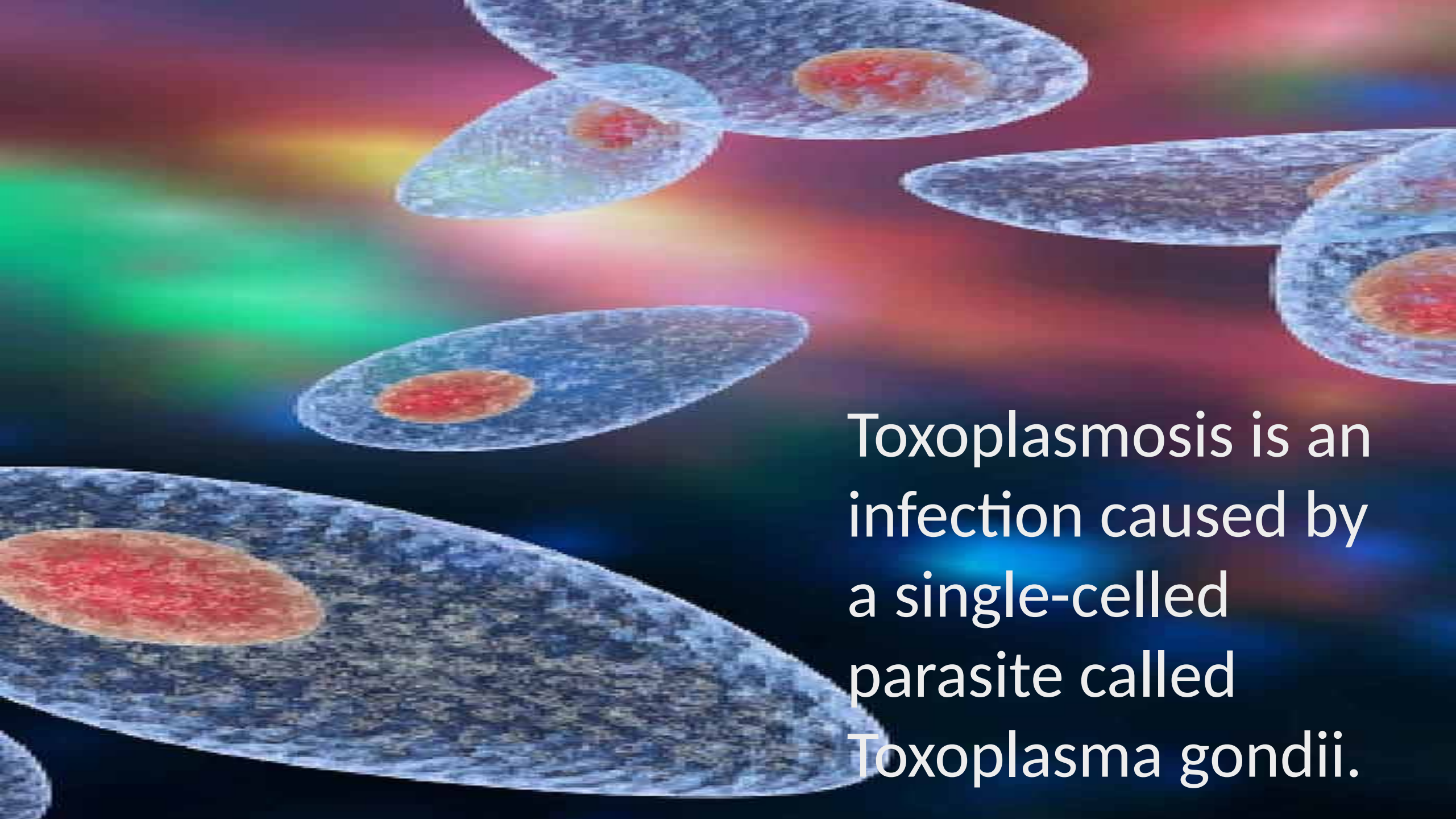
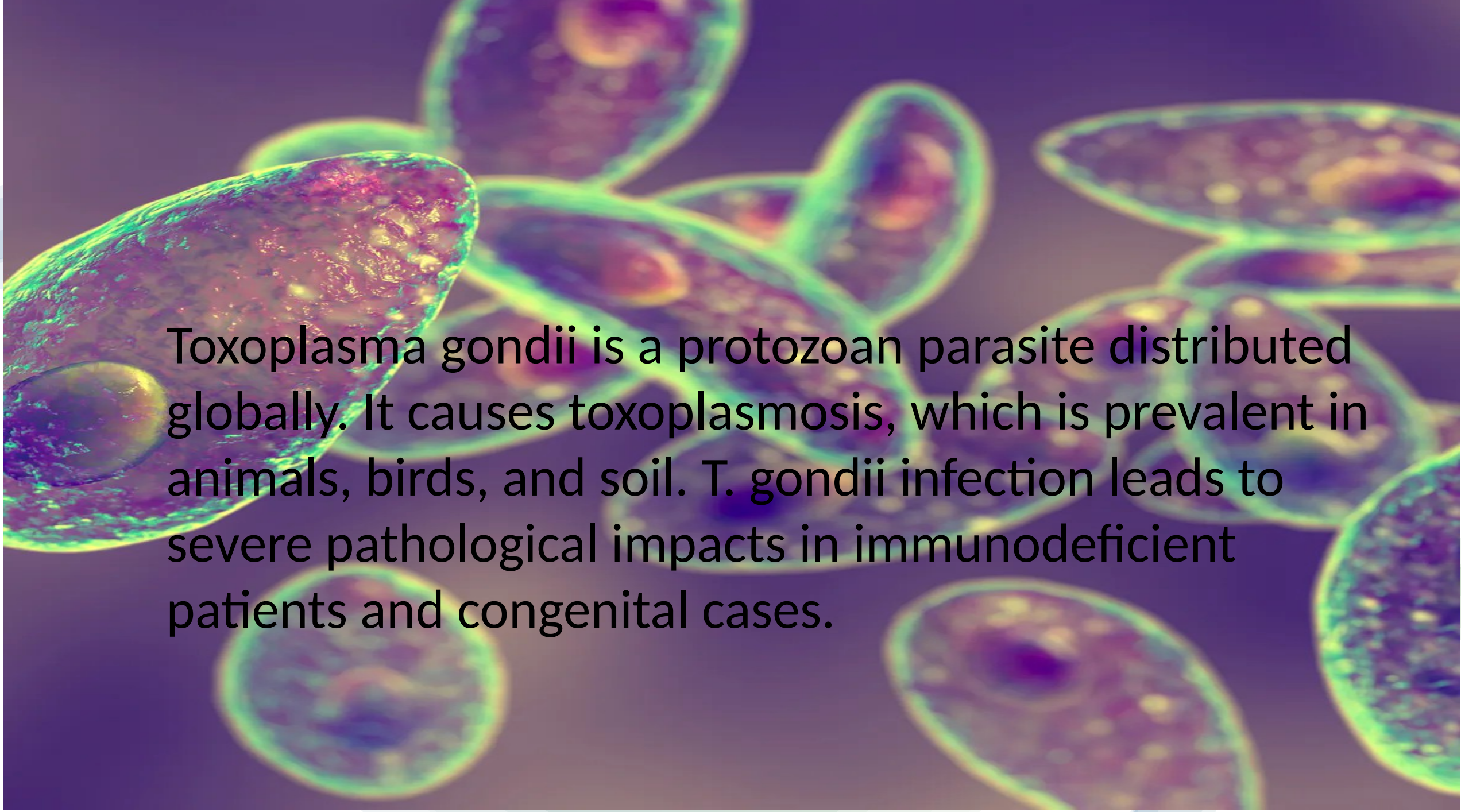
TOXOPLASMOSIS

