





BNF Chapter 9 Blood and Nutrition




Formulary Key

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| 1st line formulary choice |  | Encouraged |
| Alternative formulary choice |  | On Formulary |
| 2nd line formulary choice |  | 2nd Line |
| Shared Care (TAG Amber) |  | Shared Care Agreement |

| Drug | Formulations | Dose | Notes |
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| 1.4 Anaemias, Iron-Deficiency | | | |
| FERROUS FUMARATE  | T | 210mg | Prophylaxis Adult and child over 12 yrs: 1 tablet 1-2 times a day. Treatment Adult and child over 12yrs: 1 tablet 2-3 times a day |
| FERROUS FUMARATE  | S | 140mg/5ml | Prophylaxis: 5mls twice a day. Treatment: 10mls twice a day Child: See BNF C |

Modified release preparations have no therapeutic advantage and are not recommended for use; the low incidence of side effects may reflect the limited absorption of iron as the modified release preparation formulation is carried past the duodenum in to an area of the gut where absorption may be poor.


1.5 Anaemias, Megaloblastic

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| HYDROXOCOBALAMIN (Vitamin B12)  | IM Inj. | 1mg /ml ampoule | Initially 1mg by IM injection 3 times a week for 2 - 3 weeks then 1mg every 3 months. | |
| FOLIC ACID  | T | 5mg | Adult and child over 1 yr: 5mg daily for 4 months | Most causes of folate deficiency are self limiting and should respond to a short course of treatment. Folic acid should not be used in undiagnosed megaloblastic anaemia unless Vitamin B12 is co-administered otherwise neuropathy may be precipitated. |
| |  | S | | |

2. Fluids and Electrolyte Imbalances


Oral Potassium

Potassium salts are preferably given as an effervescent preparation rather than a modified release tablet. They may cause nausea and vomiting and poor compliance is a major limitation to their effectiveness. Regular monitoring of plasma potassium levels is essential in those taking potassium supplements.

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| POTASSIUM CHLORIDE  | T: Effervescent | 470mg (12mmol) potassium / 285mg chloride (8mmol) | Prevention: 2- 4g (25 to 50mmol) potassium daily in divided doses. | Dose should be reduced in renal impairment to reduce risk of hyperkalaemia. |
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Oral Sodium

Sodium chloride is usually given intravenously for deficiency states in a secondary care setting. Ongoing treatment with oral supplements in primary care may be necessary. In chronic conditions associated with mild or moderate degrees of sodium depletions such as in bowel or renal disease, oral supplements may be sufficient.

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| SODIUM CHLORIDE  | T: M/R | 600mg (10mmol each of Na ⁺ and Cl ⁻) | Prophylaxis: 4 - 8 tablets daily | |
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2.2 Calcium Imbalance

Oral calcium supplements are usually only required where dietary calcium intake is deficient and are usually given combined with vitamin D - see section 9.6.4

2.3 Hypercalcaemia and Hypercalciuria

Cinaclet is **TAG RED (Hospital/Specialist Only)** for

-Primary Hyperparathyroidism in patients with symptomatic severe PHPT where normalisation of calcium is desirable, but in whom surgery is not indicated or is contraindicated for medical reasons



-Refractory secondary hyperparathyroidism in patients with end-stage renal disease under specific criteria

Cinaclet is TAG DOUBLE RED (Not recommended for routine use) for secondary hyperparathyroidism & parathyroid cancer

2.5 Hypomagnesaemia

Hypomagnesaemia may be caused by excessive losses through diarrhoea, stoma or fistula. Replacement is initially given by intravenous infusion. To prevent recurrence of the deficit magnesium may be given by mouth but there is little evidence of benefit. Oral magnesium salts are not well absorbed from the gastrointestinal tract and may cause colic and diarrhoea.


Guidance on duration of treatment and process for review should be discussed with initiating specialist.

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| MAGNESIUM GLYCEROPHOSPHATE |  Chewable tablets | 4mmol (97mg) | Initially 1—2 tabs three times daily, adjusted according to response. Children: Under 4 years, not recommended; 4—12 years, initially 1 tab twice daily; 12—18 years, initially 1 tab three times daily. Adjust according to response. | Licensed product: Neomag. |
| MAGNESIUM-L-ASPARTATE |  Powder sachets for oral soln. | 243mg (10mmol) per 6.5g | Adult: 1—2 sachets dissolved in 50—200ml water, tea or orange juice once daily. Under 2 years, not recommended; 2—4 years, 109mg (1 level 5ml spoon) daily; 4—10 years, 109mg (1 level 5ml spoon) or 1 sachet daily; 10—18 years, 1 sachet daily. Dissolve in 50—200ml water, tea or orange juice before taking. | Licensed product: Magnaspartate. |

