

By -KW

COVID-19 (Novel Coronavirus, 2019-nCoV)

- including all variants **INTERIM RECOMMENDATIONS as of March 10, 2021**

• Clinical Presentation

- Fever, new onset of cough or worsening chronic cough, new or worsening shortness of breath or difficulty breathing, sore throat, runny nose.
- Extended symptoms may include
 - chills, painful swallowing
 - stuffy nose, headache
 - muscle or joint ache, feeling unwell
 - fatigue or severe exhaustion, nausea, vomiting
 - diarrhea or unexpected loss of appetite
 - loss of sense of smell or taste, conjunctivitis (pink eye).
 - May cause pneumonia, severe acute respiratory syndrome and kidney failure.

• Infectious Substances

- Respiratory secretions

• How it is Transmitted

- Droplet, indirect and direct contact.

- **Precautions Needed***

- Perform an Infection Prevention and Control Risk Assessment (IPC RA) and wear fit tested N95 respirator when performing Aerosol-generating medical procedures (AGMPs).**
- Door may remain open except during AGMP.
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- **Duration of Precautions**

- Duration of precautions will be determined on a case-by-case basis, based on
- Discontinuation of Contact and Droplet Precautions for Suspected or Confirmed COVID-19 Form (21624)

- **Incubation Period**

- Symptoms may take up to 14 days to appear after exposure.

- **Period of Communicability**

- Unknown

Creutzfeldt-Jakob disease

- classic (CJD) and variant (vCJD)

- **Clinical Presentation**

- Subacute onset of confusion, progressive dementia, chronic encephalopathy

- **Infectious Substances**

- Tissues of infected animals and humans
- High Risk Tissues (CJD): Brain including dura mater, spinal cord, eyes
- High Risk Tissues (vCJD): Same as CJD but includes tonsils

- **How it is Transmitted**

- Contaminated instrumentation (classical), ingestion of central nervous system tissue

- **Precautions Needed** - Routine Practices

- Except special precautions are needed for surgery and autopsy in all suspect cases

- **Duration of Precautions**

- Not applicable

- **Incubation Period**

- Months to years

- **Period of Communicability**

- Highest level of infectivity during symptomatic illness

The malaria

- Malaria is one of the most serious diseases to affect people in developing countries with tropical and subtropical climates.
- Malaria is caused by Plasmodium parasites. Plasmodium parasites infect people and attack the red blood cells, which often leads to severe illness and death.
- The parasites are spread to people through the bites of infected
- Anopheles mosquitoes, which are the malaria vectors and which bite mainly between dusk and dawn.
- There are four types of human malaria, each due to one of the parasites with the following specific names:
 - . Plasmodium falciparum
 - . Plasmodium vivax
 - . Plasmodium malariae
 - . Plasmodium ovale.
- **Immunity against malaria**
 - is the ability to fight the infection, which is developed by people with repeated episodes of malaria.
 - Under endemic conditions, children under the age of five years, and pregnant mothers, are most likely to be infected as they have weaker immunity.
- **Unstable (epidemic)**
 - malaria refers to a seasonal type of transmission seen in areas of low endemicity, or to outbreaks in areas previously without malaria, or among non-immune persons.
 - Epidemics can be due to changes in human behaviour, environmental and climate factors.

- The three most important factors that affect the distribution of malaria and its severity in Ethiopia are:
 - Temperature
 - Humidity (the amount of moisture in the air)
 - The availability of water collections in which the mosquito vectors can breed.
- Altitude, vegetation and rainfall have indirect effects because of their impact on temperature, humidity and availability of water collections for vector breeding.

- **Incubation period of malaria**

- Malaria parasites Incubation period in days
- P. falciparum 7-14
- P. vivax 12-18
- P. ovale 12-18
- P. malariae 18-40

- in Ethiopia, but only four species of Anopheles mosquitoes carry malaria.
- The scientific names of these mosquitoes are:
 - *Anopheles arabiensis*
 - *Anopheles pharoensis*
 - *Anopheles funestus*
 - *Anopheles nili*.
- **An. arabiensis** is the most important transmitter of malaria in Ethiopia and is responsible for more than 95% of transmissions.

- What factors do you think are responsible for the high malaria incidence in some months? Consider the following factors and decide which of them would apply to your village

- (a) Immediately following the rains; if so, why?
- (b) When the temperature is hot; if so, why?
- (c) When the rains fail and there is drought; if so, why?
- (d) When the fields are covered with vegetation; if so, why?

