

## Derbyshire Medicines Management, Prescribing and Guidelines Derbyshire Primary Care Formulary

### Chapter 9: NUTRITION AND BLOOD

Updated: July 2024

The following prescribing guidelines are relevant to the Nutrition and Blood chapter and can be found [here](#)

- Bariatric Surgery- monitoring and medication
- Cow's milk allergy in infants and children
- Gluten-free Derbyshire Prescribing Policy
- Hyperphosphataemia & Phosphate binders
- Non-Hypoallergenic specialist infant products guideline
- Management of undernutrition in adults (ONS)
- Vitamin B compound/ vitamin B compound strong- position statement
- Vitamin D- management of deficiency
- Vitamin D- position statement for self-care
- Vitamin supplementation in alcohol misuse

Relevant Resources:

- NHS Type 2 Diabetes Path to Remission Programme – Referrer information
- Confirming or excluding cow's milk allergy Patient Information Leaflet
- How to introduce hypoallergenic formula Patient Information Leaflet
- Providing a cow's milk free diet Patient Information Leaflet
- Temporary lactose intolerance Patient Information Leaflet
- Big Nutrition for small appetites Patient Information Leaflet
- Vitamin D patient Information Leaflet (also in other languages)
- Chesterfield hospital food fortification video
- Derbyshire Nutrition and Hydration pack for care homes

#### 9.1 ANAEMIAS AND SOME OTHER BLOOD DISORDERS

##### 9.1.1 Iron-deficiency anaemias

##### 9.1.1.1 Oral Iron

Elemental iron content:

Iron Salt	Strength	Elemental iron content	Dose
<b>Ferrous fumarate</b>	<b>322mg tab</b>	106mg	1 tab OD
Ferrous fumarate oral solution SF	140mg/5ml	45mg/5ml	10 ml OD
Sodium feredetate oral solution SF	190mg/5ml	27.5mg/5ml	10-15ml daily

Ferrous fumarate 322mg **tablet** is the preferred oral iron product. Note above doses may differ from BNF and is based on recommendations from [CKS](#) and [British Society of Gastroenterologist \(BSG\) guideline](#).

- Investigate and treat any underlying cause (e.g., Coeliac disease, GI ulcer). Review and stop aspirin/NSAID if appropriate.
- Choice of preparation is usually decided by the incidence of side- effects and cost
- Initially treat with **one tablet per day taken on an empty stomach**. If not tolerated, consider reducing dose to one tablet every other day or consider alternative oral preparations.
- Taking iron with meals can reduce bioavailability by up to 75%.
- Modified release preparations have no therapeutic advantage (they do not enhance iron absorption or reduce side effects) and should not be used.
- Give oral iron and continue until 3 months after deficiency is corrected so that stores are replenished.

- Monitor patient in the first 4 weeks for an Hb response to oral iron. The haemoglobin concentration should rise by about 20 g/L over 3–4 weeks. Once Hb and red cell indices are normal and treatment is stopped, monitor every 3 months for 1 year and then again after a further year.
- Give further oral iron if levels fall below normal.
- Coadministration of vitamin C with oral iron is not recommended- it neither enhances the haematological response or rate of iron loading, nor diminishes side effects. [BSG guideline]

#### 9.1.1.2 Parenteral iron

No products are included

### 9.1.2 Drugs used in megaloblastic anaemias

**Folic acid** tablets 5mg

**Hydroxocobalamin** injection 1mg/ml

1. Folic acid should never be given alone in the presence of vitamin B12 deficiency; anaemia may respond but neuropathy could be precipitated. In most people, treatment will be required for 4 months.
2. Licensed folic acid oral solution 2.5mg/5ml is available but more expensive. Tablets may be crushed and mixed with water for administration- see [Specials and expensive liquid guideline](#).
3. B12 deficient patients should be treated with IM hydroxocobalamin. Self-care should be promoted to patients with borderline B12 deficiency without neurological symptoms or anaemia.
4. Cyanocobalamin is Do Not Prescribe (**DNP**). See shared care pathology [guideline](#) on vitamin B12. Oral cyanocobalamin is poorly absorbed and should not be prescribed as a supplement. Patients should be encouraged to self-care in line with local policy.
5. [Metformin and reduced vitamin B12 levels: new advice for monitoring patients at risk MHRA](#) (2022) Metformin induced vitamin B12 deficiency: Decreased vitamin B12 levels, or vitamin B12 deficiency, is now considered to be a common side effect in patients on metformin treatment, especially in those receiving a higher dose or longer treatment duration and in those with existing risk factors. The MHRA advises checking vitamin B12 serum levels in patients being treated with metformin who have symptoms suggestive of vitamin B12 deficiency. They also advise that periodic monitoring for patients with risk factors for vitamin B12 deficiency should be considered.
6. [MHRA Dec 2023](#) Vitamin B12 (hydroxocobalamin, cyanocobalamin): advise patients with known cobalt allergy to be vigilant for sensitivity reactions. Cobalt sensitivity reactions typically present with cutaneous symptoms of chronic or subacute allergic contact dermatitis. Infrequently, cobalt allergy may trigger an erythema multiforme-like reaction. Symptom onset may be immediate or delayed up to 72 hours post-administration. Cobalt allergy is estimated to affect 1 to 3% of the general population.

