Appendix 6 Nutritional supplements and enteral feeds

Patients at risk of malnutrition may be prescribed oral nutritional supplements (ONS) or enteral feeds as long as they have a functional gastrointestinal tract. Many of these products are prescribed only in specified clinical circumstances defined by the Advisory Committee on Borderline Substances (ACBS), and are termed ACBS prescribable. Standard ACBS indications are disease-related malnutrition, intractable malabsorption, pre-operative preparation of malnourished patients, dysphagia, proven inflammatory bowel disease, following total gastrectomy, short-bowel syndrome and bowel fistula. The following tables provide a guide to the range of proprietary supplements, feeds and other nutritional support products currently available in the UK.

Product composition within a particular category will differ; some products may be more appropriate than others in particular clinical circumstances. Ongoing product development by the manufacturers inevitably means that, over time, the availability and composition of some products may change, and new products will appear. The information given here is for guidance only, and product details should be checked before clinical usage.

These tables were compiled in October 2017. For current product availability, composition and prescribing indications, consult the British National Formulary (BNF), the Monthly Index of Medical Specialities (MIMS) or the manufacturer's advice. Information on which products are suitable for special diets (e.g. kosher, halal, gluten free, lactose free, vegetarian, vegan) can also be obtained directly from the manufacturers.

A6.1 Adult nutritional supplements and enteral feeds

Note: Many sip feed supplements are available in a variety of flavours to offset taste fatigue. Some, but not all, are nutritionally complete: check compositional details before use. Some products can also be used for tube feeding.

These products can be purchased by patients from supermarkets and chemists, and are useful at times when dietary intake is poor. None are nutritionally complete.

A6.2 Paediatric nutritional supplements and enteral feeds

This appendix is used as a guide, and is not definitive. For further details, see Shaw V. (2015) *Clinical Paediatric Dietetics*, 4th edn. Oxford: Blackwell Publishing. Compiled using data from BNF for Children, 2017.

Manual of Dietetic Practice, Sixth Edition. Edited by Joan Gandy.

Companion website: www.manualofdieteticpractice.com

Table A6.1.1 Prescribable liquid (sip feed) supplements

Product type	Product name (Manufacturer) *Quantity*		Per bottle/can			
			Energy		Protein	Fibre
			kJ	kcal	(g)	(g)
Standard energy	Ensure (Abbott) *250 mL*		1057	251	10.0	0.0
(1 kcal/mL)	Fresubin Original (Fresenius Kabi) *200 mL*		840	200	7.6	0.0
Juice type	Ensure Plus Juce (Abbott) *220 mL*		1403	330	10.6	0.0
(low fat)	Fortijuce (Nutricia Clinical) *200 mL*		1280	300	8.0	0.0
(1.25–1.5 kcal/mL)	Resource Fruit (Nestlé) *200 mL*		1062	250	8.0	0.0
High energy	Ensure Plus Milkshake style (Abbott) *220 mL*		1390	330	13.8	0.0
(1.5–2.4 kcal/mL)	Ensure Plus Savoury (Abbott) *220 mL*		1390	330	14.0	0.0
	Ensure Plus Yoghurt style (Abbott) *220 mL*		1389	330	13.8	0.0
	Ensure Twocal (Abbott) *200 mL*		1675	400	16.8	2.0
	Fortisip Bottle (Nutricia Clinical) *200 mL*		1250	300	11.8	0.0
	Fortisip Compact (Nutricia Clinical) *125 mL*		1261	300	12.0	0.0
	Fortisip Extra (Nutricia Clinical) *200 mL*		1350	320	20.0	0.0
	Fortisip Yogurt Style (Nutricia Clinical) *200 mL*		1260	300	12.0	0.4
	Fresubin 2 kcal Drink (Fresenius Kabi) *200 mL*		1680	400	20.0	0.0
	Fresubin Energy (Fresenius Kabi) *200 mL*		1260	300	11.2	0.0
	Renilon 7.5 (Nutricia Clinical) *125 mL*		1050	250	9.4	0.0
High energy + fibre	Ensure Plus Fibre (Abbott) *200 mL*		1303	310	13.0	5.0
(1.5–2.0 kcal/mL)	Fresubin 2 kcal Fibre Drink (Fresenius Kabi) *200 mL*		1680	400	20	3.2
	Fresubin Energy Fibre (Fresenius Kabi) *200 mL*		1260	300	11.2	4.0
	Fortisip Compact Fibre (Nutricia Clinical) *125 mL*		1256	300	11.8	4.5
	Fortisip Multi Fibre (Nutricia Clinical) *200 mL*		1290	308	12.0	4.4
	Nutrison Energy Multi Fibre (Nutricia Clinical) 20 mL		640	153	6	2.2
	Resource 2.0 Fibre (Nestlé) *200 mL*		1680	400	18.0	5.0
	Fortisip Compact Protein (Nutricia Clinical) 125 mL		1263	300	18	0
	Fresubin Protein Energy Drink (Fresenius Kabi) *200 mL*		1260	300	20.0	0.0
	Resource Protein (Nestlé) *200 mL*		1054	250	18.8	0.0
	Nutricomp Drink Plus (Braun) 200 mL		1264	300	12	<0.2
Thickened	Fresubin Thickened (Fresenius Kabi) *200 mL*		1260	300	20.0	*
(1.5–2.4 kcal/mL)	Syrup (stage 1) and custard (stage 2)					
	Nutilis Complete Stage 1 (Nutricia) *125 mL*		1288	306	12.0	4.0
	Resource Thickened Drink (Nestlé) *114 mL*		435	102	0.0	0.0
	Syrup and custard consistencies					
	SLO Drinks (SLO Drinks)			*	*	*
	Syrup, custard and pudding consistencies					
Powdered	Complan Shake (Complan Foods) *55 g sachet*	*in 200 mL water*	1025	244	8.5	0.0
		in 200 mL whole milk	1621	387	15.6	0.0
	Foodlink Complete (Foodlink)		1612	385*	18.5*	0.0
	Shake per 57 g sachet prepared with 200 mL milk					
	Foodlink Complete with Fibre (Foodlink)		1760	421	19.6	4.5
	Shake per 63 g sachet prepared with 200 mL milk					
	Oral Impact (Nestlé) *74 g in 250 mL water*		*	*	*	
	Vegenat-med Balanced Protein (Vegenat)		1924	458	18.0	5.8
	110 g sachet					
	Vegenat-med High Protein (Vegenat)		1940	463	23.3	6.0
	110 g sachet					

* Exact composition varies – see manufacturer's data.

