

Chapter 9: Nutrition and Blood

Contents

[9.1. Anaemias and some other blood disorders](#)

[9.2 Fluids and electrolytes](#)







9.3 Not listed

[9.4. Oral nutrition](#)

[9.5 Minerals](#)

[9.6 Vitamins](#)

Key

	<p>Red drug see GMMMG RAG list</p> <p><i>Click on the symbols to access this list</i></p>
	<p>Amber drug see GMMMG RAG list</p> <p><i>Click on the symbols to access this list</i></p>
	<p>Green drug see GMMMG RAG list</p> <p><i>Click on the symbols to access this list</i></p>
	<p>If a medicine is unlicensed this should be highlighted in the template as follows</p> <p>Drug name U</p>
	<p>Not Recommended</p>
	<p>Over the Counter</p> <p>In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see GM commissioning statement.</p>
Order of Drug Choice	<p>Where there is no preferred 1st line agent provided, the drug choice appears in alphabetical order.</p>

BNF chapter	9 Nutrition and Blood	
Section	9.1. Anaemias and some other blood disorders	
	Crizanlizumab Concentrate for solution for infusion 10mg/ml	R NICE TA743: Crizanlizumab for preventing sickle cell crises in sickle cell disease
Subsection	9.1.1 Iron-deficiency anaemias	
Subsection	9.1.1.1 Oral iron	
First choice	Ferrous fumarate 322 mg tabs (100 mg iron) Ferrous fumarate 305 mg caps (100 mg iron)	
Alternatives	Ferrous fumarate 210 mg tabs (68 mg iron)	
	Ferrous sulphate 200 mg tabs (65 mg iron)	
	Ferrous fumarate 140 mg sugar free syrup (45 mg of iron/5 mL) Sodium ferredetate 190 mg sugar free elixir (27.5 mg of iron/5 mL)	
Grey drugs Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population	Ferric maltol capsules For treatment of iron deficiency anaemia in patients with intolerance to, or treatment failure with, two oral iron supplements.	G_n Criterion 2 (see RAG list)
Do Not Prescribe	Oral iron Modified release preparations	Criterion 1 (see RAG list)
	Spatone Iron-rich spa water from the mountains of Snowdonia	Criterion 1 (see RAG list)
Subsection	9.1.1.2 Parenteral iron	
First choice	Ferric carboxymaltose 50 mg/mL injection (Ferinject®)	R MHRA DSU: Ferric carboxymaltose (Ferinject▼): risk of symptomatic hypophosphataemia leading to osteomalacia and fractures, Nov 2020

	Ferric derisomaltose 100 mg/mL injection (Monofer®)	R
Alternatives	Iron sucrose 20 mg/mL iron (Venofer®)	R Used first line in haemodialysis patients.
	Iron dextran 50 mg/mL iron (CosmoFer®)	R

General Guidance applicable to all drugs

[MHRA DSU: Intravenous iron and serious hypersensitivity reactions: clarification of advice on new recommendations regarding initial test dose, Sept 2013](#)

[MHRA DSU: Intravenous iron and serious hypersensitivity reactions: new strengthened recommendations to manage and minimise risk, Aug 2013](#)

[British Society for Haematology: Management of iron deficiency in pregnancy.](#)

[NICE NG203: Chronic kidney disease: assessment and management](#)

Subsection	9.1.2 Drugs used in megaloblastic anaemias	
First choice	Hydroxocobalamin 1 mg/mL injection Folic acid 400 micrograms tablets Folic acid 5 mg tablets Folic acid 2.5 mg/5 mL oral solution sugar free	NICE CG62: Antenatal care NICE CG156 Fertility: Assessment and treatment for people with fertility problems (Folic acid 400 micrograms for the prevention of neural tube defects prior to conception and during pregnancy.)

