*MYCOPLASMA*

\*Smallest free-living micro organisms, lack cell wall /\* can pass through a bacterial filter /highly pleomorphic – no fixed shape or size

\*Called “pleuropneumonia like organisms”(PPLO) / \*Myco : fungus like branching filaments – Plasma : plasticity

\*Require complex media for growth including sterols / \* Facultative anaerobes Except M. pneumoniae - strict aerobe

\*resistant to penicillins, cephalosporins and vancomycin / \*Grow slowly and reproduced by binary fission

\*Doubling time can be as long as 16 -18hours, extended incubation needed / Established pathogens: M. pneumonia

\*Mycoplasmas of Humans: 1- saprophytic (in skin & mouth) , 2-parasitic Presumed pathogens: M. hominis, U. urealyticum

\* (2)diseases)- Atypical Pneumoniaو Genital infections ) Non pathogenic: M. اي واحد غير اللي فوق

\* Produce surface infections – adhere to the mucosa of respiratory, gastrointestinal & genitourinary tracts

\* Adherence(P1 pili (M. pneumoniae)) / \* Toxic metabolic products(Peroxide and superoxide, Inhibition of catalase by WBCs)

\* Immunopathogenesis(Stimulate cytokine production, Inflammatory cells migrate to infection and release TNF-a then IL-1 and IL-6)

\* M. hominis Genital infection, Pyelonephritis, pelvic inflammatory disease, postpartum fever //

\* U. urealyticum Nongonococcal urethritis, (pneumonia and chronic lung disease in premature infants)//

\* M. hominis, U. urealyticum(infertility, abortion, postpartum fever, chorioamnionitis & low birth weight infants)

\* M. genitalium Nongonococcal urethritis /\*SPECIEMEN(throat swabs, respiratory secretions) / pleomorphic/ Giemsa, Dienes’ stain

\* Culture(Enriched medium aerobically for 7 -12 days with 5–10% CO2 , “fried egg” colonies, beta hemolytic)

\* IDENTIFICATION: 1-Growth Inhibition Test(around discs with specific antisera) , 2- Immunofluorescence , 3- Molecular diagnosis

,4- cold agglutination tests( macroglobulin antibodies agglutinate human group O red cells at low temperature, 4°C)

 Mycoplasm pneumonia (Primary Atypical Pneumonia/ Walking pneumonia)

\* incubation period: 1-3 weeks / \* Transmission: airborne droplets, close contacts / \* cough with blood tinged sputum

\* Complications: otitis media, meningitis, encephalitis, hemolytic anemia / \* Upper respiratory tract disease, tracheobronchitis

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*CHLAMYDIA*

\*[pathogenic bacteria](https://en.wikipedia.org/wiki/Pathogenic_bacteria) that are [obligate intracellular parasites](https://en.wikipedia.org/wiki/Obligate_intracellular_parasite) / \* [Sexual, RT, or vertical transmitted diseases](https://en.wikipedia.org/wiki/Sexually_transmitted_disease)

\*leading cause of Infectious blindness worldwide / \* 3 times higher in females than in males

\* contain DNA and RNA, and ribosomes, lack ATP, biosynthetic pathways /\*non motile /\* Multiply in the cytoplasm

\*C.trachomatis (trachoma,NGU,PID,neonatl and inclusion conjunctivitis,infant pneumonia , LGV)

\*C.pneumoniae (pharyngitis,Bronchitis,Pneumonia)-Taiwan acute respiratory agent

\*C.psittaci (psittacosis(influenza like illness))

\*Incubation period (7-21) days/ \*asymptomatic reservoir /\*Re-infection is common /\*Perinatal transmission(immediately before and after birth-neonatal conjunctivitis)/ \*complex developmental cycle /\*infectious form is called an Elementary Body (EB)

\*Inside the phagocytic vesicle replication takes place /\*next 6-8 hours EB reorganizes into Reticulate Body (RB) which is

noninfectious, but metabolically active, larger and less dense / \*18-24 hours the RB form Inclusion Bodies then EBs

48-72 hours, the cell lyses and releases the EB which begin the cycle again /\*EB –(Human to human & bird to human).

\*RB-(bigger, Replication and growth (Inclusion body) without a dense center)/\*EB- (dense center,infectious)

\*Chlamydiae have a hemagglutinin for attachment /\*endotoxin-like toxin /\*Non-culture tests(Nucleic Acid Amplification,

Non-Nucleic Acid Amplification(DFA), Nucleic acid hybridization (NA probe), Serology (EIA) Enzyme immunoassay)

\*Prevention( prevent sexual relation until7 days after a single dose of azithromycin) /\*usually asymptomatic

 \*in women upper reproductive tract damage and re infection.

Chlamydia trachomatis

\*Genital tract infection is sexually transmitted /In males urethritis, dysuria and it sometimes progresses to epididymitis

In female scervical inflammation which can progress to salpingitis and PID .

\*Inclusion conjunctivitis occurs in both newborns and adults /genital tract infection is the source of the infection

Newborns are infected during the birth process /In adults causes acute follicular conjunctivitis with little discharge (autoinoculation). watery eyes- eyelids that stick together-Large follicles.

\*Trachoma (cause of blindness , direct contact or flies , children may be infected in the first three months of life,

[The inside of the eyelid can become so severely scarred that causes the eyelashes to rub against the eyeball, impairment breakdown and scarring of the cornea](https://en.wikipedia.org/wiki/Cornea) eventual [blindness](https://en.wikipedia.org/wiki/Blindness)

\*Lymphogranuloma venereum (LGV)( venereal disease, painless lesion, regional suppurative lymphadenopathy (buboes)

Chlamydia psittaci \*psittacosis- parrots fever, ornithosis(contact with an infected animal , Atypical pneumonia

Chlamydia pneumonia \*Pneumonia , Bronchitis, Pharyngitis, Laryngitis, and Sinusitis