Table A6.1.2 Non-prescribable powdered supplements

Product name (Manufacturer) *Quantity*	Per sachet + 200 mL whole milk			
	Energy		Protein	Fibre
	kJ	kcal	(g)	(g)
Complan (Complan Foods) *55 g sachet mixed with water*	1030	244	8.5	0.1

Table A6.1.3 Prescribable solid/semi-solid supplements (dessert style – also useful for dysphagic patients)

Product type	Product name (Manufacturer) *Quantity*	Per bottle/can			
		Energy		Protein	Fibre
		kJ	kcal	(g)	(g)
Solid/semi-solid desserts	Clinutren Dessert (Nestlé) *125 g*	779	187	11	2.9
	Ensure Plus Crème (Abbott) *125 g*	718	171	7.1	0.0
	Forticreme Complete (Nutricia Clinical) *125 g*	844	200	11.9	0.0
	Fortisip Fruit Dessert (Nutricia Clinical) *150 g*	844	200	10.5	3.9
	Fresubin Crème (Fresenius Kabi) *125 g*	945	225	12.5	2.5
	Resource Dessert Energy (Nestlé) *125 g*	839	200	6.0	0.0
	Resource Dessert Fruit (Nestlé) *125 g*	848	200	6.3	1.8

Table A6.1.4 Single nutrient component supplements

Component	Product name (Manufacturer)	Notes, ACBS indications and nutritional values	
Carbohydrate	Caloreen (Nestlé) *powder*	1630 kJ/385 kcal/100 g	Disease-related malnutrition, malabsorption states or other conditions requiring fortification with a high or readily available carbohydrate supplement
	Maxijul Liquid (SHS) *liquid*	850 kJ/200 kcal/100 mL	
	Maxijul Super Soluble (SHS) *powder*	1615 kJ/380 kcal/100 g	
	Polycal (Nutricia Clinical) *powder*	1630 kJ/384 kcal/100 g	
	Polycal Liquid (Nutricia Clinical) *liquid*	1050 kJ/247 kcal/100 mL	
	Resource Optifibre (Nestlé) *powder*	816 kJ/202 kcal and 86 g fibre/100 g	
	S.O.S. 10, 15, 20, 25 (Vitaflo) *powder*	1590 kJ/380 kcal/100 g	
	Vitajoule (Vitaflo) powder	1615 kJ/380 kcal/100 g	
Fat	Calogen (Nutricia Clinical) *liquid* 100% LCT fat emulsion	1850 kJ/450 kcal/100 mL	Disease-related malnutrition, malabsorption states or other conditions requiring fortification with a high-fat supplement
	Calogen Extra Shots (Nutricia Clinical)	1650 kJ/400 kcal/100 mL	
	Fresubin 5 kcal Shot (Fresenius Kabi) *liquid*	2100 kJ/500 kcal/100 mL	
	Liquigen (SHS) *liquid* 97% MCT	1850 kJ/450 kcal/100 mL	Steatorrhoea associated with cystic fibrosis (pancreas), intestinal lymphangiectasia, intestinal surgery, chronic liver disease/cirrhosis and other proven malabsorption syndromes
	Medium-Chain Triglyceride (MCT) Oil (SHS) *liquid* 100% MCT	3515 kJ/855 kcal/100 mL	
Protein	Casilan 90 (Heinz) *powder* 90% protein	1572 kJ/356 kcal/100 g	Disease-related malnutrition, malabsorption states or other conditions requiring fortification with a high-protein supplement
	Protifar (Nutricia Clinical) *powder* 89% protein	1560 kJ/368 kcal/100 g	

Table A6.1.5 Multiple nutrient component supplements

Components	Product name (Manufacturer)	Notes, ACBS indications & nutritional values	
Fat/carbohydrate	MCT Duocal (SHS) *powder*	Conditions requiring extra calories, e.g. fat malabsorption, or where assimilation of LCTs is impaired.	50 g in 150 mL water provides: 1041 kJ/249 kcal, 36 g CHO, 11.6 g fat
	Duocal (SHS) *liquid*	Conditions requiring extra calories	Per 100 mL: 695 kJ/166 kcal, 23.7 g CHO, 7.9 g fat (30% MCT)
Protein/carbohydrate	ProSource (Nutrinovo) *liquid*	Protein energy malnutrition and patients on a fluid-restricted diet	Per 30 mL: 420 kJ/100 kcal, 10 g protein, 15 g CHO
	Calogen Extra (Nutricia Clinical) *liquid*	High-energy fat emulsion with protein, carbohydrate, vitamins and minerals	Per 100 mL: 1650 kJ/400 kcal, 5 g protein, 4.5 g CHO, 40.3 g fat
Protein/fat/carbohydrate	Calshake (Fresenius Kabi) *powder*	For increased energy requirements, e.g. patients with cystic fibrosis, cancer or HIV/AIDS	87 g sachet + 240 mL whole milk provides approx.: 2504 kJ/599 kcal, 11.6 g protein, 68.9 g CHO, 28.3 g fat
	Enshake (Abbott) *powder*	High-energy, high-protein drink, for patients with involuntary weight loss	96.5 g sachet + 240 mL whole milk provides approx.: 2519 kJ/600 kcal, 16 g protein, 78.9 g CHO, 24.7 g fat
	Pro-Cal (Vitaflo) *powder*	Disease-related malnutrition, malabsorption states and other conditions requiring fortification with energy and protein, e.g. burns	15 g sachet provides: 415 kJ/100 kcal, 2 g protein, 4.2 g CHO, 8.3 g fat
	Pro-Cal Shot (Vitaflo) liquid		Per 30 mL: 418 kJ/100 kcal, 2 g protein, 4 g CHO, 8.5 g fat
	Scandishake Mix (Nutricia Clinical) *powder*	High-energy supplement for disease-related malnutrition based on skimmed milk powder, carbohydrate and fat	85 g sachet + 240 mL whole milk provides: 2457 kJ/588 kcal, 11.7 g protein, 66.8 g CHO, 30.4 g fat
	Vitasavoury 300 (Vitaflo) *powder*	Low-volume, high-energy supplements for disease-related malnutrition, malabsorption states or other conditions requiring additional energy and protein	50 g sachet provides: 1281 kJ/309 kcal, 6 g protein, 11.3 g CHO, 26 g fat

CHO, carbohydrate; MCT, medium-chain triglycerides; LCT, long-chain triglycerides.

