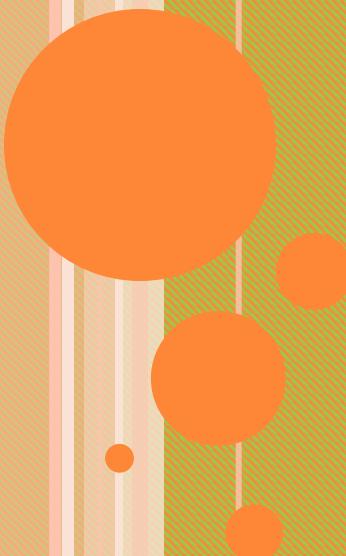


# Larva Migrans



## 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
  - **Ocular** 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

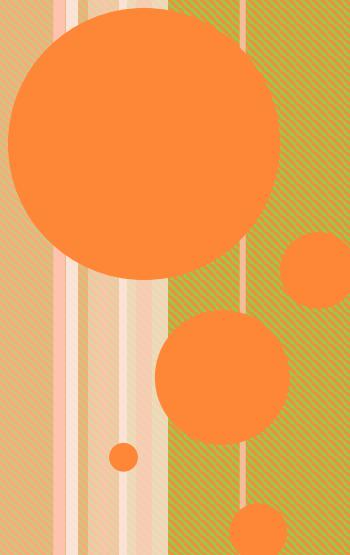
- Most animals-no signs of illness
- Young animals-diarrohea (die-if worms in large no.)
- Some worm spp.-migrate to brain & sp. cord-incordination, trembling & circling-many times fatal

## ○ 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**

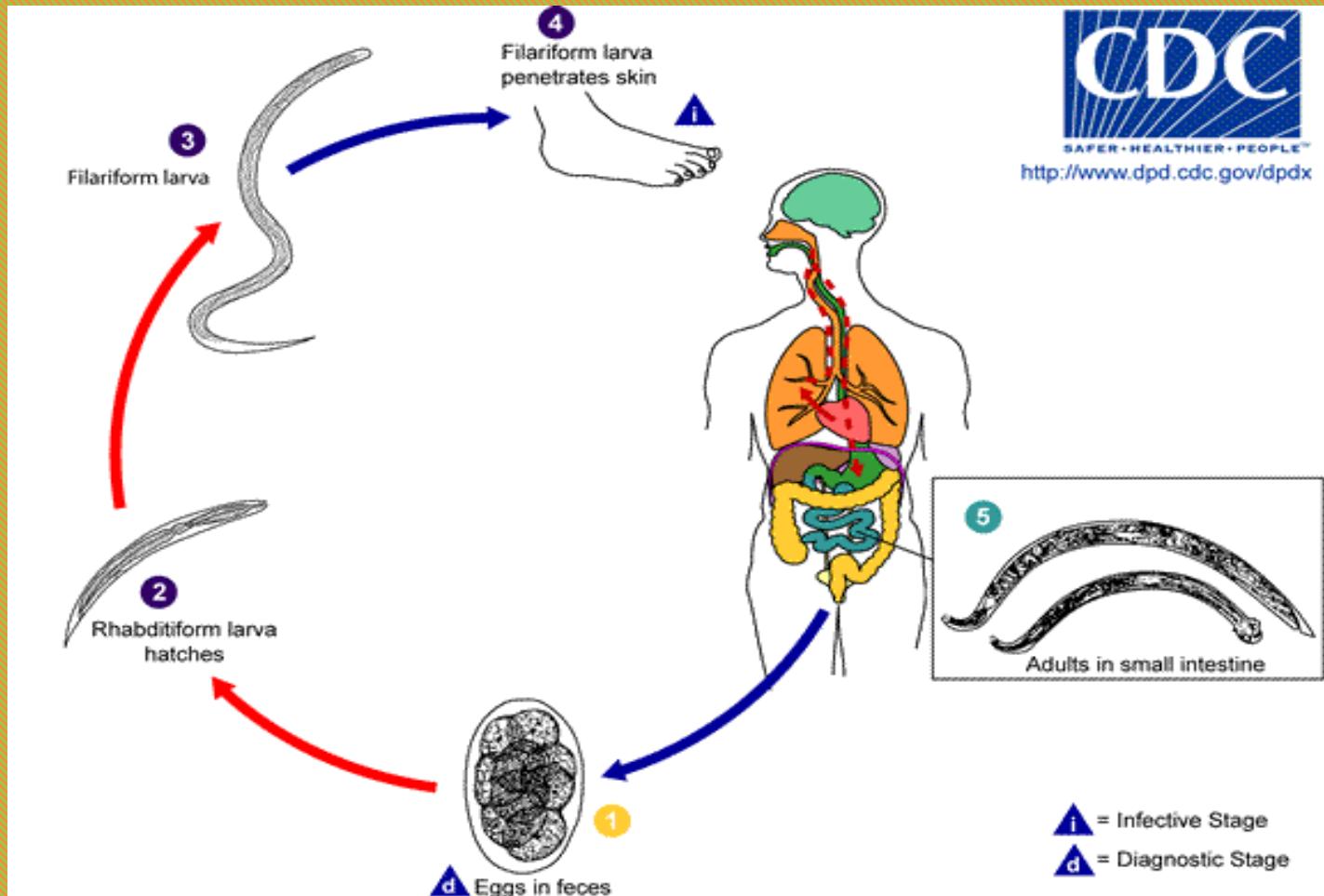


# ETIOLOGY

- 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 - reddish 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

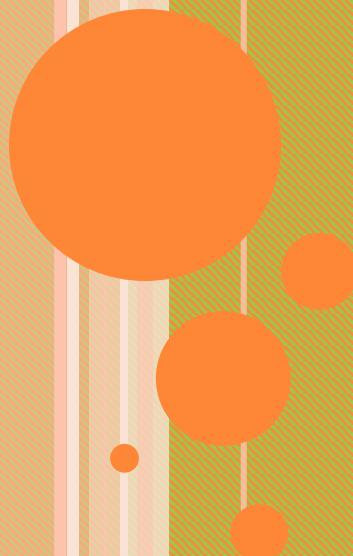
## PREVENTION

- Wear shoes or sandals at all times.



# Visceral Larva Migrans

Toxocariasis  
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 -
  - Great Britain (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
- 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

## Possible Complications

**Blindness/Decreased visual activity**

**Encephalitis (infection of the brain)**

**Heart arrhythmias**

**Respiratory distress**

**Hepatomegaly**

**Allergic pneumonia**



## 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

