

## Hypersensitivity Type II

This is a reaction due to antibody binding with cellular antigens, which leads to opsonization and phagocytosis, complement-mediated inflammation and cellular dysfunction.



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### Cytotoxic

#### Side-toe-toxic

This reaction is cytotoxic to cells as cells become opsonized by antibody leading to phagocytosis or cell lysis without phagocytosis via antibody-dependent cellular cytotoxicity (ADCC).

### IgM or IgG antibody-mediated

#### Mountain Globulin-Goblin and Gold Globulin-Goblin

IgM or IgG antibody binds to antigen on the cell, coating it. This leads to the reactions that ensue.

### Membrane Attack Complex (MAC)

#### MAC-gun

IgM or IgG antibodies on the cell surface may activate the classical pathway of the complement system which can lead to opsonization and phagocytosis and formation of the membrane attack complex, which punctures cellular membranes leading to osmotic lysis.

### Mechanism

#### Opsonization

##### Ops-signing

Antibody binds to antigens on cells thus opsonizing them. Phagocytes recognize this and phagocytose these cells, thus destroying them.

#### Complement Activation

##### Complimenting

The complement system is activated due to antibody on the surface of cells leading to cellular lysis with phagocytosis and inflammation.

#### NK Cells

##### NK Lime-Assassin Executioner

These are the primary cells responsible for antibody-dependent cellular cytotoxicity (ADCC).

### Testing

### **Direct Coombs test**

#### [Direct-route Comb](#)

This is used to test for autoimmune hemolytic anemia. Best testing for the presence of antibodies bound to the patient's red blood cells.

### **Indirect Coombs Test**

#### [Indirect-route Comb](#)

This is used to test if you have a reaction to a blood transfusion by testing for the presence of unbound antibody in the patient's serum.