Of course, we don't know the climatic pattern in your village, but malaria transmission could be high:

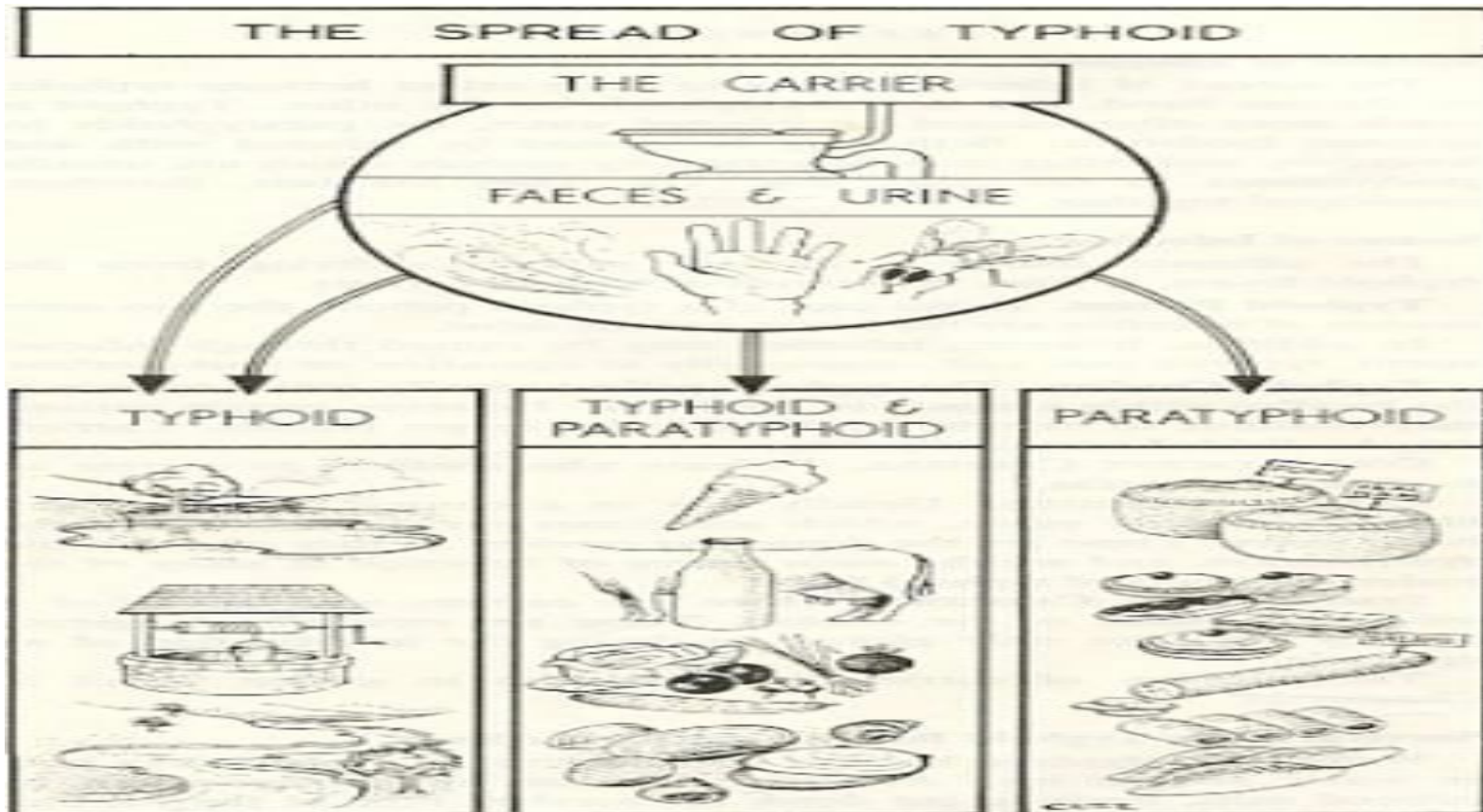
- (a) Immediately following the rains, because there will be plenty of water collections for vector breeding after the rainy season.
- (b) When the temperature is hot, because temperature speeds up vector and parasite development.
- (c) When the rains fail and there is drought, because rivers and small streams slow down into pools, creating stagnant water collections for vector breeding.
- (d) When the fields are covered with vegetation, because when the vegetation cover is high the humidity increases; higher humidity helps the mosquito to live longer and transmit malaria.