General Guidance applicable to all drugs

[British Society for Haematology: Diagnosis of B12 and Folate Deficiency \(June 2014\)](#)

Subsection	9.1.3 Drugs used in hypoplastic haemolytic, and renal anaemias	
First choice	Darbepoetin alfa Epoetin alfa (biosimilar)	R R
Alternatives	Epoetin beta Methoxy polyethylene glycol-epoetin beta ▼	R R
	Roxadustat ▼ Tablets: 20mg, 50mg, 70mg, 100mg, 150mg	R NICE TA807: Roxadustat for treating symptomatic anaemia in chronic kidney disease

General Guidance applicable to all drugs

All erythropoietins are RED and are prescribed and supplied by secondary care

[Renal Association, Clinical Practice Guidelines: Anaemia of CKD \(updated February 2020\)](#)

[NICE CG114: Anaemia management in people with chronic kidney disease.](#)

[NICE TA323: Erythropoiesis-stimulating agents \(epoetin and darbepoetin\) for treating anaemia in people with cancer having chemotherapy \(including review of TA142\)](#)




[MHRA DSU: Recombinant human erythropoietins: new prescribing advice, Dec 2007](#)

- Patients with cancer: risk of tumour progression and reduced overall survival
- Patients with chronic kidney disease: risk of mortality and cardiovascular morbidity

[MHRA DSU: recombinant human erythropoietins: treating anaemia in cancer, Aug 2008](#)

Iron Overload		
First choice	Deferasirox 125 mg, 250 mg, 500 mg tablets Desferrioxamine mesilate 2 g injection	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R R </div>
Alternatives	Deferiprone 500 mg tablets	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R </div>
<p>General Guidance applicable to all drugs</p> <p>All Iron Overload treatments listed here are commissioned by NHSE.</p>		
Subsection	9.1.4 Drugs used in platelet disorders	
Chronic immune (idiopathic) thrombocytopenic purpura and thrombocytopenia		
	Avatrombopag ▼ 20 mg tablets	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>NICE TA626: Avatrombopag for treating thrombocytopenia in people with chronic liver disease needing a planned invasive procedure</p> <p>NICE TA853: Avatrombopag for treating primary chronic immune thrombocytopenia</p> </div>
	Eltrombopag 25 mg, 50 mg tablets	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>NICE TA293: Eltrombopag for treating chronic immune (idiopathic) thrombocytopenic purpura</p> <p>MHRA DSU: Eltrombopag (Revolade): reports of interference with bilirubin and creatinine test results (July 2018)</p> </div>
	Lusutrombopag ▼ 3 mg tablets	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>NICE TA617: Lusutrombopag for treating thrombocytopenia in people with chronic liver disease needing a planned invasive procedure</p> </div>
	Romiplostim 250 microgram vial	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>NICE TA221: Romiplostim for the treatment of chronic immune (idiopathic) thrombocytopenic purpura</p> </div>
	Fostamatinib ▼ 100mg, 150mg tablets	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>NICE TA835: Fostamatinib for treating refractory chronic immune thrombocytopenia</p> </div>
<p>General Guidance applicable to all drugs</p> <p>On publication of NICE TA293, NICE discussed the differences in the wording of the above two guidance and the need to ensure clarity: NICE states that the recommendations for eltrombopag and romiplostim are for exactly the same patient population.</p>		
Essential Thrombocythaemia		
First choice	Anagrelide ▼ 500 micrograms capsules	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> R <p>Letter for HCPs: increased risk of thrombotic complications, including cerebral infarction, if</p> </div>

		anagrelide treatment is discontinued abruptly.
Subsection	9.1.6 Drugs used in neutropenia	
First choice	Filgrastim Biosimilar	R
Alternatives	Lenograstim	R
	Pegfilgrastim	R
<p>General Guidance applicable to all drugs</p> <p>MHRA DSU: Filgrastim and pegfilgrastim: risk of potentially life-threatening capillary leak syndrome, Sept 2013</p> <p>NICE CG151: Neutropenic sepsis: prevention and management of neutropenic sepsis in cancer patients</p>		