### **Prevention of neural tube defects (NTD)**

Women at low risk of neural tube defects are advised to take 400microgram of folic acid daily before conception and continue until 12 weeks of pregnancy with the expectation that this is bought OTC by women. Women at high risk of neural tube defects should be prescribed the 5mg dose and once pregnant, to continue this until 12 weeks of pregnancy. In the case of sickle cell anaemia folic acid 5mg daily should continue beyond the 12 weeks and throughout pregnancy.

High Risk defined as:

- Either partner has an NTD, they have had a previous pregnancy affected by an NTD, or they have a family history of an NTD.
- Woman has coeliac disease (or other malabsorption state)
- Diabetes mellitus
- Sickle cell anaemia or thalassaemia
- Taking anti-epileptic medicines
- Woman is obese (defined as a BMI of 30kg/m<sup>2</sup> or more)

### 9.1.3 Drugs used in hypoplastic, haemolytic, and renal anaemias

No products are included – all **RED** drugs

## 9.2 FLUIDS AND ELECTROLYTES

### 9.2.1.1 Oral potassium

**Sando-K** effervescent tablets (12 mmol of K<sup>+</sup> and 8 mmol of Cl<sup>-</sup> per tablet)

### 9.2.1.2 Oral sodium and water

Oral rehydration solutions used in the UK do not conform to the WHO formulation. They may be useful for mild to moderate diarrhoea, but they may be suboptimal in correction of fluid loss and electrolyte imbalance. They are usually unnecessary, however, are available to purchase over the counter. Provide advice on increasing intake of clear fluids.

### 9.2.1.3 Oral bicarbonate

Sodium bicarbonate capsules 500mg is **GREEN** consultant/ specialist recommendation. Sodium bicarbonate gastro-resistant 500mg capsules (Nephrotrans) is **RED** - reserved for patients who cannot tolerate other sodium bicarbonate preparations due to gastric side effect.

## 9.3 INTRAVENOUS NUTRITION

GPs should not be involved in prescribing under this section. This includes feeds, plumbing and accessories, which should be provided by the Hospital Trust as a package of care.

## 9.4 ORAL NUTRITION

### 9.4.1 Foods for special diets

Derby & Derbyshire ICB does not routinely commission the prescribing of gluten free foods. All gluten free foods have been classified as **Do Not Prescribe (DNP)**. See Gluten free [Derbyshire Prescribing policy](#).

### Phenylketonuria

Phenylketonuria (PKU) is a common inherited metabolic disorder affecting the metabolism of foods containing protein. In people with PKU, the enzyme, phenylalanine hydroxylase, required to convert the amino acid phenylalanine into tyrosine is either absent or deficient.

If left untreated, the build-up of phenylalanine in the blood can result in severe brain damage. PKU can be successfully treated by a low phenylalanine diet.

The National Society for PKU (NSPKU) [website](#) contains more information e.g., [dietary information](#) (i.e., how to calculate protein exchanges).

### Ketogenic Diet

The ketogenic diet is a therapeutic diet that needs to be carried out under close medical supervision. Follow specialist advice. See UHDB [guideline](#) and the Association of UK Dietitians (BDA) [information](#).

### 9.4.2 Enteral nutrition

Give appropriate 'Food First Advice'. See 'Big Nutrition for Small Appetites' [patient information leaflet](#).

Only the most cost-effective options are listed here. For guidance on when to prescribe and for a full list of ONS products available on prescription see [Oral Nutritional Support Guideline](#).

#### Powdered products

**Energie shake**

**Foodlink complete**

**Complan shake**

**Ensure shake**

Starter packs include a Shaker free of charge to assist the patient in preparation.