Table A6.1.6 Food and fluid thickeners (for thickening of food and drinks of patients with dysphagia)

Type of product	Product name (Manufacturer)
Modified maize starch powder*	Multi Thick (Abbott)
	Nutilis (Nutricia Clinical)
	Resource ThickenUp (Nestlé)
	Thick and Easy (Fresenius Kabi)
	Thick and Easy Clear (Fresenius Kabi)
	Thixo-D (Sutherland)
	Vitaquick (Vitaflo)
Maltodextrin and xanthan gum	Resource ThickenUp Clear (Nestlé)

* See individual manufacturer's recommendations for the quantities required to achieve various textures.

Table A6.1.7 Enteral feeds – standard indications

Product type	Product name (Manufacturer)	Per 100 mL			
		Energy		Protein	Fibre
		kJ	kcal	(g)	(g)
Standard energy (1 kcal/mL)	Fresubin Original (Fresenius Kabi)	420	100	3.8	0.0
	Fresubin Original Fibre (Fresenius Kabi)	420	100	3.8	1.5
	Peptamen (Nestlé)	421	100	4.0	0
	Jevity (Abbott)	449	107	4.0	1.8
	Jevity Promote (Abbott)	434	103	5.6	1.7
	Novasource GI Control (Nestlé) 40% MCTs	463	110	4.1	2.1
	Nutrison (Nutricia Clinical)	420	100	4.0	0.0
	Nutrison MCT (Nutricia Clinical) 61% MCTs	420	100	5.0	0.0
	Nutrison Multi Fibre (Nutricia Clinical)	430	103	4.0	1.5
	Osmolite (Abbott)	424	101	4.0	0.0
	Osmolite HP (Abbott)	424	100	6.26	0.0
Nutritionally complete (1.0–1.2 kcal/mL)	Fresubin 1000 Complete (Fresenius Kabi) Complete in 1000 mL	418	100	5.5	2.0
	Fresubin 1200 Complete (Fresenius Kabi) Complete in 1000 mL	500	120	6.0	2.0
	Fresubin 1500 Complete (Fresenius Kabi) Complete in 1500 mL	420	100	3.8	1.5
	Fresubin 1800 Complete (Fresenius Kabi) Complete in 1500 mL	500	120	6.0	2.0
	Fresubin 2250 Complete (Fresenius Kabi) Complete in 1500 mL	630	150	5.6	1.5
	Fresubin Intensive (Fresenius Kabi) Complete in 1000 mL	512	122	10	0.64
	Nutrison 800 Complete Multi Fibre (Nutricia Clinical) Complete in 800 mL	345	83	5.5	1.5
	Nutrison 1000 Complete Multi Fibre (Nutricia Clinical) Complete in 1000 mL	420	100	5.5	2.0
	Nutrison 1200 Complete Multi Fibre (Nutricia Clinical) Complete in 1000 mL	505	120	5.5	2.0
Medium energy (1.2–1.3 kcal/mL)	Jevity Plus (Abbott)	514	122	5.6	2.2
	Jevity Plus HP (Abbott)	551	131	8.1	1.5
	Nutrison Advanced Protison (Nutricia Clinical)	540	128	7.5	1.5
	Nutrison Protein Plus (Nutricia Clinical)	525	125	6.3	0.0
	Nutrison Protein Plus Multi Fibre (Nutricia Clinical)	525	125	6.3	1.5
	Osmolite Plus (Abbott)	508	121	5.6	0.0
	Peptamen HN (Nestle)	559	133	6.6	0.0
High energy (1.5–2.0 kcal/mL)	Twocal (Abbott)	837	200	8.4	1.0
	Fresubin Energy (Fresenius Kabi)	630	150	5.6	0.0
	Fresubin Energy Fibre (Fresenius Kabi)	630	150	5.6	1.5
	Fresubin HP Energy (Fresenius Kabi)	630	150	7.5	0.0
	Jevity 1.5 kcal (Abbott)	649	154	6.4	2.2
	Novasource GI Forte (Nestlé)	649	155	6.0	2.2
	Nutrison Concentrated (Nutricia Clinical)	840	200	7.5	0.0
	Nutrison Energy (Nutricia Clinical)	630	150	6.0	0.0
	Nutrison Energy Multi Fibre (Nutricia Clinical)	640	153	6.0	1.5
	Nutrison Energy Multifibre Vanilla (Nutricia Clinical)	645	154	6.0	2.2
	Osmolite 1.5 kcal (Abbott)	630	150	6.3	0.0
	Peptamen AF (Nestle)	638	152	9.4	0.0

Table A6.1.8 Specialist indication enteral feeds and supplements

Product type	Product name (Manufacturer)	Per 100 mL			
		Energy		Protein	Fibre
		kJ	kcal	(g)	(g)
Amino acid liquid formula	Elemental 028 Extra (SHS) *Sip feed*	360	86	2.5	0.0
Low-sodium liquid formula	*Nutrison Low Sodium (Nutricia Clinical)*	420	100	4.0	0.0
Peptide-based liquid formula	Peptamen (Nestlé)	421	100	4.0	0.0
	Peptamen HN (Nestlé)	559	133	6.6	0.0
	Peptisorb (Nutricia Clinical)	425	100	4.0	0.0
	Perative (Abbott)	552	131	6.7	0.0
	Survimed OPD (Fresenius Kabi)	420	100	4.5	0.0
Soya protein liquid formula	Fresubin Soya Fibre (Fresenius Kabi)	420	100	3.8	2.0
	Nutrison Soya (Nutricia Clinical)	420	100	4.0	0.0
	Nutrison Soya Multi Fibre (Nutricia Clinical)	420	100	4.0	1.5

