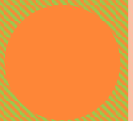




# Larva Migrans

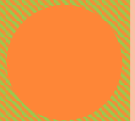
# LARVA MIGRANS

- Prolonged migration of immature(larval) stages of parasitic worms in various parts of body
- Three forms
  - **Cutaneous** larva migrans - animal hook worms
  - **Visceral** larva migrans - round worms of dogs & cats
  - **Occular** larva migrans - -----do-----



# HISTORY

- Rober Lee(1874)-
  - Described syndrome of cutaneous lesions by larvae of *Ancylostoma* -under name of Creeping eruption
- Beaver (1956) -
  - Observed larvae of dog ascarid(*T. canis*)- can enter internal organs of man
  - Differentiation between 2 larva migrans-CLM & VLM



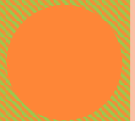
# TRANSMISSION OF LARVA MIGRANS

## ○ Animals get infected

- From mother before birth
- From mother while nursing
- Oral-Ingesting worm eggs from feces in env.
- Eating other infested animals (cat eating rodents)

## ○ Human get infected

- By direct contact-penetration thr. skin
- By accidental ingesting parasitic eggs
- By eating tissues from infested animals



# COMMON SIGNS OF LARVA MIGRANS

## ○ IN ANIMALS

- Most animals-no signs of illness
- Young animals-diarrohea (die-if worms in large no.)
- Some worm spp.-migrate to brain & sp. cord-  
incordination, trembling & circling-many times fatal

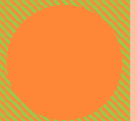
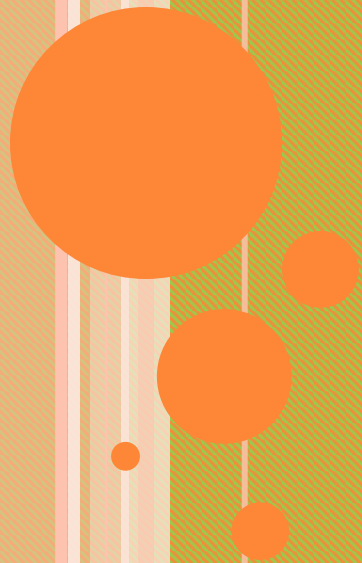
## ○ IN HUMANS

- CLM-Raised reddened tracts or lines in affected area (foot or arm)
- VLM-Vary depending on organs infested
- OLM-Vision problem-blindness



