

Visual Aid – Clinically Significant Antibodies and Hemolytic Disease of the Fetus and Newborn (HDFN) Risk

Antibodies associated with HDFN

The following red blood cell antibodies have been identified as causing HDFN. This list is comprised of those antigens which are common on routine commercial cells used for antibody identification. There may be additional antigens that are low in prevalence, or the antigens do not routinely show up on antigram panels used in antibody investigations that are not included in this list. If the pregnant individual's antibody screen is positive, but panel is negative, referral to antibody reference lab is recommended to rule out a clinically significant antibody to a low prevalence antigen. Similarly, if there is a positive neonatal or cord blood DAT, with or without evidence of anemia or jaundice, investigation of the pregnant individual's specimen for an antibody to a low prevalence antigen is recommended prior to any subsequent pregnancies. Antibodies with reactivity to multiple cells or all panel cells that cannot be identified should be investigated for antibodies to a high prevalence antigen and correlated with risk for HDFN.

Consultation with TM physician or immunohematology subject matter expert may be required.

Association	Severity of HDFN	
	Blood Group System (antigen)	
	Mild*	Mild to Severe
Commonly associated with HDFN	ABO (A, B) – HDN only Rh (E**, e, C**)	Rh (D**, c**, G) Kell (K**, k)
Rarely associated with HDFN	Duffy (Fy ^b , Fy ³) Kidd (Jk ^b , Jk ³)	Kell (Kp ^a , Kp ^b [moderate], Js ^a , Js ^b) Duffy (Fy ^a) Kidd (Jk ^a) MNS (S, s, U, rarely M) Diego (Di ^a , Di ^b , Wr ^a)
Not associated with HDFN	ABO (A ₁) P (P ₁) Lewis (Le ^a , Le ^b) MNS (N) Xg ^a Chido/Rodgers Lutheran (Lu ^a , Lu ^b)	

*Rare cases may be severe.

**Fetal blood group genotyping (FBGG) testing is available.

References

1. The Clinical Significance of Blood Group Alloantibodies and the Supply of Blood for Transfusion. In 2022 [Accessed 2026 Jul 06]. Available from: <https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/27978/spn-214-v5-the-clinical-significance-of-blood-group-alloantibodies-and-the-supply-of-blood-for-transfusion.pdf>
2. Reid ME, Lomas-Francis C, Olsson ML. The Blood Group Antigen FactsBook. Amsterdam: Elsevier/Ap; 2012.