2.6 Phosphate imbalance



2.7 Hyperphosphataemia

First line choice

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| CALCIUM ACETATE |  T | 1g (calcium 250mg or Ca ²⁺ 6.2mmol) | Initially 1 tablet 3 times daily with meals adjusted according to serum phosphate concentration. Max 12 tablets daily. | PHOSEX |
| | T | 475mg (calcium 120.25mg or Ca ²⁺ 3mmol) | Adult: 475mg-950mg mg with breakfast and snacks, 0.95g-2.85g with main meals 0.95-1.9g with supper, adjusted according to serum phosphate concentration. Max. 6.65g daily | RENACET |

For the management of hyperphosphataemia in renal failure on dialysis: Lanthanum and Sevelamer are commissioned by NHS England - currently these may be prescribed in primary care with reimbursement to CCGs until formal repatriation agreed.

Second line choice

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| LANTHANUM |  T: Chewable | 500mg, 750mg, 1g | Adult: 1.5-3g daily in divided doses with or immediately after meals adjusted according to serum phosphate concentration. | FOSRENOL TAG Green: GP prescribable at request of Consultant/Specialist |
| | Powder | 750mg, 1 g sachets | Each sachet to be mixed with food and consumed within 15 minutes | |
| SEVELAMER HYDROCHLORIDE |  T | 800mg | Adult: Initially 2.4-4.8g daily in 3 divided doses with meals adjusted according to serum phosphate concentration. Usual dose 2.4-12g daily. | RENAGEL TAG Green: GP prescribable at request of Consultant/Specialist |

5. Nutrition

5.2 Enteral Nutrition

Nutrition support should be considered in people who are malnourished, as defined by any of the following:

- a BMI of less than 18.5 kg/m²
- unintentional weight loss greater than 10% within the last 3–6 months
- a BMI of less than 20 kg/m² and unintentional weight loss greater than 5% within the last 3–6 months.

MUST Tool should be used to assess risk of malnutrition:

- People at risk of malnutrition should be given advice regarding food fortification i.e. a 'Food First' approach.
- People at high risk of malnutrition (e.g. 'MUST' score 2 or more), should be recommended to purchase over the counter (OTC) nutritional supplements (e.g. Meritene Energis, Complan), before prescription of oral nutritional supplements (ONS) is considered.

Referral to a dietitian should be considered if 'Food First' and OTC supplements do not result in improved nutritional intake and/or increased, or stabilised, weight within two to four weeks.

See [Oral nutritional supplement \(ONS\) prescribing guidelines for adults in primary care](#)

[Link](#)

A Dietitian's assessment may indicate the need for a prescribable ONS according to the specific Advisory Committee on Borderline Substances (ACBS) conditions laid out in the NHS Drug Tariff. If prescribed, a maximum of 7 days supply should be issued in the first instance to assess product acceptance and compliance and avoid waste.

Oral Nutritional Supplements should NOT be used as a replacement for meals but taken between meals, not at mealtimes.

Opened, or reconstituted, ONS should be discarded after 24 hours.

High calorie supplements containing ≥ 2 kcal/ml, juice-style ONS, and modular supplements containing high protein, high carbohydrate or high fat content, should only be prescribed *on recommendation of a dietician*.

Specialised Infant Formula

See [Key Message Bulletin 36: Specialised Infant Formula: SUMMARY](#)

Lactose free formulas for secondary lactose intolerance are not recommended for prescribing as these can be purchased at a similar cost to standard infant formulas.

See [Key Message Bulletin 26: Specialised Infant Formulas 1: Secondary Lactose Intolerance in infants under 2 years](#)

Mild-moderate non-IgE CMPA may be managed in primary care and involves initial elimination of cow's milk protein followed by a re-challenge, within 6 weeks, to confirm diagnosis. Refer to specialist if IgE suspected or severe non-IgE CMPA, multiple food allergies, one or more acute systemic or severe delayed reactions, faltering growth with one or more GI symptoms or significant atopic eczema.

See [Key Message Bulletin 27: Specialised Infant Formulas 2: Cow's Milk Protein Allergy \(CMPA\)](#)

Hydrolysed Formula

First line choice - for formula fed infants

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| ALIMENTUM |  | Powder | 400g | | Suitable from birth onwards |
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Second line choice - for formula fed infants

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| SMA ALTHERA |  | Powder | 400g, 800g | | Suitable from birth to 2 years |
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Amino Acid Formula

Amino Acid Formula should only be used if symptoms have not resolved after a 6 week trial of hydrolysed formula

First line choice - for formula fed infants

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| SMA ALFAMINO |  | Powder | 400g | | Suitable for children 0—12 months. |
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Second line choice - for formula fed infants

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| NUTRAMIGEN PURAMINO |  | Powder | 400g | | Suitable for children 0-12 months. |
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Thickening formulas such as SMA staydown® or Enfamil AR® for Gastro-Oesophageal Reflux (GOR) should not be prescribed as these can be purchased for a similar cost to standard infant formulas. Alternatively a thickener such as Instant Carobel® can be *purchased* to add to their usual formula.


