Helminthology – Nematodes Angiostrongylus

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Classification of Nematodes

Subclass	Order (suborder)	Superfamily	Genus and Species	Probable prevalence in man
Secernentea	Strongylida	Metastrongyloidea	Angiostrongylus costraricensis	Thousands
			Angiostrongylus cantonensis	Thousands

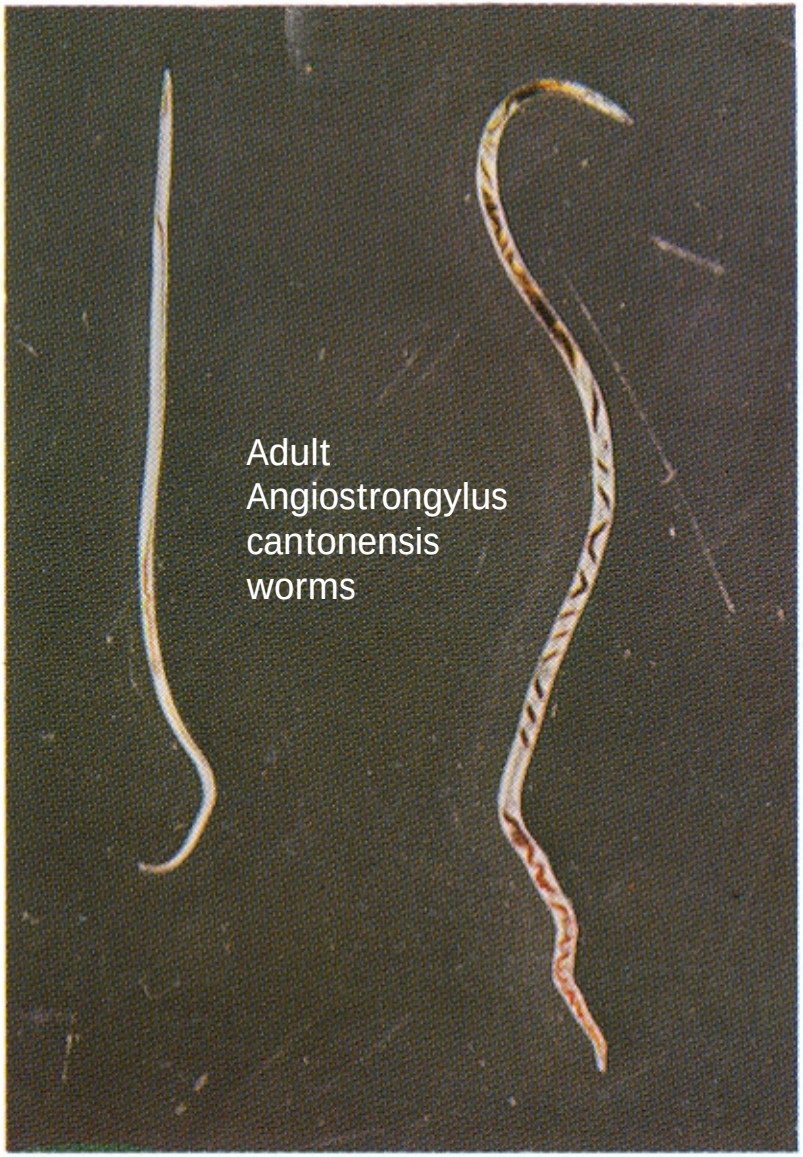
General Information

- Geographic distribution
  - A costaricensis – Costa Rica, Honduras, El Salvador, Mexico, Columbia, Brazil
  - A cantonensis – China, Australia, Malaysia, Taiwan, New Caledonia, Fiji, Guam, Ponape, Truk, Tahiti, Hawaii, Japan, N Sumatra, C Java, India

General Recognition Features

- Size
  - A costaricensis – male 22 mm, female 42 mm
  - A cantonensis – 17-25 mm

455



Adult Angiostrongylus cantonensis worms

456

1st stage rhabdiform larvae in rat feces

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Life Cycle – A costaricensis

- Definative host – cotton rat (Sigmodon Hispidis), man
- Where the adults live in the body- appendiceal mesenteric arteries
- Stage leaving the rat – L1 rhabdiform larvae
- Intermediate host – slugs
- Infectious stage for the host – L3 filariform larvae via ingestion

