babies receiving parenteral nutrition?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13

EARLY SUBMISSION  
Search strategies

#	Searches
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/
19	INFUSIONS, INTRAVENOUS/
20	CATHETERIZATION, CENTRAL VENOUS/
21	exp CATHETERIZATION, PERIPHERAL/
22	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
23	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
24	drip?.ti,ab.
25	or/15-24
26	ENERGY INTAKE/
27	(energy adj5 (need\$ or requir\$ or receiv\$ or intake? or amount? or optimal\$ or optimis\$ or target? or goal? or suffic\$)).ti,ab.
28	((kcal? or kilocalorie? or calor\$) adj5 (need\$ or requir\$ or receiv\$ or intake? or amount? or optimal\$ or optimis\$ or target? or goal? or suffic\$)).ti,ab.
29	((kcal? or kilocalorie?) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
30	or/26-29
31	ENERGY METABOLISM/
32	(energy adj3 (metabolism or expend\$)).ti,ab.
33	or/31-32
34	14 and 25 and 30
35	14 and 25 and 33
36	or/34-35
37	limit 36 to english language
38	LETTER/
39	EDITORIAL/
40	NEWS/
41	exp HISTORICAL ARTICLE/
42	ANECDOTES AS TOPIC/
43	COMMENT/
44	CASE REPORT/
45	(letter or comment*).ti.
46	or/38-45
47	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
48	46 not 47
49	ANIMALS/ not HUMANS/
50	exp ANIMALS, LABORATORY/
51	exp ANIMAL EXPERIMENTATION/
52	exp MODELS, ANIMAL/
53	exp RODENTIA/
54	(rat or rats or mouse or mice).ti.
55	or/48-54
56	37 not 55

**Databases: Embase; and Embase Classic**

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/
20	exp INTRAVENOUS CATHETER/

#	Searches
21	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
22	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
23	drip?.ti,ab.
24	or/14-23
25	CALORIC INTAKE/
26	(energy adj5 (need\$ or requir\$ or receiv\$ or intake? or amount? or optimal\$ or optimis\$ or target? or goal? or suffic\$)).ti,ab.
27	((kcal? or kilocalorie? or calori\$) adj5 (need\$ or requir\$ or receiv\$ or intake? or amount? or optimal\$ or optimis\$ or target? or goal? or suffic\$)).ti,ab.
28	((kcal? or kilocalorie?) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
29	or/25-28
30	ENERGY METABOLISM/
31	(energy adj3 (metabolism or expend\$)).ti,ab.
32	or/30-31
33	13 and 24 and 29
34	13 and 24 and 32
35	or/33-34
36	limit 35 to english language
37	letter.pt. or LETTER/
38	note.pt.
39	editorial.pt.
40	CASE REPORT/ or CASE STUDY/
41	(letter or comment*).ti.
42	or/37-41
43	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
44	42 not 43
45	ANIMAL/ not HUMAN/
46	NONHUMAN/
47	exp ANIMAL EXPERIMENT/
48	exp EXPERIMENTAL ANIMAL/
49	ANIMAL MODEL/
50	exp RODENT/
51	(rat or rats or mouse or mice).ti.
52	or/44-51
53	36 not 52

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	MeSH descriptor: [ENERGY INTAKE] this term only

#	Searches
27	(energy near/5 (need* or requir* or receiv* or intake? or amount? or optimal* or optimis* or target? or goal? or suffic*)):ti,ab
28	((kcal? or kilocalorie? or calori*) near/5 (need* or requir* or receiv* or intake? or amount? or optimal* or optimis* or target? or goal? or suffic*)):ti,ab
29	((kcal? or kilocalorie?) and (kg? or kilogram?) and (d or day)):ti,ab
30	#26 or #27 or 28 or #29
31	MeSH descriptor: [ENERGY METABOLISM] this term only
32	(energy near/3 (metabolism or expend*)):ti,ab
33	#31 or #32
34	#14 and #25 and #30
35	#14 and #25 and #33
36	#34 or #35

**3.1 What is the optimal target dosage for amino acids in preterm and term babies who are receiving parenteral nutrition and neonatal care?**

**3.2 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for amino acids?**

**3.3 What is the optimal target dosage for carbohydrates in preterm and term babies who are receiving parenteral nutrition and neonatal care?**

**3.4 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for carbohydrates?**

**3.5 What is the optimal target dosage for lipids in preterm and term babies who are receiving parenteral nutrition and neonatal care?**

**3.6 What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for lipids?**

[Note: One combined search was conducted for questions 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6]

**Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations**

**Date of last search: 30/04/2019**

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/

EARLY SUBMISSION  
Search strategies

#	Searches
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/
19	INFUSIONS, INTRAVENOUS/
20	CATHETERIZATION, CENTRAL VENOUS/
21	exp CATHETERIZATION, PERIPHERAL/
22	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
23	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
24	drip?.ti,ab.
25	or/15-24
26	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl-dopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
27	(g adj3 kg adj3 (d or day) adj5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl-dopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
28	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraynoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic

#	Searches
	<p>Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmaterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.</p>
29	<p>(g adj3 kg adj3 (d or day) adj5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmaterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.</p>
30	<p>((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or</p>

#	Searches
	Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
31	(g adj3 kg adj3 (d or day) adj5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluoro-deoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitorin or Acetyldigitorin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? or Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
32	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 macronutrient?).mp.
33	exp AMINO ACIDS/ad [Administration & Dosage]
34	exp LIPIDS/ad [Administration & Dosage]
35	exp PROSTAGLANDINS/ad [Administration & Dosage]
36	34 not 35
37	exp CARBOHYDRATES/ad [Administration & Dosage]
38	exp HEPARIN/ad [Administration & Dosage]
39	exp GLYCOPEPTIDES/ad [Administration & Dosage]
40	exp AMINOGLYCOSIDES/ad [Administration & Dosage]
41	or/38-40
42	37 not 41
43	FAT EMULSIONS, INTRAVENOUS/
44	26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 36 or 42
45	14 and 25 and 44
46	14 and 43
47	45 or 46
48	limit 47 to english language
49	LETTER/
50	EDITORIAL/
51	NEWS/
52	exp HISTORICAL ARTICLE/
53	ANECDOTES AS TOPIC/
54	COMMENT/



#	Searches
55	CASE REPORT/
56	(letter or comment*).ti.
57	or/49-56
58	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
59	57 not 58
60	ANIMALS/ not HUMANS/
61	exp ANIMALS, LABORATORY/
62	exp ANIMAL EXPERIMENTATION/
63	exp MODELS, ANIMAL/
64	exp RODENTIA/
65	(rat or rats or mouse or mice).ti.
66	or/59-65
67	48 not 66

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/
20	exp INTRAVENOUS CATHETER/
21	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
22	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
23	drip?.ti,ab.
24	or/14-23
25	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl dopa or Levodopa or Methyl dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid).mp.
26	(g adj3 kg adj3 (d or day) adj5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl

#	Searches
	Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl-dopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazo-o-norleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
27	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmaterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
28	(g adj3 kg adj3 (d or day) adj5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmaterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)).mp.
29	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or

#	Searches
	Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
30	(g adj3 kg adj3 (d or day) adj5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluoro-deoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM\$ Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)).mp.
31	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$

## EARLY SUBMISSION

### Search strategies

#	Searches
	or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 macronutrient?).mp.
32	exp AMINO ACIDS/do [Drug Dose]
33	exp LIPID/do [Drug Dose]
34	exp PROSTAGLANDIN/do [Drug Dose]
35	33 not 34
36	exp CARBOHYDRATE/do [Drug Dose]
37	exp HEPARIN/do [Drug Dose]
38	exp GLYCOPEPTIDE/do [Drug Dose]
39	exp AMINOGLYCOSIDE/do [Drug Dose]
40	or/37-39
41	36 not 40
42	exp AMINO ACIDS/
43	exp LIPID/
44	exp PROSTAGLANDIN/
45	43 not 44
46	exp CARBOHYDRATE/
47	exp HEPARIN/
48	exp GLYCOPEPTIDE/
49	exp AMINOGLYCOSIDE/
50	or/47-49
51	46 not 50
52	OPTIMAL DRUG DOSE/
53	RECOMMENDED DRUG DOSE/
54	DRUG DOSE REGIMEN/
55	DOSE CALCULATION/
56	DRUG DOSE COMPARISON/
57	DRUG DOSE ESCALATION/
58	DRUG DOSE INCREASE/
59	DRUG DOSE INTENSIFICATION/
60	25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 35 or 41
61	42 or 45 or 51
62	52 or 53 or 54 or 55 or 56 or 57 or 58 or 59
63	13 and 24 and 60
64	13 and 24 and 61 and 62
65	or/63-64
66	limit 65 to english language
67	letter.pt. or LETTER/
68	note.pt.
69	editorial.pt.
70	CASE REPORT/ or CASE STUDY/
71	(letter or comment*).ti.
72	or/67-71
73	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
74	72 not 73
75	ANIMAL/ not HUMAN/
76	NONHUMAN/
77	exp ANIMAL EXPERIMENT/
78	exp EXPERIMENTAL ANIMAL/
79	ANIMAL MODEL/
80	exp RODENT/
81	(rat or rats or mouse or mice).ti.
82	or/74-81
83	66 not 82

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees

EARLY SUBMISSION  
Search strategies

#	Searches
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion*):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl dopa or Levodopa or Methyl dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)):ti,ab
27	(g adj3 kg adj3 (d or day) near/5 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl dopa or Levodopa or Methyl dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)):ti,ab
28	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride?

#	Searches
	or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sphingolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)) :ti,ab
29	(g adj3 kg adj3 (d or day) near/5 (Lipid? or intralipid? or Ceroid or Fat? or Cholesterol? or Oil? or Fatty Acid? or Omega-3 or Omega-6 or Linolenic Acid? or Docosahexaenoic Acid? or Eicosapentaenoic Acid? or Ricinoleic Acid? or Triolein or Caprylate? or Decanoic Acid? or Decanoate? or Eicosanoic Acid? or Endocannabinoid? or Eicosanoid? or Arachidonic Acid? or Hydroxyeicosatetraenoic Acid? or eicosatetraenoic Acid? or Isoprostane? or Neuroprostane? or Leukotriene? or SRS-A or Thromboxane? or Eicosatetraenoic Acid? or Eicosatrienoic Acid? or Lipoxin? or Linoleic Acid? or Lubiprostone or Capsaicin or Erucic Acid? or Oleic Acid? or Undecylenic Acid? or Gefarnate or Ionomycin or Oxylipin? or Sorbic Acid? or Heptanoic Acid? or Atorvastatin Calcium or Heptanoate? or Lauric Acid? or Laurate? or Mupirocin or Mycolic Acid? or Mycophenolic Acid? or Myristic Acid? or Myristate? or Palmitic Acid? or Palmitate? or Palmitoyl Coenzyme A or Prostanic Acid? or Sodium Morrhuate or Stearic Acid? or Stearate? or Thioctic Acid? or Glyceride? or Diglyceride? or Monoglyceride? or Triglyceride? or Triacetin or Glycolipid? or Cord Factor? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Polyisoprenyl Phosphate Sugar? or Polyisoprenyl Phosphate Monosaccharide? or Polyisoprenyl Phosphate Oligosaccharide? or Lipofuscin or Lipopolysaccharide? or O Antigen? or Lipoprotein? or Apolipoprotein? or ATP Binding Cassette Transporter Sub-Family G Member 5 or ATP Binding Cassette Transporter Sub-Family G Member 8 or Chylomicron? or Apoprotein or Phospholipid? or Glycerophosphate? or Phosphatidic Acid? or Glycerophospholipid? or Glycerylphosphorylcholine or Phosphatidylcholine? or Dimyristoylphosphatidylcholine or Dipalmitoylphosphatidylcholine or Lecithin? or Phosphatidylethanolamine? or Phosphatidylglycerol? or Cardiolipin? or Phosphatidylinositol? or Phosphatidylserine? or Phospholipid Ether? or Plasmalogen? or Platelet Activating Factor or Lysophospholipid? or Lysophosphatidylcholine? or Sphingomyelin? or Proteolipid? or Sterol? or Adosterol or Cholecalciferol or Hydroxycholecalciferol? or Calcifediol or Dihydroxycholecalciferol? or Calcitriol or Dihydroxyvitamin D3 or Azacosterol or Cholestanol or Dehydrocholesterol? or Desmosterol or 19-Iodocholesterol or Oxysterol? or Hydroxycholesterol? or Ketocholesterol? or Ergocalciferol? or 25-Hydroxyvitamin D2 or Dihydrotachysterol or Lanosterol or Phytosterol? or Brassinosteroid? or Ecdysteroid? or Sitosterol? or Stigmasterol or Withanolide? or Solanine or Polyhydroxyalkanoate?)) :ti,ab
30	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM* Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Attractylside or Digitonin or Acetyldigoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic

