

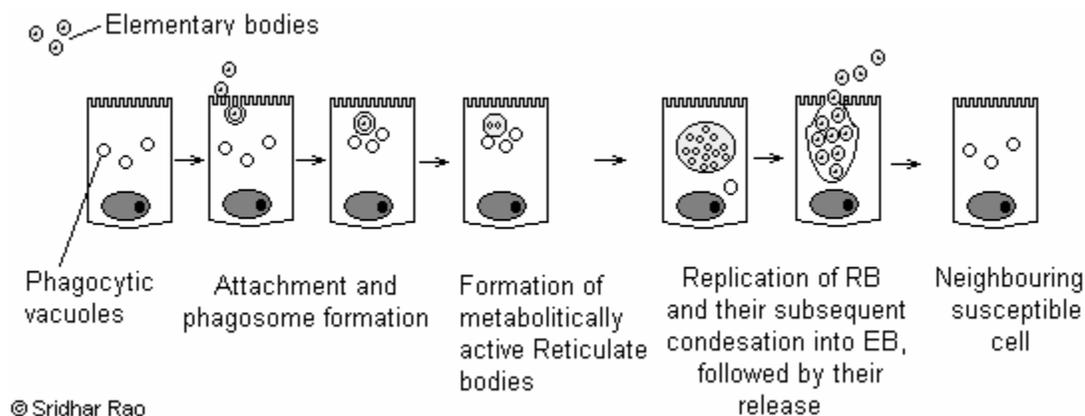
## TRIC AGENTS

TRIC is derived from words Trachoma and Inclusion Conjunctivitis. Both of these ophthalmic diseases are produced by a bacterium *Chlamydia trachomatis*. Serotypes of *C. trachomatis* A to K are together called TRIC agents.

### Properties:

Chlamydiae are obligate intracellular parasitic organisms that exclusively infect humans. They were once considered as viruses. Though they can't be stained well with Gram's stain, they are considered gram negative on the basis of cell wall structure. The cell wall is proposed to be gram-negative in that it contains an outer lipopolysaccharide membrane, but it lacks peptidoglycan in its cell wall. They exist in two forms, namely elementary body and reticulate body. Elementary body is considered to be the extracellular infective form while reticulate body is the reproductive form that is seen in infected host cells. Once inside, elementary body reorganizes into reticulate body. Over a 24-hour period, these reticulate bodies divide and begin to reorganize back into elementary bodies. About 48-72 hours after infection, the cell is lysed and numerous infectious elementary bodies are released. These can be demonstrated in infected cells by Iodine stain, Machiavello stain, Gimenez stain, Giemsa stain and immunofluorescence. Chlamydiae can't be grown on inanimate culture medium. They can be propagated only on embryonated eggs, mouse or tissue culture.

### Life cycle:



**Trachoma:** It is a chronic keratoconjunctivitis characterized by follicular hypertrophy, papillary hyperplasia, pannus formation and cicatrization (in late stages). Infection is transmitted from eye to eye by fingers or fomites (towels and washcloths). There is no genital involvement in this disease. Both children and adults can be infected.

Trachoma is an infection of the epithelial cells of the conjunctiva, producing inclusion bodies. Vascularization and clouding of cornea along with trichiasis (inward growth of eyelashes) can produce scarring that may lead to blindness. This is the leading cause of blindness in the world.

**Inclusion conjunctivitis:** It is a milder form that occurs in both children and adults. This form generally heals without scarring or blindness. During the birth process, when the fetus passes down the birth canal, it can contract an eye infection from the mother's infected genital tract after an incubation period of 5-12 days.

In the adult, it resembles the early stages of trachoma, but usually does not progress to a chronic disease or blindness. It was known as 'swimming pool conjunctivitis' as infection was associated with bathing in community swimming pools, which probably got contaminated with chlamydia from the genital secretions.

### Laboratory diagnosis:

- Specimen collection: Corneal scrapings
- Microscopy: Demonstration of inclusion bodies (HP bodies) by Giemsa, Castaneda, Machiavello methods, Iodine or immunofluorescence.
- Culture: Yolk sac of 6-8 day old embryonated egg, McCoy cell lines.