BrisDoc Patient care by people who care

NHS

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Standard operating procedure

Vitamin B12 Deficiency

Version:	Owner:	Created:
1.2	C Talbot	01/05/2024
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08/01/2025		08/01/2026

Contents

PERSONS RESPONSIBLE

All clinical staff

The following is taken from updated Nice Guidelines 2024 (https://www.nice.org.uk/guidance/ng239/resources/vitamin-b12-deficiency-in-over-16s-diagnosis-and-management-pdf-66143904531397)

Diagnosis

Offer an initial diagnostic test for vitamin B12 deficiency to people who have:

• at least 1 common symptom or sign (see box 1) and

• at least 1 common risk factor for the condition (see box 2).

Use clinical judgement when deciding whether to test people who have at least 1 common symptom or sign (see box 1) but no common risk factors (see box 2).

Use either total B12 (serum cobalamin) or active B12 (serum holotranscobalamin) as the initial test for suspected vitamin B12 deficiency unless:

• the test needs to be done during pregnancy, or

• recreational nitrous oxide use is the suspected cause of deficiency.

Use active B12 as the initial test for suspected vitamin B12 deficiency during pregnancy.

If the person has suspected vitamin B12 deficiency caused by recreational use of nitrous oxide:

• use plasma homocysteine or serum methylmalonic acid (MMA) as the initial test and

• if using plasma homocysteine, refer the person to phlebotomy services in secondary care for this test.

Take blood samples for diagnostic tests before starting vitamin B12 replacement.

Box 1 – signs & symptoms
• abnormal findings on a blood count such as anaemia or macrocytosis • cognitive difficulties such as difficulty concentrating or short-term memory loss (sometimes described as 'brain fog'), which can also be symptoms of delirium or dementia • eyesight problems related to optic nerve dysfunction: – blurred vision – optic atrophy – visual field loss (scotoma) • glossitis • neurological or mobility problems related to peripheral neuropathy, or to central nervous system disease including myelopathy (spinal cord disease): – balance issues and falls caused by impaired proprioception (the ability to sense movement, action and location) and linked to sensory ataxia (which may have been caused by spinal cord damage) – impaired gait – pins and needles or numbness (paraesthesia) • symptoms or signs of anaemia that suggest iron treatment is not working properly during pregnancy or breastfeeding • unexplained fatigue.

Box 2 – risk factors
• diet low in vitamin B12 (without the regular use of over-the-counter preparations), for example, in people who: – follow a diet that excludes, or is low in, animal-source foods (such as a vegan diet, or diets excluding meat for religious beliefs) – do not consume food or drinks fortified with vitamin B12 – have an allergy to some foods such as eggs, milk or fish – find it difficult to buy or prepare food (for example, people who have

dementia or frailty, or those with mental health conditions)

– find it difficult to obtain or afford foods rich in vitamin B12 (for example, people on low income)

– have a restricted diet (for example, because of an eating disorder)

• family history of vitamin B12 deficiency or an autoimmune condition

• health conditions:

– atrophic gastritis affecting the gastric body

– coeliac disease or another autoimmune condition (such as thyroid disease, Sjögren's syndrome or type 1 diabetes)

• medicines:

– colchicine

– H2-receptor antagonists

– metformin (see the MHRA safety advice on metformin and reduced vitamin B12)

– phenobarbital

– pregabalin

– primidone

– proton pump inhibitors

– topiramate

• previous abdominal or pelvic radiotherapy

• previous gastrointestinal surgery:

– many bariatric operations (for example, Roux-en-Y gastric bypass or sleeve gastrectomy)

– gastrectomy or terminal ileal resection

• recreational nitrous oxide use.

Interpreting total or active B12 test results

Results if testing total B12 concentrations	Results if testing active B12 concentrations	Likelihood of vitamin B12 deficiency
Less than 180 nanograms	Less than 25 pmol per litre	Confirmed vitamin B12 deficiency

(133 pmol) per litre		
Between 180 and 350 nanograms (133 and 258 pmol) per litre	Between 25 and 70 pmol per litre	Indeterminate test result – possible vitamin B12 deficiency
More than 350 nanograms (258 pmol) per litre	More than 70 pmol per litre	Test result suggests vitamin B12 deficiency is unlikely

Treatment

Taken from BNF (https://bnf.nice.org.uk/drugs/hydroxocobalamin/)

Pernicious anaemia and other macrocytic anaemias without neurological involvement

for hydroxocobalamin

By intramuscular injection

Initially 1 mg 3 times a week for 2 weeks, then 1 mg every 2–3 months.

Pernicious anaemia and other macrocytic anaemias with neurological involvement

for hydroxocobalamin

By intramuscular injection

Initially 1 mg once daily on alternate days until no further improvement, then 1 mg every 2 months.

Administration

Check PSD is up-to-date and includes your initials (task NMP if new PSD needed)

Administered by trained nurse or HCA who has been trained and assessed as competent

Intramuscular injection into the deltoid, alternate arm for each dose

Storage

Store at or below 25°C. Protect from light.

Monitoring

No follow up tests are required but review should be agreed with GP

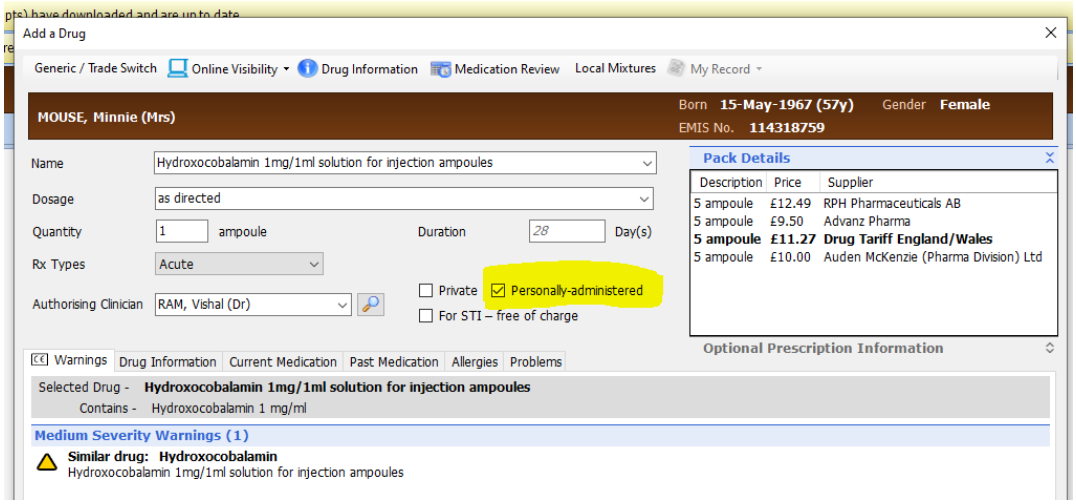
Documentation

Problem – Cobalamin deficiency/pernicious anaemia/gastrectomy/gastric bypass

Injections Template (Ardens), All injections tab – consent, B12 tab – procedure (manufacturer, expiry date, batch number and route), follow-up (adjust date according to frequency of administration)

Claiming

Add 'hydroxocobalim 1mg/1ml solution for injection' to medication list and click 'issue later' so that prescriptions team can claim for this medication.



If prescription is for the community nurse team to administer this will need to be prescribed by prescribing clinician with clear instructions for District nurse administration only.

Version Control

Date	Version	Author	Change Details
May 2024	1.1	C Talbot	reviewed
December 2024	1.2	C Talbot	Review