#	Searches
	Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)) :ti,ab
31	(g adj3 kg adj3 (d or day) near/5 (Carbohydrate? or Amino Sugar? or Hexosamine? or Fructosamine or Galactosamine or Acetylgalactosamine or Glucosamine or Acetylglucosamine or Muramic Acid? or Acetylmuramyl-Alanyl-Isoglutamine or Neuraminic Acid? or Sialic Acid? or N-Acetylneuraminic Acid or Deoxy Sugar? or Deoxyglucose or Fluorodeoxyglucose F18 or Deoxyribose or Fucose or Rhamnose or Sucrose or High Fructose Corn Syrup or Glycoconjugate? or Glycolipid? or Galactolipid? or Glycosphingolipid? or Ganglioside? or Sulfoglycosphingolipid? or Ceramide? or Cerebroside? or Galactosylceramide? or Glucosylceramide? or Globoside? or Lactosylceramide? or Trihexosylceramide? or Sphingomyelin? or Psychosine or Glycosylphosphatidylinositol? or Glycopeptide? or Peplomycin or Phleomycin? or Peptidoglycan or Ristocetin or Glycoprotein? or AC133 Antigen or ADAM* Protein? or Fertilin? or Cholesterol Ester Transfer Protein? or Fibrillin? or Lipopolysaccharide? or Glycoside? or Anthocyanin? or Atractyloside or Digitonin or Acetyldigitoxin? or Acetyldigoxin? or Medigoxin or Lanatoside? or Deslanoside or Proscillaridin or Strophanthin? or Cymarine or Ouabain or Chromomycin? or Galactoside? or Methylgalactoside? or Nitrophenylgalactoside? or Thiogalactoside? or Glucoside? or Amygdalin or Arbutin or Canagliflozin or Chloralose or Esculin or Methylglucoside? or 3-O-Methylglucose or Thioglucoside? or Glucosinolate? or Glycosylated Hemoglobin A or Lincosamide? or Mannoside? or Methylmannoside? or Methylglycoside? or Novobiocin or Nucleoside? Nucleotide? or Adenosine Diphosphate or O-Acetyl-ADP-Ribose or Cyclic ADP-Ribose or Cytidine Diphosphate Diglyceride? or Guanosine Diphosphate or Uridine Diphosphate or Olivomycin? or Phlorhizin or Saponin? or Escin or Ginsenoside? or Holothurin or Quillaja Saponin? or Solanine or Teichoic Acid? or Thioglycoside? or Tomatine or Monosaccharide? or Carbasugar? or Heptose? or Mannoheptulose or Hexose? or Fructose or Galactose or Glucose or Mannose or Sorbose or Imino Sugar? or Imino Furanose? or Imino Pyranose? or 1-Deoxynojirimycin or Ketose? or Dihydroxyacetone or Xylulose or Pentose? or Arabinose or Ribose or Xylose or Tetrose? or Thiosugar? or Triose? or Glyceraldehyde or Polysaccharide? or Alginate? or Carrageenan or Chitin or Chitosan or Ficoll or Fructan? or Inulin or Galactan? or Agar or Glucan? or Lentinan or Sizofiran or Zymosan or Cellulose or Cellobiose or Hypromellose Derivative? or Methylcellulose or Carboxymethylcellulose Sodium or Dextran? or Glycogen or Isomaltose or Maltose or Starch or Amylopectin or Amylose or Dextrin? or Cyclodextrin? or Hydroxyethyl Starch Derivative? or Trehalose or Glycosaminoglycan? or Chondroitin or Dermatan Sulfate or Heparitin Sulfate or Hyaluronic Acid or Keratan Sulfate or Mannan? or Oligosaccharide? or Disaccharide? or Lactose or Lactulose or Melibiose or Sucralfate or Oligosaccharide? or Trisaccharide? or Acarbose or Raffinose or Pectin? or Pentosan Sulfuric Polyester or Bambermycin? or Lipid A or O Antigen? or Prebiotic? or Prodigiozan or Proteoglycan? or Aggrecan? or CD44 Antigen? or Versican? or Heparan Sulfate Proteoglycan? or Small Leucine-Rich Proteoglycan? or Biglycan or Decorin or Fibromodulin or Lumican or Sepharose or Xylan? or Sugar Acid? or Ascorbic Acid or Dehydroascorbic Acid or Diketogulonic Acid or Glucaric Acid or Gluconate? or Glyceric Acid? or Diphosphoglyceric Acid? or Diphosphoglycerate or Tartrate? or Tartronate? or Uronic Acid? or Glucuronate? or Glucuronic Acid or Hexuronic Acid? or Iduronic Acid or Sugar Alcohol? or Dithioerythritol or Dithiothreitol or Erythritol or Erythrityl Tetranitrate or Galactitol or Dianhydrogalactitol or Mitolactol or Glycerol or Inositol or Phytic Acid or Mitobronitol or Ribitol or Sorbitol or Isosorbide or Xylitol or Sugar Phosphate? or Dihydroxyacetone Phosphate or Glycerophosphate? or Glycerylphosphorylcholine or Hexosephosphate? or Fructosephosphate? or Fructosediphosphate? or Galactosephosphate? or Glucosephosphate? or Glucose-6-Phosphate or Hexosediphosphate? or Mannosephosphate? or Pentosephosphate? or Phosphoribosyl Pyrophosphate or Ribosemonophosphate? or Ribulosephosphate? or Polyisoprenyl Phosphate or Dolichol Monophosphate Mannose)) :ti,ab
32	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 macronutrient?) :ti,ab
33	MeSH descriptor: [AMINO ACIDS] explode all trees and with qualifier(s): [Administration & dosage - AD]
34	MeSH descriptor: [LIPIDS] explode all trees and with qualifier(s): [Administration & dosage - AD]
35	MeSH descriptor: [PROSTAGLANDINS] explode all trees and with qualifier(s): [Administration & dosage - AD]
36	#34 not #35
37	MeSH descriptor: [CARBOHYDRATES] explode all trees and with qualifier(s): [Administration & dosage - AD]
38	MeSH descriptor: [HEPARIN] explode all trees and with qualifier(s): [Administration & dosage - AD]
39	MeSH descriptor: [GLYCOPEPTIDES] explode all trees and with qualifier(s): [Administration & dosage - AD]
40	MeSH descriptor: [AMINOGLYCOSIDES] explode all trees and with qualifier(s): [Administration & dosage - AD]
41	#38 or #39 or #40
42	#37 not #41
43	MeSH descriptor: [FAT EMULSIONS, INTRAVENOUS] this term only
44	#26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #36 or #42
45	#14 and #25 and #44
46	#14 and #43
47	#45 or #46

### 3.7 What is the clinical effectiveness, efficacy, and safety of lipid formulations from different sources (for example, soya, fish oil, or mixed sources)?

[Note: A search was not conducted for 3.7 as the evidence from relevant Cochrane Reviews were used for this question – see relevant evidence review for further details]

### 3.8 What are the optimal target dosages for calcium and phosphate in preterm and term babies who are receiving parenteral nutrition and neonatal care?

### 3.9 What is the optimal ratio of phosphate to amino acid in preterm and term babies who are receiving parenteral nutrition and neonatal care?

[Note: One combined search conducted for questions 3.8 and 3.9]

#### Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/
19	INFUSIONS, INTRAVENOUS/
20	CATHETERIZATION, CENTRAL VENOUS/
21	exp CATHETERIZATION, PERIPHERAL/
22	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
23	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
24	drip?.ti,ab.
25	or/15-24
26	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 calcium).mp.
27	((mmol? or ml) adj3 (d or day) adj5 calcium).mp.
28	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
29	((mmol? or ml) adj3 (d or day) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
30	CALCIUM/ad [Administration & Dosage]
31	CALCIUM, DIETARY/ad [Administration & Dosage]
32	exp PHOSPHATES/ad [Administration & Dosage]
33	PHOSPHORUS/ad [Administration & Dosage]



EARLY SUBMISSION  
Search strategies

#	Searches
34	PHOSPHORUS, DIETARY/ad [Administration & Dosage]
35	or/26-34
36	exp AMINO ACIDS/ and ratio?.ti,ab.
37	(ratio? adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
38	exp PHOSPHATES/ and ratio?.ti,ab.
39	PHOSPHORUS/ and ratio?.ti,ab.
40	PHOSPHORUS, DIETARY/ and ratio?.ti,ab.
41	(ratio? adj10 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
42	(percent\$ adj10 (Phosph\$ or amino acid?)).mp.
43	(percent\$ adj5 feed\$).ti,ab.
44	or/36-43
45	exp AMINO ACIDS/ and (exp PHOSPHATES/ or PHOSPHORUS/ or PHOSPHORUS, DIETARY/)
46	((amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
47	or/45-46
48	14 and 25 and 35
49	14 and 25 and 44
50	14 and 25 and 47
51	or/48-50
52	limit 51 to english language
53	LETTER/
54	EDITORIAL/
55	NEWS/
56	exp HISTORICAL ARTICLE/
57	ANECDOTES AS TOPIC/
58	COMMENT/
59	CASE REPORT/
60	(letter or comment*).ti.
61	or/53-60
62	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.

#	Searches
63	61 not 62
64	ANIMALS/ not HUMANS/
65	exp ANIMALS, LABORATORY/
66	exp ANIMAL EXPERIMENTATION/
67	exp MODELS, ANIMAL/
68	exp RODENTIA/
69	(rat or rats or mouse or mice).ti.
70	or/63-69
71	52 not 70

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/
20	exp INTRAVENOUS CATHETER/
21	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
22	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
23	drip?.ti,ab.
24	or/14-23
25	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 calcium).mp.
26	((mmol? or ml) adj3 (d or day) adj5 calcium).mp.
27	((Dose? or Dosage? or Regimen? or Amount? or Optimal\$ or Optimis\$ or Requir\$ or Target? or Rate? or Increment\$ or Safe\$ or Efficacy or Initiat\$ or Start\$ or Introduc\$ or Receiv\$ or Administer\$) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
28	((mmol? or ml) adj3 (d or day) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
29	CALCIUM/ad, do [Drug Administration, Drug Dose]
30	CALCIUM INTAKE/
31	PHOSPHATE/ad, do [Drug Administration, Drug Dose]
32	PHOSPHORUS/ad, do [Drug Administration, Drug Dose]
33	PHOSPHATE INTAKE/
34	or/25-33
35	exp *AMINO ACIDS/ and ratio?.ti,ab.
36	(ratio? adj10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-

#	Searches
	Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazo oxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)).mp.
37	PHOSPHATE/ and ratio?.ti,ab.
38	PHOSPHORUS/ and ratio?.ti,ab.
39	PHOSPHATE INTAKE/ and ratio?.ti,ab.
40	(ratio? adj10 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
41	(percent\$ adj10 (Phosph\$ or amino acid?)).mp.
42	(percent\$ adj5 feed\$).ti,ab.
43	or/35-42
44	exp AMINO ACIDS/ and (PHOSPHATE/ or PHOSPHORUS/ or PHOSPHATE INTAKE/)
45	((amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methyl dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Aminoadipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazo oxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid) adj5 (Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)).mp.
46	or/44-45
47	13 and 24 and 34
48	13 and 24 and 43
49	13 and 24 and 46
50	or/47-49
51	limit 50 to english language
52	letter.pt. or LETTER/
53	note.pt.
54	editorial.pt.
55	CASE REPORT/ or CASE STUDY/
56	(letter or comment*).ti.
57	or/52-56
58	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
59	57 not 58
60	ANIMAL/ not HUMAN/
61	NONHUMAN/
62	exp ANIMAL EXPERIMENT/
63	exp EXPERIMENTAL ANIMAL/
64	ANIMAL MODEL/
65	exp RODENT/
66	(rat or rats or mouse or mice).ti.
67	or/59-66
68	51 not 67

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only

EARLY SUBMISSION  
Search strategies

#	Searches
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 calcium):ti,ab
27	((mmol? or ml) near/3 (d or day) near/5 calcium):ti,ab
28	((Dose? or Dosage? or Regimen? or Amount? or Optimal* or Optimis* or Requir* or Target? or Rate? or Increment* or Safe* or Efficacy or Initiat* or Start* or Introduc* or Receiv* or Administer*) near/5 (Phosph* or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)):ti,ab
29	((mmol? or ml) near/3 (d or day) near/5 (Phosph* or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite)):ti,ab
30	MeSH descriptor: [CALCIUM] this term only and with qualifier(s): [Administration & dosage - AD]
31	MeSH descriptor: [CALCIUM, DIETARY] this term only and with qualifier(s): [Administration & dosage - AD]
32	MeSH descriptor: [PHOSPHATES] explode all trees and with qualifier(s): [Administration & dosage - AD]
33	MeSH descriptor: [PHOSPHORUS] this term only and with qualifier(s): [Administration & dosage - AD]
34	MeSH descriptor: [PHOSPHORUS, DIETARY] this term only and with qualifier(s): [Administration & dosage - AD]
35	#26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34
36	MeSH descriptor: [AMINO ACIDS] explode all trees
37	ratio?:ti,ab
38	#36 and #37
39	(ratio? near/10 (amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyl-dopa or Levodopa or Methyl-dopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazooxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid)):ti,ab
40	MeSH descriptor: [PHOSPHATES] explode all trees
41	MeSH descriptor: [PHOSPHORUS] this term only
42	MeSH descriptor: [PHOSPHORUS, DIETARY] this term only
43	#40 or #41 or #42
44	ratio?:ti,ab
45	#43 and #44
46	(ratio? near/10 (Phosph* or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate?

