

## VITAMIN B12 (METHYLCOBALAMIN)

### Dosage & Administration:

- Normal dose: 1mg
- Max dose: 2mg
- Administration: IV infusion or IM injection

### Key Functions & Benefits:

- Supports DNA synthesis and lipid metabolism.
- Regulates mood, reduces irritability, and may alleviate ADHD-like symptoms.
- Essential for myelin sheath formation, nerve protection, and cognitive function.
- Necessary for red blood cell production but does NOT treat iron deficiency anemia alone.

### Absorption & Metabolism:

- IV/IM B12 bypasses the digestive system, making it more effective for those with absorption issues.
- Oral B12 requires intrinsic factor, which many individuals lack due to age or gastrointestinal conditions.

### Dietary Considerations:

- Main sources: Animal products (meat, fish, eggs, dairy).
- Vegans and vegetarians require supplementation.
- Some gut bacteria produce B12, but not enough to meet daily needs.

### Special Considerations:

- MTHFR genetic mutation: Individuals with this mutation should take methylcobalamin or hydroxocobalamin instead of cyanocobalamin.