**Do not put the 'starter pack' on repeat prescription.**

#### Ready-made products

**Altraplen Energy**

**Energie Shake Complete 1.5kcal**

**Aymes Complete**

## Fortisip Bottle

### Thickening agents

[MHRA April 2021](#) Polyethylene glycol (PEG) laxatives and starch-based thickeners: potential interactive effect when mixed, leading to an increased risk of aspiration. Avoid directly mixing together PEG laxatives and starch-based thickeners, especially in patients at risk of aspiration e.g., elderly and people with disabilities that affect swallowing.

See [Patient Safety Alert](#) (June 2018) on modification of food and drink- this aids safe transition to the International Dysphagia Diet Standardisation Initiative (IDDSI) framework.

**Nutlis clear** is the preferred thickening agent for patients with dysphagia (xanthan gum based). Thickeners are provided on prescription and should only be recommended following assessment by a Speech and Language Therapist or a Dysphagia Trained Nurse. The table below outlines the approximate monthly usage and cost. The quantity of Nutlis clear required may vary slightly depending on the temperature or thickness of the liquid required. (Once opened, use contents within 2 months.)

Likely monthly usage and monthly cost:				
Volume of thickened fluid per day	Level 1 Slightly thick	Level 2 Mildly thick	Level 3 Moderately thick	Level 4 Extremely thick
200ml	1 scoop/ 1.25g 1 x 175g tin every 2 months (£4.51)	2 scoops/ 2.5g 1 x 175g tin every 2 months (£4.51)	3 scoops/ 3.75g 1 x 175g tin (£9.02)	7 scoops/ 8.75g 2 x 175g tin (£18.04)
1000ml	5 scoops/ 6.25g 1 x 175g tin (£9.02)	10 scoops/ 12.5g 2 x 175g tin (£18.04)	15 scoops/ 18.75g 3 x 175g tin (£27.06)	35 scoops/ 43.75g 7 x 175g tin (£63.14)
1500ml	7.5 scoops/ 9.375g 2 x 175g tin (£18.04)	15 scoops/ 18.75g 3 x 175g tin (£27.06)	22.5 scoops/ 28.125g 5 x 175g tin (£45.10)	52.5 scoops/ 65.625g 11 x 175g tin (£99.22)
2000ml	10 scoops/ 12.5g 2 x 175g tin (£18.04)	20 scoops/ 25g 4 x 175g tin (£36.08)	30 scoops/ 37.5g 6 x 175g tin (£54.12)	70 scoops/ 87.5g 14 x 175g tin (£126.28)

## 9.5 MINERALS

Follow specialist advice

## 9.6 VITAMINS

For treatments of minor, short-term medical conditions patients are encouraged to self-care for medicines and treatments that are available to purchase over-the-counter. Vitamins and minerals are essential nutrients which most people can and should get from eating a healthy, varied and balanced diet. They must not be prescribed as dietary supplements or a general 'pick-me-up' and this use of vitamins and minerals is unproven. Any prescribing not in-line with JAPC approved indication should be discontinued.

For vitamin K use in the management of a patient over-coagulated with warfarin see the [Oral anticoagulation guideline](#) and local [Vitamin K Patient Group Direction \(PGD\)](#)

### 9.6.2 Vitamin B group

Deficiency of the B vitamins, other than deficiency of vitamin B<sub>12</sub>, is rare in the UK, and is usually treated by preparations containing thiamine (B<sub>1</sub>), riboflavin (B<sub>2</sub>), and nicotinamide, which is used in preference to nicotinic acid, as it does not cause vasodilatation.

[NICE CG150](#) suggests that riboflavin at a dose of 400mg daily may be effective in reducing migraine frequency and intensity for some patients. This recommendation refers to self-purchase only as there is no licensed riboflavin product available in the UK, nor any cost effectiveness data to justify its use on NHS prescription.

The severe deficiency states Wernicke's encephalopathy and Korsakoff's psychosis, especially as seen in chronic alcoholism, are best treated initially by the parenteral administration of B vitamins (*Pabrinex*®),

followed by oral administration of **thiamine** in the longer term. Anaphylaxis has been reported with parenteral B vitamins (see [MHRA/CHM](#) advice). See [Vitamin supplementation in alcohol misuse](#)

**Thiamine** 50mg, 100mg tablets

1. Vitamin B **compound strong** is **RED** for specialist use as a short course, post-acute admissions; **GREY** after consultant/specialist recommendation for patients with a medically diagnosed deficiency due to lifelong or chronic condition or following surgery that results in malabsorption. Also, for refeeding syndrome - short course supplied in hospital or in exceptional circumstances GPs may prescribe following a community dietician request. **Do Not Prescribe (DNP)** for all other indications. See [position statement](#).
2. Vitamin B **compound** is **RED** for specialist use as a short course, post-acute admissions (Not for prescribing in Primary Care); **Do Not Prescribe (DNP)** for all other indications.