#	Searches
	or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite):ti,ab
47	(percent* near/10 (Phosph* or amino acid?):ti,ab
48	(percent* near/5 feed*):ti,ab
49	#38 or #39 or #45 or #46 or #47 or #48
50	MeSH descriptor: [AMINO ACIDS] explode all trees
51	MeSH descriptor: [PHOSPHATES] explode all trees
52	MeSH descriptor: [PHOSPHORUS] this term only
53	MeSH descriptor: [PHOSPHORUS, DIETARY] this term only
54	#51 or #52 or #53
55	#50 and #54
56	((amino acid? or Alanine or Pantothenic Acid or Lysinoalanine or Mimosine or Chloromethyl Ketone? or Aspartic Acid or Isoaspartic Acid or N-Methylaspartate or Potassium Magnesium Aspartate or Glutamate? or 1-Carboxyglutamic Acid or Glutamic Acid or Sodium Glutamate or Pemetrexed or Polyglutamic Acid or Pyrrolidonecarboxylic Acid or Arginine or Argininosuccinic Acid or Benzoylarginine-2-Naphthylamide or Benzoylarginine Nitroanilide or Homoarginine or Nitroarginine or omega-N-Methylarginine or Tosylarginine Methyl Ester or Asparagine or Glutamine or Proglumide or Lysine or Hydroxylysine or Polylysine or Ornithine or Eflornithine or Aminoisobutyric Acids or Isoleucine or Leucine or Valine or 2-Amino-5-phosphonovalerate or Valsartan or Dextrothyroxine or Phenylalanine or Dihydroxyphenylalanine or Cysteinyldopa or Levodopa or Methylidopa or Fenclonine or N-Formylmethionine or p-Fluorophenylalanine or Thyroxine or Thyronine? or Diiodothyronine? or Triiodothyronine or Tryptophan or 5-Hydroxytryptophan or Tyrosine or Betalain? or Betacyanin? or Diiodotyrosine or Melanin? or Methyltyrosine? or Monoiodotyrosine or Phosphotyrosine or Cycloleucine or Desmosine or Histidine or Ergothioneine or Methylhistidine? or Imino Acid? or Azetidinecarboxylic Acid or Proline or Captopril or Fosinopril or Hydroxyproline or Technetium Tc 99m or Isodesmosine or NG-Nitroarginine Methyl Ester or Citrulline or Cystathionine or Cystine or Diaminopimelic Acid or Homocystine or 2-Amino adipic Acid or Carbocysteine or Methionine or Racemethionine or Threonine or Phosphothreonine or Cysteine or Serine or Azaserine or Droxidopa or Enterobactin or Phosphoserine or Cysteic Acid or Acetylcysteine or Selenocysteine or Ethionine or Homocysteine or S-Adenosylhomocysteine or S-Adenosylmethionine or Buthionine Sulfoximine or Selenomethionine or Vitamin U or Penicillamine or S-Nitroso-N-Acetylpenicillamine or Thiorphan or Tiopronin or Aminobutyrate? or gamma-Aminobutyric Acid or Pregabalin or Vigabatrin or Aminocaproate? or Aminocaproic Acid or Norleucine or Diazo oxonorleucine or Aminolevulinic Acid or Canavanine or Creatine or Phosphocreatine or Glycine? or Allylglycine or Glycocholic Acid or Glycodeoxycholic Acid or Glycochenodeoxycholic Acid or Sarcosine or Homoserine or Kynurenine or Oxamic Acid or Phosphoamino Acid? or Quisqualic Acid) near/5 (Phosph* or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite):ti,ab
57	#55 or #56
58	#14 and #25 and #35
59	#14 and #25 and #49
60	#14 and #25 and #57
61	#58 or #59 or #60

### 3.10 What is the most effective and safe iron supplementation compared to no iron or different dosage/formulations in preterm and term babies who are receiving parenteral nutrition and neonatal care?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/

## EARLY SUBMISSION

### Search strategies

#	Searches
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/
19	INFUSIONS, INTRAVENOUS/
20	CATHETERIZATION, CENTRAL VENOUS/
21	exp CATHETERIZATION, PERIPHERAL/
22	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
23	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
24	drip?.ti,ab.
25	or/15-24
26	IRON/
27	IRON, DIETARY/
28	IRON COMPOUNDS/
29	IRON-DEXTRAN COMPLEX/
30	FERRIC COMPOUNDS/
31	FERROUS COMPOUNDS/
32	FERROSOFERRIC OXIDE/
33	(iron or ferro\$ or ferri\$).mp.
34	or/26-33
35	TRACE ELEMENTS/
36	(trace adj3 (element? or mineral? or metal?)).ti,ab.
37	(Biometal? or Bio-metal?).ti,ab.
38	(micromineral? or micro-mineral?).ti,ab.
39	or/35-38
40	14 and 25 and 34
41	14 and 25 and 39
42	or/40-41
43	limit 42 to english language
44	LETTER/
45	EDITORIAL/
46	NEWS/
47	exp HISTORICAL ARTICLE/
48	ANECDOTES AS TOPIC/
49	COMMENT/
50	CASE REPORT/
51	(letter or comment*).ti.
52	or/44-51
53	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
54	52 not 53
55	ANIMALS/ not HUMANS/
56	exp ANIMALS, LABORATORY/
57	exp ANIMAL EXPERIMENTATION/
58	exp MODELS, ANIMAL/
59	exp RODENTIA/
60	(rat or rats or mouse or mice).ti.
61	or/54-60
62	43 not 61

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/

#	Searches
19	INTRAVENOUS DRUG ADMINISTRATION/
20	exp INTRAVENOUS CATHETER/
21	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
22	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
23	drip?.ti,ab.
24	or/14-23
25	IRON/
26	IRON INTAKE/
27	IRON DERIVATIVE/
28	IRON DEXTRAN/
29	FERRIC ION/
30	FERROUS ION/
31	MAGNETITE/
32	(iron or ferro\$ or ferri\$).mp.
33	or/25-32
34	TRACE ELEMENT/
35	TRACE METAL/
36	(trace adj3 (element? or mineral? or metal?)).ti,ab.
37	(Biometal? or Bio-metal?).ti,ab.
38	(micromineral? or micro-mineral?).ti,ab.
39	or/34-38
40	13 and 24 and 33
41	13 and 24 and 39
42	or/40-41
43	limit 42 to english language
44	letter.pt. or LETTER/
45	note.pt.
46	editorial.pt.
47	CASE REPORT/ or CASE STUDY/
48	(letter or comment*).ti.
49	or/44-48
50	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
51	49 not 50
52	ANIMAL/ not HUMAN/
53	NONHUMAN/
54	exp ANIMAL EXPERIMENT/
55	exp EXPERIMENTAL ANIMAL/
56	ANIMAL MODEL/
57	exp RODENT/
58	(rat or rats or mouse or mice).ti.
59	or/51-58
60	43 not 59

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born*)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only

#	Searches
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion*):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	MeSH descriptor: [IRON] this term only
27	MeSH descriptor: [IRON, DIETARY] this term only
28	MeSH descriptor: [IRON COMPOUNDS] this term only
29	MeSH descriptor: [IRON-DEXTRAN COMPLEX] this term only
30	MeSH descriptor: [FERRIC COMPOUNDS] this term only
31	MeSH descriptor: [FERROUS COMPOUNDS] this term only
32	MeSH descriptor: [FERROSO-FERRIC OXIDE] this term only
33	(iron or ferro* or ferri*):ti,ab
34	#26 or #27 or #28 or #29 or #30 or #31 or #32 or #33
35	MeSH descriptor: [TRACE ELEMENTS] this term only
36	(trace near/3 (element? or mineral? or metal?)):ti,ab
37	(Biometal? or Bio-metal?):ti,ab
38	(micromineral? or micro-mineral?):ti,ab
39	#35 or #36 or #37 or #38
40	#14 and #25 and #34
41	#14 and #25 and #39
42	#40 or #41

### 3.11 How much (if any) intravenous acetate should be provided to preterm and term babies who are receiving parenteral nutrition and neonatal care?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/
19	INFUSIONS, INTRAVENOUS/
20	CATHETERIZATION, CENTRAL VENOUS/
21	exp CATHETERIZATION, PERIPHERAL/
22	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
23	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
24	drip?.ti,ab.
25	or/15-24
26	exp ACETATES/
27	(Acetate? or Acetamide? or 2-Acetylaminofluorene or Acetoxyacetylaminofluorene or Hydroxyacetylaminofluorene or Allylisopropylacetamide or Iodoacetamide or Linezolid or Piracetam or Thioacetamide or Acetic Acid or Acetic Anhydride? or Aminooxyacetic Acid or Chloroacetate? or Dichloroacetic Acid or Trichloroacetic Acid or Edetic Acid or Egtazic Acid or Fluoroacetate? or Trifluoroacetic Acid or Glycolate? or Phenoxyacetate? or 2,4-Dichlorophenoxyacetic Acid or Agent Orange or Ethacrynic Acid or 2-Methyl-4-chlorophenoxyacetic Acid or 2,4,5-Trichlorophenoxyacetic Acid or Halofenate or Meclofenoxate or Ticrynafen or Iodoacetate? or Iodoacetamide or Iodoacetic Acid or Nitrilotriacetic Acid or Pentetic Acid or Gadolinium DTPA or Technetium Tc 99m Pentetate or



#	Searches
	Peracetic Acid or Phosphonoacetic Acid or Fosfarnet or Thioglycolate?).mp.
28	or/26-27
29	14 and 25 and 28
30	limit 29 to english language
31	LETTER/
32	EDITORIAL/
33	NEWS/
34	exp HISTORICAL ARTICLE/
35	ANECDOTES AS TOPIC/
36	COMMENT/
37	CASE REPORT/
38	(letter or comment*).ti.
39	or/31-38
40	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
41	39 not 40
42	ANIMALS/ not HUMANS/
43	exp ANIMALS, LABORATORY/
44	exp ANIMAL EXPERIMENTATION/
45	exp MODELS, ANIMAL/
46	exp RODENTIA/
47	(rat or rats or mouse or mice).ti.
48	or/41-47
49	30 not 48

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/
20	exp INTRAVENOUS CATHETER/
21	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
22	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
23	drip?.ti,ab.
24	or/14-23
25	ACETIC ACID/
26	ACETIC ACID DERIVATIVE/
27	(Acetate? or Acetamide? or 2-Acetylaminofluorene or Acetoxyacetylaminofluorene or Hydroxyacetylaminofluorene or Allylisopropylacetamide or Iodoacetamide or Linezolid or Piracetam or Thioacetamide or Acetic Acid or Acetic Anhydride? or Aminooxyacetic Acid or Chloroacetate? or Dichloroacetic Acid or Trichloroacetic Acid or Edetic Acid or Egtazic Acid or Fluoroacetate? or Trifluoroacetic Acid or Glycolate? or Phenoxyacetate? or 2,4-Dichlorophenoxyacetic Acid or Agent Orange or Ethacrynic Acid or 2-Methyl-4-chlorophenoxyacetic Acid or 2,4,5-Trichlorophenoxyacetic Acid or Halofenate or Meclofenoxate or Ticrynafen or Iodoacetate? or Iodoacetamide or Iodoacetic Acid or Nitrilotriacetic Acid or Pentetic Acid or Gadolinium DTPA or Technetium Tc 99m Pentetate or Peracetic Acid or Phosphonoacetic Acid or Fosfarnet or Thioglycolate?).mp.
28	or/25-27
29	13 and 24 and 28
30	limit 29 to english language
31	letter.pt. or LETTER/
32	note.pt.
33	editorial.pt.
34	CASE REPORT/ or CASE STUDY/
35	(letter or comment*).ti.

#	Searches
36	or/31-35
37	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
38	36 not 37
39	ANIMAL/ not HUMAN/
40	NONHUMAN/
41	exp ANIMAL EXPERIMENT/
42	exp EXPERIMENTAL ANIMAL/
43	ANIMAL MODEL/
44	exp RODENT/
45	(rat or rats or mouse or mice).ti.
46	or/38-45
47	30 not 46

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or matur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or matur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	MeSH descriptor: [ACETATES] explode all trees
27	(Acetate? or Acetamide? or 2-Acetylaminofluorene or Acetoxyacetylaminofluorene or Hydroxyacetylaminofluorene or Allylisopropylacetamide or Iodoacetamide or Linezolid or Piracetam or Thioacetamide or Acetic Acid or Acetic Anhydride? or Aminoxyacetic Acid or Chloroacetate? or Dichloroacetic Acid or Trichloroacetic Acid or Edetic Acid or Egtazic Acid or Fluoroacetate? or Trifluoroacetic Acid or Glycolate? or Phenoxyacetate? or 2,4-Dichlorophenoxyacetic Acid or Agent Orange or Ethacrynic Acid or 2-Methyl-4-chlorophenoxyacetic Acid or 2,4,5-Trichlorophenoxyacetic Acid or Halofenate or Meclofenoxate or Ticrynafen or Iodoacetate? or Iodoacetamide or Iodoacetic Acid or Nitrilotriacetic Acid or Pentetic Acid or Gadolinium DTPA or Technetium Tc 99m Pentetate or Peracetic Acid or Phosphonoacetic Acid or Foscarnet or Thioglycolate?):ti,ab
28	#26 or #27
29	#14 and #25 and #28

### 3.12 What is the effectiveness, efficacy and safety of standardised parenteral nutrition bags compared with individualised bags?

**Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations**

**Date of last search: 30/04/2019**

## EARLY SUBMISSION

### Search strategies

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	or/15-17
19	standard\$.ti.
20	(standard\$ adj10 (nutrition\$ or feed\$ or fed\$ or regimen? or prescription? or preparation? or formulat\$ or solution? or bag?)).ab.
21	individual\$.ti.
22	(individual\$ adj10 (nutrition\$ or feed\$ or fed\$ or regimen? or prescription? or preparation? or formulat\$ or solution? or bag?)).ab.
23	or/19-22
24	(standard\$ adj10 parenteral\$).ti,ab.
25	((premixed\$ or pre-mixed\$) adj10 parenteral\$).ti,ab.
26	(standard\$ adj10 (PN or TPN)).ti,ab.
27	STD-PN.ti,ab.
28	(individual\$ adj10 parenteral\$).ti,ab.
29	((bespoke\$ or be-spoke\$) adj10 parenteral\$).ti,ab.
30	(tailor\$ adj10 parenteral\$).ti,ab.
31	(modif\$ adj10 parenteral\$).ti,ab.
32	(enhanc\$ adj10 parenteral\$).ti,ab.
33	(individual\$ adj10 (PN or TPN)).ti,ab.
34	IND-PN.ti,ab.
35	((standard\$ or individual\$) adj10 (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj10 (nutrition\$ or feed\$ or fed\$)).ti,ab.
36	or/24-35
37	PARENTERAL NUTRITION/st [Standards]
38	PARENTERAL NUTRITION, TOTAL/st [Standards]
39	PARENTERAL NUTRITION SOLUTIONS/st [Standards]
40	or/37-39
41	14 and 18 and 23
42	14 and 36
43	14 and 40
44	or/41-43
45	limit 44 to english language
46	LETTER/
47	EDITORIAL/
48	NEWS/
49	exp HISTORICAL ARTICLE/
50	ANECDOTES AS TOPIC/
51	COMMENT/
52	CASE REPORT/
53	(letter or comment*).ti.
54	or/46-53
55	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
56	54 not 55
57	ANIMALS/ not HUMANS/
58	exp ANIMALS, LABORATORY/
59	exp ANIMAL EXPERIMENTATION/
60	exp MODELS, ANIMAL/
61	exp RODENTIA/
62	(rat or rats or mouse or mice).ti.
63	or/56-62
64	45 not 63

