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When the infection by tubercle bacilli occurs , tuberculo protein is released and stimulates the body to produce both immunity and hypersensitivity

**Immunity:** Is the ability of the body to overcome the infection by pathogenic bacteria .It occurs after first exposure (sensitization).The reaction is beneficial as it localizes and destroys the antigen without disease production. If the bacilli overcome the immunity , it will multiply resulting in progression from tuberculous infection to tuberculous disease.

**Hypersensitivity:** Is the change in reaction following re-exposure to antigen. When an antigen enters the body for the first time no harmful effect occurs. If the same antigen is reintroduced into the body , cellular damage with sever inflammatory reaction occurs called hypersensitivity

In tuberculous infection a delayed type of hypersensitivity (**cell mediated immune reaction** ) develops within 10 days of first infection with tubercle bacilli. Hypersensitivity decrease with time. It is detected by tuberculin test.

**Cell Mediated (Delayed)  
Hypersensitivity Reaction In Tuberculosis**

It is an exaggerated cell mediated immune response that damages the host cells.The main cell involved is the activated T-Lymphocyte T helper 1 cell (Th1).

Antibody and histamine play no role in this type. The response is delayed, it starts hours or days after contact with the antigen

The Th1 cell recognize the antigen and release the cytokines (lymphokines) that results in the accumulation of large number of activated macrophages and tubercle formation .