BNF chapter	9 Nutrition and Blood	
Section	9.2. Fluids and electrolytes	
Subsection	9.2.1.1 Oral potassium	
Compensation for Potassium loss		
First choice	Sando-K® effervescent tablets Potassium bicarbonate and chloride equivalent to potassium 470 mg (12 mmol of K ⁺) and chloride 285 mg (8 mmol of Cl ⁻)	
Alternatives	Kay-Cee-L® syrup sugar free Potassium chloride 7.5% (1 mmol/mL each of K ⁺ and Cl ⁻)	
Management of Hyperkalaemia		
First choice	Calcium Resonium® powder (Calcium polystyrene sulfonate powder)	
Alternatives	Patiomer sorbitex calcium (Veltassa®▼) Powder for oral suspension	 GMMMG shared care protocol: Patiomer for adult patients within renal and cardiology TA623: Patiomer for treating hyperkalaemia
	Sodium zirconium cyclosilicate (Lokelma®▼) Powder for oral suspension	 GMMMG shared care protocol: Sodium zirconium cyclosilicate for adult patients within renal and cardiology TA599: Sodium zirconium cyclosilicate for treating hyperkalaemia
MHRA DSU: Calcium chloride, calcium gluconate: potential risk of underdosing with calcium gluconate in severe hyperkalaemia, June 2023		
Subsection	9.2.1.2 Oral sodium and water	
Sodium Chloride		
First choice	Sodium Chloride 600mg modified release tablets (Approximately 10 mmol each of Na ⁺ and Cl ⁻)	
Oral Rehydration Therapy		
First choice	Electrolade® oral powder sachets	
Alternatives	Dioralyte® oral powder sachets	

General Guidance applicable to all drugs

None

BNF chapter	9 Nutrition and Blood	
Section	9.4. Oral nutrition	
Subsection	9.4.1. Foods for special diets	
First choice	Dependent on dietetic assessment and in line with "ACBS" recommendations.	The availability / choice of products will also be influenced by GM and CCG policies and the local acute trust product contract.
<p>General Guidance applicable to all</p> <p>Borderline Substances:</p> <p>In certain conditions some foods have characteristics of drugs and the Advisory Committee on Borderline Substances advises as to the circumstances in which such substances may be regarded as drugs. The Advisory Committee's recommendations are detailed in the Drug Tariff and are listed in Part XV – Borderline Substances. Prescriptions issued in accordance with the Committee's advice for the conditions stated and endorsed "ACBS" can be prescribed subject to any local or GM wide policy or guidance.</p> <p>The GMMMG Gluten Free policy is available online.</p>		
Subsection	9.4.2. Enteral nutrition (tube feeds)	
First choice	Dependent on dietetic assessment	The choice of product may be influenced by the local supply contract.
Subsection	9.4.2 Enteral nutrition (sip feeds)	
First choice	First choice product, after consideration / trial of food fortification, should be a powdered, ready to mix supplement	The choice of product may be influenced by the local supply contract.
Alternatives	Ready mixed products should be reserved for second line.	The choice of product may be influenced by the local supply contract.
<p>General Guidance applicable to all</p> <p>NICE QS24: Quality standard for nutrition support in adults.</p> <p>See local policies for management strategies, product choice and level of dietetic input available.</p>		