See [Key Message Bulletin 28: Specialised Infant Formulas 3: Gastro-Oesophageal Reflux \(GOR\) in Infants](#)

6. Vitamin deficiencies

Vitamins for supplementation to prevent deficiency are **not** recommended on prescription. These are available widely for patients to purchase.

Vitamin B group

Severe deficiency states Wernicke's encephalopathy and Korsakoff's psychosis, as seen in chronic alcoholism are best treated initially by parenteral administration of B vitamins followed by oral administration of thiamine. Other vitamin B supplements are not indicated.

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| THIAMINE |  | T | 50mg | 50mg two to three times a day* *Norfolk and Suffolk NHS Foundation Trust : Alcohol Care Pathway Draft version 2 | Thiamine is <i>not</i> recommended for low risk patient groups, hazardous, harmful drinkers or those with mild to moderate alcohol dependence who eat an adequate diet and have no other alcohol related problems. |
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Vitamin D and analogues

Vitamin D deficiency can occur in people who have limited exposure to sunlight and whose diet is deficient in vitamin D. Deficiency can be prevented by taking an oral supplement of 10micrograms daily which should be purchased. Where supplementation with calcium is required a combined product may be prescribed. For proven deficiency, high dose vitamin D is required on prescription:


[Diagnosis and Management of Vitamin D Deficiency in Adults in Primary Care](#)

[Diagnosis and Management of Vitamin D Deficiency in Paediatric patients in Primary Care](#)



Treatment of deficiency: Loading regimen up to a total of approx. 300,000 IU colecalciferol

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| INVITA D3 |  | Soft capsules | 50,000 I.U. | Treatment of deficiency in adults: one capsule once a week for 6 weeks. Total dose: 300,000IU | Licensed for the treatment and prevention of vitamin D deficiency in all ages from newborn infants to adults. Sugar-free liquid. Contains Olive oil (refined), and Sweet orange peel oil. |
| | | Oral Solution (Adults) | 50,000 I.U. / ml (1ml ampoule) | Treatment of deficiency in adults: one ampoule (50,000 IU) once a week for 6 weeks. Total dose: 300,000IU | |
| | | Oral Solution (Children) | 25,000 I.U. / ml (1ml ampoule) | Treatment of deficiency in children 0-18 years: one ampoule every 2 weeks for 6 weeks. Total dose: 75,000IU | |
| STEXEROL D3 |  | T | 25,000 IU | Treatment of deficiency in adults: two tablets weekly for 6 weeks. Total dose: 300,000IU | Film-coated capsule-shaped tablets (14 mm size) which can be swallowed whole or crushed, and taken with food. Not recommended for children under 12 years. |



Vitamin D requires hydroxylation to the active form therefore hydroxylated derivatives i.e. alfacalcidol should be prescribed if patients with severe renal impairment require vitamin therapy.

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| ALFACALCIDOL |  | C | 250 nanograms 500 nanograms | Adult and child over 20Kg: initially 1microgram daily (elderly 500nanograms) adjusted to avoid hypercalcaemia. Usual dose 0.25 - 1microgram daily. | |
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Supplementation with calcium: *Also see - [Bone Formulary](#)*

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| THEICAL D3 (CALCIUM CARBONATE / COLECALCIFEROL) |  | T: Chewable | 2.5g / 880iu | Chew 1 tablet daily | Each tablet contains Calcium 1g / Colecalciferol 20micrograms (800iu) |
| | | ADCAL D3 (CALCIUM CARBONATE / COLECALCIFEROL) |  | T: Chewable | 1.5g / 10micrograms |
| | | Caplet | 750mg / 5micrograms | 2 caplets twice daily | Each tablet contains Calcium 300mg / Colecalciferol 5 micrograms (200iu) |

Options for patients with swallowing difficulties

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| CALFOVIT D3 (CALCIUM PHOPHATE / COLECALCIFEROL) |  | 3.1 g / 20 micrograms | Powder for oral suspension | 1 sachet daily | Daily dose equivalent to 1.2 g of calcium and 800 units colecalciferol |
| ADCAL D3 DISSOLVE (CALCIUM CARBONATE / COLECALCIFEROL) |  | 1.5g / 10 micrograms | Effervescent tablets (dissolves to clear solution) | 1 tablet BD | Daily dose equivalent to 1.2 g of calcium and 800 units colecalciferol |