

## COMMON SYMPTOMS



**Mouth ulcers**  
Sores at corner of mouth  
Sore tongue (glossitis)



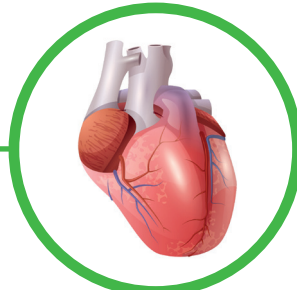
**Persistent pain, Pins & needles**  
Numbness, Dizziness/balance problems  
Restless leg syndrome, Weakness



**Fatigue/apathy**  
Depression  
Brain fog, Anxiety



**Children:**  
Delayed development  
Learning issues  
Autism



**Associated conditions**  
due to build up of metabolic  
toxin homocysteine:  
Heart attacks, stroke,  
clots, dementia,  
osteoporosis



**Mis-diagnoses:**  
MS, Dementia, chronic  
fatigue syndrome (CFS/  
ME), Fibromyalgia Burning  
mouth syndrome, Diabetic/  
peripheral neuropathy

## FOODS HIGH IN B12



Mackerel, Tuna,  
Salmon, Sardines



Meat



Liver



Full fat dairy



Eggs



Shitake  
mushrooms

## FOR ABSORPTION TO OCCUR YOU NEED:

Adequate levels  
of stomach acid  
to break bond  
between food  
and B12



Intrinsic factor (IF) to  
allow absorption in the  
small intestine



healthy gut  
lining in small  
intestines

### REDUCED ABSORPTION CAUSES

#### STOMACH

**Symptoms:**  
Heartburn, reflux,  
bloating/gas



**Medications:**  
Acid Inhibitors  
(PPI's – omeprazole/  
lansoprazole)



**Diagnoses:**  
Helicobacter Pylori infection  
Pernicious anemia (auto-immune disease of stomach – reduces  
stomach acid and IF)

## REDUCED ABSORPTION CAUSES

### SMALL INTESTINES (WHERE ABSORPTION OCCURS):

**Diagnosed:**  
Coeliac disease/  
gluten sensitivity  
"IBS", Crohn's  
disease



**Symptoms:**  
Bloating, diarrhoea/constipation

**Medications which reduce absorption:**  
Metformin (diabetes drug), anti-convulsant  
(pregabalin, primadone phenobarbital)



## B12 DEFICIENCY AND ANEMIA

Low B12 is one cause of anemia (along with folic acid and iron), however low B12 levels affects many systems in the body, producing varied symptoms which frequently occurs in the absence of anemia

According to published NHS guidelines:

- Definitive blood test cut off points to rule out deficiency are not possible
- The clinical picture (symptoms) is the most important factor in assessing the significance of a test result
- In the presence of a difference between test result and strong B12 deficiency type symptoms, treatment should be started to avoid permanent neurological impairment

## NOTE

Pernicious anemia is an auto-immune disease affecting the stomach, which lowers the levels of stomach acid and intrinsic factor, both needed for B12

## B12 DEFICIENCY DIAGNOSIS DIFFICULTY

Total/serum B12 contains both active and inactive (unusable) fractions of B12. Up to 90% may be the inactive form, unable to be used by the body, with as little as 10% active and available

< 148 pmol/L (200 ng/L) = deficient (see GP for injections and pernicious anemia testing/ intrinsic factor anti-bodies) *Note: Most patients benefit from additional sublingual B12 (see below)*

**Total/serum B12**  
148 pmol/L - 500 pmol/L (200 - 677 ng/L) =  
Definitive cut off points to rule out deficiency are not possible, in this grey zone deficiency is possible. If symptoms are suggestive of B12 deficiency a trial of B12 is warranted

## FURTHER TESTING

**Active B12 test:**

< 35 pmol/L =  
deficient (see GP for injections and pernicious anemia testing/ intrinsic factor anti-bodies)

35 -75 pmol/L =  
Definitive cut off points to rule out deficiency are not possible, in this grey zone deficiency is possible. If symptoms are suggestive of B12 deficiency a trial of B12 is warranted



## TREATMENT

B12 is completely non-toxic, however patients with clinically diagnosed anxiety should either start by breaking off small pieces of Active B12 tablets to start with a lower dose, or use the inactive form of B12 hydroxocobalamin.

Active B12 sublingual tablets (dissolved between cheek & gum) give superior absorption compared to swallowed capsules & allows those on B12 blocking medications or with digestive issues to achieve optimal levels.

Take 1-2 tablets daily in the morning (1250-2500 mcg) daily for a mix of two active forms of B12 methylcobalamin & adenosylcobalamin. Re-assess clinical symptoms after one month.

**Synergistic support:** Active B12 works alongside active folate (folic acid), B6, and B2. All three help to remove a toxic chemical made internally called homocysteine. Methyl B Hero combines all nutrients needed to remove homocysteine in one capsule. Recommended to take one capsule in the morning daily with Active B12 as a month long trial and re-assess clinical symptoms.

Homocysteine can be measured via a blood test, talk to your practitioner.