BNF chapter	9 Nutrition and Blood	
Section	9.5 Minerals	
Subsection	9.5.1 Calcium and magnesium	
	9.5.1.1 Calcium	
First choice	<p>Calcium Carbonate 1.5g chewable tablets (Calcium 600 mg or Ca²⁺ 15 mmol)</p> <p>Calcium Carbonate 1.25g chewable tablets (Calcium 500 mg or Ca²⁺ 12.5 mmol)</p>	
Alternatives	<p>Calcium Carbonate 1.25g effervescent tablets (Calcium 500 mg or Ca²⁺ 12.5 mmol, when dispersed in water)</p>	
	<p>Calcium gluconate 10% injection (Calcium 8.4mg/ml or Ca²⁺ approximately 225 micromol/mL)</p>	<p>For severe, acute hypocalcaemia only. ECG monitoring required.</p> <p>MHRA DSU: Calcium gluconate injection in small-volume glass containers: new contraindications due to aluminium exposure risk, Sept 2010</p>
Do Not Prescribe	<p>Calcium 500 mg with colecalciferol 400 units e.g. Calcichew D-3®</p>	Criterion 1 (see RAG list)
General Guidance applicable to all drugs		
None		
Hyperparathyroidism		
	<p>Cinacalcet 30mg, 60mg and 90mg tablets</p>	<p>A (Primary hyperparathyroidism)</p> <p>R (Secondary hyperparathyroidism)</p> <p>NICE TA117: Cinacalcet for the treatment of secondary hyperparathyroidism in patients with end-stage renal disease on maintenance dialysis therapy</p> <p>NICE NG132: Hyperparathyroidism (primary): diagnosis, assessment and initial management</p>

	9.5.1.3 Magnesium - hypomagnesaemia	
First choice	Magnesium aspartate dihydrate 6.5 g sachet of powder for oral solution. (Each 6.5 g sachet of powder contains magnesium aspartate dihydrate equivalent to 243 mg (10 mmol) of magnesium.)	Treatment and Maintenance therapy
Alternatives	Magnesium sulfate injection BP 20% (Mg ²⁺ approximately 0.8 mmol/mL) 50% (Mg ²⁺ approximately 2 mmol/mL)	Treatment
	Magnesium glycerophosphate 4 mmol tablets NICE ESUOM4: Preventing recurrent hypomagnesaemia: oral magnesium glycerophosphate	Maintenance therapy
Additional Notes		
None		
Section	9.5.2 Phosphorus	
	9.5.2.1 Phosphate supplements	
First choice	Phosphate-Sandoz [®] effervescent tabs (phosphate 16.1 mmol/tablet)	
Alternatives	Phosphates Intravenous infusion (Providing PO ₄ ³⁻ 100 mmol, K ⁺ 19 mmol, and Na ⁺ 162 mmol/litre)	R
Subsection	9.5.2.2 Phosphate-binding agents	
First choice	Calcium acetate 1 g tablets (Calcium 250 mg or Ca ²⁺ 6.2 mmol) Calcium acetate 667 mg capsules (Calcium 169 mg or Ca ²⁺ 4.2 mmol)	G_n Following specialist initiation G_n Following specialist initiation
Alternatives	Calcium Carbonate 1.25 g chewable tablets Calcium 500 mg or Ca ²⁺ 12.5 mmol) Sevelamer Carbonate 800 mg tablets	G_n Following specialist initiation G_n Following specialist initiation (NHS England commissioned for adult renal dialysis)

	<p>Lanthanum 500 mg, 750 mg, 1 g tablets</p> <p>Osvaren® tablets (Calcium acetate 435 mg [calcium 110 mg or Ca²⁺ 2.7 mmol], heavy magnesium carbonate 235 mg [magnesium 60 mg])</p>	<p>R</p> <ul style="list-style-type: none"> - NHS England-commissioned for adult renal dialysis - CCG-commissioned for non-dialysis patients <p>G_n Following specialist initiation</p>
--	--	---

General Guidance applicable to all drugs

[NICE NG203: Chronic kidney disease: assessment and management](#)


