

## Summary of NICE Guidelines

Title	Vitamin B12 deficiency in over 16s: diagnosis and management													
NICE Reference	NG239													
Previous NICE Reference ( if applicable)	NA													
Date of Publication	6 March 2024													
Date of Review/Update by NICE	NA													
Date of Summary by Trainee	28 August 2024													
Summary of Guidance (Max 250 words)	<p>This guideline provides recommendations for the recognition, diagnosis and management of vitamin B12 deficiency in over 16s.</p> <p><b>Diagnosis:</b></p> <ul style="list-style-type: none"> <li>• Diagnostic testing should be offered to people with at least one common symptom/sign AND at least one common risk factor of B12 deficiency</li> <li>• Use clinical judgement for whether to test people with symptoms/signs but no risk factors</li> <li>• Front-line testing should be total OR active B12 (active B12 in pregnancy)</li> <li>• Measure plasma homocysteine OR serum methylmalonic acid (MMA) initially if recreational nitrous oxide use is suspected</li> <li>• Interpretation of total or active B12 results shown below (or use laboratory thresholds)</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Total B12 (ng/L)</th> <th style="text-align: center;">Active B12 (pmol/L)</th> <th style="text-align: center;">Likelihood of Deficiency</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">&lt;180 (133 pmol/L)</td> <td style="text-align: center;">&lt;25</td> <td style="text-align: center;">Confirmed</td> </tr> <tr> <td style="text-align: center;">180 – 350 (133 – 258 pmol/L)</td> <td style="text-align: center;">25 – 70</td> <td style="text-align: center;">Indeterminate</td> </tr> <tr> <td style="text-align: center;">&gt;350 (258 pmol/L)</td> <td style="text-align: center;">&gt; 70</td> <td style="text-align: center;">Unlikely</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Consider serum MMA in people with signs/symptoms but with an indeterminate B12 result</li> </ul> <p><b>Determining Cause:</b></p> <ul style="list-style-type: none"> <li>• Consider anti-intrinsic factor antibody testing if autoimmune gastritis is suspected AND they have not had a positive anti-intrinsic factor antibody test OR an operation that could affect vitamin B12 absorption</li> <li>• If anti-intrinsic factor result is negative and autoimmune gastritis is still suspected, consider anti-gastric parietal cell antibody testing, gastrin testing, a CobaSorb test or a gastroscopy with gastric body biopsy</li> <li>• Offer serological testing for coeliac disease if the cause of deficiency is still unknown</li> </ul> <p><b>Monitoring:</b></p> <ul style="list-style-type: none"> <li>• If the person has new or worsening symptoms following B12 replacement, consider testing with serum MMA or plasma homocysteine (if not tested previously)</li> <li>• Do not repeat initial diagnostic test in people receiving</li> </ul>		Total B12 (ng/L)	Active B12 (pmol/L)	Likelihood of Deficiency	<180 (133 pmol/L)	<25	Confirmed	180 – 350 (133 – 258 pmol/L)	25 – 70	Indeterminate	>350 (258 pmol/L)	> 70	Unlikely
Total B12 (ng/L)	Active B12 (pmol/L)	Likelihood of Deficiency												
<180 (133 pmol/L)	<25	Confirmed												
180 – 350 (133 – 258 pmol/L)	25 – 70	Indeterminate												
>350 (258 pmol/L)	> 70	Unlikely												

	intramuscular B12 replacement
Impact on Lab (See below)	<p><b>■ Important:</b> This NICE guideline is of direct relevance to our pathology service and will have a direct impact on one or more of the services that we currently offer.</p>
Lab professionals to be made aware  <i>Please select/highlight appropriate choices</i>	<ul style="list-style-type: none"> <li>✓ Laboratory Manager</li> <li>✓ Chemical Pathologist</li> <li>✓ Clinical Scientist</li> <li>✓ Biomedical Scientist</li> </ul>
Please detail the impact of this guideline (Max 150 words)	<ul style="list-style-type: none"> <li>• Recommendation of active B12 measurement in pregnancy may require laboratories to include this as a referral test or introduce the assay as an alternative to total B12 (in selected or all B12 requests). This may represent a cost pressure for laboratories.</li> <li>• Adoption of the new diagnostic thresholds may change reporting practice in some laboratories.</li> <li>• MMA analysis is only available at a small number of specialist laboratories. The requirement for MMA testing may represent an increase in referrals for analysis in most laboratories with an associated cost pressure. The specialist laboratories providing MMA analysis may observe a significant increase in workload.</li> <li>• The introduction of these guidelines could lead to more requests for all of the tests mentioned due to an increased awareness</li> </ul>

#### Impact on Lab

- None:** This NICE guideline has no impact on the provision of laboratory services
- Moderate:** This NICE guideline has information that is of relevance to our pathology service and may require review of our current service provision.
- Important:** This NICE guideline is of direct relevance to our pathology service and will have a direct impact on one or more of the services that we currently offer.

**Written by: Chloe Austin**

**Reviewed by: Karen Smith**

**Date: 28/08/2024**