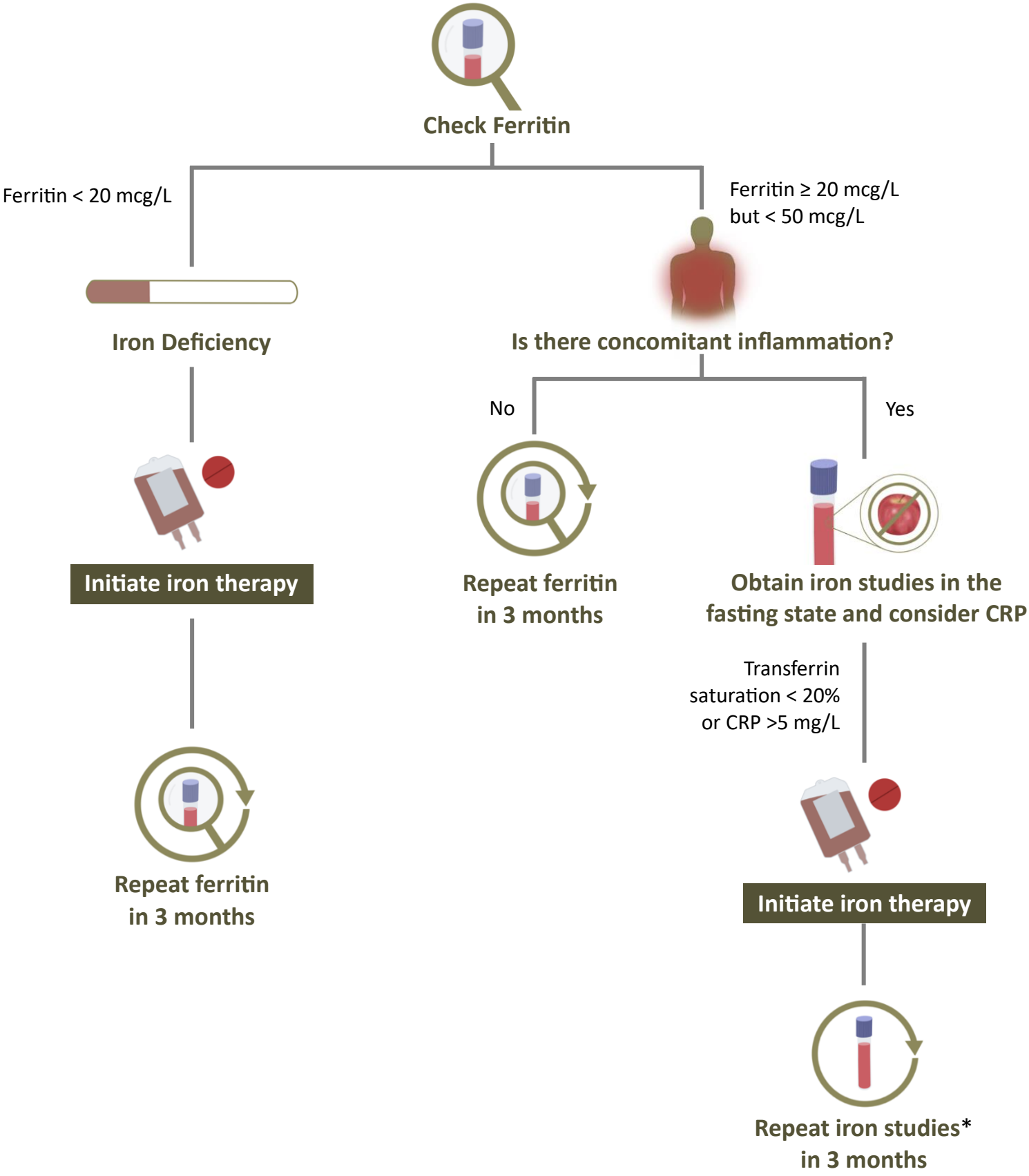
Pediatric Iron Deficiency Treatment Algorithm



*Note: Iron studies refers to serum iron, TIBC, and transferrin saturation. Assess for improvement in transferrin saturation to ≥ 20%.

Check ferritin

Similar to the adult population, ferritin is a positive acute phase reactant and may be elevated in the presence of inflammation.

Iron deficiency

In the pediatric population, ferritin levels below 20 mcg/L indicates iron deficiency.

Concomitant inflammation

Patients who have ferritin ≥ 20 mcg/L but less than 50 mcg/L who have concomitant inflammation (see examples below) should have full iron studies ordered (serum iron, TIBC, and transferrin saturation). Ferritin is a positive acute phase reactant that rises with inflammation even in presence of iron deficiency.

Examples of inflammatory states:
- Acute and chronic infections
- Heart failure
- Chronic kidney disease
- Autoimmune conditions (e.g., systemic lupus erythematous, rheumatoid arthritis, inflammatory bowel disease, vasculitis, psoriasis)
- Hematological and solid-organ malignancy
- Patients with elevated BMI
- Patient post-transplant

Obtain iron studies in the fasting state and consider CRP

Iron studies refers to serum iron, TIBC, and transferrin saturation.

Initiate iron therapy

In patients with concomitant inflammation, transferrin saturation less than 20% is indicative of iron deficiency. C-reactive protein levels have been used to detect concomitant inflammation with levels greater than 5 suggesting possible inflammation in patients with ferritin levels between 20 and 50 mcg/L. Soluble transferrin receptor levels may also be used as an alternative to transferrin saturation to assess for iron deficiency in states of inflammation, but it may not always be available.