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	or/14-18
20	standard\$.ti.
21	(standard\$ adj10 (nutrition\$ or feed\$ or fed\$ or regimen? or prescription? or preparation? or formulat\$ or solution? or bag?)).ab.
22	individual\$.ti.
23	(individual\$ adj10 (nutrition\$ or feed\$ or fed\$ or regimen? or prescription? or preparation? or formulat\$ or solution? or bag?)).ab.
24	or/20-23
25	(standard\$ adj10 parenteral\$).ti,ab.
26	((premixed\$ or pre-mixed\$) adj10 parenteral\$).ti,ab.
27	(standard\$ adj10 (PN or TPN)).ti,ab.
28	STD-PN.ti,ab.
29	(individual\$ adj10 parenteral\$).ti,ab.
30	((bespoke\$ or be-spoke\$) adj10 parenteral\$).ti,ab.
31	(tailor\$ adj10 parenteral\$).ti,ab.
32	(modif\$ adj10 parenteral\$).ti,ab.
33	(enhanc\$ adj10 parenteral\$).ti,ab.
34	(individual\$ adj10 (PN or TPN)).ti,ab.
35	IND-PN.ti,ab.
36	((standard\$ or individual\$) adj10 (intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj10 (nutrition\$ or feed\$ or fed\$)).ti,ab.
37	or/25-36
38	13 and 19 and 24
39	13 and 37
40	or/38-39
41	limit 40 to english language
42	letter.pt. or LETTER/
43	note.pt.
44	editorial.pt.
45	CASE REPORT/ or CASE STUDY/
46	(letter or comment*).ti.
47	or/42-46
48	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
49	47 not 48
50	ANIMAL/ not HUMAN/
51	NONHUMAN/
52	exp ANIMAL EXPERIMENT/
53	exp EXPERIMENTAL ANIMAL/
54	ANIMAL MODEL/
55	exp RODENT/
56	(rat or rats or mouse or mice).ti.
57	or/49-56
58	41 not 57

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	#15 or #16 or #17
19	standard*:ti
20	(standard* near/10 (nutrition* or feed* or fed* or regimen? or prescription? or preparation? or formulat* or solution? or bag?)):ab
21	individual*:ti
22	(individual* near/10 (nutrition* or feed* or fed* or regimen? or prescription? or preparation? or formulat* or solution? or bag?)):ab
23	#19 or #20 or #21 or #22
24	(standard* near/10 parenteral*):ti,ab
25	((premixed* or pre-mixed*) near/10 parenteral*):ti,ab
26	(standard* near/10 (PN or TPN)):ti,ab
27	STD-PN:ti,ab
28	(individual* near/10 parenteral*):ti,ab
29	((bespoke* or be-spoke*) near/10 parenteral*):ti,ab
30	(tailor* near/10 parenteral*):ti,ab
31	(modif* near/10 parenteral*):ti,ab
32	(enhanc* near/10 parenteral*):ti,ab
33	(individual* near/10 (PN or TPN)):ti,ab
34	IND-PN:ti,ab
35	((standard* or individual*) near/10 (intravenous* or intra-venous* or IV or venous* or infusion?) near/10 (nutrition* or feed* or fed*)):ti,ab
36	#24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35
37	MeSH descriptor: [PARENTERAL NUTRITION] this term only and with qualifier(s): [Standards - ST]
38	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only and with qualifier(s): [Standards - ST]
39	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only and with qualifier(s): [Standards - ST]
40	#37 or #38 or #39
41	#14 and #18 and #23
42	#14 and #36
43	#14 and #40
44	#41 or #42 or #43

**4.1 What overall osmolality, concentration of calcium and glucose/dextrose in parenteral nutrition can determine whether to administer centrally or peripherally?**

**Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations**

**Date of last search: 30/04/2019**

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/

## EARLY SUBMISSION

### Search strategies

#	Searches
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	OSMOLAR CONCENTRATION/
16	osmolalit\$.ti,ab.
17	osmolarit\$.ti,ab.
18	(osmolar adj3 concentrat\$).ti,ab.
19	(ionic adj3 strength?).ti,ab.
20	or/15-19
21	CALCIUM/
22	CALCIUM, DIETARY/
23	calcium.mp.
24	or/21-23
25	GLUCOSE/
26	glucose.mp.
27	dextrose.mp.
28	or/25-27
29	CATHETERIZATION, CENTRAL VENOUS/
30	CENTRAL VENOUS CATHETERS/
31	(central\$ adj3 (line? or catheter\$ or access\$ or route? or administ\$)).ti,ab.
32	(central\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
33	(central\$ adj3 (vein? or venous\$ or intravenous\$ or intra-venous\$ or IV or infusion?)).ti,ab.
34	CVC?.ti,ab.
35	or/29-34
36	exp CATHETERIZATION, PERIPHERAL/
37	(peripheral\$ adj3 (line? or catheter\$ or access\$ or route? or administ\$)).ti,ab.
38	(peripheral\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
39	(peripheral\$ adj3 (vein? or venous\$ or intravenous\$ or intra-venous\$ or IV or infusion?)).ti,ab.
40	PICC?.ti,ab.
41	or/36-40
42	PARENTERAL NUTRITION/
43	PARENTERAL NUTRITION, TOTAL/
44	PARENTERAL NUTRITION SOLUTIONS/
45	(parenteral\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
46	or/42-45
47	PARENTERAL NUTRITION/ae [Adverse Effects]
48	CATHETERIZATION, CENTRAL VENOUS/ae [Adverse Effects]
49	CENTRAL VENOUS CATHETERS/ae [Adverse Effects]
50	exp CATHETERIZATION, PERIPHERAL/ae [Adverse Effects]
51	14 and 20 and (35 or 41)
52	14 and 24 and (35 or 41)
53	14 and 28 and (35 or 41)
54	14 and 35 and 41 and 46
55	14 and (35 or 41) and 47
56	14 and 46 and (48 or 49 or 50)
57	or/51-56
58	limit 57 to english language
59	LETTER/
60	EDITORIAL/
61	NEWS/
62	exp HISTORICAL ARTICLE/
63	ANECDOTES AS TOPIC/
64	COMMENT/
65	CASE REPORT/
66	(letter or comment*).ti.
67	or/59-66
68	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
69	67 not 68
70	ANIMALS/ not HUMANS/
71	exp ANIMALS, LABORATORY/
72	exp ANIMAL EXPERIMENTATION/
73	exp MODELS, ANIMAL/

#	Searches
74	exp RODENTIA/
75	(rat or rats or mouse or mice).ti.
76	or/69-75
77	58 not 76

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	"OSMOLARITY AND OSMOLALITY"/
15	exp OSMOLALITY/
16	exp OSMOLARITY/
17	osmolalit\$.ti,ab.
18	osmolarit\$.ti,ab.
19	(osmolar adj3 concentrat\$).ti,ab.
20	(ionic adj3 strength?).ti,ab.
21	or/14-20
22	CALCIUM/
23	CALCIUM INTAKE/
24	calcium.mp.
25	or/22-24
26	GLUCOSE/
27	glucose.mp.
28	dextrose.mp.
29	or/26-28
30	CENTRAL VENOUS CATHETERIZATION/
31	exp CENTRAL VENOUS CATHETER/
32	(central\$ adj3 (line? or catheter\$ or access\$ or route? or administ\$)).ti,ab.
33	(central\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
34	(central\$ adj3 (vein? or venous\$ or intravenous\$ or intra-venous\$ or IV or infusion?)).ti,ab.
35	CVC?.ti,ab.
36	or/30-35
37	exp PERIPHERAL VENOUS CATHETER/
38	(peripheral\$ adj3 (line? or catheter\$ or access\$ or route? or administ\$)).ti,ab.
39	(peripheral\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
40	(peripheral\$ adj3 (vein? or venous\$ or intravenous\$ or intra-venous\$ or IV or infusion?)).ti,ab.
41	PICC?.ti,ab.
42	or/37-41
43	PARENTERAL NUTRITION/
44	TOTAL PARENTERAL NUTRITION/
45	PARENTERAL SOLUTIONS/
46	(parenteral\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
47	or/43-46
48	PERIPHERAL PARENTERAL NUTRITION/
49	PARENTERAL NUTRITION/ae [Adverse Drug Reaction]
50	CENTRAL VENOUS CATHETERIZATION/ae [Adverse Drug Reaction]
51	exp CENTRAL VENOUS CATHETER/ae [Adverse Drug Reaction]
52	exp CENTRAL VENOUS CATHETER/am [Adverse Device Effect]
53	exp CENTRAL VENOUS CATHETER/dc [Device Comparison]
54	exp PERIPHERAL VENOUS CATHETER/am [Adverse Device Effect]
55	exp PERIPHERAL VENOUS CATHETER/dc [Device Comparison]
56	13 and 21 and (36 or 42)
57	13 and 25 and (36 or 42)
58	13 and 29 and (36 or 42)
59	13 and 36 and 42 and 47
60	13 and 48

#	Searches
61	13 and (36 or 42) and 49
62	13 and 47 and (50 or 51 or 52 or 53 or 54 or 55)
63	or/56-62
64	limit 63 to english language
65	letter.pt. or LETTER/
66	note.pt.
67	editorial.pt.
68	CASE REPORT/ or CASE STUDY/
69	(letter or comment*).ti.
70	or/65-69
71	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
72	70 not 71
73	ANIMAL/ not HUMAN/
74	NONHUMAN/
75	exp ANIMAL EXPERIMENT/
76	exp EXPERIMENTAL ANIMAL/
77	ANIMAL MODEL/
78	exp RODENT/
79	(rat or rats or mouse or mice).ti.
80	or/72-79
81	64 not 80

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre?mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [OSMOLAR CONCENTRATION] this term only
16	osmolalit*:ti,ab
17	osmolarit*:ti,ab
18	(osmolar near/3 concentrat*):ti,ab
19	(ionic near/3 strength*):ti,ab
20	#15 or #16 or #17 or #18 or #19
21	MeSH descriptor: [CALCIUM] this term only
22	MeSH descriptor: [CALCIUM, DIETARY] this term only
23	calcium:ti,ab
24	#21 or #22 or #23
25	MeSH descriptor: [GLUCOSE] this term only
26	glucose:ti,ab
27	dextrose:ti,ab
28	#25 or #26 or #27
29	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
30	MeSH descriptor: [CENTRAL VENOUS CATHETERS] this term only
31	(central* near/3 (line* or catheter* or access* or route* or administ*)):ti,ab
32	(central* near/3 (nutrition* or feed* or fed*)):ti,ab
33	(central* near/3 (vein* or venous* or intravenous* or intra-venous* or IV or infusion*)):ti,ab
34	CVC*:ti,ab
35	#29 or #30 or #31 or #32 or #33 or #34
36	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
37	(peripheral* near/3 (line* or catheter* or access* or route* or administ*)):ti,ab
38	(peripheral* near/3 (nutrition* or feed* or fed*)):ti,ab
39	(peripheral* near/3 (vein* or venous* or intravenous* or intra-venous* or IV or infusion*)):ti,ab
40	PICC*:ti,ab



#	Searches
41	#36 or #37 or #38 or #39 or #40
42	MeSH descriptor: [PARENTERAL NUTRITION] this term only
43	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
44	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
45	(parenteral* near/3 (nutrition* or feed* or fed*)):ti,ab
46	#42 or #43 or #44 or #45
47	MeSH descriptor: [PARENTERAL NUTRITION] this term only and with qualifier(s): [Adverse effects - AE]
48	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only and with qualifier(s): [Adverse effects - AE]
49	MeSH descriptor: [CENTRAL VENOUS CATHETERS] this term only and with qualifier(s): [Adverse effects - AE]
50	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees and with qualifier(s): [Adverse effects - AE]
51	#14 and #20 and (#35 or #41)
52	#14 and #24 and (#35 or #41)
53	#14 and #28 and (#35 or #41)
54	#14 and #35 and #41 and #46
55	#14 and (#35 or #41) and #47
56	#14 and #46 and (#48 or #49 or #50)
57	#51 or #52 or #53 or #54 or #55 or #56

## 5.1 In babies on parenteral nutrition, what is the optimal frequency of blood sampling for monitoring glucose, calcium, phosphate, potassium and serum triglycerides?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
19	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
22	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
26	or/15-25
27	BLOOD SPECIMEN COLLECTION/
28	(blood? adj5 (samp\$ or specimen? or collect\$ or test\$ or monitor\$)).ti,ab.
29	PUNCTURES/
30	(heel adj3 (lanc\$ or stick\$ or prick\$)).ti,ab.
31	(heellanc\$ or heelstick? or heelprick\$).ti,ab.
32	((arter\$ or vein or venous or capillar\$) adj3 punctur\$).ti,ab.
33	Venepunctur\$.ti,ab.
34	or/27-33
35	exp GLUCOSE/
36	(glucose or sugar? or dextrose).mp.
37	CALCIUM/
38	calcium.mp.