Table A6.1.9 Specialised formulas for specific clinical conditions

Condition	Notes and ACBS indications	Product (Manufacturer)
Cancer	Pancreatic cancer.	FortiCare (Nutricia Clinical) *liquid*
	Lung cancer undergoing chemotherapy.	Supportan (Fresenius Kabi) *liquid*
	Pancreatic cancer.	ProSure (Abbott) *liquid*
	Contains EPA.	
Crohn's disease	Crohn's disease.	Alicalm (SHS) *powder*
	Active Crohn's disease / nutritional support during Crohn's remission.	Modulen IBD (Nestlé) *powder*
		(can be flavoured with Flavour Mix (Nestlé) powder)
Epilepsy	Part of ketogenic diet in the management of drug therapy–resistant epilepsy.	KetoCal (SHS) *powder*
Liver disease	Whey protein + BCAA. Chronic liver disease and/or porto-hepatic encephalopathy.	Generaid (SHS) *powder*
Pulmonary	Acute lung injury, ARDS and SIRS.	Oxepa (Abbott) *liquid*
	COPD, cystic fibrosis or respiratory failure.	Pulmocare (Abbott) *liquid*
	Disease-related malnutrition in COPD + BMI <20.	Respifor (Nutricia Clinical) *liquid*
Renal	Chronic renal failure with haemodialysis or continuous ambulatory peritoneal dialysis.	Nepro (Abbott) *liquid*
	Cirrhosis.	
	Chronic renal failure.	Renamil (KoRa) *powder*
	Biochemically proven hypoproteinaemia.	Renapro (KoRa) *powder*
	Patients on dialysis.	
Renal/liver	For use where a high-energy, low-fluid, low-electrolyte diet is required.	Duocal Super Soluble (SHS) *powder*
	Chronic/acute renal failure without dialysis.	Suplena (Abbott) *liquid*
	Chronic/acute liver disease with fluid restriction.	
Short-bowel syndrome	Intractable malabsorption and proven irritable bowel disease.	Elemental 028 Extra (SHS) *powder*
		Glucodrate (Vitaflo) *powder*
Synthetic diets	Mineral and trace element supplement for synthetic diets.	Metabolic Mineral Mixture (SHS) *powder*

ARDS: acute respiratory distress syndrome; BCAA: branched-chain amino acids; COPD: chronic obstructive pulmonary disease; SIRS: Systemic inflammatory response syndrome.

Table A6.1.10 Nutritional supplements for metabolic diseases

Condition	Notes and ACBS indications	Product (Manufacturer)
Glutaric aciduria	Type 1 glutaric aciduria.	XLYS, TRY Glutaridon* (SHS) *powder*
Glycogen storage diseases	Plus other metabolic conditions where a constant glucose supply is essential.	Glycosade (Vitaflo) *powder*
Homocystinuria	Methionine-free protein substitute.	HCU cooler (Vitaflo) *liquid*
		HCU Express (Vitaflo) *powder*
Hypermethioninaemia	And vitamin B_6 non-responsive homocystinuria.	HCU LV (SHS) *powder*
Hypermethioninaemia or homocystinuria	Essential and nonessential amino acids, except methionine.	XMET Homidon* (SHS) *powder*
		XMET Maxamum (SHS) *powder*
Isovaleric acidaemia	Essential and nonessential amino acids, except leucine.	XLEU Faladon (SHS) *powder*
Maple syrup urine disease	Use in low-protein diets by mixing with protein substitute, adding to modular feeds, incorporating into other permitted food or drink.	Isoleucine Amino Acid Supplement (Vitaflo) *powder*
		Valine Amino Acid Supplement (Vitaflo) *powder*
	Essential and nonessential amino acids, except isoleucine, leucine, valine.	MSUD Aid III (SHS) *powder*
		MSUD cooler (Vitaflo) *liquid*
		MSUD express (Vitaflo) *powder*
		MSUD Maxamum (SHS) *powder*
Methylmalonic acidaemia Propionic acidaemia	Essential and nonessential amino acids, except methionine, threonine, valine and low isoleucine.	XMTVI Asadon (SHS) *powder*
		XMTVI Maxamum (SHS) *powder*
Other errors of protein metabolism	Use in low-protein diets by mixing with protein substitute, adding to modular feeds, incorporating into other permitted food or drink.	Cystine Amino Acid Supplement (Vitaflo) *powder*
		Leucine Amino Acid Supplement (Vitaflo) *powder*
		Phenylalanine Amino Acid Supplement (Vitaflo) *powder*
Dietary management of patients with increased risk of infection	For use in post-operative, post-traumatic (e.g. burns) or severely malnourished patients.	Reconvan (Fresenius Kabi) *liquid*
Other inborn errors of metabolism	n-3 supplement containing DHA.	DocOmega (Vitaflo) *powder*
	n-3 and supplement containing AA and DHA.	KeyOmega (Vitaflo) *powder*
Phenylketonuria (PKU)	Phenylalanine-free protein substitute.	Add-Ins (SHS) *powder*
Phenylalanine-free protein substitutes	Ready-to-drink phenylalanine-free liquid product.	Easiphen (SHS) *liquid*
	Phenylalanine-free drink mix.	Lophlex (SHS) *powder*
	For use in maternal PKU where there are low plasma tyrosine concentrations.	L-Tyrosine (SHS) *powder*
	Phenylalanine-free protein supplement.	Milupa PKU 3-advanta (Milupa) *powder*
	Each unit (one sachet, 10 tablets or 20 capsules) provides 10 g amino acids except phenylalanine.	Phlexy-10 Exchange System (SHS) *Capsule/Tablet/Drink*
	Unflavoured blend of essential and nonessential amino acids.	PK Aid-4 (SHS) *powder*
	Ready-to-drink phenylalanine-free protein substitutes, including n-3 LCPs, DHA and EPA.	PKU cooler10 (Vitaflo) *liquid*
		Provides 10 g of protein equivalent
		PKU cooler15 (Vitaflo) *liquid*
		Provides 15 g of protein equivalent
		PKU cooler20 (Vitaflo) *liquid*
		Provides 20 g of protein equivalent
	Phenylalanine-free protein substitute.	PKU express (Vitaflo) *powder*
		1 x 25 g sachet provides 15 g of protein equivalent
	Phenylalanine-free liquid containing a balanced mixture of essential and nonessential amino acids, carbohydrates, vitamins, trace elements and some minerals.	PKU Lophlex LQ 10 (SHS) *liquid*
		Provides 10 g of protein equivalent
		PKU Lophlex LQ 20 (SHS) *liquid*
		Provides 20 g of protein equivalent
	For use in low-protein diets.	Tyrosine Amino Acid Supplement (Vitaflo) *powder*
	Phenylalanine-free protein substitute drink mix.	XP Maxamum (SHS) *powder*

