# Common Variable Immunodeficiency

Common variable immunodeficiency consists of a group of approximately 150 primary immunodeficiencies which have a common set of features but variable underlying causes. Overall, there is a defect in B cell maturation, leading to decreased number of plasma cells, and decreased immunoglobulins of all classes, but normal number of B cells. Because the patient is not able to produce sufficient antibodies in response to exposure to pathogens, they are at increased risk of recurrent sinopulmonary infections. In addition to infections, individuals are also at increased risk of autoimmune diseases and cancer such as lymphomas. Diagnosis is usually made by demonstrating low levels of immunoglobulins in the serum.




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## Pathophysiology

### Defect in B Cell Maturation

Baby (B cells) Basketballs

Overall, common variable immunodeficiency is characterized by a defect in B cell maturation, leading to decreased number of plasma cells and low levels of immunoglobulins in the serum. The number of B cells is normal, however.

### Decreased Plasma Cells

Down-arrows on histology of Plasma Cells

Overall, common variable immunodeficiency is characterized by a defect in B cell maturation, leading to decreased number of plasma cells and low levels of immunoglobulins in the serum. This leads to inadequate response to pathogens and recurrent infections.

### Decreased Immunoglobulins

Down-arrow In-moon-goblins

Overall, common variable immunodeficiency is characterized by a defect in B cell maturation, leading to decreased number of plasma cells and low levels of immunoglobulins in the serum. This leads to inadequate response to pathogens and recurrent infections.

## Signs & Symptoms

### Sinopulmonary Infections

Sinner-with-lungs

Because the patient is not able to produce sufficient antibodies in response to exposure to pathogens, they are at increased risk of recurrent sinopulmonary infections.

### Increased Risk of Autoimmune Disease

Auto-in-moon

There is an increased risk of autoimmune diseases in patients with Common variable immunodeficiency, with a risk of up to 25%. Most commonly, autoimmune destruction of platelets or red blood cells is seen.

### Lymphoma

Lime-foam

Common variable immunodeficiency may predispose individuals to developing lymphomas, although the exact mechanism is poorly understood.

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