#### 9.6.4 Vitamin D

See [Vitamin D](#) - management of deficiency & position statement for self-care.

preparation	notes	Suitable for*		
		Vegetarian/ vegan	Soya/ nut allergy	Kosher/ Halal diet**
<b>InVita D3 50,000 unit</b> cap	Adult weekly regime	Unsuitable- contain gelatine	Suitable	<i>'The only ingredient that is derived from slaughtered animals is the gelatine. The gelatine is halal/kosher certified'.</i>
<b>Strivit D3 20,000 unit</b> cap	Adult daily regime	Unsuitable- contain gelatine	Suitable	<i>'Strivit D3 products have official Halal and/or Kosher certification'</i>
<b>Invita D3 25,000 unit/ml</b> & <b>50,000 unit/ml</b> oral solution	Adult- only use if cap/ tab not suitable	Suitable for vegetarian Not suitable for vegan	Suitable	<i>'The product does not contain any ingredients derived from slaughtered animals, nor does it contain any other prohibited ingredients'.</i>
<b>Thorens 10,000 unit/ml</b> oral drops	Liquid option for children	Suitable for vegetarian Not suitable for vegan	Suitable	<i>'The colecalciferol is both Halal and Kosher certified'.</i>

Reference: which oral vitamin D products are suitable for people with vegetarian or vegan diets?

<https://www.sps.nhs.uk/articles/choosing-an-oral-vitamin-d-preparation-for-vegetarians-or-vegans/>

For people who are allergic to peanuts or soya, preparations which do not contain soya (or soya bean) oil are available, such as Accrete D3® chewable. For more information see [NICE advice](#).

\* Manufacturers may change their products' formulation or the suppliers of their excipients. Current status of the product ingredients should therefore be obtained from the manufacturer.

\*\* information provided by manufacturer through personal communication July 2023.

With Calcium

Preparation	Dose	formulation
<b>Calci-D</b> (calcium 1000mg + VitD3 1000units)	Take <b>one daily</b>	Chewable tablet (as an option for patients with compliance issue)
<b>Accrete D3 tabs</b> (calcium 600mg+ VitD3 400units)	Take <b>one twice daily</b>	Film coated tablets
<b>Evacal D3 tabs</b> (calcium 600mg+ VitD3 400units)	Take <b>one twice daily</b>	Chewable tablet
<b>Adcal D3 CAPLET</b> (calcium 300mg + VitD3 200units)	Take <b>TWO twice daily</b>	Caplet (smaller size if unable to swallow tablets/ capsules; stability in a MCA for up to 14days)
<b>Adcal D3 Dissolve</b> (calcium 600mg + vit D3 400iu)	Take <b>one twice daily</b>	Effervescent tabs* (option for patients with swallowing difficulties)

\*contains approx. 42mg sodium per tablet, equivalent to 2.1% of the WHO recommended max. daily intake of 2 g sodium for an adult

1. JAPC recommends the prescribing on the NHS of high-dose vitamin D only as a short-course treatment, for the **correction of diagnosed deficiency** for adults and children. For all other vitamin D requirements, JAPC recommends that the patient is encouraged to make lifestyle changes such as increasing dietary intake of vitamin D, increasing safe sun exposure and to purchase a supplement over the counter from a local pharmacy, health food shop or supermarket. See [Vitamin D patient information leaflet](#).
2. SIGN recommends assessing dietary calcium intake, and only supplementing if it is less than 700mg daily. Calcium supplementation alone should not be recommended as a means of fracture prevention in those not on a bisphosphonate.
3. A combination treatment of calcium and vitamin D is recommended if both are required and to aid compliance. However, compliance and persistence with supplementation is poor. Elderly patients that are housebound or living in residential/ nursing homes are likely to gain benefit from lifelong calcium + vitamin D supplementation.
4. Routine monitoring is not thought necessary except in patients with renal impairment where caution is advised. Avoid in patients with hypercalcaemia, metastatic calcification and a history of calcific renal stones.