

## 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.