Section	9.5.3 Fluoride	
First choice	Fluoride tablets, oral drops, mouthwashes and toothpaste	Dental prescribing only
<p>Grey drugs</p> <p>Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population</p>	<p>Fluoride toothpaste 5,000 ppm</p> <p>e.g. Duraphat®</p> <p>For patients at risk of caries secondary to treatment for head and neck cancers or reduced salivary flow rate secondary to surgery.</p> <p>To be continued for as long as natural teeth remain. The prescribing of fluoride mouthwashes and toothpastes for other indications should be by dental prescription only, and in line with GMMMG Commissioning Statement: Conditions for which over the counter items should not routinely be prescribed in primary care</p>	<p>G_n following specialist advice</p> <p>Criterion 3 (see RAG list)</p>
Do Not Prescribe	BioXtra® toothpaste and mouth rinse	Criterion 1 (see RAG list)
	<p>Prevention of dental caries</p> <p>Fluoride mouthwashes, toothpaste</p>	<p>In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see GM commissioning statement.</p>

General Guidance applicable to all drugs

[Public Health England \(2014\) Delivering better oral health: an evidence-based toolkit for prevention](#)

Section	9.5.4 Zinc	
First choice	Zinc sulfate monohydrate 125 mg effervescent tablets sugar free	
Section	9.5.5 Selenium	
	Selenium (as sodium selenite pentahydrate) oral solution 50 micrograms/mL	
General Guidance applicable to all drugs		
None		

BNF chapter	9 Nutrition and Blood	
Section	9.6 Vitamins	
Subsection	9.6.2 Vitamin B	
First choice	Thiamine 50 mg, 100 mg tablets	NICE CG100: alcohol use disorders
Alternatives	B vitamins High potency intravenous and intramuscular injection	For severe deficiency states, especially as seen in chronic alcoholism
	Pyridoxine (vitamin B₆) 10 mg, 20 mg, 50 mg tablets	G_n following specialist advice For pyridoxine deficiency that may occur during isoniazid or penicillamine treatment. See BNF for doses. Discontinue when isoniazid/penicillamine therapy is stopped.
Grey drugs Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population	Cyanocobalamin tablets Only use in those patients who are truly unable to tolerate injections and who are vegan	G_n Criterion 3 (see RAG list)
	Vitamin B compound strong tablets Should only be used on the advice of a dietician for medically diagnosed deficiency, or in secondary care to prevent "re-feeding syndrome" Where a vitamin B compound is indicated, only vitamin B compound strong should be prescribed.	G_n following specialist initiation Criterion 1 (see RAG list) RMO Position Statement: Oral Vitamin B supplementation
General Guidance applicable to all drugs		
NICE CG32: Nutrition support in adults: Oral nutrition support, enteral tube feeding and parenteral nutrition		
NICE CG100: Alcohol-use disorders: Diagnosis and clinical management of alcohol-related physical complications		
MHRA DSU: Pabrinex: allergic reactions, Sept 2007		
CKS [accessed 12th March 2015] Alcohol – problem drinking; Scenario: Dependence on alcohol		

Subsection	9.6.4 Vitamin D	
First choice	Colecalciferol 20,000 units; 3, 200 units capsules Colecalciferol 25,000 units in oral solution (ampoule)	For the treatment of vitamin D deficiency Only licensed products should be used.
Alternatives	Ergocalciferol 7.5mg (300,000 units) /mL injection Alfacalcidol <ul style="list-style-type: none"> • Capsules: 250 nanograms, 500 nanograms, 1microgram • Oral drops 2 microgram/mL (1 drop contains approximately 100 nanograms) Calcitriol capsules 250 nanograms, 500 nanograms Healthy Start vitamins – See section 9.6.7	 Following specialist initiation

General Guidance applicable to all drugs

GMMMG recommends that the vitamin D and bone health clinical guideline for patient management from the [Royal Osteoporosis Society](#) be followed.