(*Continued*)

Table A6.1.10 (*Continued*)

Condition	Notes and ACBS indications	Product (Manufacturer)
Tyrosinaemia	Ready-to-drink, tyrosine- and phenylalanine-free protein substitute.	TYR cooler (Vitaflo) *liquid*
	Unflavoured, powdered tyrosine- and phenylalanine-free protein substitute.	TYR express (Vitaflo) *powder* 25 g sachet provides 15 g of protein equivalent
	Normal plasma methionine concentrations.	XPHEN TYR Tyrosidon (SHS) *powder*
	Above-normal plasma methionine concentrations.	XPTM Tyrosidon (SHS) *powder*
Urea cycle disorders	Except arginase deficiency.	L-Arginine (SHS) *powder*
	Essential amino acid supplement.	Dialamine (SHS) *powder* EAA Supplement (Vitaflo) *powder*
Low-protein milk replacement drinks	Low-protein, low-phenylalanine drink based on cow's milk.	Loprofin PKU Drink (SHS) *liquid*
	Suitable for dietary management of amino acid metabolism disorders.	Milupa lp-drink (Milupa) *powder*
	Liquid blend of carbohydrate and fat.	ProZero (Vitaflo) *liquid*
	Low-protein, low-phenylalanine drink based on milk extracts.	Sno-Pro (SHS) *liquid*
Vitamin and mineral component	For use with restricted diets for PKU and similar amino acid abnormalities.	Phlexy-Vits (SHS) *powder/tablet*
Flavouring preparations	For use with unflavoured protein substitutes.	FlavourPac (Vitaflo) *powder* (blackcurrant, lemon, orange, tropical, raspberry) Modjul Flavour System (SHS) *powder* (blackcurrant, orange, pineapple)

*A source of vitamins, minerals, and trace elements is also required, e.g. Phlexy-Vits.
AA, arachidonic acid; DHA, docosahexaenoic acid; EPA, eicosapentaenoic acid; LCPs, long-chain polyunsaturated fatty acids.

Table A6.1.11 Manufacturers' websites

Abbott, Abbott Laboratories Ltd	www.abbott.co.uk
Complan Foods, Complan Foods Ltd	www.complanfoods.com
Foodlink, Foodlink (UK) Ltd	www.foodlinkltd.co.uk
Fresenius Kabi, Fresenius Kabi Ltd	www.fresenius-kabi.co.uk
Heinz, H. J. Heinz Company Ltd	www.heinz.co.uk
KoRa, KoRa Healthcare Ltd	www.kora-health.com
Milupa, Milupa Aptamil	www.milupa-metabolics.com
Nestlé, Nestlé Nutrition	www.nestlehealthscience.co.uk
Nutricia Clinical, Nutricia Clinical Care	www.nutricia.co.uk
Nutrinovo, Nutrinovo Ltd	www.nutrinovo.com
SLO Drinks, SLO Drinks Ltd	www.slodrinks.com
Sutherland, Sutherland Health Ltd	www.sutherlandhealth.com
Vegenat, Vegenat	http://vegenatnutricion.es/index.php?r=site/index
Vitaflo, Vitaflo International Ltd	www.vitaflo.co.uk

Note: SHS International Ltd is part of Nutricia and no longer has a separate web site.

Table A6.2.1 Paediatric sip feeds

Product type	Product name (Manufacturer)	Per 100 mL ready-to-drink product/ standard dilution				Notes
		Energy		Protein	Fibre	
		kJ	kcal	(g)	(g)	
Low energy <1 kcal/ mL	Nutriprem 1 (Cow & Gate) *liquid*	335	80	2.6	0.6	70 mL bottle, formula for low-birth-weight babies <1.8 kg only available in hospital
	Nutriprem 2 (Cow & Gate) *liquid*	310	75	2.0	0.6	Catch-up growth in pre-term infants (less than 35 weeks at birth) and small for gestational-age infants up to 6 months corrected age
	SMA Gold Prem 2 (SMA Nutrition) *powder*	305	73	2.0	0.0	
	SMA High Energy (SMA Nutrition) *liquid*	414	99	2.6	0.0	250 mL carton, disease related malnutrition, malabsorption, growth failure from birth to 18 months
Standard energy (1 kcal/mL)	Clinutren Junior (Nestlé) *powder*	420	100	3.0	0.0	Growth failure*†
	Infatrini (Nutricia Clinical) *liquid*	420	101	2.6	0.6	125 mL bottle failure to thrive, disease-related malnutrition and malabsorption, from birth up to body weight 9 kg
	Paediasure (Abbott) *liquid*	422	101	2.8	0.0	200 mL bottle*†
	Paediasure Fibre (Abbott) *liquid*	424	101	2.8	0.73	
	Paediasure Peptide (Abbott) *liquid*	420	100	3.0	0.0	
	Similac High Energy (Abbott) *liquid*	419	100	2.6	0.4	60 mL and 200 mL bottles increased energy requirements, faltering growth &/or need for fluid restriction, body weight up to 8 kg
High energy (1.5 kcal/mL)	Fortini (Nutricia Clinical) *liquid*	630	150	3.4	0.0	Disease-related malnutrition and growth failure in children of 1–6 years*, body weight 8–20 kg
	Fortini Multifibre (Nutricia Clinical) *liquid*	630	150	3.4	1.5	
	Fortini Smoothie Multifibre (Nutricia Clinical) *liquid*	625	150	3.4	1.4	
	Frebini Energy Drink (Fresenius Kabi) *liquid*	630	150	3.8	0.0	Disease-related malnutrition and growth failure in children of 1–10 years*, body weight 8–30 kg
	Frebini Energy Fibre Drink (Fresenius Kabi) *liquid*	630	150	3.8	1.1	
	Paediasure Plus (Abbott) *liquid*	632	151	4.2	0.0	*†
	Paediasure Plus Fibre (Abbott) *liquid*	635	152	4.2	1.1	*†
	Paediasure Plus Juce (Abbott) *liquid*	638	150	4.2	0.0	Low fat*†
	Resource Junior (Nestlé) *liquid*	630	150	3.0	0.0	For children of 1–10 years*

*Not suitable for use in children aged under 1 year.
†For children aged 1–10 years, body weight 8–30 kg.

