

## Transplant Rejection

There are various mechanisms through which organs are rejected. In hyperacute rejection, which occurs within minutes, an antibody-mediated rejection occurs due to the presence of preformed antidonor antibodies in the transplant recipient. Acute rejection, which occurs weeks later, leads to a cell-mediated rejection process due to cytotoxic T lymphocytes reacting against foreign MHCs or an antibody-mediated process. In chronic rejection, which occurs months to years after transplant, organ atrophy is caused by T cell and antibody-mediated vascular damage.



PLAY PICMONIC

### Hyperacute

[Hiker](#)

Hyperacute rejection occurs within minutes.

### Occurs within Minutes

[Minute-stopwatch](#)

Hyperacute transplant rejections occur within minutes.

### Antibody Mediated Due to Preformed Antidonor Antibodies

[Ant-tie-bodies in Preformed-line](#)

In this type of rejection, an antibody-mediated rejection occurs due to the presence of preformed antidonor antibodies in the transplant recipient.

### Acute

[Acute-angle](#)

Acute rejection, which occurs weeks later, leads to a cell-mediated rejection process due to cytotoxic T lymphocytes reacting against foreign MHCs. Interestingly, it can also lead to an antibody-mediated immune (humoral) response.

### Occurs within Weeks

[Weekly-newspaper](#)

Acute rejections occur within weeks of transplantation.

### Cytotoxic T Lymphocytes Cause Cell-mediated or Antibody-mediated Response

[Side-toe-toxic Tennis-ball or Ant-tie bodies](#)

Acute rejection may occur due to a cell-mediated rejection process, where cytotoxic T lymphocytes react against foreign MHCs. Acute rejection may also occur due to an antibody-mediated (humoral) response.

### Chronic

[Crone](#)

In chronic rejection, which occurs months to years after transplant, organ atrophy is caused by T cell and antibody-mediated vascular damage.

### **Occurs Months to Years Later**

[Monthly-moon](#) and [Yearly-sun](#)

Chronic rejection is observed months to years after transplant.

### **Antibody and T Cell-mediated Vascular Damage**

[Ant-tie-bodies](#) and [Tennis-balls](#) causing [Vascular Damage](#)

In this type of transplant rejection, T cell and antibody-mediated vascular damage leads to organ ischemia, causing atrophy.