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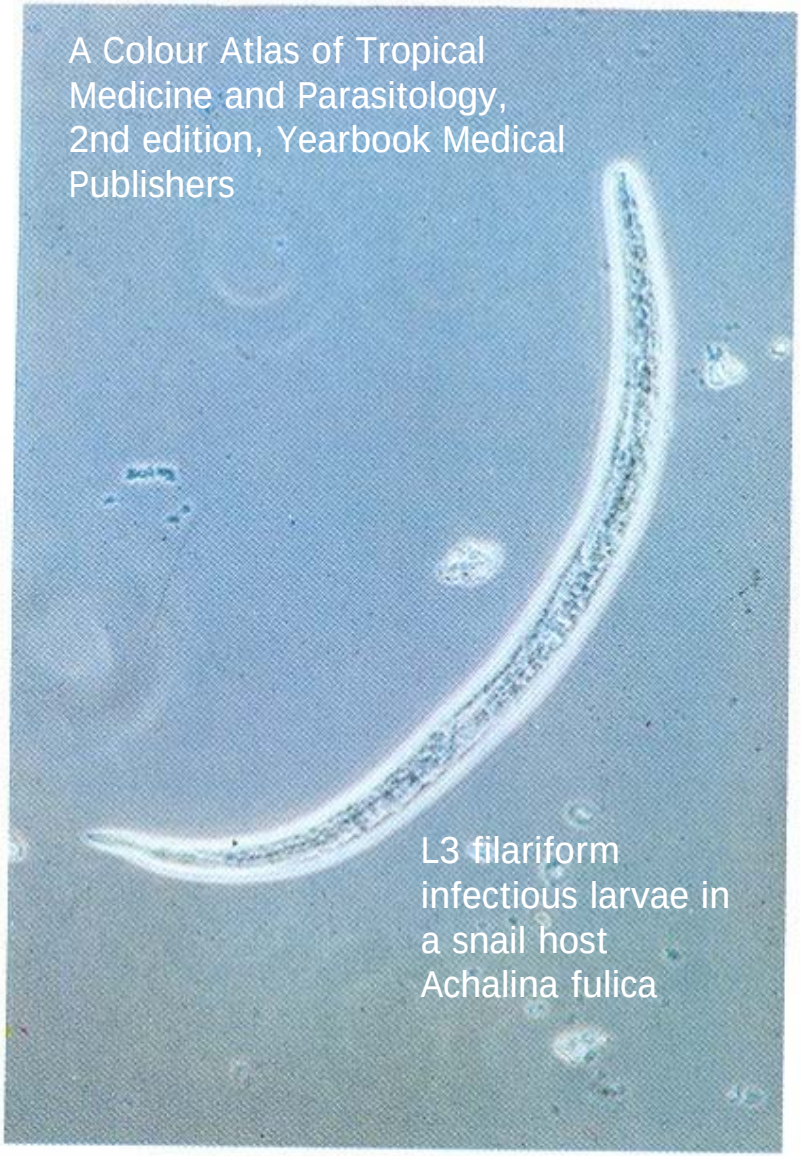