## EARLY SUBMISSION

### Search strategies

#	Searches
39	exp PHOSPHATES/
40	PHOSPHORUS/
41	PHOSPHORUS, DIETARY/
42	(Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite).mp.
43	exp POTASSIUM/
44	exp POTASSIUM, DIETARY/
45	potassium.mp.
46	exp TRIGLYCERIDES/
47	(triglyceride? or triacylglycerol? or triacetin or triolein).mp.
48	or/35-47
49	TIME FACTORS/ and MONITORING, PHYSIOLOGIC/
50	((frequen\$ or regular\$ or routine\$) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
51	((day? or daily or hour\$ or week\$) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
52	((repetition or repeat\$ or rate? or amount?) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
53	(number? adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
54	or/49-53
55	BLOOD GLUCOSE/
56	CALCIUM/bl [Blood]
57	exp PHOSPHATES/bl [Blood]
58	PHOSPHORUS/bl [Blood]
59	PHOSPHORUS, DIETARY/bl [Blood]
60	exp POTASSIUM/bl [Blood]
61	exp POTASSIUM, DIETARY/bl [Blood]
62	exp TRIGLYCERIDES/bl [Blood]
63	(blood? adj3 (glucose or calcium or phosph\$ or potassium\$ or triglyceride?)).ti,ab.
64	or/55-63
65	(sampl\$ or specimen?).ti,ab.
66	BLOOD SPECIMEN COLLECTION/mt [Methods]
67	BLOOD SPECIMEN COLLECTION/ae [Adverse Effects]
68	14 and 26 and 34 and 48
69	14 and 26 and 34 and 54
70	14 and 26 and 64 and 65
71	14 and 26 and 66
72	14 and 26 and 67
73	or/68-72
74	limit 73 to english language
75	LETTER/
76	EDITORIAL/
77	NEWS/
78	exp HISTORICAL ARTICLE/
79	ANECDOTES AS TOPIC/
80	COMMENT/
81	CASE REPORT/
82	(letter or comment*).ti.
83	or/75-82
84	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
85	83 not 84
86	ANIMALS/ not HUMANS/
87	exp ANIMALS, LABORATORY/
88	exp ANIMAL EXPERIMENTATION/
89	exp MODELS, ANIMAL/
90	exp RODENTIA/
91	(rat or rats or mouse or mice).ti.
92	or/85-91
93	74 not 92

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/

EARLY SUBMISSION  
Search strategies

#	Searches
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
22	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	or/14-24
26	BLOOD SAMPLING/
27	(blood? adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$)).ti,ab.
28	(heel adj3 (lanc\$ or stick\$ or prick\$)).ti,ab.
29	(heellanc\$ or heelstick? or heelprick\$).ti,ab.
30	((arter\$ or vein or venous or capillar\$) adj3 punctur\$).ti,ab.
31	Venepunctur\$.ti,ab.
32	or/26-31
33	GLUCOSE/
34	(glucose or sugar? or dextrose).mp.
35	CALCIUM/
36	calcium.mp.
37	PHOSPHATE/
38	PHOSPHORUS/
39	PHOSPHATE INTAKE/
40	(Phosph\$ or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite).mp.
41	POTASSIUM/
42	POTASSIUM INTAKE/
43	potassium.mp.
44	TRIACYLGLYCEROL/
45	(triglyceride? or triacylglycerol? or triacetin or triolein).mp.
46	or/33-45
47	TIME FACTOR/ and (PHYSIOLOGIC MONITORING/ or MONITORING/)
48	((frequen\$ or regular\$ or routine\$) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
49	((day? or daily or hour\$ or week\$) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
50	((repetition or repeat\$ or rate? or amount?) adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
51	(number? adj5 (sampl\$ or specimen? or collect\$ or test\$ or monitor\$ or investigat\$)).ti,ab.
52	or/47-51
53	GLUCOSE BLOOD LEVEL/
54	CALCIUM BLOOD LEVEL/
55	PHOSPHATE BLOOD LEVEL/
56	PHOSPHORUS BLOOD LEVEL/
57	POTASSIUM BLOOD LEVEL/
58	TRIACYLGLYCEROL BLOOD LEVEL/
59	(blood? adj3 (glucose or calcium or phosph\$ or potassium\$ or triglyceride?)).ti,ab.
60	or/53-59
61	(sampl\$ or specimen?).ti,ab.
62	13 and 25 and 32 and 46
63	13 and 25 and 32 and 52
64	13 and 25 and 60 and 61
65	or/62-64
66	limit 65 to english language
67	letter.pt. or LETTER/
68	note.pt.
69	editorial.pt.
70	CASE REPORT/ or CASE STUDY/
71	(letter or comment*).ti.
72	or/67-71
73	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
74	72 not 73
75	ANIMAL/ not HUMAN/

#	Searches
76	NONHUMAN/
77	exp ANIMAL EXPERIMENT/
78	exp EXPERIMENTAL ANIMAL/
79	ANIMAL MODEL/
80	exp RODENT/
81	(rat or rats or mouse or mice).ti.
82	or/74-81
83	66 not 82

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	#18 or #19 or #20 or #21
23	(nutrition* or feed* or fed*):ti,ab
24	#22 and #23
25	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
26	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)):ti,ab
27	(catheter* near/3 (nutrition* or feed* or fed*)):ti,ab
28	(drip? near/3 (nutrition* or feed* or fed*)):ti,ab
29	#15 or #16 or #17 or #24 or #25 or #26 or #27 or #28
30	MeSH descriptor: [BLOOD SPECIMEN COLLECTION] this term only
31	(blood? near/5 (sampl* or specimen? or collect* or test* or monitor*)):ti,ab
32	MeSH descriptor: [PUNCTURES] this term only
33	(heel near/3 (lanc* or stick* or prick*)):ti,ab
34	(heellanc* or heelstick? or heelprick*):ti,ab
35	((arter* or vein or venous or capillar*) near/3 punctur*):ti,ab
36	Venepunctur*:ti,ab
37	#30 or #31 or #32 or #33 or #34 or #35 or #36
38	MeSH descriptor: [GLUCOSE] explode all trees
39	(glucose or sugar? or dextrose):ti,ab
40	MeSH descriptor: [CALCIUM] this term only
41	calcium:ti,ab
42	MeSH descriptor: [PHOSPHATES] explode all trees
43	MeSH descriptor: [PHOSPHORUS] this term only
44	MeSH descriptor: [PHOSPHORUS, DIETARY] this term only
45	(Phosph* or Apatite? or Hydroxyapatite? or Durapatite or Calcium Pyrophosphate or Polyphosphate? or Diphosphate? or Calcium Pyrophosphate or Technetium Tc 99m Pyrophosphate or Tin Polyphosphate? or Struvite):ti,ab
46	MeSH descriptor: [POTASSIUM] explode all trees
47	MeSH descriptor: [POTASSIUM, DIETARY] explode all trees
48	potassium:ti,ab
49	MeSH descriptor: [TRIGLYCERIDES] explode all trees
50	(triglyceride? or triacylglycerol? or triacetin or triolein):ti,ab
51	#38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49 or #50
52	MeSH descriptor: [TIME FACTORS] this term only

#	Searches
53	MeSH descriptor: [MONITORING, PHYSIOLOGIC] this term only
54	#52 and #53
55	((frequen* or regular* or routine*) near/5 (sampl* or specimen? or collect* or test* or monitor* or investigat*)):ti,ab
56	((day? or daily or hour* or week*) near/5 (sampl* or specimen? or collect* or test* or monitor* or investigat*)):ti,ab
57	((repetition or repeat* or rate? or amount?) near/5 (sampl* or specimen? or collect* or test* or monitor* or investigat*)):ti,ab
58	(number? near/5 (sampl* or specimen? or collect* or test* or monitor* or investigat*)):ti,ab
59	#54 or #55 or #56 or #57 or #58
60	MeSH descriptor: [BLOOD GLUCOSE] this term only
61	MeSH descriptor: [CALCIUM] this term only and with qualifier(s): [Blood - BL]
62	MeSH descriptor: [PHOSPHATES] this term only and with qualifier(s): [Blood - BL]
63	MeSH descriptor: [PHOSPHORUS] this term only and with qualifier(s): [Blood - BL]
64	MeSH descriptor: [PHOSPHORUS, DIETARY] this term only and with qualifier(s): [Blood - BL]
65	MeSH descriptor: [POTASSIUM] this term only and with qualifier(s): [Blood - BL]
66	MeSH descriptor: [POTASSIUM, DIETARY] this term only and with qualifier(s): [Blood - BL]
67	MeSH descriptor: [TRIGLYCERIDES] this term only and with qualifier(s): [Blood - BL]
68	(blood? near/3 (glucose or calcium or phosph* or potassium* or triglyceride?)):ti,ab
69	#60 or #61 or #62 or #63 or #64 or #65 or #66 or #67 or #68
70	(sampl* or specimen?):ti,ab
71	MeSH descriptor: [BLOOD SPECIMEN COLLECTION] this term only and with qualifier(s): [Methods - MT]
72	MeSH descriptor: [BLOOD SPECIMEN COLLECTION] this term only and with qualifier(s): [Adverse effects - AE]
73	#14 and #29 and #37 and #51
74	#14 and #29 and #37 and #59
75	#14 and #29 and #69 and #70
76	#14 and #29 and #71
77	#14 and #29 and #72
78	#73 or #74 or #75 or #76 or #77

## 6.2 What amount of enteral feed (measured in terms of ml/kg/d, or kcal/kg/d, or ratios in relation to PN and enteral feeds) indicates that parenteral nutrition is no longer required?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
19	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
22	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
26	or/15-25
27	ENTERAL NUTRITION/

## EARLY SUBMISSION

### Search strategies

#	Searches
28	INTUBATION, GASTROINTESTINAL/
29	GASTROSTOMY/
30	JEJUNOSTOMY/
31	((enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
32	((Nasogastric\$ or gastrointestinal\$) adj3 (tube? or intubate\$ or nutrition\$ or feed\$ or fed\$)).ti,ab.
33	Gastrostom\$.ti,ab.
34	Jejunostom\$.ti,ab.
35	or/27-34
36	((wean\$ or decreas\$ or de-creas\$ or halt\$ or ceas\$ or cessat\$ or suspen\$ or stop\$ or end\$ or discontinu\$ or discontinu\$ or finish\$ or transition\$) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
37	((wean\$ or decreas\$ or de-creas\$ or halt\$ or ceas\$ or cessat\$ or suspen\$ or stop\$ or end\$ or discontinu\$ or discontinu\$ or finish\$ or transition\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)).ti,ab.
38	or/36-37
39	((Advanc\$ or Achiev\$ or Establish\$ or Tolera\$ or Success\$ or Full\$) adj3 (enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
40	((amount? or volume? or ratio?) adj10 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj10 (enteral\$ or tube? or oral\$ or sip) adj10 (nutrition\$ or feed\$ or fed\$)).ti,ab.
41	((ml? or milliliter? or kcal? or kilocalor\$) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
42	ENERGY INTAKE/
43	NUTRITIONAL STATUS/
44	((energy or volume? or kcal or kilocalorie? or nutrition\$) adj3 (goal? or target\$)).ti,ab.
45	((optimi\$ or success\$) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
46	or/42-45
47	PARENTERAL NUTRITION/mt [Methods]
48	ENTERAL NUTRITION/mt [Methods]
49	14 and 35 and 38
50	14 and 26 and 39
51	14 and 40
52	14 and 26 and 35 and 41
53	14 and 26 and 35 and 46
54	14 and 47 and 48
55	or/49-54
56	limit 55 to english language
57	LETTER/
58	EDITORIAL/
59	NEWS/
60	exp HISTORICAL ARTICLE/
61	ANECDOTES AS TOPIC/
62	COMMENT/
63	CASE REPORT/
64	(letter or comment*).ti.
65	or/57-64
66	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
67	65 not 66
68	ANIMALS/ not HUMANS/
69	exp ANIMALS, LABORATORY/
70	exp ANIMAL EXPERIMENTATION/
71	exp MODELS, ANIMAL/
72	exp RODENTIA/
73	(rat or rats or mouse or mice).ti.
74	or/67-73
75	56 not 74

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/

## EARLY SUBMISSION

### Search strategies

#	Searches
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
22	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	or/14-24
26	ENTERIC FEEDING/
27	exp DIGESTIVE TRACT INTUBATION/
28	GASTROSTOMY/
29	JEJUNOSTOMY/
30	((enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
31	((Nasogastric\$ or gastrointestinal\$) adj3 (tube? or intubate\$ or nutrition\$ or feed\$ or fed\$)).ti,ab.
32	Gastrostom\$.ti,ab.
33	Jejunostom\$.ti,ab.
34	or/26-33
35	((wean\$ or decreas\$ or de-creas\$ or halt\$ or ceas\$ or cessat\$ or suspen\$ or stop\$ or end\$ or discontinu\$ or discontinu\$ or finish\$ or transition\$) adj5 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
36	((wean\$ or decreas\$ or de-creas\$ or halt\$ or ceas\$ or cessat\$ or suspen\$ or stop\$ or end\$ or discontinu\$ or discontinu\$ or finish\$ or transition\$) adj5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)).ti,ab.
37	or/35-36
38	((Advanc\$ or Achiev\$ or Establish\$ or Tolera\$ or Success\$ or Full\$) adj3 (enteral\$ or tube? or oral\$ or sip) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
39	((amount? or volume? or ratio?) adj10 (parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj10 (enteral\$ or tube? or oral\$ or sip) adj10 (nutrition\$ or feed\$ or fed\$)).ti,ab.
40	((ml? or milliliter? or kcal? or kilocalor\$) adj3 (kg? or kilogram?) adj3 (d or day)).ti,ab.
41	CALORIC INTAKE/
42	NUTRITIONAL STATUS/
43	((energy or volume? or kcal or kilocalorie? or nutrition\$) adj3 (goal? or target\$)).ti,ab.
44	((optimi\$ or success\$) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
45	or/41-44
46	13 and 34 and 37
47	13 and 25 and 38
48	13 and 39
49	13 and 25 and 34 and 40
50	13 and 25 and 34 and 45
51	or/46-50
52	limit 51 to english language
53	letter.pt. or LETTER/
54	note.pt.
55	editorial.pt.
56	CASE REPORT/ or CASE STUDY/
57	(letter or comment*).ti.
58	or/53-57
59	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
60	58 not 59
61	ANIMAL/ not HUMAN/
62	NONHUMAN/
63	exp ANIMAL EXPERIMENT/
64	exp EXPERIMENTAL ANIMAL/
65	ANIMAL MODEL/
66	exp RODENT/
67	(rat or rats or mouse or mice).ti.
68	or/60-67
69	52 not 68

