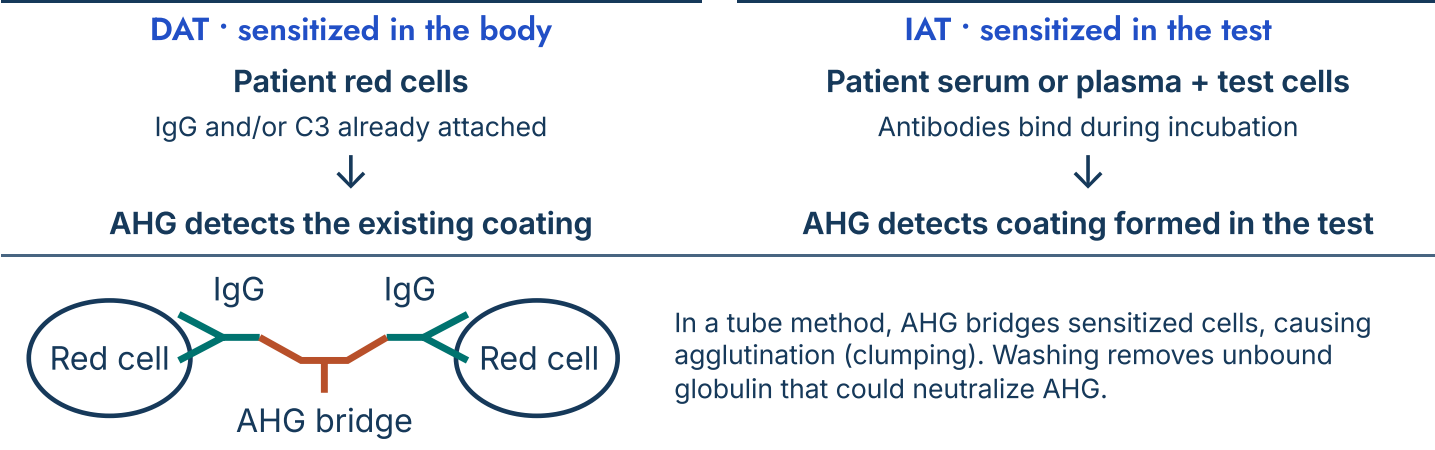


DAT versus IAT

Where sensitization occurs and what the result can establish

The **direct antiglobulin test (DAT)** detects antibody or complement already coating the patient's red cells. The **indirect antiglobulin test (IAT)** tests whether antibodies in serum or plasma can coat test red cells during incubation.

Sensitization is antibody or complement coating a red cell. **Antihuman globulin (AHG)** reacts with the coating specified on the reagent label, often **immunoglobulin G (IgG)** and/or fragments of **complement component 3 (C3)**.



The diagram illustrates the tube method. Gel and solid-phase methods separate and detect reactions differently; specimen and reagent instructions govern the method used.

Comparison	DAT	IAT
Material tested	Patient red cells, commonly from anticoagulated blood.	Serum/plasma plus reagent cells, or donor cells for an antiglobulin crossmatch.
What is detected	Bound IgG and/or complement, per reagent.	Antibodies reactive with test-cell antigens under the assay conditions; commonly IgG.
Common uses	Investigation of immune hemolysis, transfusion reactions, and hemolytic disease of the fetus and newborn.	Antibody screening and identification, prenatal testing, and antiglobulin compatibility testing.

A positive DAT does not establish hemolysis. Compare bilirubin, lactate dehydrogenase, haptoglobin, and clinical findings. A negative DAT may miss a small amount of coating or a type the reagent does not detect.

A positive reaction alone does not identify the antibody. A negative IAT means no reaction was detected with those test cells and conditions; a weak antibody or one whose antigen is absent from the cells may be missed.