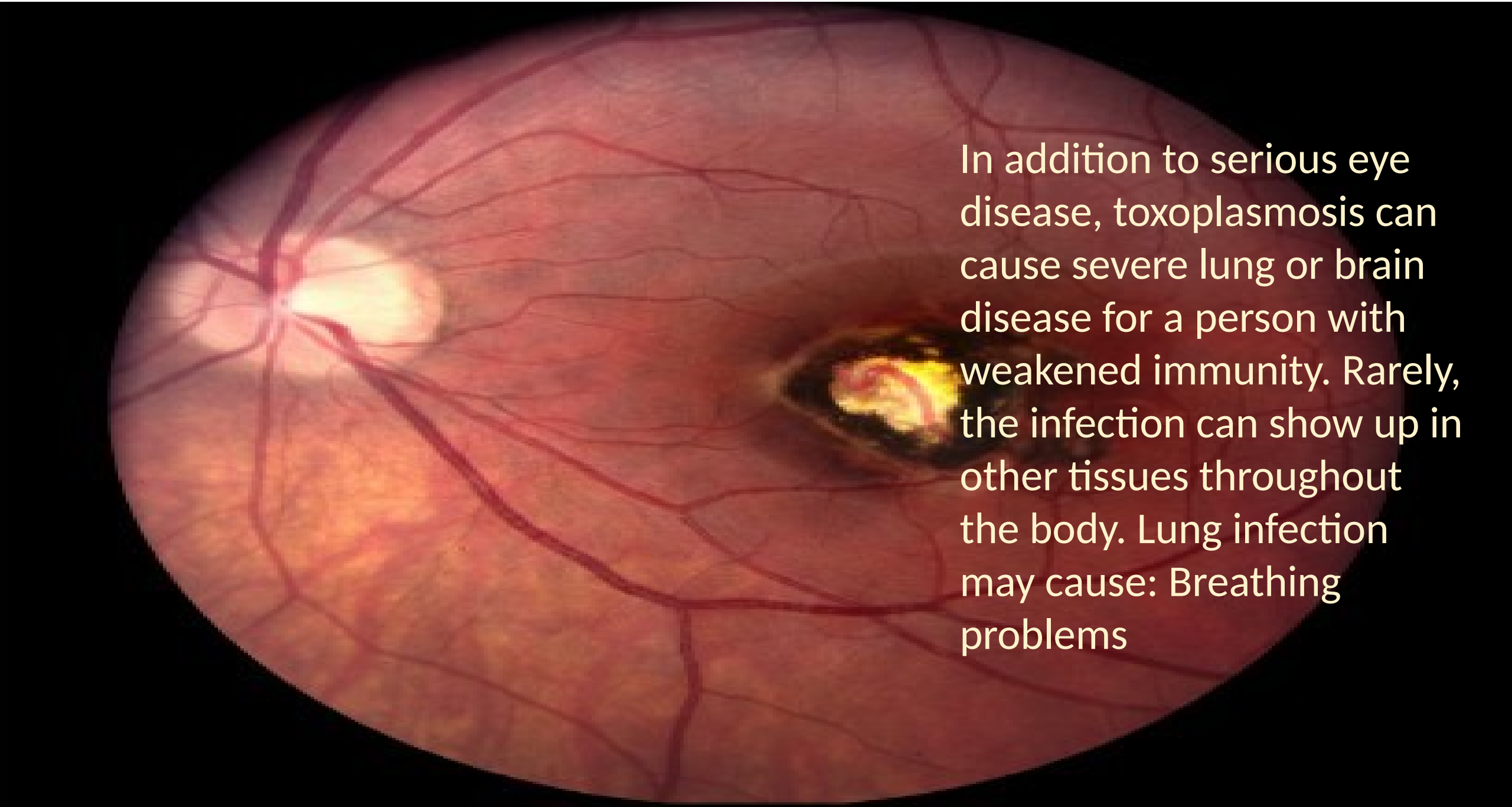
BY DR WAJEEHA RAHMAN



Toxoplasmosis is an infection caused by a single-celled parasite called Toxoplasma gondii.



Toxoplasma gondii is a protozoan parasite distributed globally. It causes toxoplasmosis, which is prevalent in animals, birds, and soil. T. gondii infection leads to severe pathological impacts in immunodeficient patients and congenital cases.



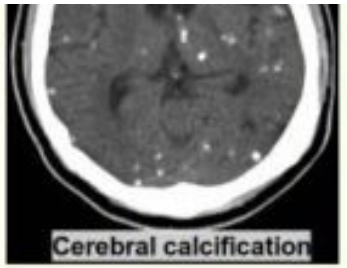
In addition to serious eye disease, toxoplasmosis can cause severe lung or brain disease for a person with weakened immunity. Rarely, the infection can show up in other tissues throughout the body. Lung infection may cause: Breathing problems

Learning goals to know by the end of the lecture

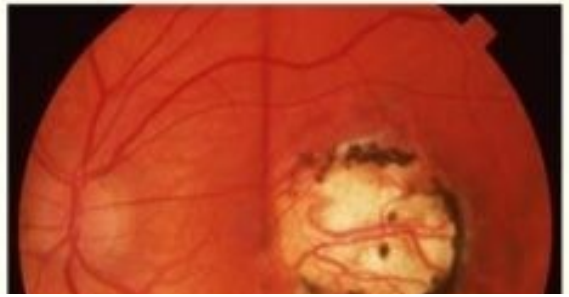
- What is toxoplasmosis
- Transmission
- Pathogenesis
- Life cycle
- Prevention

High prevalence groups had close contact with cats, dogs, consumed uncooked raw fruits, meat, or vegetables and the socio-economic level noted to be one of the crucial factors that influence toxoplasmosis. Toxoplasmosis infection is high in low-income countries and low in developed European countries. Immunosuppressed groups and pregnant women were the highly vulnerable groups.

toxoplasmosis



Jaundice in Newborns



Acute toxoplasmosis infection in the immunocompetent individual leads to asymptomatic infection in skeletal and encysts in cardiac muscles, retina, parenchyma, and brain tissues. The latent infection has been reported among such patients, had a rapid conversion of bradyzoites into tachyzoites leading to severe mortality if not treated. Latent infection was reported among immunocompetent patients' retina, leading to a severe loss of visual acuity. Symptoms such as headache, fever, and muscle pain were reported, lasting for a few weeks. Though the severity of this disease is reported to be controlled by medication, prevention is recommended to avoid any parasitic exposure.

•Nicolle and Manceaux initially reported T. gondii in 1908 (Nicolle and Manceaux, 1908) from the North African rodent, Ctenodactylus gondii (gundi), and rabbits in Brazil by Splendore (Ferguson, 2004) and was widely recognized as a common infection in various warm-blood animals, including rodents and mammals. The clinical implications of toxoplasmosis were first reported in early 1920s among children with encephalitis, retinochoroiditis and hydrocephalus. In the 1980s, it was observed as one of the major opportunistic infections among patients with immune suppression due to HIV infection

