



Vitamin B12 Facts



Causes of B12 deficiency

- Decreased intake
- Decreased absorption (bariatric surgery, IBD, celiac disease, aging)
- autoimmune diseases - pernicious anemia

**IgA attacks Intrinsic factor OR Parietal cells*

- medications (Metformin, proton pump inhibitors)

**yearly B12 levels should be checked on patients taking Metformin*

Diagnosing Vitamin B12 Deficiency

Above 300 pg/mL -- normal

200-300 pg/mL -- borderline (*additional testing needed)

< 200 pg/mL -- low

Megaloblastic anemia (MCV > 100 fl)

Homocysteine and methylmalonic acid (MMA)

-homocysteine -- elevated in B12 and folate deficiencies

-MMA -- elevated only in B12 deficiencies

**Measure MMA and homocysteine with borderline B12*

-MMA and homocysteine elevated -- B12 deficiency confirmed