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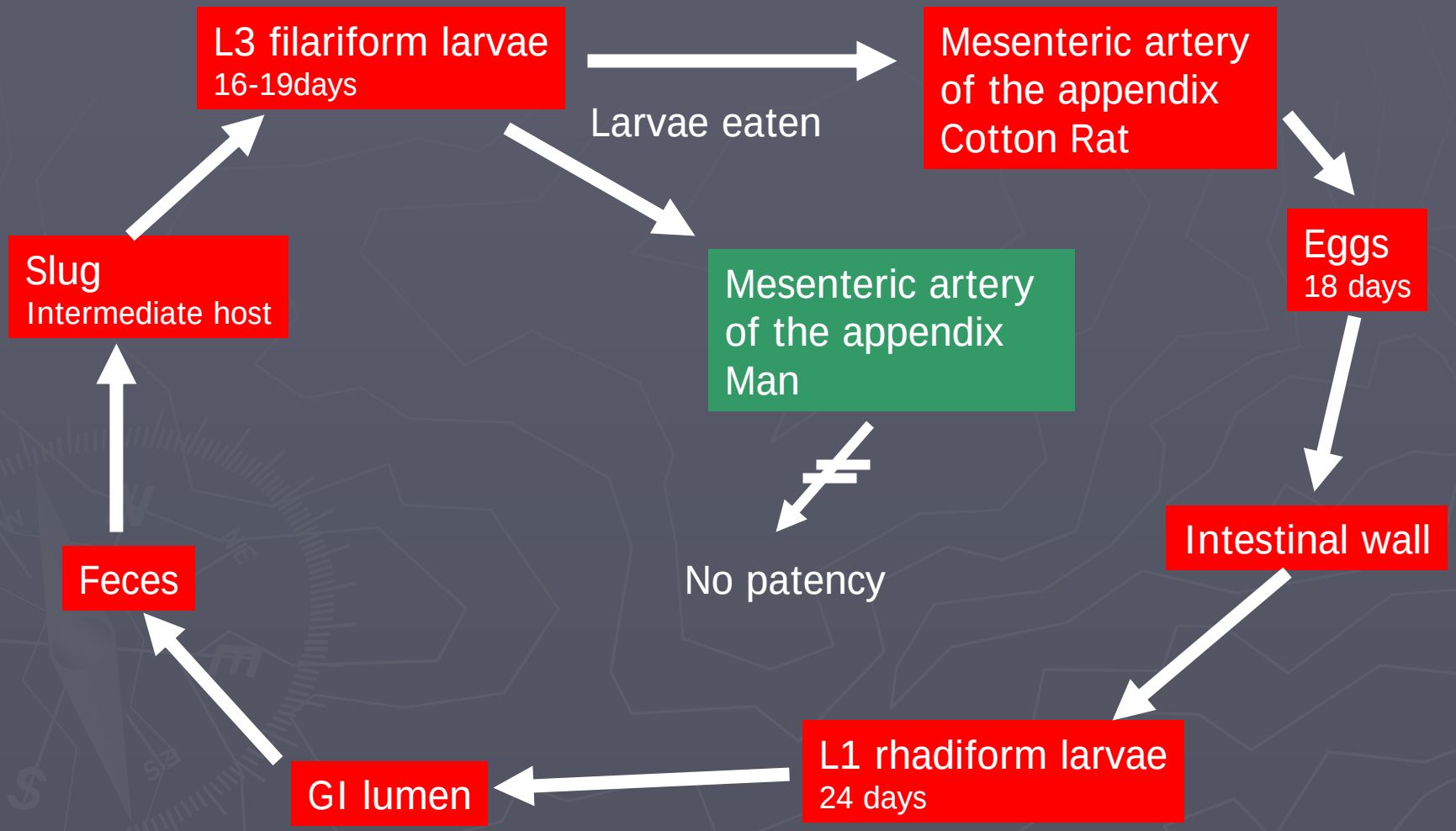
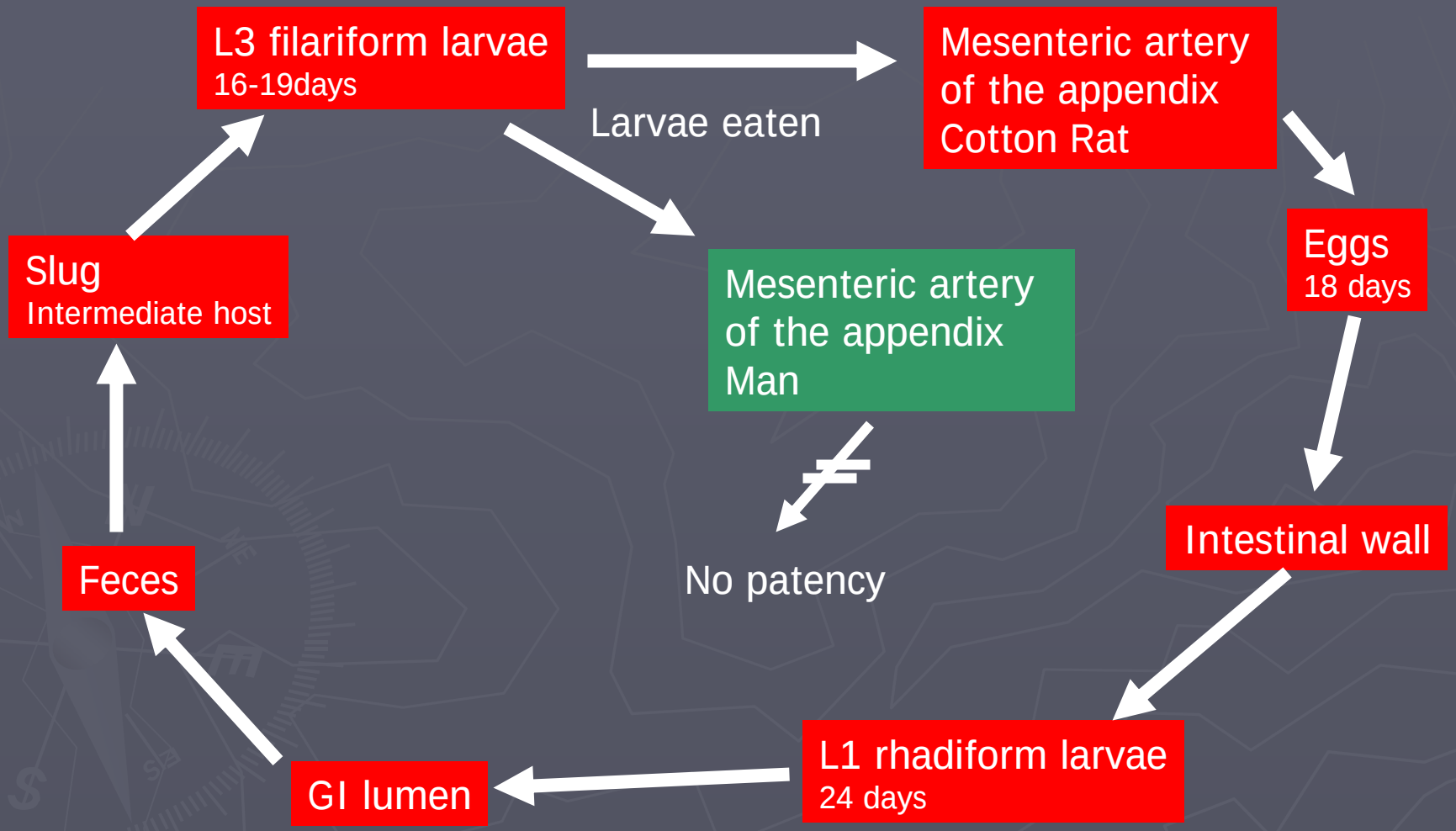
L3 filariform infectious larvae in a snail host Achalina fulica

