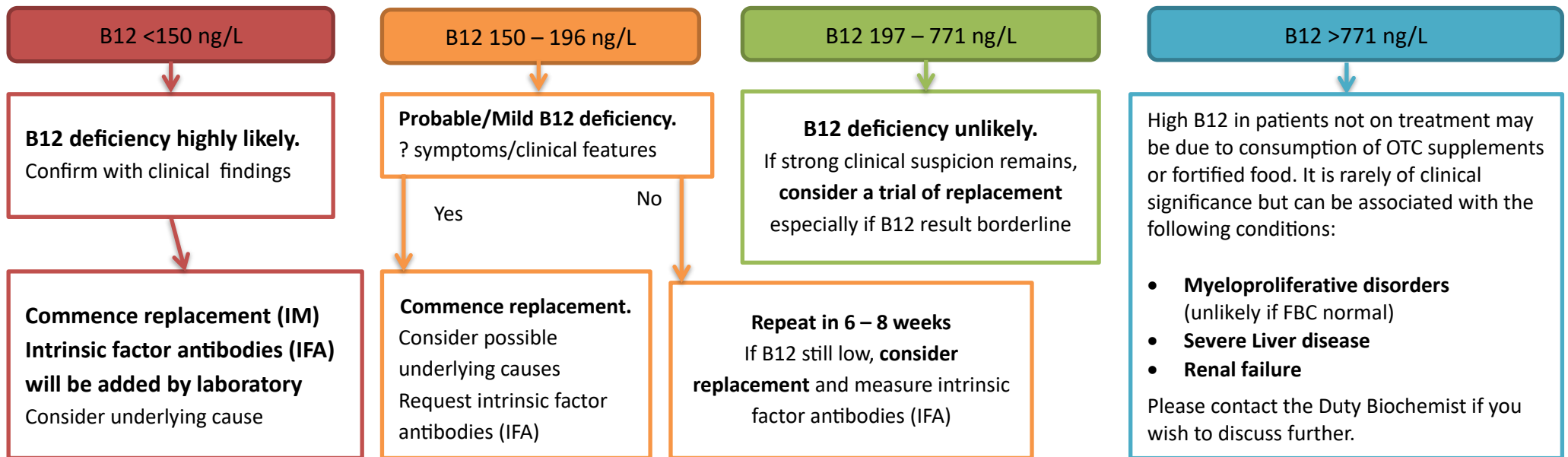


Guidance for Primary Care on the Interpretation of B12

- B12 deficiency does **not** usually require secondary care referral.
- Replacement is usually given by IM injection. Oral replacement may be appropriate for mild deficiencies where the IFA is negative.

It is not appropriate to measure B12 in patients on IM treatment. Monitor response to treatment using the full blood count (Hb and MCV).



Causes of B12 deficiency

- **Pregnancy, OCP, HRT** (not thought to represent a functional B12 deficiency)
- **Medications:** metformin, PPI, anti-convulsants e.g. phenytoin, antibiotics, colchicine
- **Vegetarian/vegan/poor diet**
- **Malabsorption** – consider other features of malabsorption/pancreatic insufficiency.
- **Pernicious anaemia** – consider history of autoimmune disease and/or family history.
- **Folate deficiency**
- **Parasitic infection, HIV,**

Clinical features of B12 deficiency

B12 levels are not easily correlated with clinical features, and low levels may not represent a functional B12 deficiency.

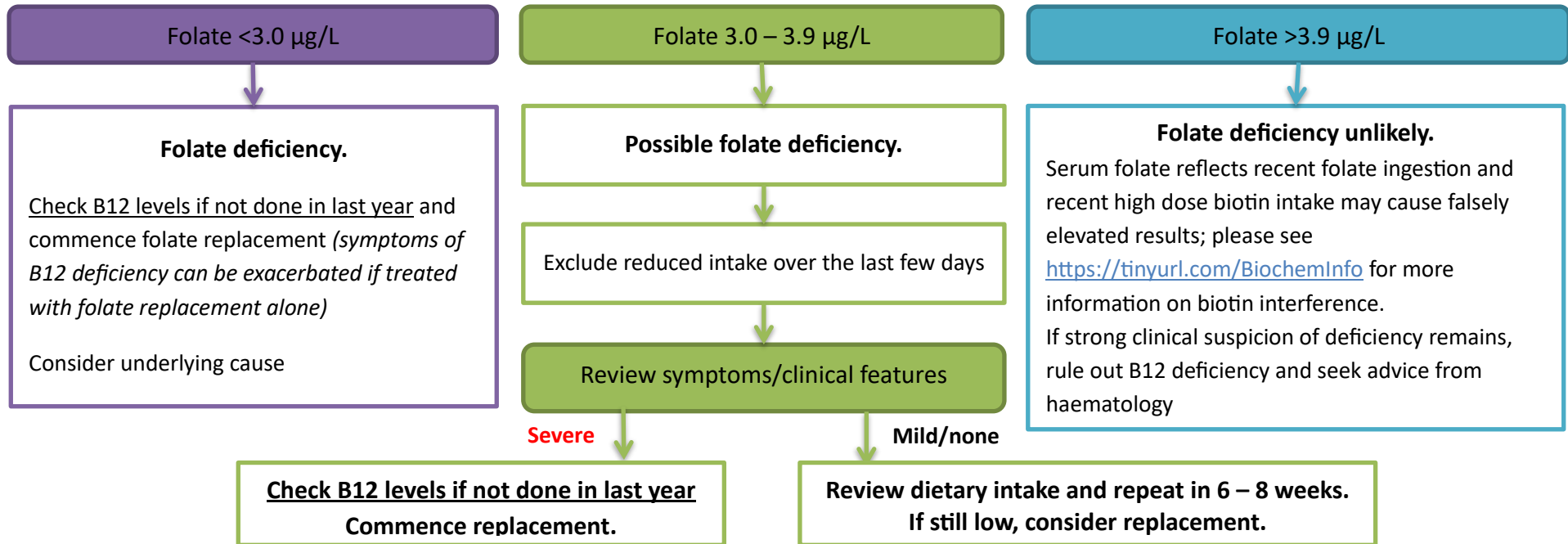
Features of B12 deficiency may include:

- Macrocytic anaemia (MCV >101 fl)*
- Glossitis
- Paraesthesia, unsteadiness, peripheral neuropathy

*Note co-existing iron deficiency/thalassaemia trait may mask macrocytosis

Guidance for Primary Care on the Interpretation of Folate

- **It is not appropriate to measure folate in patients on supplements.** Monitor response to therapy using the FBC (Hb and MCV).
- In the presence of true B12 deficiency, serum folate may be elevated.



Causes of Folate deficiency

- **Dietary deficiency/anorexia**
- **Pregnancy**
- **Alcoholism**
- **Malabsorption** – consider other features of malabsorption/pancreatic insufficiency.
- **Haemolysis**
- **Malignancy**
- **Medications:** Anti-convulsants
- **Sample collection immediately post-dialysis**

Clinical features of Folate deficiency

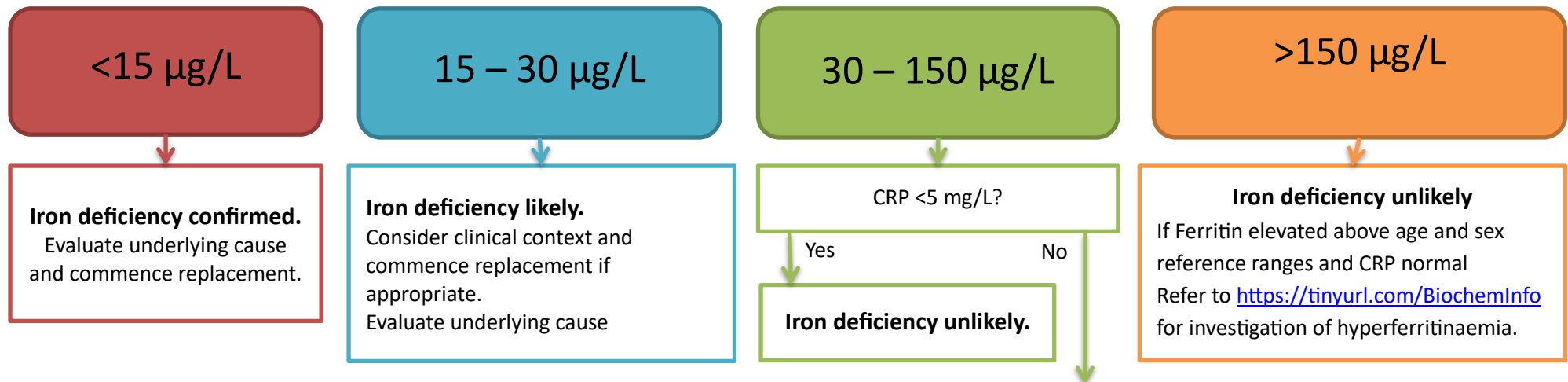
Features of folate deficiency include:

- Macrocytic anaemia (MCV >101 fl)*
- Angular cheilosis/stomatitis

*Note: co-existing iron deficiency/thalassaemia trait may mask macrocytosis

Guidance for Primary Care on the Interpretation of Ferritin

- For investigation of iron deficiency, serum ferritin is the recommended front line test and is superior to transferrin saturation.
- Monitor response to iron therapy using FBC (Hb and MCV) initially. **There is no need to re-check ferritin levels within 6 – 8 weeks.**



Iron deficiency not excluded. Transferrin saturation will be added by laboratory

For patients with chronic inflammatory conditions, interpret ferritin cautiously.

Ferritin levels are increased independently of iron status in acute and chronic inflammatory conditions, malignancy and liver disease which may mask deficiencies.

Review FBC parameters and transferrin saturation; if <16%, iron deficiency is possible. *Note: transferrin saturation is non-specific as pregnancy, OCP and chronic illness can result in low transferrin saturation without iron deficiency.*

Causes of iron deficiency

- **Inadequate diet or malabsorption**
- **Bleeding**, e.g. GI bleeding, menorrhagia or blood donation
- **Chronic renal failure** and haemodialysis
- **Infancy, pregnancy or lactation**
- **Increased red cell turnover**

Clinical features of iron deficiency

Features of iron deficiency include:

- Microcytic hypochromic anaemia (MCV <79 fl)
- Symptoms of anaemia – fatigue, dyspnoea, pallor.
- Symptoms of iron deficiency may occur without anaemia: lack of concentration, irritability, hair loss, dry skin, angular cheilosis, atrophic glossitis, spoon-shaped nails, and unusual cravings for non-food items (phenomenon known as pica).