Toxoplasmosis Risk Factors

undercooked meat

cat feces

unwashed produce

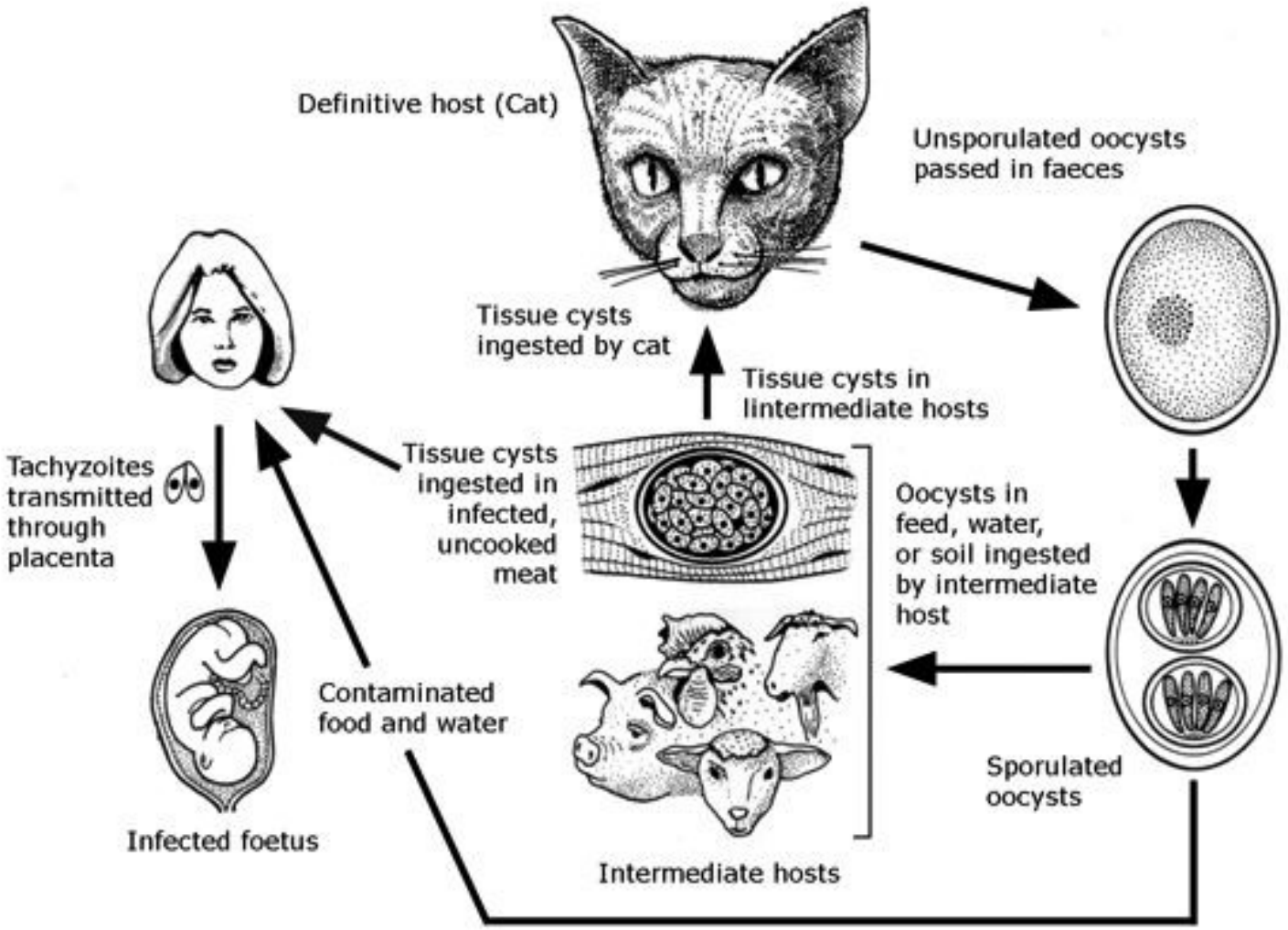
infected water

unpasteurized dairy

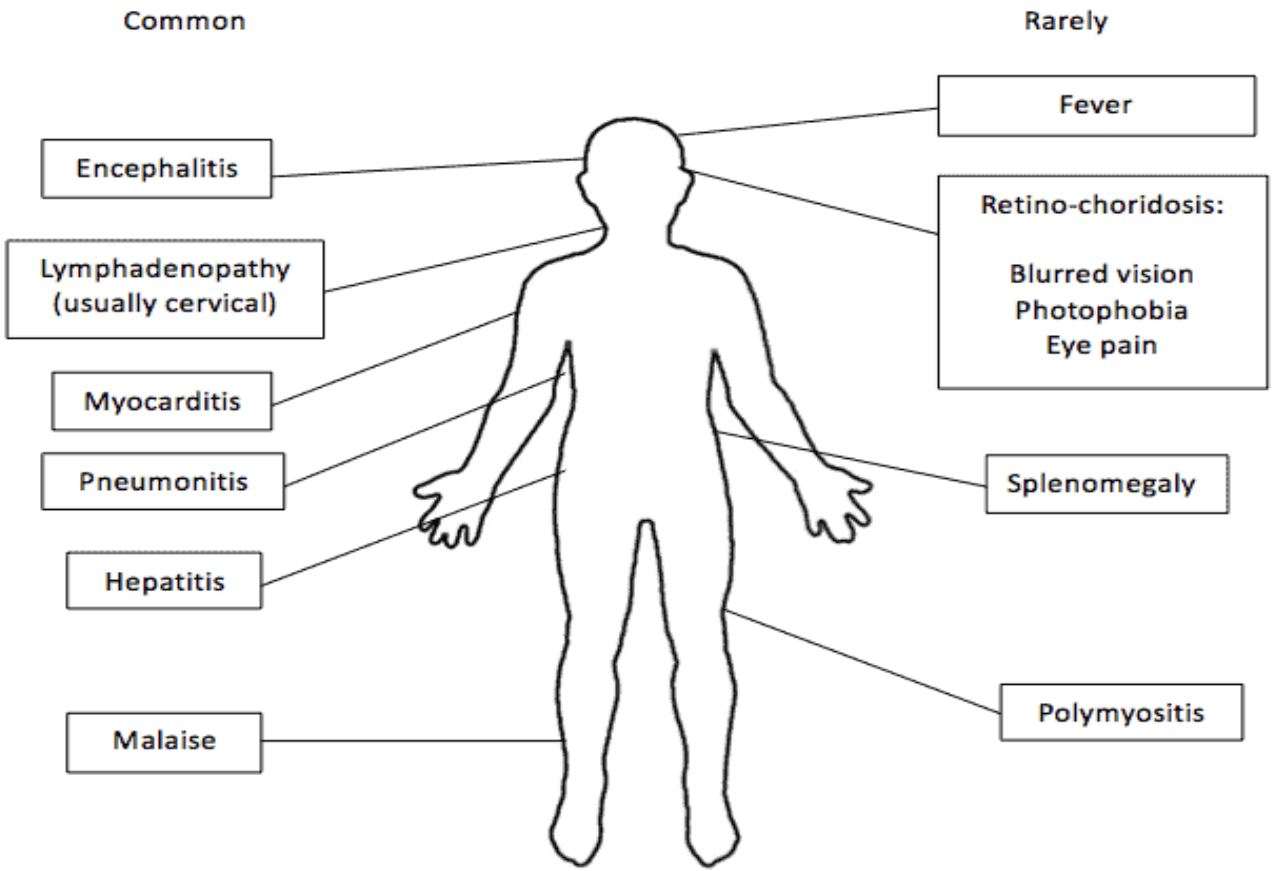
raw seafood

verywell