Table A6.2.2 Feed thickener

Product name (Manufacturer)	Notes
Carobel Instant (Cow & Gate)	Instant thickening agent, prepared from carob seed flour, suitable from birth. Prescribable for thickening feeds in the treatment of habitual and recurrent vomiting.

Table A6.2.3 Paediatric enteral feeds – standard indications

Product type	Product name (Manufacturer)	Per 100 mL				Notes
		Energy		Protein	Fibre	
		kJ	kcal	(g)	(g)	
Low energy (<1 kcal/mL)	Nutrini Low Energy Multi Fibre (Nutricia Clinical) *liquid*	315	75	2.1	0.8	For ages 1–6 years, except bowel fistula, body weight 8–20 kg
Standard energy (1 kcal/mL)	Clinutren Junior (Nestlé) *powder*	420	100	3.0	0.0	For growth failure*†
	Frebini Original (Fresenius Kabi) *liquid*	420	100	2.5	0.0	
	Frebini Original Fibre (Fresenius Kabi) *liquid*	420	100	2.5	0.8	
	Infatrini (Nutricia Clinical) *liquid*	415	100	2.6	0.8	Failure to thrive, disease-related malnutrition and malabsorption, from birth up to body weight 8 kg
	Nutrini (Nutricia Clinical) *liquid*	420	100	2.8	0.0	For growth failure, for ages 1–6 years, body weight 8–20 kg*
	Nutrini Multi Fibre (Nutricia Clinical) *liquid*	420	100	2.8	0.8	
	Paediasure (Abbott) *liquid*	422	101	2.8	0.0	*†
	Paediasure Fibre (Abbott) *liquid*	424	101	2.8	0.73	
	Similac High Energy (Abbott) *liquid*	419	100	2.6	0.4	Increased energy requirements, faltering growth and/or need for fluid restriction, body weight up to 8 kg
	Tentrini (Nutricia Clinical) *liquid*	420	100	3.3	0.0	For growth failure in children aged 7–12 years, body weight 21–45 kg
	Tentrini Multi Fibre (Nutricia Clinical) *liquid*	420	100	3.3	1.1	
Medium energy (1.2 kcal/mL)	Isosource Junior (Nestlé) *liquid*	513	122	2.7	0.0	For growth failure in children aged 1–6 years, body weight 8–20 kg*
High energy (1.5 kcal/mL)	Frebini Energy (Fresenius Kabi) *liquid*	630	150	3.8	0.0	For growth failure in ages 1–10 years, body weight 8–30 kg*
	Frebini Energy Fibre (Fresenius Kabi) *liquid*	630	150	3.8	1.1	
	Nutrini Energy (Nutricia Clinical) *liquid*	630	150	4.1	0.0	For growth failure in ages 1–6 years, body weight 8–20 kg*
	Nutrini Energy Multi Fibre (Nutricia Clinical) *liquid*	630	150	4.1	0.8	For ages 1–6 years, body weight 8–20 kg* and total gastrectomy, not with bowel fistula
	Paediasure Plus (Abbott) *liquid*	632	151	4.2	0.0	*†
	Paediasure Plus Fibre (Abbott) *liquid*	635	152	4.2	1.1	
	Tentrini Energy (Nutricia Clinical) *liquid*	630	150	4.9	0.0	For growth failure in children aged 7–12 years, body weight 21–45 kg
	Tentrini Energy Multi Fibre (Nutricia Clinical) *liquid*	630	150	4.9	1.1	For children aged 7–12 years, body weight 21–45 kg and proven inflammatory bowel disease

*Not suitable for use in children aged under 1 year.
†For children aged 1–10 years, body weight 8–30 kg.

Table A6.2.4 Specialist paediatric formulas

Formula type	Product name (Manufacturer)	Per 100 mL ready-to-drink product (standard dilution)				Notes
		Energy		Protein	Fibre	
		kJ	kcal	(g)	(g)	
Amino acid based	Emsogen (SHS) *powder*	368	88	2.5	0.0	Short-bowel syndrome, intractable malabsorption, proven inflammatory bowel disease, bowel fistula. Not suitable as sole source of nutrition for children aged 1–5 years*
	Neocate Active (SHS) *powder*	418	100	2.8	0.0	For 1–10 years*
	Neocate Advance (SHS) *powder*	420	100	2.5	0.0	
	Neocate LCP (SHS) *powder*	279	67	1.8	0.0	‡
	Nutramigen Puramino (Mead Johnson) *powder*	290	68	1.9	0.0	
Fructose based	Galactomin 19 (SHS) *powder*	288	69	1.9	0.0	Conditions of glucose plus galactose intolerance
Hydrolysate	Aptamil Pepti 1 (Allergy) (Milupa) *powder*	280	67	1.6	0.6	Established cows' milk protein intolerance, with or without secondary lactose intolerance‡.
	Aptamil Pepti 2 (Allergy) (Milupa) *powder*	285	68	1.6	0.6	Established cows' milk protein allergy or intolerance. Not suitable <6 months; suitable for 6 months–12 years.
	Cow & Gate Pepti-Junior (Cow & Gate) *powder*	275	66	1.8	0.0	Disaccharide and/or whole-protein intolerance, or where amino acids and peptides are indicated in conjunction with medium-chain triglycerides‡.
	Nutramigen Lipil 1 (Mead Johnson) *powder*	280	68	1.9	0.0	Disaccharide and/or whole-protein intolerance where additional medium-chain triglycerides are not included‡.
	Nutramigen Lipil 2 (Mead Johnson) *powder*	285	68	1.7	0.0	Established disaccharide and/or whole-protein intolerance where additional-chain triglycerides are not indicated. Not suitable for <6 months, suitable for 6 months–12 years.
	Nutrini Peptisorb (Nutricia Clinical) *liquid*	420	100	2.8	0.0	For growth failure in ages 1–6 years*, body weight 8–20 kg.
	Pepdite (SHS) *powder*	297	71	2.1	0.0	Disaccharide and/or whole-protein intolerance‡.
	Pepdite 1+ (SHS) *powder*	423	100	3.1	0.0	Disaccharide and/or whole-protein intolerance, or where amino acids or peptides are indicated in conjunction with medium-chain triglycerides. For ages 1–12 years*.
	Peptamen Junior (Nestlé) *liquid*	420	100	3.0	0.0	Short-bowel syndrome, intractable malabsorption, proven inflammatory bowel disease, bowel fistula, in children aged 1–10 years*
	Pregestimil Lipil (Mead Johnson) *powder*	280	68	1.9	0.0	Disaccharide and/or whole-protein intolerance, or where amino acids or peptides are indicated in conjunction with medium-chain triglycerides and hydrolysed casein‡.
Low calcium	Locasol (SHS) *powder*	278	66	1.9	0.0	Conditions of calcium intolerance requiring restriction of calcium and vitamin D intake‡.
MCT-enhanced	Caprilon (SHS) *powder*	277	66	1.5	0.0	Fat 3.6 g (MCT 75%)[d] ‡.
	MCT Pepdite (SHS) *powder*	286	68	2.0	0.0	Fat 2.7 g (MCT 75%)[d] ‡.
	MCT Pepdite +1 (SHS) *powder*	381	91	2.8	0.0	Fat 3.6 g (MCT 75%)[d] for ages 1–12 years*.
	Monogen (SHS) *powder*	310	74	2.2	0.0	LCAD (long-chain acyl-CoA dehydrogenase deficiency), CPTD (carnitine palmitoyltransferase deficiency), primary and secondary lipoprotein lipase deficiency. Fat 2.1 g (MCT 90%)‡.