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

**Date of last search: 30/04/2019**

#	Searches
#1	MeSH descriptor: [INFANT, NEWBORN] this term only
#2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
#3	MeSH descriptor: [PREMATURE BIRTH] this term only
#4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born)):ti,ab
#5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
#6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
#7	(pre?mie? or premie or premies):ti,ab
#8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
#9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
#10	((LBW or VLBW) near/5 infan*):ti,ab
#11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
#12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
#13	NICU?:ti,ab
#14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
#15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
#16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
#17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
#18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
#19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
#20	MeSH descriptor: [CATHETERIZATION, CENTRAL VEIN] this term only
#21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
#22	#18 or #19 or #20 or #21
#23	(nutrition* or feed* or fed*) :ti,ab
#24	#22 and #23
#25	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)) :ti,ab
#26	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)) :ti,ab
#27	(catheter* near/3 (nutrition* or feed* or fed*)) :ti,ab
#28	(drip? near/3 (nutrition* or feed* or fed*)) :ti,ab
#29	#15 or #16 or #17 or #24 or #25 or #26 or #27 or #28
#30	MeSH descriptor: [ENTERAL NUTRITION] this term only
#31	MeSH descriptor: [INTUBATION, GASTROINTESTINAL] this term only
#32	MeSH descriptor: [GASTROSTOMY] this term only
#33	MeSH descriptor: [JEJUNOSTOMY] this term only
#34	((enteral* or tube? or oral* or sip) near/3 (nutrition* or feed* or fed*)) :ti,ab
#35	((Nasogastric* or gastrointestinal*) near/3 (tube? or intubate* or nutrition* or feed* or fed*)) :ti,ab
#36	Gastrostom*:ti,ab
#37	Jejunostom*:ti,ab
#38	#30 or #31 or #32 or #33 or #34 or #35 or #36 or #37
#39	((wean* or decreas* or de-creas* or halt* or ceas* or cessat* or suspen* or stop* or end* or discontinu* or dis-continu* or finish* or transition*) near/5 (parenteral* or intravenous* or intra-venous* or IV or venous* or infusion*) near/3 (nutrition* or feed* or fed*)) :ti,ab
#40	((wean* or decreas* or de-creas* or halt* or ceas* or cessat* or suspen* or stop* or end* or discontinu* or dis-continu* or finish* or transition*) near/5 (PN or SPN or IPN or TPN or STD-PN or IND-PN)):ti,ab
#41	#39 or #40
#42	((Advanc* or Achiev* or Establish* or Tolera* or Success* or Full*) near/3 (enteral* or tube* or oral* or sip) near/3 (nutrition* or feed* or fed*)) :ti,ab
#43	((amount* or volume* or ratio*) near/10 (parenteral* or intravenous* or intra-venous* or IV or venous* or infusion*) near/10 (enteral* or tube* or oral* or sip) near/10 (nutrition* or feed* or fed*)) :ti,ab
#44	((ml* or milliliter* or kcal* or kilocalor*) near/3 (kg* or kilogram*) near/3 (d or day)):ti,ab
#45	MeSH descriptor: [ENERGY INTAKE] this term only
#46	MeSH descriptor: [NUTRITIONAL STATUS] this term only
#47	((energy or volume* or kcal or kilocalorie* or nutrition*) near/3 (goal* or target*)):ti,ab
#48	((optimi* or success*) near/3 (nutrition* or feed* or fed*)) :ti,ab
#49	#45 or #46 or #47 or #48
#50	MeSH descriptor: [PARENTERAL NUTRITION] this term only and with qualifier(s): [methods - MT]
#51	MeSH descriptor: [ENTERAL NUTRITION] this term only and with qualifier(s): [methods - MT]
#52	#14 and #38 and #41
#53	#14 and #29 and #42
#54	#14 and #43
#55	#14 and #29 and #38 and #44
#56	#14 and #29 and #38 and #49
#57	#14 and #50 and #51
#58	#52 or #53 or #54 or #55 or #56 or #57

## 7.1 Are nutrition care/support teams effective in providing parenteral nutrition in preterm and term babies?



**Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations**

**Date of last search: 30/04/2019**

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
19	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
22	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
26	or/15-25
27	PATIENT CARE TEAM/
28	((patient? or medical or health) adj1 care team).ab,ti.
29	((multidisciplinary or multi-disciplinary or multiprofession\$ or multi-profession\$ or integrated or network\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
30	((interdisciplinary or inter-disciplinary or interprofession\$ or inter-profession\$ or integrated or network\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
31	((transdisciplinary or trans-disciplinary or transprofession\$ or trans-profession\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
32	mdt?.ab,ti.
33	network meeting?.ti,ab.
34	or/27-33
35	INTERDISCIPLINARY COMMUNICATION/
36	((interdisciplinary or inter-disciplinary or interprofession\$ or inter-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.
37	((multidisciplinary or multi-disciplinary or multiprofession\$ or multi-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.
38	((transdisciplinary or trans-disciplinary or transprofession\$ or trans-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.
39	or/35-38
40	COOPERATIVE BEHAVIOR/
41	((co-operat\$ or cooperat\$) adj3 (care or service? or practice?)).ab,ti.
42	((co-ordinat\$ or coordinat\$ or network\$) adj3 (care or service? or practice?)).ab,ti.
43	or/40-42
44	MODELS, ORGANIZATIONAL/
45	DELIVERY OF HEALTH CARE/
46	"DELIVERY OF HEALTH CARE, INTEGRATED"/
47	((care or healthcare or organiz\$ or organis\$) adj3 model?).ti,ab.
48	(service? adj3 (deliver\$ or configure\$)).ti,ab.
49	or/44-48
50	(special\$ adj2 (team? or approach\$ or program\$ or care or manag\$ or service? or package?)).ti,ab.
51	(compos\$ adj3 team?).ti,ab.
52	(pharmacist? or dietician? or neonatologist? or neonatal nurse? or biochemist? or lab\$ specialist?).ti.
53	(pharmacist? or dietician? or neonatologist? or neonatal nurse? or biochemist? or lab\$ specialist?).ab. /freq=2
54	or/50-53
55	(nutrition\$ adj3 (care or support\$) adj3 team?).ti,ab.
56	14 and 26 and 34
57	14 and 26 and 39
58	14 and 26 and 43

#	Searches
59	14 and 26 and 49
60	14 and 26 and 54
61	14 and 55
62	or/56-61
63	limit 62 to english language
64	LETTER/
65	EDITORIAL/
66	NEWS/
67	exp HISTORICAL ARTICLE/
68	ANECDOTES AS TOPIC/
69	COMMENT/
70	CASE REPORT/
71	(letter or comment*).ti.
72	or/64-71
73	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
74	72 not 73
75	ANIMALS/ not HUMANS/
76	exp ANIMALS, LABORATORY/
77	exp ANIMAL EXPERIMENTATION/
78	exp MODELS, ANIMAL/
79	exp RODENTIA/
80	(rat or rats or mouse or mice).ti.
81	or/74-80
82	63 not 81

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
22	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	or/14-24
26	*PATIENT CARE/
27	((patient? or medical or health) adj1 care team).ab,ti.
28	((multidisciplinary or multi-disciplinary or multiprofession\$ or multi-profession\$ or integrated or network\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
29	((interdisciplinary or inter-disciplinary or interprofession\$ or inter-profession\$ or integrated or network\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
30	((transdisciplinary or trans-disciplinary or transprofession\$ or trans-profession\$) adj3 (team? or staff\$ or task force? or approach\$ or program\$ or system? or panel? or forum? or group? or care or manag\$ or service?)).ab,ti.
31	mdt?.ab,ti.
32	network meeting?.ti,ab.
33	or/26-32
34	INTERDISCIPLINARY COMMUNICATION/
35	((interdisciplinary or inter-disciplinary or interprofession\$ or inter-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.

#	Searches
36	((multidisciplinary or multi-disciplinary or multiprofession\$ or multi-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.
37	((transdisciplinary or trans-disciplinary or transprofession\$ or trans-profession\$) adj3 (communic\$ or collaborat\$ or relation\$)).ab,ti.
38	or/34-37
39	*COOPERATION/
40	((co-operat\$ or cooperat\$) adj3 (care or service? or practice?)).ab,ti.
41	((co-ordinat\$ or coordinat\$ or network\$) adj3 (care or service? or practice?)).ab,ti.
42	or/39-41
43	*NONBIOLOGICAL MODEL/
44	*HEALTH CARE DELIVERY/
45	INTEGRATED HEALTH CARE SYSTEM/
46	((care or healthcare or organiz\$ or organis\$) adj3 model?).ti,ab.
47	(service? adj3 (deliver\$ or configure\$)).ti,ab.
48	or/43-47
49	(special\$ adj2 (team? or approach\$ or program\$ or care or manag\$ or service? or package?)).ti,ab.
50	(compos\$ adj3 team?).ti,ab.
51	(pharmacist? or dietician? or neonatologist? or neonatal nurse? or biochemist? or lab\$ specialist?).ti.
52	(pharmacist? or dietician? or neonatologist? or neonatal nurse? or biochemist? or lab\$ specialist?).ab. /freq=2
53	or/49-52
54	(nutrition\$ adj3 (care or support\$) adj3 team?).ti,ab.
55	13 and 25 and 33
56	13 and 25 and 38
57	13 and 25 and 42
58	13 and 25 and 48
59	13 and 25 and 53
60	13 and 54
61	or/55-60
62	limit 61 to english language
63	letter.pt. or LETTER/
64	note.pt.
65	editorial.pt.
66	CASE REPORT/ or CASE STUDY/
67	(letter or comment*).ti.
68	or/63-67
69	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
70	68 not 69
71	ANIMAL/ not HUMAN/
72	NONHUMAN/
73	exp ANIMAL EXPERIMENT/
74	exp EXPERIMENTAL ANIMAL/
75	ANIMAL MODEL/
76	exp RODENT/
77	(rat or rats or mouse or mice).ti.
78	or/70-77
79	62 not 78

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only

#	Searches
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	#18 or #19 or #20 or #21
23	(nutrition* or feed* or fed*):ti,ab
24	#22 and #23
25	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)):ti,ab
26	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)):ti,ab
27	(catheter* near/3 (nutrition* or feed* or fed*)):ti,ab
28	(drip? near/3 (nutrition* or feed* or fed*)):ti,ab
29	#15 or #16 or #17 or #24 or #25 or #26 or #27 or #28
30	MeSH descriptor: [PATIENT CARE TEAM] this term only
31	((patient? or medical or health) near/1 care team):ti,ab
32	((multidisciplinary or multi-disciplinary or multiprofession* or multi-profession* or integrated or network*) near/3 (team? or staff* or task force? or approach* or program* or system? or panel? or forum? or group? or care or manag* or service?)):ti,ab
33	((interdisciplinary or inter-disciplinary or interprofession* or inter-profession* or integrated or network*) near/3 (team? or staff* or task force? or approach* or program* or system? or panel? or forum? or group? or care or manag* or service?)):ti,ab
34	((transdisciplinary or trans-disciplinary or transprofession* or trans-profession*) near/3 (team? or staff* or task force? or approach* or program* or system? or panel? or forum? or group? or care or manag* or service?)):ti,ab
35	mdt?:ti,ab
36	network meeting?:ti,ab
37	#30 or #31 or #32 or #33 or #34 or #35 or #36
38	MeSH descriptor: [INTERDISCIPLINARY COMMUNICATION] this term only
39	((interdisciplinary or inter-disciplinary or interprofession* or inter-profession*) near/3 (communic* or collaborat* or relation*)):ti,ab
40	((multidisciplinary or multi-disciplinary or multiprofession* or multi-profession*) near/3 (communic* or collaborat* or relation*)):ti,ab
41	((transdisciplinary or trans-disciplinary or transprofession* or trans-profession*) near/3 (communic* or collaborat* or relation*)):ti,ab
42	#38 or #39 or #40 or #41
43	MeSH descriptor: [COOPERATIVE BEHAVIOR] this term only
44	((co-operat* or cooperat*) near/3 (care or service? or practice?)):ti,ab
45	((co-ordinat* or coordinat* or network*) near/3 (care or service? or practice?)):ti,ab
46	#43 or #44 or #45
47	MeSH descriptor: [MODELS, ORGANIZATIONAL] this term only
48	MeSH descriptor: [DELIVERY OF HEALTH CARE] this term only
49	MeSH descriptor: [DELIVERY OF HEALTH CARE, INTEGRATED] this term only
50	((care or healthcare or organiz* or organis*) near/3 model?):ti,ab
51	(service? near/3 (deliver* or configure*)):ti,ab
52	#47 or #48 or #49 or #50 or #51
53	(special* near/2 (team? or approach* or program* or care or manag* or service? or package?)):ti,ab
54	(compos* near/3 team?):ti,ab
55	(pharmacist? or dietician? or neonatologist? or neonatal nurse? or biochemist? or lab* specialist?):ti,ab
56	#53 or #54 or #55
57	(nutrition* near/3 (care or support*) near/3 team?):ti,ab
58	#14 and #29 and #37
59	#14 and #29 and #42
60	#14 and #29 and #46
61	#14 and #29 and #52
62	#14 and #29 and #56
63	#14 and #57
64	#58 or #59 or #60 or #61 or #62 or #63

## 8.1 What are the most effective methods of information provision about PN, and what information and support about this do parents/carers perceive as useful?

Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

EARLY SUBMISSION  
Search strategies

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	PARENTERAL NUTRITION/
16	PARENTERAL NUTRITION, TOTAL/
17	PARENTERAL NUTRITION SOLUTIONS/
18	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
19	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
22	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
26	or/15-25
27	FAMILY/
28	GRANDPARENTS/
29	exp PARENTS/
30	CAREGIVERS/
31	(famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$).ti,ab.
32	or/27-31
33	exp HEALTH PERSONNEL/
34	(professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?).ti,ab.
35	or/33-34
36	COUNSELING/
37	DIRECTIVE COUNSELING/
38	exp EDUCATION/
39	HEALTH EDUCATION/
40	exp COMMUNICATION/
41	exp CONSUMER HEALTH INFORMATION/
42	PATIENT EDUCATION AS TOPIC/
43	INFORMATION SEEKING BEHAVIOR/
44	POSTERS AS TOPIC/
45	PUBLICATIONS/
46	GOVERNMENT PUBLICATIONS AS TOPIC/
47	PAMPHLETS/
48	INTERNET/
49	HOTLINES/
50	TELEPHONE/
51	patient education handout.pt.
52	(inform\$ or educat\$ or communicat\$ or advi\$ or counsel\$ or support\$).ti,ab.
53	(pamphlet? or leaflet? or booklet? or manual? or brochure? or publication? or handout? or hand out? or poster? or website? or web site? or web page? or webpage? or web based or video? or dvd? or online? or internet? or app? or application? or social media or telephon\$ or phone? or helpline? or help line? or hotline? or hot line?).ti,ab.
54	or/36-53
55	SELF-HELP GROUPS/
56	((support\$ or selfhelp\$ or self help\$) adj3 group?).ti,ab.
57	or/55-56
58	PATIENT CARE PLANNING/
59	CRITICAL PATHWAY/
60	CLINICAL PROTOCOLS/
61	((care adj3 plan\$) or pathway? or protocol?).ti.
62	or/58-61
63	exp "CONTINUITY OF PATIENT CARE"/
64	((patient? or neonat\$ or newborn\$ or new-born\$ or baby or babies or pre#mie? or premie or premies or infant?) adj3 (discharg\$ or handoff? or hand off or handover? or hand\$ over? or transfer\$ or transition\$ or aftercare)).ti,ab.
65	or/63-64
66	INTENSIVE CARE UNITS, PEDIATRIC/

## EARLY SUBMISSION

### Search strategies

#	Searches
67	INTENSIVE CARE UNITS, NEONATAL/
68	(intensive care adj3 (p?ediatric\$ or neonat\$)).ti,ab.
69	PICU?.ti,ab.
70	NICU?.ti,ab.
71	or/66-70
72	PHYSICIAN-PATIENT RELATIONS/
73	PROFESSIONAL-FAMILY RELATIONS/
74	NURSE-PATIENT RELATIONS/
75	PROFESSIONAL-PATIENT RELATIONS/
76	ATTITUDE OF HEALTH PERSONNEL/
77	((professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?) adj5 (famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$) adj5 (relation\$ or interact\$ or involv\$ or meet\$ or collaborat\$ or rapport)).ti,ab.
78	((famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$) adj5 (perception\$ or concern\$ or anxiet\$ or anxious\$)).ti,ab.
79	or/72-78
80	(famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$).ti.
81	(professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?).ti.
82	(inform\$ or educat\$ or communicat\$ or advi\$ or counsel\$).ti.
83	or/80-82
84	14 and 26 and (32 or 35) and 54
85	14 and 26 and 57
86	14 and 26 and 62
87	14 and 26 and (32 or 35 or 54) and 65
88	26 and (32 or 35) and 54 and 71
89	14 and 26 and 79
90	14 and 26 and 83
91	or/84-90
92	limit 91 to english language
93	LETTER/
94	EDITORIAL/
95	NEWS/
96	exp HISTORICAL ARTICLE/
97	ANECDOTES AS TOPIC/
98	COMMENT/
99	CASE REPORT/
100	(letter or comment*).ti.
101	or/93-100
102	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
103	101 not 102
104	ANIMALS/ not HUMANS/
105	exp ANIMALS, LABORATORY/
106	exp ANIMAL EXPERIMENTATION/
107	exp MODELS, ANIMAL/
108	exp RODENTIA/
109	(rat or rats or mouse or mice).ti.
110	or/103-109
111	92 not 110

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	PARENTERAL NUTRITION/

## EARLY SUBMISSION

### Search strategies

#	Searches
15	TOTAL PARENTERAL NUTRITION/
16	PERIPHERAL PARENTERAL NUTRITION/
17	PARENTERAL SOLUTIONS/
18	INTRAVENOUS FEEDING/
19	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
20	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
21	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
22	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
23	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
24	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
25	or/14-24
26	FAMILY/
27	exp GRANDPARENT/
28	exp PARENT/
29	CAREGIVER/
30	(famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$).ti,ab.
31	or/26-30
32	exp HEALTH CARE PERSONNEL/
33	(professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?).ti,ab.
34	or/32-33
35	COUNSELING/
36	DIRECTIVE COUNSELING/
37	exp *EDUCATION/
38	HEALTH EDUCATION/
39	exp *INTERPERSONAL COMMUNICATION/
40	CONSUMER HEALTH INFORMATION/
41	PATIENT EDUCATION/
42	INFORMATION SEEKING/
43	PUBLICATION/
44	INTERNET/
45	HOTLINE/
46	TELEPHONE/
47	(inform\$ or educat\$ or communicat\$ or advi\$ or counsel\$ or support\$).ti,ab.
48	(pamphlet? or leaflet? or booklet? or manual? or brochure? or publication? or handout? or hand out? or poster? or website? or web site? or web page? or webpage? or web based or video? or dvd? or online? or internet? or app? or application? or social media or telephon\$ or phone? or helpline? or help line? or hotline? or hot line?).ti,ab.
49	or/35-48
50	SELF HELP/
51	((support\$ or selfhelp\$ or self help\$) adj3 group?).ti,ab.
52	or/50-51
53	PATIENT CARE PLANNING/
54	CLINICAL PATHWAY/
55	CLINICAL PROTOCOL/
56	((care adj3 plan\$) or pathway? or protocol?).ti.
57	or/53-56
58	PATIENT CARE/
59	exp CLINICAL HANDOVER/
60	((patient? or neonat\$ or newborn\$ or new-born\$ or baby or babies or pre#mie? or premie or premies or infant?) adj3 (discharg\$ or handoff? or hand off or handover? or hand\$ over? or transfer\$ or transition\$ or aftercare)).ti,ab.
61	or/58-60
62	PEDIATRIC INTENSIVE CARE UNIT/
63	NEONATAL INTENSIVE CARE UNIT/
64	(intensive care adj3 (p?ediatric\$ or neonat\$)).ti,ab.
65	PICU?.ti,ab.
66	NICU?.ti,ab.
67	or/62-66
68	DOCTOR PATIENT RELATION/
69	NURSE PATIENT RELATIONSHIP/
70	PROFESSIONAL PATIENT RELATIONSHIP/
71	HEALTH PERSONNEL ATTITUDE/
72	((professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?) adj5 (famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$) adj5 (relation\$ or interact\$ or invol\$ or meet\$ or collaborat\$ or rapport)).ti,ab.
73	((famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$) adj5 (perception\$ or concern\$ or anxiet\$ or anxious\$)).ti,ab.
74	or/68-73
75	(famil\$ or parent? or parental or father\$ or mother\$ or grandparent\$ or grandfather\$ or grandmother\$ or carer\$ or caregiver\$).ti.

#	Searches
76	(professional? or personnel or doctor? or physician? or general practitioner? or GP? or nurse? or AHP? or pharmacist? or dietician? or neonatologist? or p?ediatrician?).ti.
77	(inform\$ or educat\$ or communicat\$ or advi\$ or counsel\$).ti.
78	or/75-77
79	13 and 25 and (31 or 34) and 49
80	13 and 25 and 52
81	13 and 25 and 57
82	13 and 25 and (31 or 34 or 49) and 61
83	25 and (31 or 34) and 49 and 67
84	13 and 25 and 74
85	13 and 25 and 78
86	or/79-85
87	limit 86 to english language
88	letter.pt. or LETTER/
89	note.pt.
90	editorial.pt.
91	CASE REPORT/ or CASE STUDY/
92	(letter or comment*).ti.
93	or/88-92
94	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
95	93 not 94
96	ANIMAL/ not HUMAN/
97	NONHUMAN/
98	exp ANIMAL EXPERIMENT/
99	exp EXPERIMENTAL ANIMAL/
100	ANIMAL MODEL/
101	exp RODENT/
102	(rat or rats or mouse or mice).ti.
103	or/95-102
104	87 not 103

**Databases: Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Database of Abstracts of Reviews of Effects; and Health Technology Assessment**

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [Infant, Newborn] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [Premature Birth] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth* or born)):ti,ab
5	MeSH descriptor: [Infant, Premature] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre?mie? or premie or premies):ti,ab
8	MeSH descriptor: [Infant, Low Birth Weight] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [Intensive Care, Neonatal] this term only
12	MeSH descriptor: [Intensive Care Units, Neonatal] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [Parenteral Nutrition] this term only
16	MeSH descriptor: [Parenteral Nutrition, Total] this term only
17	MeSH descriptor: [Parenteral Nutrition Solutions] this term only
18	MeSH descriptor: [Administration, Intravenous] this term only
19	MeSH descriptor: [Infusions, Intravenous] this term only
20	MeSH descriptor: [Catheterization, Central Venous] this term only
21	MeSH descriptor: [Catheterization, Peripheral] explode all trees
22	#18 or #19 or #20 or #21
23	(nutrition* or feed* or fed*) :ti,ab
24	#22 and #23
25	((parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?) near/3 (nutrition* or feed* or fed*)) :ti,ab
26	((peripheral* or central*) near/3 line? near/3 (nutrition* or feed* or fed*)) :ti,ab
27	(catheter* near/3 (nutrition* or feed* or fed*)) :ti,ab
28	(drip? near/3 (nutrition* or feed* or fed*)) :ti,ab
29	#15 or #16 or #17 or #24 or #25 or #26 or #27 or #28
30	MeSH descriptor: [Family] this term only
31	MeSH descriptor: [Grandparents] this term only



## EARLY SUBMISSION

### Search strategies

#	Searches
32	MeSH descriptor: [Parents] explode all trees
33	MeSH descriptor: [Caregivers] this term only
34	(famil* or parent* or parental or father* or mother* or grandparent* or grandfather* or grandmother* or carer* or caregiver*):ti,ab
35	#30 or #31 or #32 or #33 or #34
36	MeSH descriptor: [Health Personnel] explode all trees
37	(professional* or personnel or doctor* or physician* or "general practitioner*" or GP* or nurse* or AHP* or pharmacist* or dietician* or neonatologist* or pediatrician* or paediatrician*):ti,ab
38	#36 or #37
39	MeSH descriptor: [Counseling] this term only
40	MeSH descriptor: [Directive Counseling] this term only
41	MeSH descriptor: [Education] explode all trees
42	MeSH descriptor: [Health Education] this term only
43	MeSH descriptor: [Communication] explode all trees
44	MeSH descriptor: [Consumer Health Information] explode all trees
45	MeSH descriptor: [Patient Education as Topic] this term only
46	MeSH descriptor: [Information Seeking Behavior] this term only
47	MeSH descriptor: [Posters as Topic] this term only
48	MeSH descriptor: [Publications] this term only
49	MeSH descriptor: [Government Publications as Topic] this term only
50	MeSH descriptor: [Pamphlets] this term only
51	MeSH descriptor: [Internet] this term only
52	MeSH descriptor: [Hotlines] this term only
53	MeSH descriptor: [Telephone] this term only
54	(inform* or educat* or communicat* or advi* or counsel* or support*):ti,ab
55	(pamphlet* or leaflet* or booklet* or manual* or brochure* or publication* or handout* or "hand out*" or poster* or website* or "web site*" or "web page*" or webpage* or "web based" or video* or dvd* or online* or internet* or app* or application* or "social media" or telephon* or phone* or helpline* or "help line*" or hotline* or "hot line*"):ti,ab
56	#39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49 or #50 or #51 or #52 or #53 or #54 or #55
57	MeSH descriptor: [Self-Help Groups] this term only
58	((support* or selfhelp* or "self help*") near/3 group*):ti,ab
59	#57 or #58
60	MeSH descriptor: [Patient Care Planning] this term only
61	MeSH descriptor: [Critical Pathways] this term only
62	MeSH descriptor: [Clinical Protocols] this term only
63	((care near/3 plan*) or pathway* or protocol*):ti
64	#60 or #61 or #62 or #63
65	MeSH descriptor: [Continuity of Patient Care] explode all trees
66	((patient* or neonat* or newborn* or "new-born*" or baby or babies or premie or premies or infant*) near/3 (discharg* or handoff* or "hand off" or handover* or "hand* over*" or transfer* or transition* or aftercare)):ti,ab
67	#65 or #66
68	MeSH descriptor: [Intensive Care Units, Pediatric] this term only
69	MeSH descriptor: [Intensive Care Units, Neonatal] this term only
70	("intensive care" near/3 (pediatric* or paediatric* or neonat*)):ti,ab
71	PICU*:ti,ab
72	NICU*:ti,ab
73	#68 or #69 or #70 or #71 or #72
74	MeSH descriptor: [Physician-Patient Relations] this term only
75	MeSH descriptor: [Professional-Family Relations] this term only
76	MeSH descriptor: [Nurse-Patient Relations] this term only
77	MeSH descriptor: [Professional-Patient Relations] this term only
78	MeSH descriptor: [Attitude of Health Personnel] this term only
79	((professional* or personnel or doctor* or physician* or "general practitioner*" or GP* or nurse* or AHP* or pharmacist* or dietician* or neonatologist* or pediatrician* or paediatrician*) near/5 (famil* or parent* or parental or father* or mother* or grandparent* or grandfather* or grandmother* or carer* or caregiver*) near/5 (relation* or interact* or involv* or meet* or collaborat* or rapport)):ti,ab
80	((famil* or parent* or parental or father* or mother* or grandparent* or grandfather* or grandmother* or carer* or caregiver*) near/5 (perception* or concern* or anxiet* or anxious*)):ti,ab
81	#74 or #75 or #76 or #77 or #78 or #79 or #80
82	(famil* or parent* or parental or father* or mother* or grandparent* or grandfather* or grandmother* or carer* or caregiver*):ti
83	(professional* or personnel or doctor* or physician* or "general practitioner*" or GP* or nurse* or AHP* or pharmacist* or dietician* or neonatologist* or pediatrician* or paediatrician*):ti
84	(inform* or educat* or communicat* or advi* or counsel*):ti
85	#82 or #83 or #84
86	#14 and #29 and (#35 or #38) and #56
87	#14 and #29 and #59
88	#14 and #29 and #64
89	#14 and #29 and (#35 or #38 or #56) and #67
90	#29 and (#35 or #38) and #56 and #73
91	#14 and #29 and #81