[GMMMG recommendations for management of Vitamin D Deficiency and Insufficiency are available for adults and children.](#)

[Advice from the Chief Medical Officer](#) (CMO) for England, Wales, Northern Ireland, and Scotland made specific recommendations on vitamin D supplementation in at risk groups

[MHRA DSU: Unlicensed imported vitamin D \(colecalfiferol\) capsules: potential peanut oil and soya oil allergens, March 2012](#)

Subsection	9.6.4 Vitamin D (with calcium)	
First choice	Calcium Carbonate 1.5 g and Colecalciferol 10 micrograms tablets and chewable tablets Calcium Carbonate 750 mg and Colecalciferol 5 micrograms caplets Calcium carbonate 1.25 g and Colecalciferol 10 micrograms chewable tablets	NICE (2014) Vitamin D: increasing supplement use among at-risk groups (PH56)
Alternatives	Calcium phosphate 3.1 g and Colecalciferol 20 micrograms powder	

General Guidance applicable to all drugs

GMMMG recommends that the vitamin D and bone health clinical guideline for patient management from the [Royal Osteoporosis Society](#) be followed.

Subsection	9.6.5 Vitamin E	
First choice	Vitamin E Suspension (alpha tocopheryl acetate) 500mg/5mL	
Subsection	9.6.6 Vitamin K	
First choice	Menadiol Phosphate 10 mg tablets Phytomenadione Injection 10 mg/mL	
Subsection	9.6.7 Multivitamin Preparations	
	<p>Healthy Start vitamins</p> <p>Renavit® tablets</p> <p>Dalivit® drops</p> <p>Forceval® capsules</p> <p>Pregncare® tablets</p>	<p>Pregnant women, women with a child under 12 months who are receiving Healthy Start vouchers are entitled to free Healthy Start vitamins. Not available on FP10; NHS Choices advises where patients can be directed to obtain supplies</p> <p>For use in dialysis patients to replace water soluble vitamins lost on dialysis.</p> <p>Preferred route for multivitamins in children should be through the Healthy Start vitamins</p> <p>For use in gastric bypass / BPD*/DS* bariatric surgery on the recommendation of a dietician / specialist. (BPD = biliopancreatic diversion; DS = sleeve gastrectomy with duodenal switch).</p> <p>For use in pregnant post gastric by-pass patients only, if not on Forceval capsules.</p>
General Guidance applicable to all drugs		
*(BPD = biliopancreatic diversion; DS = sleeve gastrectomy with duodenal switch).		
Do Not Prescribe	Multivitamins and mineral preparations for the management of age-related macular degeneration (ARMD) e.g. ICaps®, Occuvite®, PreserVision®, Viteyes®, Visionace®, Vitalux-plus®	<u>Criterion 1 (see RAG list)</u>
	Vitamins, minerals and antioxidants When used in people who have no clinical indication for use.	<u>Criterion 3 (see RAG list)</u>

Section	Supplements	
<p>Grey drugs</p> <p>Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population</p>	<p>Co-enzyme Q10</p> <p>Should only be used for the treatment of mitochondrial disorders under the care of a specialist</p>	<p>G_n following specialist initiation</p> <p>Criterion 3 (see RAG list)</p>
	<p>Paravit-CF</p> <p>Capsules and liquid</p> <p>Only for use in patients with cystic fibrosis.</p>	<p>G_n following specialist initiation</p> <p>Criterion 3 (see RAG list)</p>
<p>Do Not Prescribe</p>	<p>Cod liver oil capsules</p>	<p>Criterion 3 (see RAG list)</p>
	<p>Gamolenic acid (starflower oil)</p>	<p>Criterion 1 (see RAG list)</p>
	<p>Herbal medicines and other natural products</p>	<p>Criterion 3 (see RAG list)</p>
	<p>Homeopathic medicines</p>	<p>Criterion 3 (see RAG list)</p>
	<p>Multivitamins and mineral preparations for the management of age-related macular degeneration (ARMD)</p> <p>e.g. ICaps[®], Occuvite[®], PreserVision[®], Viteyes[®], Visionace[®], Vitalux-plus[®]</p>	<p>Criterion 1 (see RAG list)</p>
	<p>Vitamins, minerals and antioxidants</p> <p>When used in people who have no clinical indication for use.</p>	<p>Criterion 3 (see RAG list)</p>