

## *Ascaris lumbricoides*

- Cosmopolitan & commonest round worm parasite of humans
- Areas with adequate moisture and low standards of hygiene
- Prevalence of about 1.3 billion infections

## Morphology

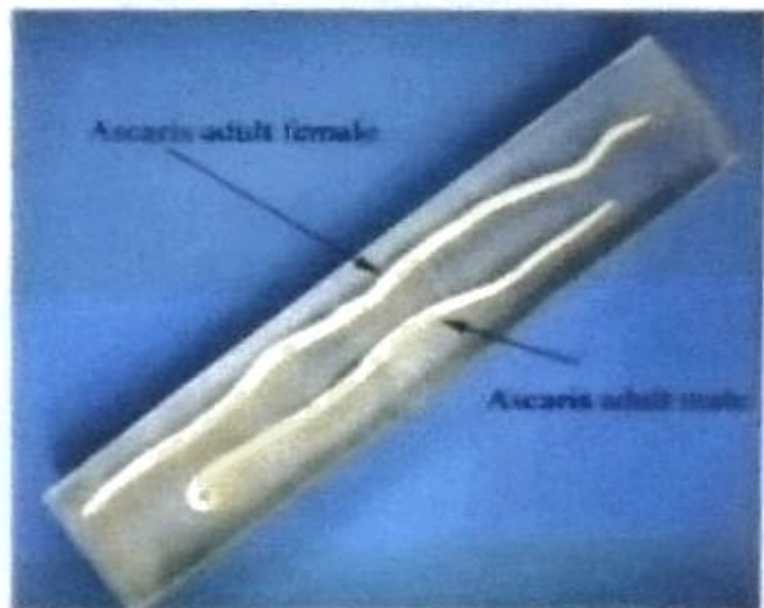
### i. Male adult (in ileum)