#	Searches
92	#14 and #29 and #85
93	#86 or #87 or #88 or #89 or #90 or #91 or #92

## Database: Web of Science – Conference Proceedings Citation Index- Science (CPCI-S)

Date of last search: 30/04/2019

#	Searches
1	TOPIC: (neonat* or newborn* or new-born* or baby or babies or premie\$ or infant\$)
2	TOPIC: ((parenteral* or intravenous* or intra-venous* or venous* or infusion\$) near/3 (nutrition* or feed* or fed*))
3	TOPIC: (inform* or educat* or communicat* or advi* or counsel*)
4	TOPIC: (pamphlet\$ or leaflet\$ or booklet\$ or manual\$ or brochure\$ or publication\$ or handout\$ or hand out\$ or poster\$ or website\$ or web site\$ or web page\$ or webpage\$ or web based or video\$ or dvd\$ or online\$ or internet\$ or app\$ or application\$ or social media or telephon* or phone\$ or helpline\$ or help line\$ or hotline\$ or hot line\$)
5	#4 OR #3
6	#5 AND #2 AND #1

## 9.1 What are the general principles of neonatal parenteral nutrition?

### Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	INFANT, NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURE BIRTH/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	exp INFANT, PREMATURE/
6	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	exp INFANT, LOW BIRTH WEIGHT/
9	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
10	((LBW or VLBW) adj5 infan\$).ti,ab.
11	INTENSIVE CARE, NEONATAL/
12	INTENSIVE CARE UNITS, NEONATAL/
13	NICU?.ti,ab.
14	or/1-13
15	exp CHILD/
16	child\$.ti,ab.
17	exp INFANT/
18	infan\$.ti,ab.
19	exp PEDIATRICS/
20	p?ediatric\$.ti,ab.
21	or/15-20
22	PARENTERAL NUTRITION/
23	PARENTERAL NUTRITION, TOTAL/
24	PARENTERAL NUTRITION SOLUTIONS/
25	ADMINISTRATION, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
26	INFUSIONS, INTRAVENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
27	CATHETERIZATION, CENTRAL VENOUS/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
28	exp CATHETERIZATION, PERIPHERAL/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
29	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
30	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
31	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
32	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
33	or/22-32
34	exp GUIDELINE/
35	guideline.pt.
36	guideline?.ti.
37	or/34-36
38	(standard\$ adj3 protocol?).ti.
39	"European Society of Paediatric Gastroenterology, Hepatology and Nutrition".ti,ab.
40	ESPGHAN.ti,ab.

#	Searches
41	"European Society for Clinical Nutrition and Metabolism".ti,ab.
42	ESPEN.ti,ab.
43	"European Society of Paediatric Research".ti,ab.
44	ESPR.ti,ab.
45	"American Society for Parenteral and Enteral Nutrition".ti,ab.
46	ASPEN.ti,ab.
47	"British Association for Parenteral and Enteral Nutrition".ti,ab.
48	BAPEN.ti,ab.
49	"The Parenteral and Enteral Nutrition Group of the British Dietetic Association".ti,ab.
50	PENG.ti,ab.
51	"The British Society of Paediatric Gastroenterology, Hepatology and Nutrition".ti,ab.
52	BSPGHAN.ti,ab.
53	"National Nurses Nutrition Group".ti,ab.
54	NNNG.ti,ab.
55	"Patients on Intravenous and Nasogastric Nutrition Therapy".ti,ab.
56	PINNT.ti,ab.
57	"British Pharmaceutical Nutrition Group".ti,ab.
58	BPNG.ti,ab.
59	"British Association of Perinatal Medicine".ti,ab.
60	BAPM.ti,ab.
61	or/39-60
62	(14 or 21) and 33 and 37
63	(14 or 21) and 33 and 38
64	(14 or 21) and 33 and 61
65	or/62-64
66	limit 65 to english language

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	NEWBORN/
2	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
3	PREMATURITY/
4	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
5	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
6	(pre#mie? or premie or premies).ti,ab.
7	exp LOW BIRTH WEIGHT/
8	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
9	((LBW or VLBW) adj5 infan\$).ti,ab.
10	NEWBORN INTENSIVE CARE/
11	NEONATAL INTENSIVE CARE UNIT/
12	NICU?.ti,ab.
13	or/1-12
14	exp CHILD/
15	child\$.ti,ab.
16	exp INFANT/
17	infan\$.ti,ab.
18	exp PEDIATRICS/
19	p?ediatric\$.ti,ab.
20	or/14-19
21	PARENTERAL NUTRITION/
22	TOTAL PARENTERAL NUTRITION/
23	PERIPHERAL PARENTERAL NUTRITION/
24	PARENTERAL SOLUTIONS/
25	INTRAVENOUS FEEDING/
26	INTRAVENOUS DRUG ADMINISTRATION/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
27	exp INTRAVENOUS CATHETER/ and (nutrition\$ or feed\$ or fed\$).ti,ab.
28	((parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?) adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
29	((peripheral\$ or central\$) adj3 line? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
30	(catheter\$ adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
31	(drip? adj3 (nutrition\$ or feed\$ or fed\$)).ti,ab.
32	or/21-31
33	*PRACTICE GUIDELINE/
34	guideline?.ti.
35	or/33-34
36	(standard\$ adj3 protocol?).ti.
37	"European Society of Paediatric Gastroenterology, Hepatology and Nutrition".ti,ab.
38	ESPGHAN.ti,ab.

#	Searches
39	"European Society for Clinical Nutrition and Metabolism".ti,ab.
40	ESPEN.ti,ab.
41	"European Society of Paediatric Research".ti,ab.
42	ESPR.ti,ab.
43	"American Society for Parenteral and Enteral Nutrition".ti,ab.
44	ASPEN.ti,ab.
45	"British Association for Parenteral and Enteral Nutrition".ti,ab.
46	BAPEN.ti,ab.
47	"The Parenteral and Enteral Nutrition Group of the British Dietetic Association".ti,ab.
48	PENG.ti,ab.
49	"The British Society of Paediatric Gastroenterology, Hepatology and Nutrition".ti,ab.
50	BSPGHAN.ti,ab.
51	"National Nurses Nutrition Group".ti,ab.
52	NNNG.ti,ab.
53	"Patients on Intravenous and Nasogastric Nutrition Therapy".ti,ab.
54	PINNT.ti,ab.
55	"British Pharmaceutical Nutrition Group".ti,ab.
56	BPNG.ti,ab.
57	"British Association of Perinatal Medicine".ti,ab.
58	BAPM.ti,ab.
59	or/37-58
60	PRACTICE GUIDELINE/
61	guideline?.ti,ab.
62	or/60-61
63	(13 or 20) and 32 and 35
64	(13 or 20) and 32 and 36
65	(13 or 20) and 32 and 59 and 62
66	or/63-65
67	limit 66 to english language

## Health economics global search

### Databases: Medline; Medline Epub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

Date of last search: 30/04/2019

#	Searches
1	ECONOMICS/
2	VALUE OF LIFE/
3	exp "COSTS AND COST ANALYSIS"/
4	exp ECONOMICS, HOSPITAL/
5	exp ECONOMICS, MEDICAL/
6	exp RESOURCE ALLOCATION/
7	ECONOMICS, NURSING/
8	ECONOMICS, PHARMACEUTICAL/
9	exp "FEES AND CHARGES"/
10	exp BUDGETS/
11	budget*.ti,ab.
12	cost*.ti,ab.
13	(economic* or pharmaco?economic*).ti,ab.
14	(price* or pricing*).ti,ab.
15	(financ* or fee or fees or expenditure* or saving*).ti,ab.
16	(value adj2 (money or monetary)).ti,ab.
17	resourc* allocat*.ti,ab.
18	(fund or funds or funding* or funded).ti,ab.
19	(ration or rations or rationing* or rationed).ti,ab.
20	ec.fs.
21	or/1-20
22	INFANT, NEWBORN/
23	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
24	PREMATURE BIRTH/
25	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
26	exp INFANT, PREMATURE/
27	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
28	(pre#mie? or premie or premies).ti,ab.
29	exp INFANT, LOW BIRTH WEIGHT/
30	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.

## EARLY SUBMISSION

### Search strategies

#	Searches
31	((LBW or VLBW) adj5 infan\$).ti,ab.
32	INTENSIVE CARE, NEONATAL/
33	INTENSIVE CARE UNITS, NEONATAL/
34	NICU?.ti,ab.
35	or/22-34
36	PARENTERAL NUTRITION/
37	PARENTERAL NUTRITION, TOTAL/
38	PARENTERAL NUTRITION SOLUTIONS/
39	ADMINISTRATION, INTRAVENOUS/
40	INFUSIONS, INTRAVENOUS/
41	CATHETERIZATION, CENTRAL VENOUS/
42	exp CATHETERIZATION, PERIPHERAL/
43	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
44	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
45	drip?.ti,ab.
46	or/36-45
47	35 and 46
48	limit 47 to english language
49	LETTER/
50	EDITORIAL/
51	NEWS/
52	exp HISTORICAL ARTICLE/
53	ANECDOTES AS TOPIC/
54	COMMENT/
55	CASE REPORT/
56	(letter or comment*).ti.
57	or/49-56
58	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
59	57 not 58
60	ANIMALS/ not HUMANS/
61	exp ANIMALS, LABORATORY/
62	exp ANIMAL EXPERIMENTATION/
63	exp MODELS, ANIMAL/
64	exp RODENTIA/
65	(rat or rats or mouse or mice).ti.
66	or/59-65
67	48 not 66
68	21 and 67

## Databases: Embase; and Embase Classic

Date of last search: 30/04/2019

#	Searches
1	HEALTH ECONOMICS/
2	exp ECONOMIC EVALUATION/
3	exp HEALTH CARE COST/
4	exp FEE/
5	BUDGET/
6	FUNDING/
7	RESOURCE ALLOCATION/
8	budget*.ti,ab.
9	cost*.ti,ab.
10	(economic* or pharmaco?economic*).ti,ab.
11	(price* or pricing*).ti,ab.
12	(financ* or fee or fees or expenditure* or saving*).ti,ab.
13	(value adj2 (money or monetary)).ti,ab.
14	resourc* allocat*.ti,ab.
15	(fund or funds or funding* or funded).ti,ab.
16	(ration or rations or rationing* or rationed).ti,ab.
17	or/1-16
18	NEWBORN/
19	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
20	PREMATURITY/
21	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
22	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
23	(pre#mie? or premie or premies).ti,ab.
24	exp LOW BIRTH WEIGHT/
25	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
26	((LBW or VLBW) adj5 infan\$).ti,ab.

## EARLY SUBMISSION

### Search strategies

#	Searches
27	NEWBORN INTENSIVE CARE/
28	NEONATAL INTENSIVE CARE UNIT/
29	NICU?.ti,ab.
30	or/18-29
31	PARENTERAL NUTRITION/
32	TOTAL PARENTERAL NUTRITION/
33	PERIPHERAL PARENTERAL NUTRITION/
34	PARENTERAL SOLUTIONS/
35	INTRAVENOUS FEEDING/
36	INTRAVENOUS DRUG ADMINISTRATION/
37	exp INTRAVENOUS CATHETER/
38	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
39	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
40	drip?.ti,ab.
41	or/31-40
42	30 and 41
43	limit 42 to english language
44	letter.pt. or LETTER/
45	note.pt.
46	editorial.pt.
47	CASE REPORT/ or CASE STUDY/
48	(letter or comment*).ti.
49	or/44-48
50	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
51	49 not 50
52	ANIMAL/ not HUMAN/
53	NONHUMAN/
54	exp ANIMAL EXPERIMENT/
55	exp EXPERIMENTAL ANIMAL/
56	ANIMAL MODEL/
57	exp RODENT/
58	(rat or rats or mouse or mice).ti.
59	or/51-58
60	43 not 59
61	17 and 60

## Database: Cochrane Central Register of Controlled Trials

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [ECONOMICS] this term only
2	MeSH descriptor: [VALUE OF LIFE] this term only
3	MeSH descriptor: [COSTS AND COST ANALYSIS] explode all trees
4	MeSH descriptor: [ECONOMICS, HOSPITAL] explode all trees
5	MeSH descriptor: [ECONOMICS, MEDICAL] explode all trees
6	MeSH descriptor: [RESOURCE ALLOCATION] explode all trees
7	MeSH descriptor: [ECONOMICS, NURSING] this term only
8	MeSH descriptor: [ECONOMICS, PHARMACEUTICAL] this term only
9	MeSH descriptor: [FEES AND CHARGES] explode all trees
10	MeSH descriptor: [BUDGETS] explode all trees
11	budget*.ti,ab
12	cost*.ti,ab
13	(economic* or pharmaco?economic*):ti,ab
14	(price* or pricing*):ti,ab
15	(financ* or fee or fees or expenditure* or saving*):ti,ab
16	(value near/2 (money or monetary)):ti,ab
17	resourc* allocat*:ti,ab
18	(fund or funds or funding* or funded):ti,ab
19	(ration or rations or rationing* or rationed):ti,ab
20	ec.fs.
21	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20
22	MeSH descriptor: [INFANT, NEWBORN] this term only
23	(neonat* or newborn* or new-born* or baby or babies):ti,ab
24	MeSH descriptor: [PREMATURE BIRTH] this term only
25	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)):ti,ab
26	MeSH descriptor: [INFANT, PREMATURE] explode all trees
27	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
28	(pre#mie? or premie or premies):ti,ab

#	Searches
29	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
30	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
31	((LBW or VLBW) near/5 infan*):ti,ab
32	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
33	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
34	NICU?:ti,ab
35	#22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34
36	MeSH descriptor: [PARENTERAL NUTRITION] this term only
37	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
38	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
39	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
40	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
41	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
42	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
43	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?):ti,ab
44	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
45	drip?:ti,ab
46	#36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45
47	#21 and #35 and #46

## Databases: Health Technology Assessment; and NHS Economic Evaluation Database

Date of last search: 30/04/2019

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies):ti,ab
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born*)):ti,ab
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*):ti,ab
7	(pre#mie? or premie or premies):ti,ab
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*):ti,ab
10	((LBW or VLBW) near/5 infan*):ti,ab
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?:ti,ab
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?):ti,ab
23	((peripheral* or central*) near/3 (line? or catheter*)):ti,ab
24	drip?:ti,ab
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	#14 and #25