ETIOLOGY

- There are 5 closely related mycobacteria in the *M. tuberculosis* complex:
  - *M. tuberculosis*, *M. bovis*, *M. africanum*, *M. microti*, and *M. canetti*.

- *M. tuberculosis* – Most important cause of Tb in humans
  - Non–spore-forming
  - Non-motile
  - Pleomorphic
  - Weakly gram-positive curved rods 2-4 µm long
  - Obligate aerobes
  - Grow best at 37-41°C
  - Hallmark of all mycobacteria is **acid fastness**
CLINICAL MANIFESTATION

• **PRIMARY INFECTION**
  – 1\textsuperscript{st} infection
  – Can occur at any age, but commonly before age 5
  – The lung is the site in >98% of cases
  – On completion, TST usually becomes positive
  – Usually asymptomatic
  – Low grade fever, malaise and anorexia maybe present
  – Erythema nodosum and phlycternular conjunctivitis possible

• **Primary (Ghon’s) focus** – small area of inflammatory exudate at the alveoli where the inhaled bacilli first lodge

• **Primary (Ghon’s) Complex** – primary focus + the draining lymphatics + the inflamed regional lymph node
EXTRAPULMONARY TB

• DTB
  – Most common in infants and young children
  – Occurring 2-6 months of primary infection
  – Results from haematogenous spread
  – Onset of symptoms can be explosive with a fulminant course
  – Wt loss, anorexia, low grade fever
  – Generalized lymphadenopathy and hepatosplenomegally
  – Respiratory manifestations as in PTB
  – Symptoms of meningitis and peritonitis in 20-40% of cases
TB AND BCG VACCINATION

• Efficacy for adult pulmonary TB 0-80% in randomised clinical trials

• Best efficacy against serious childhood disease
  – 64% protection against TB meningitis
  – 78% protection against DTB

• BCG important for young children, inadequate as a single strategy