Amebiasis(parasite)

- Amebiasis is a disease caused by a parasite (Entamoeba histolytica)
- Symptoms include:
 - Diarrhea(possibly bloody)
 - Abdominal pain
 - Weight loss
 - Fever/Chills
 - Dysentery, diarrhea and liver abscesses
- **How it is Transmitted**
 - Direct contact and indirect contact (fecal-oral)
- **IP** **2-4 months to years**
- **Contagious Period** **Commonly 2to4 weeks,**
 - **But can be as short as a few days and as long as a few years.**

TYPHOID

- Caused By SALMONELLA TYPHI



- I.P.-10-14 days.
- **Clinical features**
- **First week**
 - □ Onset is insidious
 - □ Fever
 - □ Headache
 - □ Malaise
 - □ Anorexia
 - Epistaxis may occur
 - In few cases productive cough may be present.
 - Abdominal symptoms- vague discomfort, mild bloating and constipation
 - **2nd week**-diarrhoea with pea soup stools.

- **Physical examination** –Slow pulse fever, abdominal distention and tenderness.
- □‘Rose spots’ on chest and upper abdomen.
- □Are 2-3cm in diameter and are due to bacterial embolism. Last for few days and fade off.
- □Hepato splenomegaly
- □Lymphadenopathy .

- **Second week**

- □Temperature increases and remains continuous around 40 degree celsius.
- □Relative bradycardia.
- □Tongue-coated in center with the margins remaining reddish.
- □ Diarrhoea with pea soup stools.

- **Typhoid state**

- □Signs of toxemia.
- □Low muttering delirium, tremulosity of the hands, carphology,coma vigil.

- **Complications Intestinal:**

- •Haemorrhage
- •Perforation
- •**Septic:** Cholecystitis
 - •Hepatitis
 - •Pneumonitis
 - •Thrombophlebitis
 - •Meningitis
 - •Nephritis

- **Toxic : Encephalopathy**

- □Cerebellar ataxia
- □Deafness
- □Myocarditis
- □Alopacia

• c/c carrier state

- □ Around 5% of pts develop c/c carrier state with persistent infection in gall bladder.
- □ More in older women
- □ Such persons pass the organisms in stools for long periods and acts as source of infection.

• Immunity:

- □ Confers lifelong immunity.
- □ second attack may occur in rare cases.

• Management

• □ **General:**

- □ Bed rest.
- □ Maintenance of nutrition and fluid and electrolyte balance.
- □ Diet should be easily digestible.
- □ At least 1500-1800cal and 2-3 lit of fluid should be provided every day

Ascariasis (*Ascaris* spp.) – Roundworm – ascariasis

Hookworm -(*Necator americanus*, *Ancylostoma duodenale*)

- **Infectious Substances**

- **Roundworm:** Contaminated soil or water

- **Hookworm:** Larvae in soil

- **How it is Transmitted**

- **Roundworm:** Ingestion of infective eggs/larvae

- No person-to-person transmission

- **Hookworm:** Acquired from larvae in soil, feces, and other contaminated surfaces through exposed skin, oral ingestion and from mother to fetus / infant

- No person-to-person transmission

- **Incubation Period**

- **Roundworm:** = 2-8 days

- **Hookworm:** = 4-6 weeks

- **Period of Communicability** = Not applicable

***Bordetella pertussis* - (whooping cough, pertussis)**

- **Clinical Presentation**
 - **Irritating, violent coughing without inhalation followed by high pitched crowing or “whoop”, vomiting after coughing, non-specific respiratory tract infection in infants**
- **Infectious Substances**
 - **Respiratory secretions**
- **How it is Transmitted**
 - **Large droplets**
- **Precautions Needed***
 - **Droplet Precautions**
- **Duration of Precautions**
 - **Until 3 weeks after onset of paroxysms if not treated or until after 5 days of effective antimicrobial treatment**
- **Incubation Period**
 - **Average 9-10 days; range of 6-20 days**
- **Period of Communicability**
 - **At onset of mild respiratory tract symptoms (catarrhal stage) until 3 weeks after onset of paroxysms or coughing if not treated**

Chikungunya virus (Arbovirus CHIKV)

