Screening test: Complete blood count with blood smear morphology (test codes CBC, MORP).

**YES**

Is the patient’s MCV <80fL?

**NO**

Ferritin (test code FERR).

**YES**

Is the ferritin low?

**NO**

Consider iron deficiency anemia. Additional iron studies (serum Fe, TIBC and transferrin saturation, test code FE) to confirm.

Perform HPLC/hemoglobin electrophoresis (test code HBEP).

Consider molecular testing (ATHL, BTHL) with additional molecular testing if clinically needed (test code ATHSB, HBCS, BDEL, BGSQ).

Note: Iron deficiency may decrease HbA2 levels, and a diagnosis of beta-thalassemia may be missed

If mild thalassemia is suspected, but no clinically significant findings are present, and HPLC negative, no further testing required.

If patient has normocytic anemia, consider co-existing macrocytic process prior to evaluation of thalassemia

Low risk of clinically significant thalassemia in the patient, if there is no recent history of transfusion. If recently transfused, re-evaluate after 4 months.

Retest for thalassemia after iron repletion, if clinical suspicion persists

Note: Not sufficient for prenatal screening/planning. Genetic counseling and molecular testing may be needed.

Reviewer: Zane Amenhotep, MD Last updated: 3/1/2014