(*Continued*)

Table A6.2.4 (*Continued*)

Formula type	Product name (Manufacturer)	Per 100 mL ready-to-drink product (standard dilution)				Notes
		Energy		Protein	Fibre	
		kJ	kcal	(g)	(g)	
Peptide-based	Paediasure Peptide (Abbott) *liquid*	420	100	3.0	0.0	*†
	Peptamen Junior (Nestlé) *liquid*	420	100	3.0	0.0	Short-bowel syndrome, intractable malabsorption, proven inflammatory bowel disease, bowel fistula*†.
Pre-thickened infant feeds	Enfamil AR (Mead Johnson) *powder*	285	68	1.7	0.0	Significant gastro-oesophageal reflux‡.
	SMA Staydown (SMA Nutrition) *powder*	279	67	1.6	0.0	
Residual lactose	Enfamil O-Lac (Mead Johnson) *powder*	280	68	1.4	0.0	Proven lactose intolerance‡.
	Galactomin 17 (SHS) *powder*	295	70	1.7	0.0	Proven lactose intolerance in pre-school children, galactosaemia, and galactokinase deficiency‡.
	SMA LF (SMA Nutrition) *powder*	281	67	1.5	0.0	Proven lactose intolerance‡.
Soya-based	InfaSoy (Cow & Gate) *powder*	275	66	1.6	0.0	Proven lactose and associated sucrose intolerance in pre-school children, galactokinase deficiency, galactosaemia, and proven whole cows' milk sensitivity‡.
	SMA Wysoy (SMA Nutrition) *powder*	280	67	1.8	0.0	

*Not suitable for use in children aged under 1 year;
†For children aged 1–10 years, body weight 8–30 kg;
‡Suitable from birth to 12 years; MCT = medium-chain triglycerides;
[d]= Disorders in which a high intake of MCT is beneficial. (MCT 75%).

Table A6.2.5 Nutritional supplements for metabolic diseases

Metabolic disease	Product name (Manufacturer)	Age range	Notes
Glutaric aciduria (type 1)	GA1 Anamix Infant (SHS) *powder*	Birth to 3 years	Contains vitamins, minerals, trace elements, essential and nonessential amino acids (except lysine), and low tryptophan.
	GA Gel (Vitaflo) *gel*	6 months–10 years	
	XLYS, Low TRY, Maxamaid (SHS) *powder*	1–8 years	
Glycogen storage disease	Glycosade (Vitaflo) *powder*	>2 years	Also other metabolic conditions where a constant glucose supply is essential.
Homocystinuria	Cystine Amino Acid Supplement (Vitaflo) *powder*		
	HCU cooler (Vitaflo) *liquid*	>3 years	Methionine-free protein substitutes for use as nutritional supplements.
	HCU Express (Vitaflo) *liquid*	>8 years	
	HCU gel (Vitaflo) *powder*	1–10 years	
Hypermethioninaemia or homocystinuria	XMET Homidon (SHS) *powder*		Methionine-free unflavoured powdered drink mixes.
	XMET Maxamaid (SHS) *powder*	1–8 years	
	XMET Maxamum (SHS) *powder*	>8 years	Methionine-free unflavoured powdered drink mix with vitamins, minerals, and trace elements.
	HCU Anamix Infant (SHS) *powder*	Birth to 3 years	Essential and nonessential amino acids except methionine for proven vitamin B_6 non-responsive homocystinuria or hypermethioninaemia.
	HCU LV (SHS) *powder*	>8 years	For hypermethioninaemia or vitamin B_6 non-responsive homocystinuria.
High energy Fat/carbohydrate supplement	Energivit (SHS) *powder*		For children requiring additional energy, vitamins, minerals, and trace elements following a protein-restricted diet.

Table A6.2.5 (*Continued*)