- **Clinical Presentation**
 - Fever, joint pain
 - headache, muscle pain
 - joint swelling and rash
- **Infectious Substances**
 - *Aedes albopictus* mosquitoes
- **How it is Transmitted**
 - Insect borne
 - No person-to-person transmission
- **Precautions Needed** - Routine Practices
- **Duration of Precautions**
 - Not applicable
- **Incubation Period**
 - Not applicable
- **Period of Communicability**
 - Not applicable

Chlamydia (*Chlamydia trachomatis*)

- Lymphogranuloma venereum

- **Clinical Presentation**

- Genital tract infections (cervicitis, urethritis in females, urethritis, epididymitis in males), pneumonia, conjunctivitis, trachoma, inguinal adenopathy

- **Infectious Substances**

- Conjunctival and genital secretions

- **How it is Transmitted**

- Sexually transmitted, mother to newborn at birth
- Trachoma: Direct contact and indirect contact

- **Precautions Needed - Routine Practices**

- **Duration of Precautions**

- Not applicable

- **Incubation Period**

- Variable

- **Period of Communicability**

- As long as organism present in secretions

Cholera (*Vibrio cholerae*)

- **Clinical Presentation**

- Profuse watery diarrhea, nausea with or without vomiting

- **Infectious Substances**

- Contaminated food or water, feces

- **How it is Transmitted**

- Direct contact, indirect contact and ingestion of contaminated food or water

- **Precautions Needed* Contact Precautions**

- If patient • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate his/her environment

- **Duration of Precautions**

- Until symptoms have stopped for 48 hours AND after at least one normal/baseline or formed bowel movement
- OR until patient is continent and has good hygiene

- **Incubation Period**

- 0.5-5 days

- **Period of Communicability**

- Until symptoms resolve

Clostridium perfringens
- gas gangrene

- **Clinical Presentation**

- Breakdown of muscle tissue (myonecrosis). Severe pain, edema, tenderness, pallor, discoloration, hemorrhagic bullae and production of gas at wound site.

- **Infectious Substances**

- **Feces, soil, water**

- **How it is Transmitted**

- Infection occurs through contamination of wounds (fractures, cuts, bullet wounds) with soil or any foreign material contaminated with *C. perfringens*
- No person-to-person transmission

- **Precautions Needed* **Contact Precautions****

- if wound drainage present and not contained by dressing

- **Duration of Precautions**

- If on **Contact Precautions**, discontinue isolation when drainage resolved or contained by dressing.

- **Incubation Period**

- 10 hours-5 days

- **Period of Communicability**

- Not applicable

Coronavirus -

(Severe acute respiratory syndrome, SARS CoV, Middle East respiratory syndrome, MERS CoV)

- **Clinical Presentation**

- Fever cough, runny nose, sore throat, body aches, pneumonia (shortness of breath, discomfort during breathing)

- **Infectious Substances**

- Respiratory secretions and exhaled droplets and airborne particles

- **How it is Transmitted**

- Direct contact, indirect contact and large droplets

- **Precautions Needed* = Contact and Droplet Precautions**

- Perform an Infection Prevention and Control Risk Assessment (IPC RA) and
- wear fit tested N95 respirator when performing Aerosol-generating medical procedures (AGMPs).** For more information refer to Interim Guidance-Novel Coronavirus

- **Duration of Precautions**

- Duration of precautions will be determined on a case-by-case basis and in conjunction with Infection Prevention and Control, and the Medical Officer of Health.

- **Incubation Period**

- 3-10 days

- **Period of Communicability**

- Unknown / variable

Corynebacterium diphtheriae

- Toxigenic strain

Non-toxigenic strain

- **Diphtheria - cutaneous or pharyngeal**
- **Clinical Presentation**
- **Non-toxigenic strain:**
 - Skin or nasopharyngeal ulcerative lesion (lesions are asymmetrical with grayish white membranes surrounded with swelling and redness)
- **Diphtheria - cutaneous or pharyngeal:**
- **Toxigenic strain:**
 - Cutaneous (skin) or nasopharyngeal ulcerative lesions. Nasopharyngeal lesions are asymmetric with grayish white membranes.
- **Infectious Substances**
 - Lesion drainage and/or nasopharyngeal secretions
- **How it is Transmitted**
 - Direct contact, indirect contact and large droplets
- **Precautions Needed***
- Toxigenic strain: **Contact and Droplet Precautions**
- Non-toxigenic strain: **Routine Practices**