•LIFE CYCLE OF TOXOPLASMOSIS

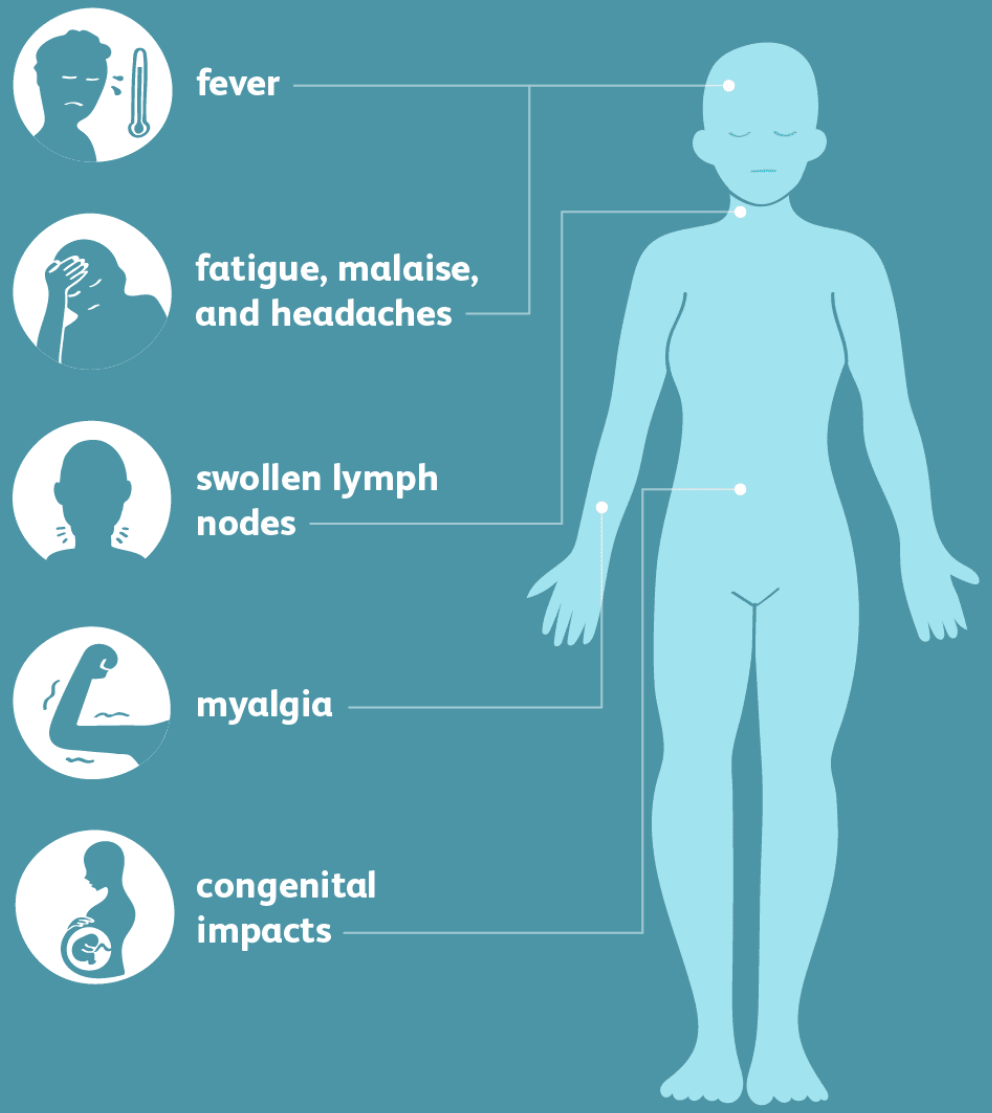


SIGNS AND SYMPTOMS



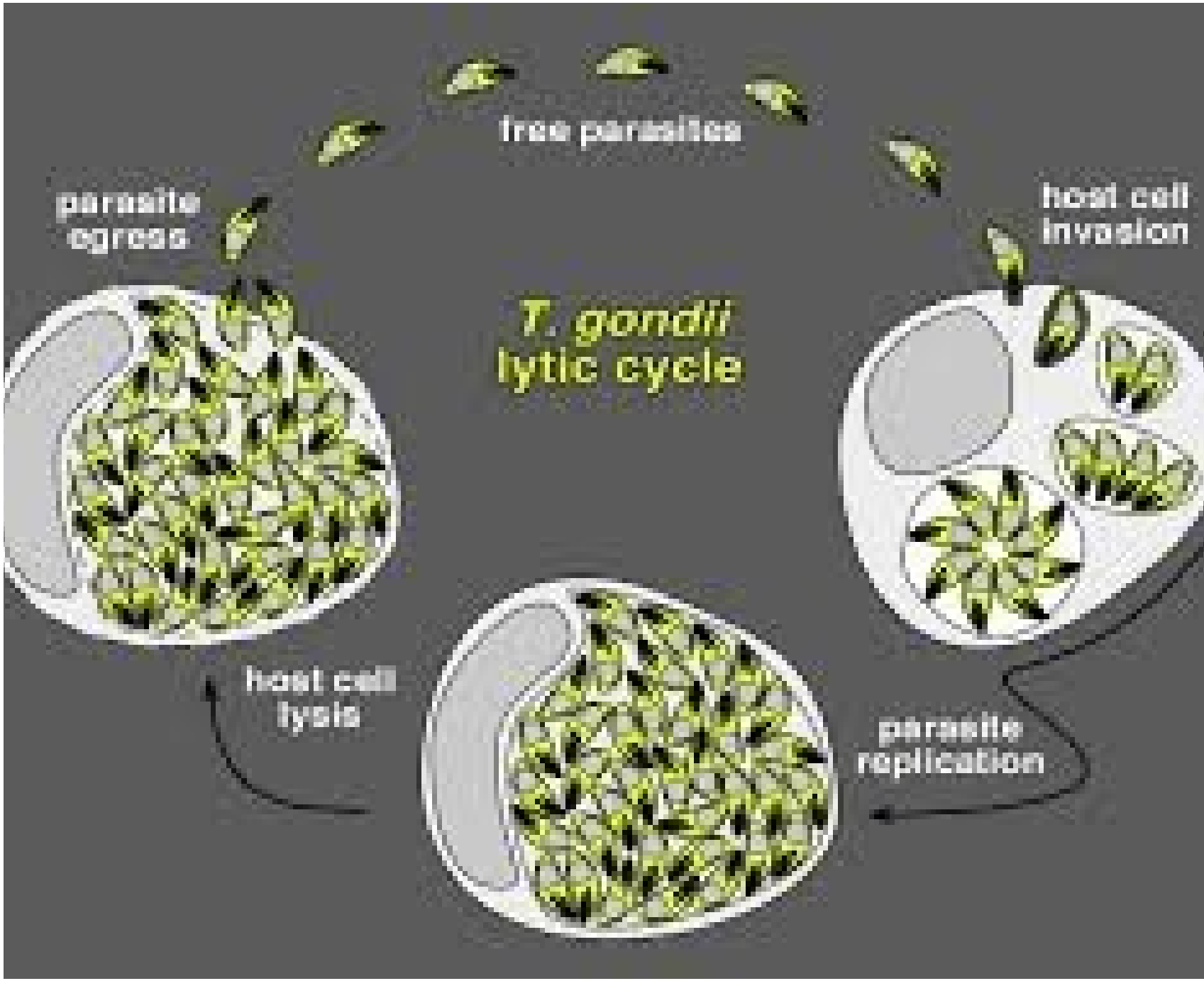
Toxoplasmosis

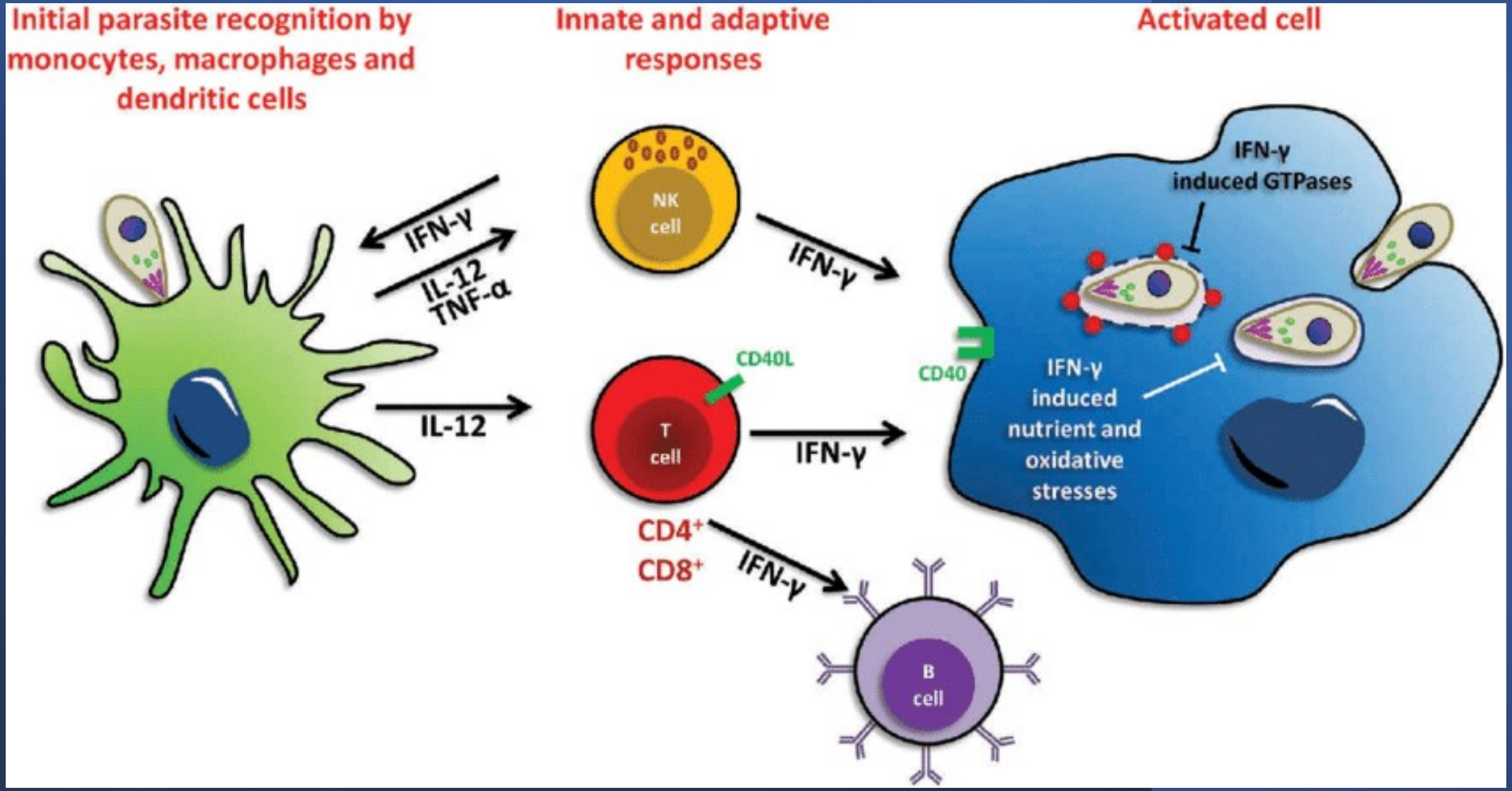
Common Symptoms



PATHOGENESIS

Host cells are destroyed by active multiplication of T gondii. Necrotic foci may result. Congenital infection often involves the retina and brain; focal chorioretinitis may result in impaired vision.




Initial parasite recognition by monocytes, macrophages and dendritic cells
Innate and adaptive responses
Activated cell
IFN-γ
IL-12
TNF-α
IL-12
NK cell
IFN-γ
T cell
CD40L
IFN-γ
CD4+
CD8+
IFN-γ
B cell
CD40
IFN-γ induced GTPases
IFN-γ induced nutrient and oxidative stresses