Metabolic disease	Product name (Manufacturer)	Age range	Notes
Hyperlysinaemia	HYPER LYS Anamix Infant (SHS) *powder*	Birth to 3 years	Essential and nonessential amino acids except lysine.
	XLYS Maxamaid (SHS) *powder*	1–8 years	
Isovaleric acidaemia	IVA Anamix Infant (SHS) *powder*	Birth to 3 years	Isovaleric acidaemia and other proven disorders of leucine metabolism.
	XLEU Faladon (SHS) *powder*		XLEU Faladon can be used as part of a modular feed or added as an amino acid supplement to XLEU Analog in the latter stages of weaning.
	XLEU Maxamaid (SHS) *powder*	1–8 years	
Low-protein milk replacement drinks	Loprofin PKU Drink (SHS) *liquid*	>1 year	Low-protein, low-phenylalanine drink based on cow's milk for use in PKU.
	Low-protein drink (Milupa) *powder*	>1 year	For inborn errors of amino acid metabolism.
	Milupa lp-drink (Milupa) *powder*	>1 year	For dietary management of amino acid metabolism disorders.
	ProZero (Vitaflo) *liquid*	>6 months	Liquid blend of carbohydrate and fat.
	Sno-Pro (SHS) *liquid*		Low-protein, low-phenylalanine drink based on milk extracts for PKU, chronic renal failure, and other inborn errors of amino acid metabolism.
Maple syrup urine disease	MSUD Aid III (SHS) *powder*		Also related conditions where intake of branched-chain amino acids must be limited
	MSUD Anamix Infant (SHS) *powder*	Birth to 3 years	
	MSUD Anamix Junior (SHS) *powder*	1–10 years	
	MSUD Anamix Junior LQ (SHS) *liquid*	1–10 years	Liquid format
	MSUD cooler (Vitaflo) *liquid*	>3 years	
	MSUD express (Vitaflo) *powder*	>8 years	
	MSUD Gel (Vitaflo) *powder*	1–10 years	
	MSUD Maxamaid (SHS) *powder*	1–8 years	
	MSUD Maxamum (SHS) *powder*	>8 years	
Methylmalonic acidaemia and propionic acidaemia	MMA/PA Anamix Infant (SHS) *powder*	Birth to 3 years	Essential and nonessential amino acids except methionine, threonine, and valine; low isoleucine content
	XMTVI Asadon (SHS) *powder*	Infants and children	
	XMTVI Maxamaid (SHS) *powder*	1–8 years	
	XMTVI Maxamum (SHS) *powder*	>8 years	
Phenylketonuria	Add-Ins (SHS) *powder*	>4 years	Essential and nonessential amino acids except phenylalanine.
PKU	Easiphen (SHS) *liquid*	>8 years	
	Lophlex (SHS) *powder*	>8 years	
	Milupa PKU 2-prima (Milupa) *powder*	1–8 years	
	Milupa PKU 2-secunda (Milupa) *powder*	9–15 years	
	Milupa PKU 3-advanta (Milupa) *powder*	>15 years	
	Phlexy-10 Exchange System (SHS) *Capsule/Tablet/Drink*	>8 years	Each unit (one sachet, 10 tablets or 20 capsules) provides 10 g amino acids except phenylalanine.
	Phlexy-Vits (SHS) *powder/tablet*	>11 years	Vitamin and mineral component of restricted therapeutic diets in PKU and similar amino acid abnormalities.
	PKU Anamix First Spoon (SHS) *powder*	6 months–5 years	Contains DHA, essential and nonessential amino acids except phenylalanine.
	PKU Anamix Infant (SHS) *powder*	Birth to 3 years	Contains prebiotic oligosaccharides, AA and DHA.
	PKU Anamix Junior (SHS) *powder*	1–10 years	Contains AA, DHA, vitamins and minerals.
	PKU Anamix Junior LQ (SHS) *liquid*	1–10 years	
	PKU cooler 10, 15, 20 (Vitaflo) *liquid*	>3 years	Ready-to-drink phenylalanine-free protein substitutes, contains DHA and EPA, vitamins, minerals, trace elements.
	PKU express (Vitaflo) *powder*	>3 years	Contains essential and nonessential amino acids except phenylalanine, carbohydrate, vitamins, minerals and trace elements.
	PKU gel (Vitaflo) *powder*	1–10 years	

(*Continued*)

Table A6.2.5 (*Continued*)

Metabolic disease	Product name (Manufacturer)	Age range	Notes
Phenylketonuria	PKU Lophlex LQ 10, 20 (SHS) *liquid*	>4 years	Ready-to-drink, phenylalanine-free, containing essential and nonessential amino acids, carbohydrates, vitamins, trace elements and some minerals.
	PKU Start (Vitaflo) *liquid*	<12 months	Ready-to-feed, phenylalanine-free infant formula, containing essential and non-dispensable amino acids, carbohydrate, fat, vitamins, minerals, trace elements, AA and DHA.
	XP Maxamaid (SHS) *powder*	1–8 years	Phenylalanine-free drink mix containing essential and nonessential amino acids, carbohydrate, vitamins, minerals and trace elements.
	XP Maxamum (SHS) *powder*	>8 years	
Tyrosinaemia	Methionine-free TYR Anamix Infant (SHS) *powder*	Birth to 3 years	For proven tyrosinaemia type 1.
	TYR Anamix Infant (SHS) *powder*	Birth to 3 years	Proven tyrosinaemia where plasma-methionine concentrations are normal.
	TYR Anamix Junior (SHS) *powder*	1–10 years	Proven tyrosinaemia.
	TYR Anamix Junior LQ (SHS) *liquid*	>1 year	Tyrosinaemia type 1 (when NTBC is used), type II and III.
	TYR cooler (Vitaflo) *liquid*	>3 years	Contains carbohydrates, minerals, trace elements and vitamins, essential and nonessential amino acids (except tyrosine) and phenylalanine.
	TYR express (Vitaflo) *powder*	>8 years	
	TYR Gel (Vitaflo) *Gel*	1–10 years	
	XPHEN TYR Maxamaid (SHS) *powder*	1–8 years	Tyrosinaemia type I (when NTBC is used), type II and III.
Flavouring preparations	FlavourPac (Vitaflo) *powder*	>3 years	For use with unflavoured protein substitutes.
	Modjul Flavour System (SHS) *powder*	>6 months	

AA, arachidonic acid; DHA, docosahexaenoic acid; EPA, eicosapentaenoic acid; NTBC, nitisone; PKU, phenylketonuria.

Table A6.2.7 Manufacturers' websites

Abbott, Abbott Laboratories Ltd	www.abbott.co.uk
Cow & Gate, Nutricia Ltd	www.cowandgate.co.uk
Fresenius Kabi, Fresenius Kabi Ltd	www.fresenius-kabi.co.uk
Mead Johnson, Mead Johnson Nutrition	www.meadjohnson.com
Milupa, Milupa Aptamil	www.milupa-metabolics.com
Nestlé, Nestlé Nutrition	www.nestlehealthscience.co.uk
Nutricia Clinical, Nutricia Clinical Care	www.nutricia.co.uk
SMA Nutrition, Pfizer Ltd	www.smanutrition.co.uk
Vitaflo, Vitaflo International Ltd	www.vitaflo.co.uk

Note: SHS International is part of Nutricia and does not have a separate website.