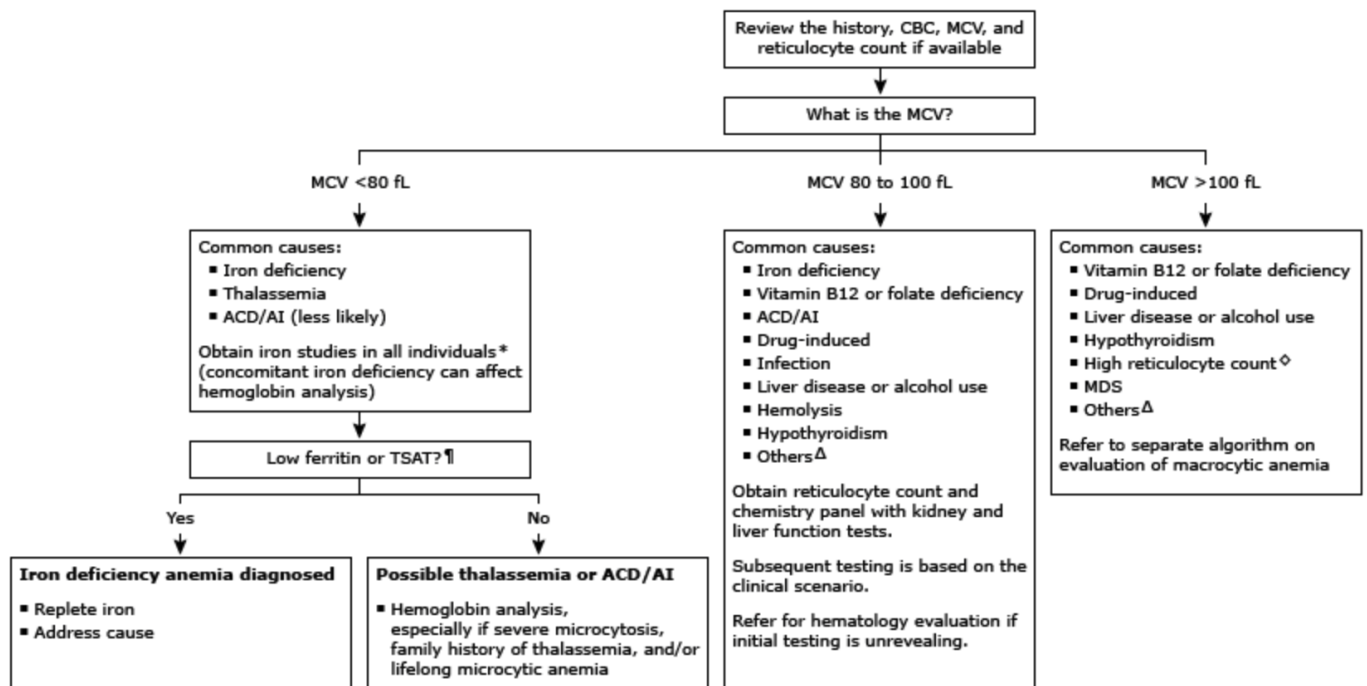


# Anemia

Anemia can be caused by many things but first we should get some basic labs such as CBC that will show MCV, and Reticulocyte count.

## Anemia evaluation in outpatients (nonpregnant adults)



Δ Other causes of anemia include monoclonal gammopathies, androgen deficiency (male), MDS, clonal cytopenias, copper deficiency, and others. Multiple causes may be present. The risks of clonal disorders and hematologic malignancies generally increases with age or exposure to bone marrow toxins including certain chemotherapy drugs. Aplastic anemia and Diamond-Blackfan anemia are less age dependent.

This table from UTD summarizes on the different causes of anemia depending on the MCV.

Increased reticulocyte count (increased red cell breakdown) will also require peripheral smear to narrow differential.

1. Acute blood loss
2. Hemolysis - including antibody mediated, cellular toxins (malaria, clostridium), trauma (valve), or hypersplenism.
3. Intrinsic Defect- including enzyme deficiency such as G6PHD, SCD, or thalassemia
4. Membrane Defect- including spur cell, hereditary spherocytosis or PNH

Anemia with decreased reticulocyte count

1. Deficiency of Iron, Vit B12, Folate, or copper
2. Medication that can suppress the bone marrow (such as quinidine, TMP SMX, albendazole)
3. Primary bone marrow disorders (MDS, Myelofibrosis, or leukemia)
4. Very recent bleeding (within 5-7 days, before bone marrow compensation has occurred)

If patient has Hgb of  $<7$  in Non cardiac patient or  $<8$  in cardiac patient we should consider blood transfusion (pRBC). (Let the patient know of the risk's and benefits and also inquire that patient is not a Jehovah's Witness before proceeding with blood transfusion).

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Revision #2

Created 25 February 2022 06:36:09 by Katarina Soewono

Updated 3 April 2022 23:34:31 by Umair Khalid