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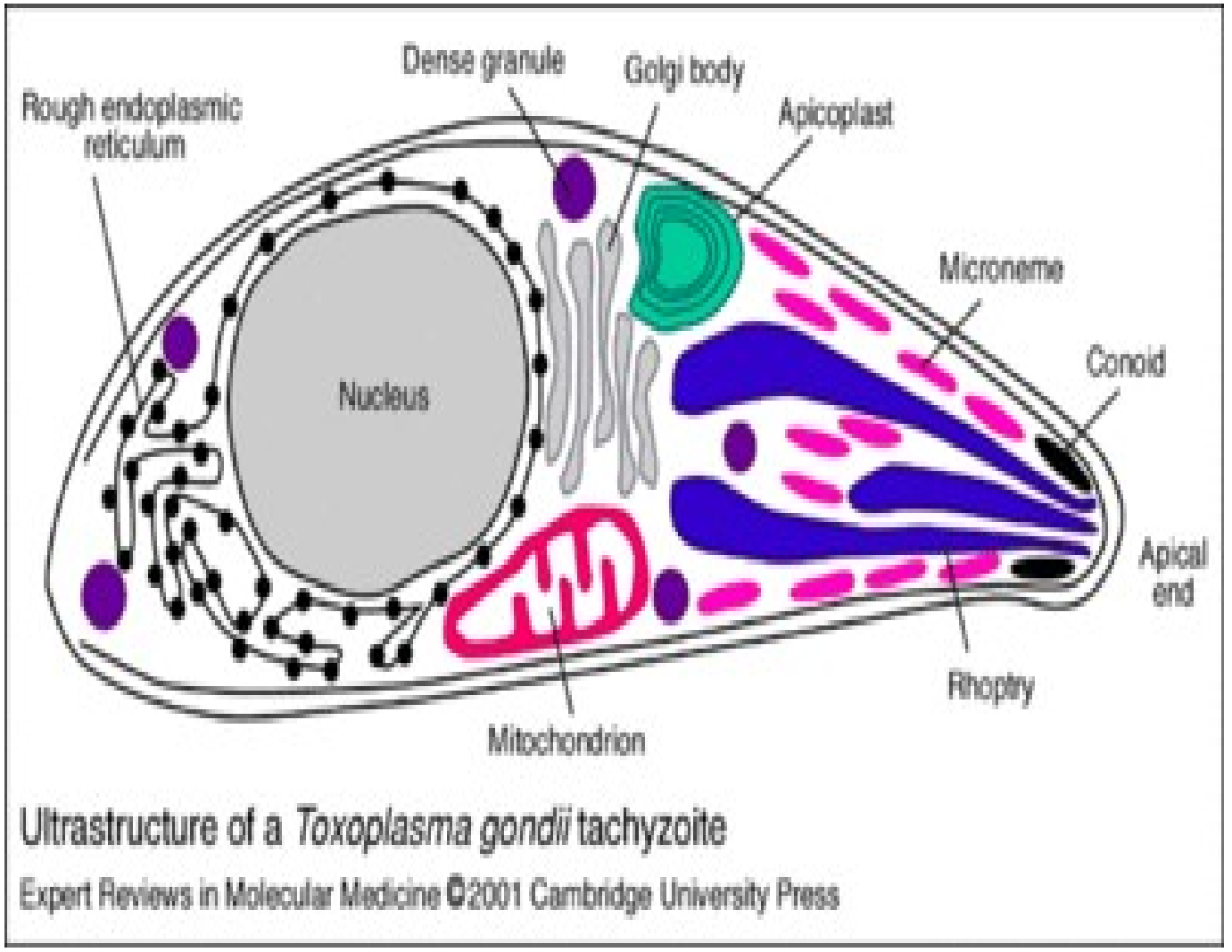
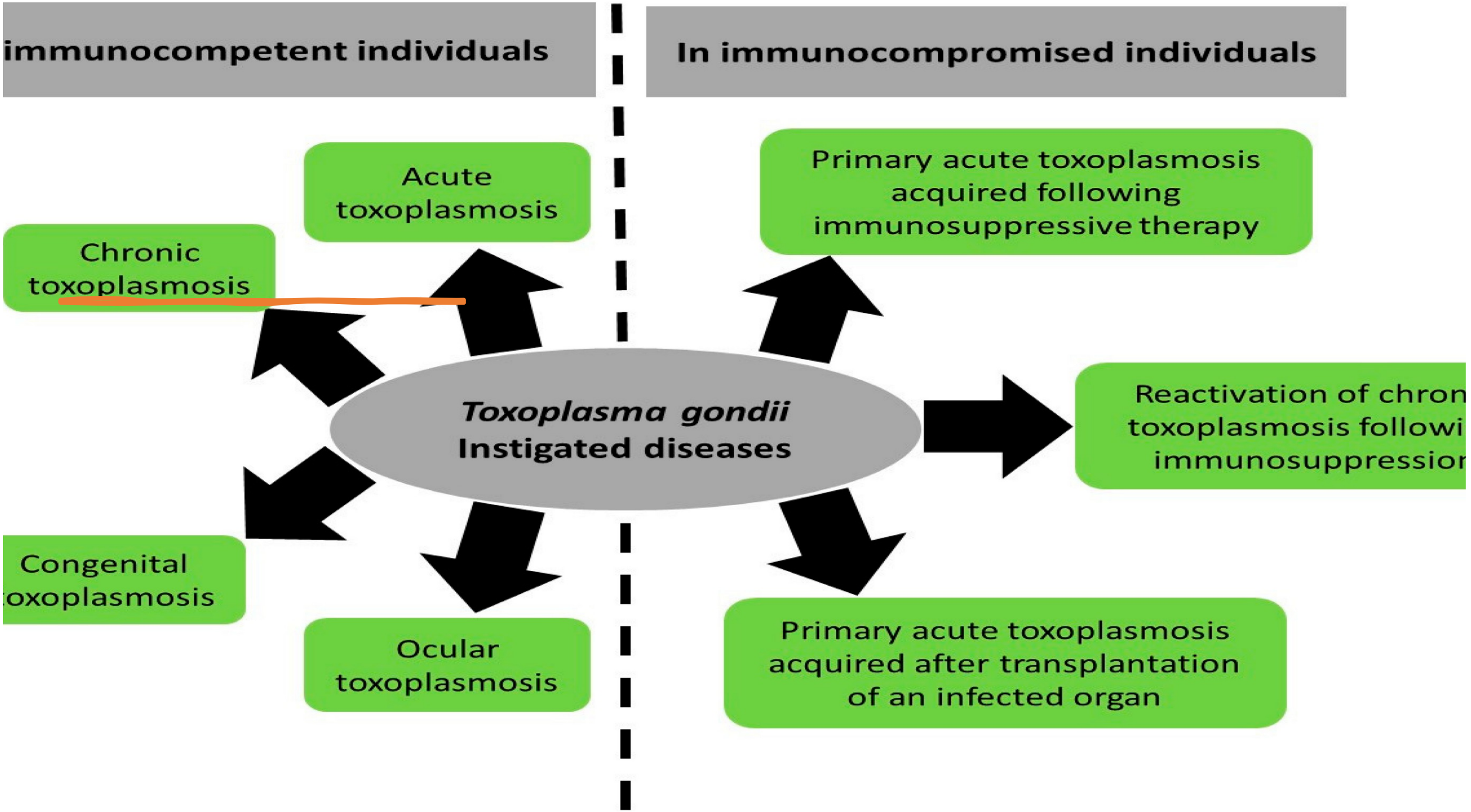


Ultrastructure of a *Toxoplasma gondii* tachyzoite

- Most people who become infected with Toxoplasma gondii are not aware of it beca they have no symptoms at all.
- Some people who have toxoplasmosis may as if they have the “flu” with swollen lymph glands or muscle aches and pains that may for a month or more.
- Severe toxoplasmosis, causing damage to brain, eyes, or other organs, can develop fr acute Toxoplasma infection or one that had occurred earlier in life and is now reactivate Severe toxoplasmosis is more likely in indiv who have weak immune systems, though occasionally, even persons with healthy imm systems may experience eye damage from toxoplasmosis.


immunocompetent individuals
In immunocompromised individuals
Acute toxoplasmosis
Chronic toxoplasmosis
Primary acute toxoplasmosis acquired following immunosuppressive therapy
Toxoplasma gondii Instigated diseases
Reactivation of chron toxoplasmosis followi immunosuppressior
Congenital oxoplasmosis
Ocular toxoplasmosis
Primary acute toxoplasmosis acquired after transplantation of an infected organ

TRANSMISSION

- Accidental ingestion of oocysts after cleaning a cat's litter box when the cat has shed Toxoplasma in its feces. Accidental ingestion of oocysts after touching or ingesting anything that has come into contact with a cat's feces that contain Toxoplasma.

A fetus may contract toxoplasmosis through the placental connection with its infected mother

The mother may be infected by:

Improper handling of cat litter

Handling or ingesting contaminated meat

A.D.A.M.

CONCLUSION/SUMMARY