- **Diphtheria - cutaneous or pharyngeal:**

- **Contact Precautions - Cutaneous**
- **Droplet Precautions - Pharyngeal**
-

- **Duration of Precautions**

- **Toxigenic strain:**

- Until two cultures from skin lesions and/or both nose and throat cultures are negative
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- **Diphtheria - cutaneous or pharyngeal:**

- Until after antimicrobial therapy is complete AND two cultures from skin lesions and/or both nose and throat cultures, collected at least 24 hours apart, are negative

- **Incubation Period**

- 2-5 days

- **Period of Communicability**

- **Toxigenic strain:** If untreated, 2 weeks to several months If treated with appropriate antibiotics, 48hr

- **Diphtheria - cutaneous or pharyngeal:** If untreated, 2 weeks to several months

Cough, Fever, Acute upper respiratory tract infection -
many viruses including:

- **Rhinovirus**
- **Respiratory syncytial virus, [RSV]**
- **Para influenza virus**
- **Influenza**
- **Adenovirus**
- **Coronavirus**
- ***Bordetella pertussis***
- ***Mycoplasma pneumoniae***

- **Clinical Presentation**

- Cough, fever, sore throat, runny nose

- **Infectious Substances**

- Respiratory secretions

- **How it is Transmitted**

- Direct contact, indirect contact and large droplets

- **Precautions Needed* Contact and Droplet Precautions**

- • **AGMP require** an N95 respirator if the adult patient has respiratory illness (RI) of unknown etiology; or confirmed infection with viral respiratory organism, or other emerging/novel respiratory pathogens; or suspected or confirmed viral hemorrhagic fever.
- • **AGMP** require an N95 respirator if the pediatric patient has respiratory illness (RI) of unknown etiology; or confirmed infection with suspected or confirmed influenza (all strains), COVID-19, or other emerging/novel respiratory pathogens; or suspected or confirmed viral hemorrhagic fever.

- **Droplet Precautions**

- – Bordetella Pertussis, Mycoplasma pneumoniae

- **Duration of Precautions**

- Resolution of acute respiratory infection symptoms or return to baseline. Refer to clinical presentation for examples of symptoms.

- **Incubation Period**

- Variable (*Continued on next page*)

- **Period of Communicability**

- Variable / Duration of symptoms

Questionnaires

- A 54-year-old pet store owner presented with 4 days of fever and headache, and 2 days of a rash that had started on his face and spread outwards. On examination, he had a macular rash over his face and distal extremities, with only a few lesions on his abdomen and back. His temperature was 38.3 °C. He had widespread lymphadenopathy. Examination of his cardiovascular, respiratory and abdominal examinations was unremarkable. He was admitted for observation and investigation. Over the next few days the rash evolved from macules to vesicles to pustules. The fever persisted for 8 days in total, the rash for 12 days. Electron microscopy of lesion biopsy: see photograph. What is the most likely pathogen?
- A. Herpes B virus
- B. Monkeypox virus
- C. *Streptobacillus moniliformis*
- D. *Treponema pallidum*
- E. Varicella zoster virus
- **Ans: B.**
- **The diagnosis of monkeypox infection requires clinical (rash), epidemiologic (equatorial Africa) and laboratory (the presence of genomic DNA or brick-shaped virions in scab material) findings.**

2. Peripheral smear in *Plasmodium falciparum* infection shows:

- a) Rings and Schizonts
- b) Schizonts and gametocytes
- c) Gametocytes and rings
- d) Rings, Schizonts and Gametocytes
- **Ans: C**
- ***P. falciparum* infection shows gametocytes & ring forms are only seen in the peripheral smear. Late trophozoites and schizonts are not seen in the peripheral blood. Their presence shows heavy infection and grave prognosis. Trophozoites, schizonts and gametocytes are all seen in smear in *P. vivax*, *malariae* & *ovale*.**

3. Parasite where larva is not the infective form:

- a) *Trichuris trichura*
- b) *T. spiralis*
- c) *W. bancrofti*
- d) *A. duodenale*

- **Ans. A**

- In *Trichuris trichura* (whip worm), the infectious form is embryonated egg. In *T. spiralis*, it is encysted larvae in tissues. *W. bancrofti*, it is the 3rd stage larvae and in *A. duodenale* it is filariform larvae.