- Length up to 30cm
- Creamy-white pink tint
- Prominent incurved tail



### ii. Female adult (in ileum)

- Length 22-35 cm
- Creamy-white pink tint
- Pencil-lead thickness



# Eggs

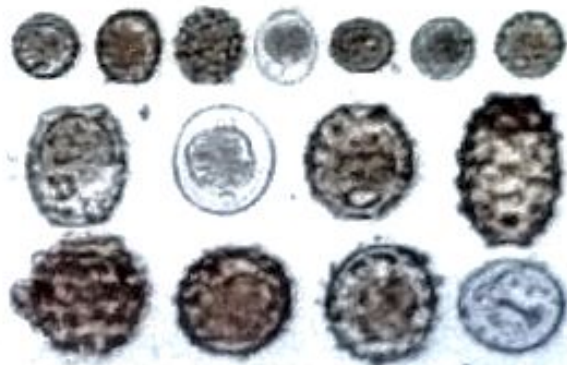
## i. Fertilized

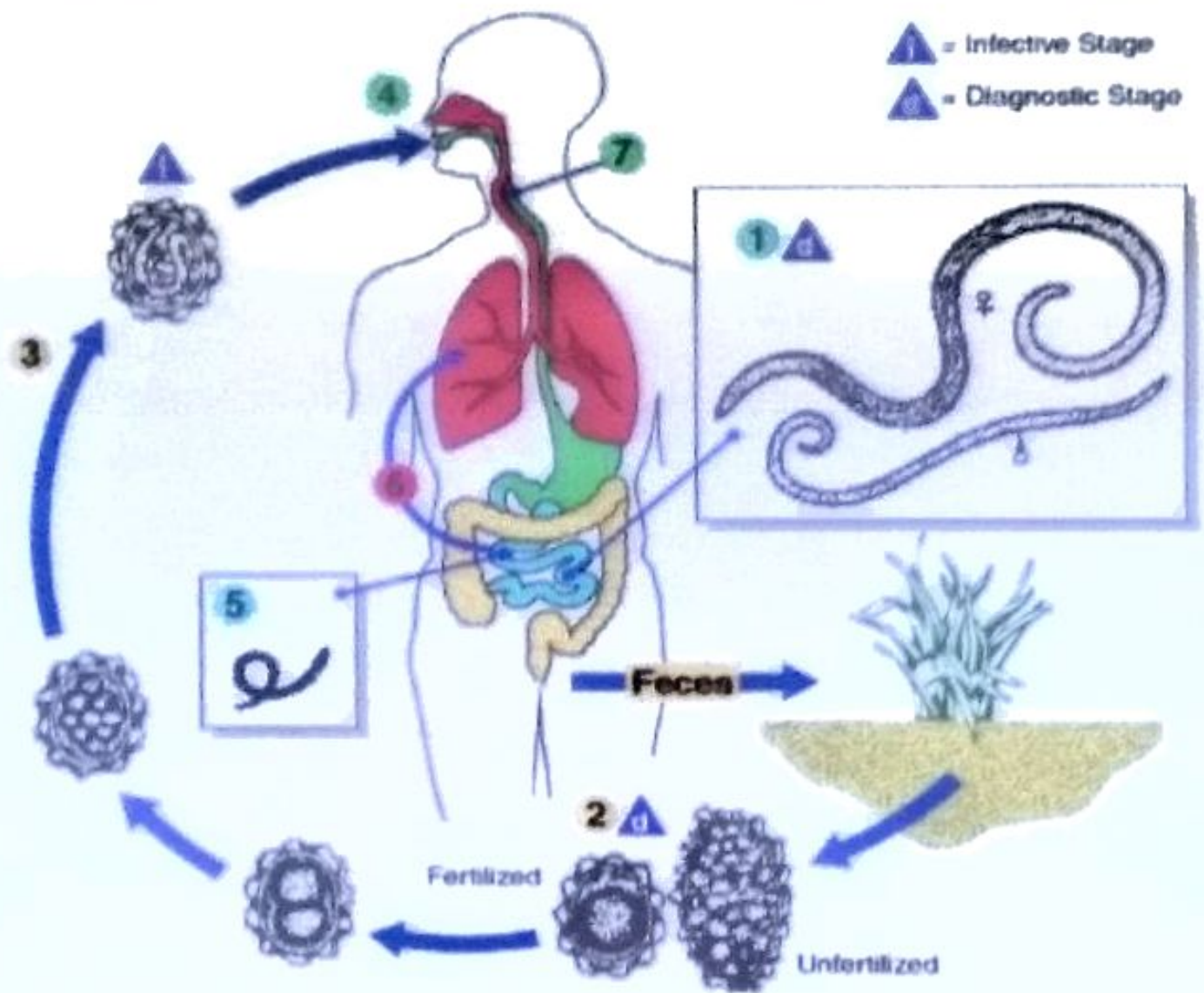
- More round than the unfertilized form
- Undeveloped unicellular embryo
- Thick shell (made of chitin)
- May be corticated or decorticated



## ii. Unfertilized Egg

- Thin shell
- Shape varies from round to oblong
- Unembryonated (with amorphous mass of protoplasm)
- Usually corticated

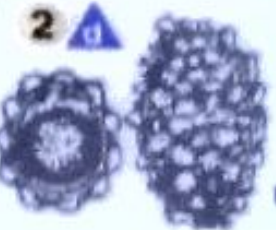




▲<sub>1</sub> = Infective Stage  
 ▲<sub>2</sub> = Diagnostic Stage



Feces



Fertilized

## **Pathology & Clinical Manifestations**

### **i. Larval migration (Pulmonary and hypersensitivity manifestations)**

- Pulmonary manifestations of ascariasis
- Pneumonitis (Loffler's syndrome)
- 1 – 2 wks after ingestion of the eggs
- Correlate with larval burden
- Urticaria and other symptoms related to hypersensitivity

## ii. Adult worms (intestinal)

- Almost 80% are asymptomatic
- Abdominal discomfort,
- Anorexia,
- Nausea,
- Diarrhoea
- Malnutrition (retarded growth, lactose intolerance, vitamins A and C deficiencies, low albumin levels)

# Complications of *A. lumbricoides* infections

## i. Intestinal obstruction

- Usually in children (1 in 500) with heavy infections
- Worms form a bolus causing obstruction (Ileocecal valve)
- Colicky abdominal pain, vomiting and constipation
- Complications – volvulus, ileocecal intussusception, gangrene, and intestinal



## ii. Hepatobiliary and pancreatic symptoms

- Migration of adult worms
- Abdominal pain, biliary colic, acalculous cholecystitis, ascending cholangitis, obstructive jaundice, or bile duct perforation with peritonitis
- Hepatic abscesses
- Pancreatic duct obstruction – pancreatitis,
- Appendix resulting in appendicitis
- Other ectopic sites





## **Diagnosis**

- **Clinical**
- **Eosinophilia**
- **Macroscopy**
- **Microscopy** — (wet smears, concentration techniques, Kato-katz technique)
- **Imaging**
- **Ultrasound**
- **Serology**

## **Treatment**

- pyrantel pamoate, mebendazole, albendazole, ivermectin, piperazine citrate, and levamisole
- Supportive care for the patient

## **Prevention and control**

- Improvement of standard sanitation and hygiene
- Washing vegetables and fruits, adequate cooking of food
- Supervision of children's play areas is also very important