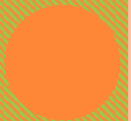
# Cutaneous Larva Migrans

**CREEPING ERUPTION,  
GROUND ITCH**



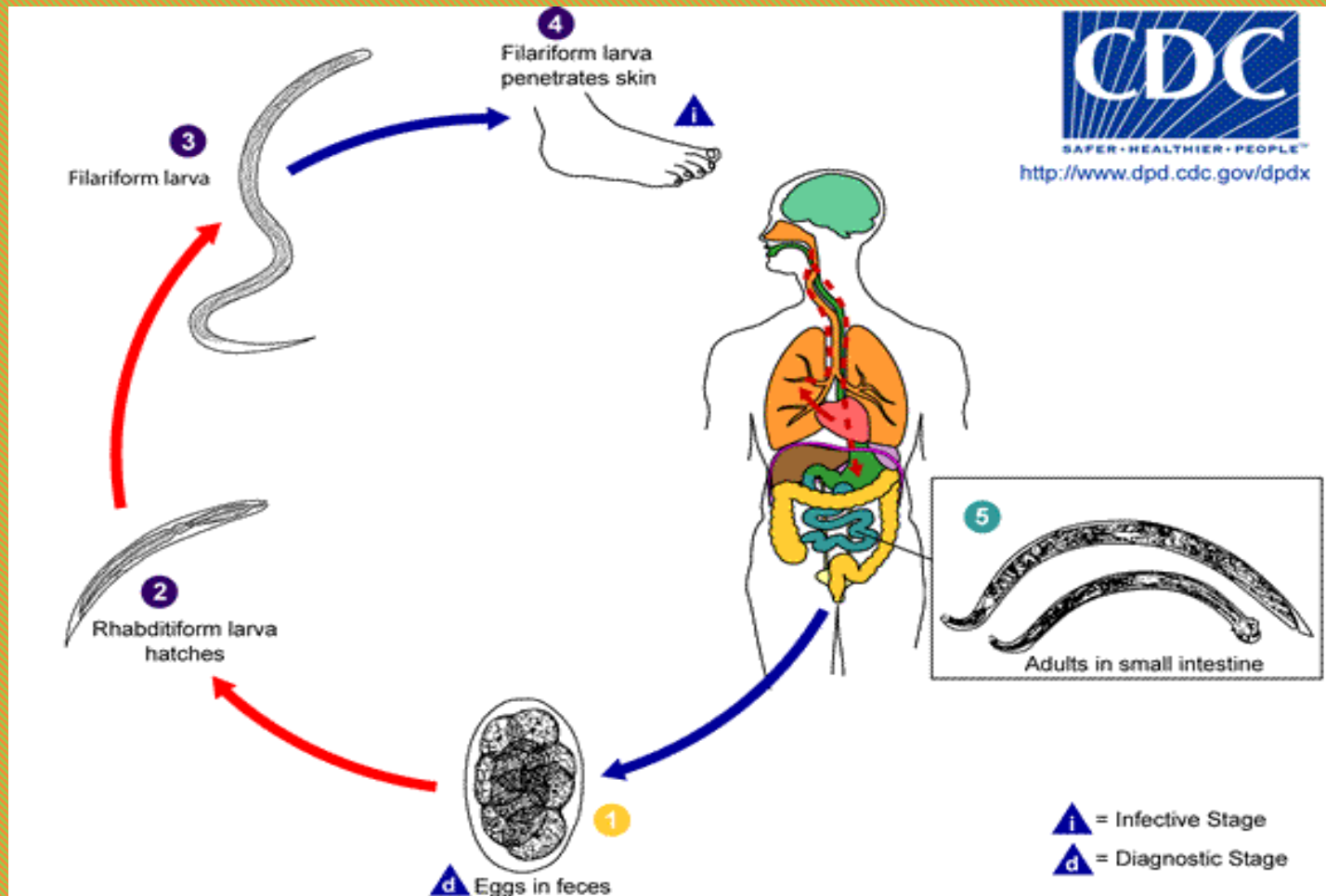
# ETIOLOGY

- Hookworm larvae
  - *Ancylostoma caninum*
  - *Ancylostoma braziliensis*
  - *Uncinaria stenocephala*
- Nematode larvae
  - *Strongyloides stercoralis*
  - *Gnathostoma spinigerum*
  - *Capillaria* spp.
- Eggs are found in dog or cat feces and can be contracted even through intact skin while walking barefoot or lying on the ground



# Cutaneous Larva Migrans-TRANSMISSION

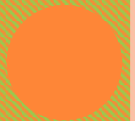
Direct penetration of the skin by hookworm 3rd stage larvae (Filariform), which develop in the environment from eggs shed in dog or cat faeces.





# EPIDEMIOLOGY

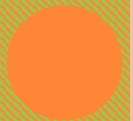
- Mostly in **warm & damp climates** especially **sandy soils**-favourable for larval survival
- Commonly seen in Children's
- In South Asian countries- highly prevalent among
  - sweet potato growers
  - rice field workers
  - tea picking labors



## SIGNS AND SYMPTOMS



- After invasion of larvae - affected skin - redish itchy papules
- In 2-3days – **serpiginous channels** in stratum germinativum
- The lesions – **erythematous** - then elevated & vesicular
- Larvae travel under the skin a **few millimeters/cms a day**, leaving **itchy red tracks...tunnel** - dry& crusty
- **Irritation-pruritus-scratching- pyogenic infection**
- Eosinophilia in 65% children affected with creeping eruption
- Lesion-single/multiple
- Foot ,ankle ,hands - most common sites
- Occasionally massive infection-cutaneous lesions over large areas of body –may penetrate vaginal& anal mucosa





## DIAGNOSIS

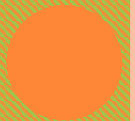
- Clinical signs

- **TREATMENT**

- Mebendazole 100 mg BID x3 days

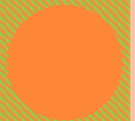
OR

- Albendazole 400 mg OD x3 days



## PREVENTION

- Wear shoes or sandals at all times.



# Visceral Larva Migrans

**Toxocariosis**

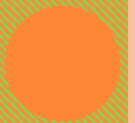
**Ocular larva migrans**

**Larva migrans visceralis**

# VISCERAL LARVA MIGRANS

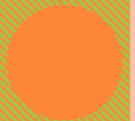
- Extra intestinal migration of larval nematodes of lower animals (dogs and cats)-

In human tissues – chronic granulomatous lesions



## ETIOLOGY

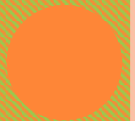
- Larvae of worms ( parasites) that infect the intestines of dogs and cats.
  - Dog parasite - *Toxocara canis*
  - Cat parasite - *Toxocara cati*
- Eggs produced by these worms are in the feces of the infected animals.
- By larval stages of Other nematodes
  - *Gnathostoma spinigerum*
  - *Cappillaria hepatica* (of rodents)
  - *Ascaris suum*
  - *Dirofilaria spp.*





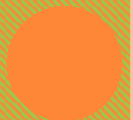
# EPIDEMIOLOGY

- Usually in children(1-5yrs)-habit of dirt eating
- Prevalence studies -
  - GreatBritain (20.7% dogs excrete *Toxocara* eggs)
  - INDIA (A.P.- 6.67%,Karnatak-26.23%,T.N.-16.28%)



# TRANSMISSION

- The feces mix with soil, allowing the infection to spread to humans
- Humans may get infected
  - unwashed raw vegetables
  - by eating raw meat
- Young children with pica - at highest risk
- But this infection can also occur in adults
- After a person swallows the contaminated soil, the worm eggs break open in the gastrointestinal tract
- Carried throughout body to various organs, such as the lungs, liver, and eyes
- Brain, heart, and other organs can also be affected.