4. Man is the definitive host in:

- a) Malaria
- b) Toxoplasmosis
- c) Echinococcosis
- d) Filariasis

- **Ans. D. Filariasis**

- In malaria, toxoplasmosis and echinococcosis, man is the intermediate host

5. All are tissue nematodes except:

- a) *S. stercoralis*
 - b) *T. spiralis*
 - c) *D. medinensis*
 - d) *W. bancrofti*
- Ans. A – *S. stercoralis*

6. Relapse in *P. vivax* malaria is due to:

- a) Antigenic variation
 - b) Hypnozoites
 - c) Repeated infections
 - d) None of the above
- Ans. B.
- **Relapse in *P. vivax* & *ovale* is due to parasites remaining dormant after infecting the hepatocytes (cryptobiotic phase). They are activated from time to time to initiate pre-erythro and erythro. Schizogony.**
 - **In *P. falciparum* and *malariae*, hypnozoites are not seen, but the parasite evade the immune mechanism and there is persistence of infection called recrudescence.**

7. The malarial parasite was discovered by

- a) Ronald Ross
- b) Louis Pasteur
- c) Robert Koch
- d) Paul Ehrlich

• Ans. A

8. Primary amoebic meningitis is caused by:

- a) Acanthamoeba
- b) Giardia lamblia
- c) E.histolytica
- d) Entamoeba coli

• Ans. A.

- Primary amoebic meningoencephalitis is caused by free living soil amoeba, Acanthamoeba & Naeglaria.
- Diagnosis is made by demonstrating trophozoites or cysts in CSF. Acanthamoebic trophozoites show spinous acanthopodia.

10. Artemisinin is useful for treating:

- a) Leishmania
 - b) Trypanosoma
 - c) Ancylostoma
 - d) Malaria
- Ans. D.
 - MDR *P.falciparum* – rapidly acting and safe drug obtained from Chinese herb *Artemisia annua*. Artemisinin is the active principal of this herb. Mefloquine and halofantrine are also effective against MDR forms.

10. Which of the following parasites is commonly transmitted by sexual route:

- a) *Giardia lamblia*
 - b) *Trichomonas vaginalis*
 - c) *Cryptosporidium*
 - d) *Dientamoeba fragilis*
- Ans. B.
 - *T.vaginalis* is commonly transmitted by sexual intercourse. The other parasites are acquired by ingestion.
 - *Giardia* – Cyst
 - *Cryptosporidium* – Oocyst
 - *Dientamoeba* – (no cyst) faeco oral route
 - *Dientamoeba fragilis* through *Enterobius* eggs

11. Which of the following conditions has been attributed to Schistosoma hematobium infections ?

- **a) Carcinoma of the urinary bladder**
- **b) Carcinoma of the colon**
- **c) Carcinoma of the bile duct**
- **d) Carcinoma of the gall bladder**

- **Ans. A**

- **Schistosoma hematobium cause carcinoma of the urinary bladder**

12. Cutaneous larva migrans is caused by:

- **a) Ascaris lumbricoides**
- **b) Ancylostoma duodenale**
- **c) Toxocara canis**
- **d) Ancylostoma braziliensis**

- **Ans. D**

- **A. braziliensis & A. caninum cause cutaneous larva migrans. Toxocara canis & toxocara cati cause visceral larva migrans**

13. Infective stage of *E. histolytica* is:

- a) Trophozoite
 - b) Cyst
 - c) Precyst
 - d) All of the above
- Ans. B.
 - Cyst. Mature quadrinucleate cyst is the infective forms

14. Choose the correct statement regarding life cycle of *Entamoeba histolytica*:

- a) Entire-life cycle is completed on one host
 - b) Cattle acts as the intermediate host
 - c) Trophozoites & cysts infective to man
 - d) Descending colon & rectum are the optimum habitat
- Ans. A.
 - In *E. histolytica*, entire life cycle is completed in one host. Cysts are the infective form and the optimum habitat for the metacystic trophozoites is the caecal mucosa

15. Infective form of *Toxoplasma gondii* is:

- a) Oocyst
 - b) Tissue cyst
 - c) Oocyst & Tissue cyst
 - d) Bradyzoites
-
- Ans. C. Oocyst & Tissue cyst
 - Bradyzoites are the slowly multiplying parasite seen in tissue cyst in chronic infection. Tachyzoites are the rapidly proliferating trophozoites seen in acute infection

Galatooma///