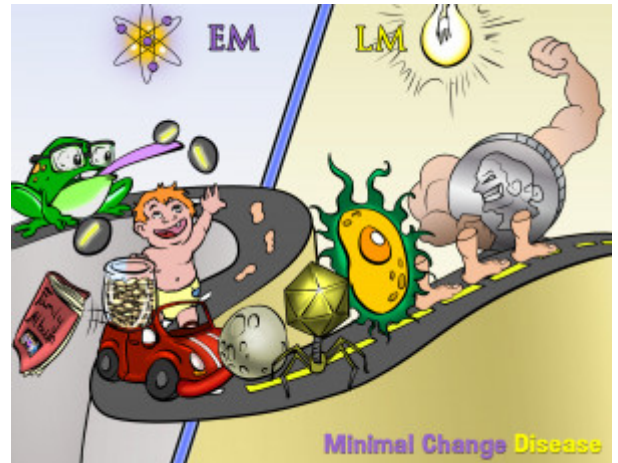


## Minimal Change Disease

Minimal change disease is a relatively benign disorder that is the most common cause of nephrotic syndrome in children. This disease is characterized by diffuse effacement of foot processes called podocytes of visceral epithelial cells. This podocyte effacement is visible with examination by electron microscopy while the glomeruli appear virtually normal by light microscopy. In minimal change disease, the glomerular basement membrane loses its negative charge which makes it unable to repel the negatively charged albumin. Therefore, this form of nephrotic syndrome is characterized by selective loss of albumin with minimal loss of immunoglobulins. This disease is typically triggered by a recent infection or immune stimulus like a prophylactic immunization and has dramatic response to corticosteroid therapy.



PLAY PICMONIC

### Pathophysiology

#### Nephrotic

##### [Nerd-frog](#)

Nephrotic syndrome is a group of symptoms including massive proteinuria defined as a daily loss of 3.5 gm or more of protein, hyperlipidemia, generalized edema, and hypoalbuminemia which results from renal pathology.

#### Most Common in Children

##### [Child in diaper](#)

Minimal change is the most common cause of nephrotic syndrome in children.

#### May be Triggered by Recent Infection or Immune Stimulus

##### [Virus and Bacteria with Moon](#)

This disease is typically triggered by a recent infection or immune stimulus, like a prophylactic immunization.

### Diagnosis

#### On Electron Microscopy (EM) See Foot Process (Podocyte) Effacement

##### [Left side marked with \(EM\) Electrons in an atom with lack of Foot Processes](#)

This disease is characterized by diffuse effacement of foot processes, called podocytes of visceral epithelial cells. This podocyte effacement is visible with examination by electron microscopy, while the glomeruli appear virtually normal by light microscopy.

#### On Light Microscopy (LM) See Normal Glomeruli

##### [Right-side marked with \(LM\) Light-bulb with Normal foot process structures](#)

This disease is characterized by diffuse effacement of foot processes, called podocytes of visceral epithelial cells. This podocyte effacement is visible with examination by electron microscopy, while the glomeruli appear virtually normal by light microscopy.

#### Loss of Negative Charge

##### [Negative-signs flying Off the road](#)

In minimal change disease, the glomerular basement membrane loses its negative charge, which makes it unable to repel the negatively charged albumin. Therefore, this form of nephrotic syndrome is characterized by selective loss of albumin with minimal loss of immunoglobulins.

#### Selective Loss of Albumin

##### [Family album being tossed out](#)

In minimal change disease, the glomerular basement membrane loses its negative charge, which makes it unable to repel the negatively charged albumin. Therefore, this form of nephrotic syndrome is characterized by selective loss of albumin with minimal loss of immunoglobulins.

### Treatment

### **Responds to Corticosteroids**

#### [Quarter-on-steroids](#)

Minimal change disease has dramatic response to corticosteroid therapy. Therefore, patients should be started on corticosteroids if minimal change is suspected, and if the response is inadequate, an alternative diagnosis should be suspected.