# SYMPTOMS

- Mild infections may not cause symptoms
- More serious infections may cause the following symptoms:

- Abdominal pain
- Cough
- Fever
- Irritability
- Itchy skin (hives)
- Shortness of breath
- Wheezing

## Possible Complications

**Blindness/Decreased visual activity**  
**Encephalitis (infection of the brain)**  
**Heart arrhythmias**  
**Respiratory distress**  
**Hepatomegaly**  
**Allergic pneumonia**

- Granulomatous lesions sometimes eyes

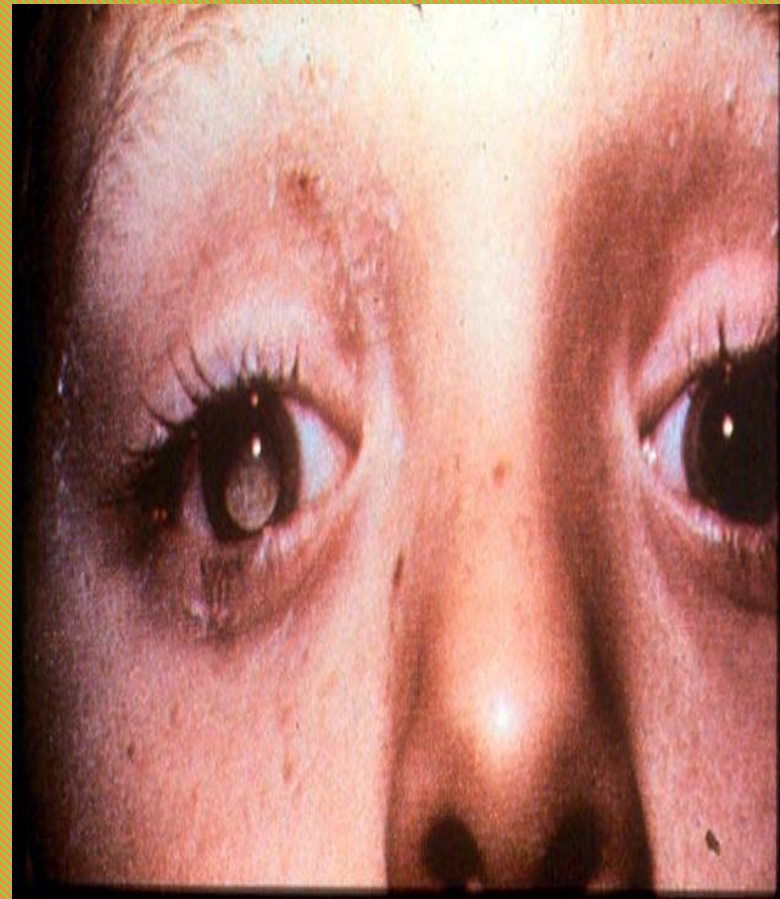
- Eosinophilia

- 80% cases reach 50%; some cases 90%
- Chronicity - lasts for >2 yrs.

- Leucocytosis (count >20,000/mm<sup>3</sup>)

- **Mostly seen in children 18 months - 5 yrs of age**

- If eyes - infected (ocular larva migrans) - chorioretinitis - loss of vision and crossed eyes (strabismus) may occur



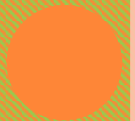
# DIAGNOSIS

- Demonstration of Lesions-typical granulomatous
- Demonstration of larva in biopsy material
- Signs of -swollen liver, rash, and lung or eye problems
- Tests may include:
  - Complete blood count
  - Serology for anti-*Toxocara* antibodies (CFT,IFAT,IHA,ELISA)



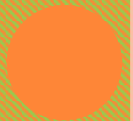
# TREATMENT

- This infection usually goes away on its own and may not require treatment
- Some people may need anti-parasitic drugs such as –  
Albendazole
- **Prognosis**
- Rare-Severe infections involving the brain or heart -death



# PREVENTION

- De-worming dogs and cats
- Preventing dogs and cats - defecating in public areas
- Keep play areas, lawns free from animal wastes
- Regular disposing of pet feces & covering sand boxes when not in use
- Important - carefully washing hands after touching soil or animals
- To kill larvae in soil –spray strong Salt soln. or borax



THANKS