Life Cycle – A costaricensis



Life Cycle – A costaricensis



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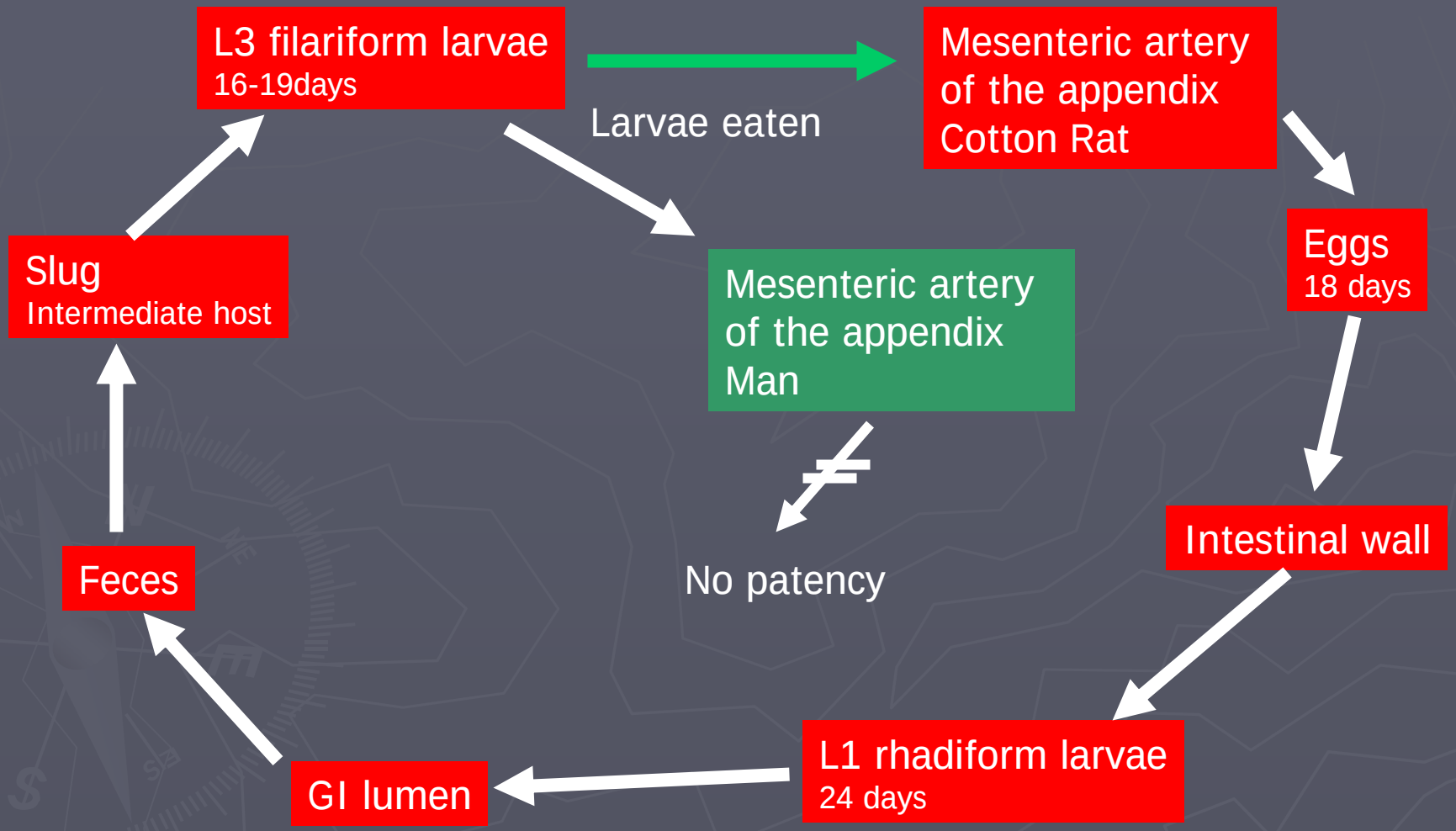

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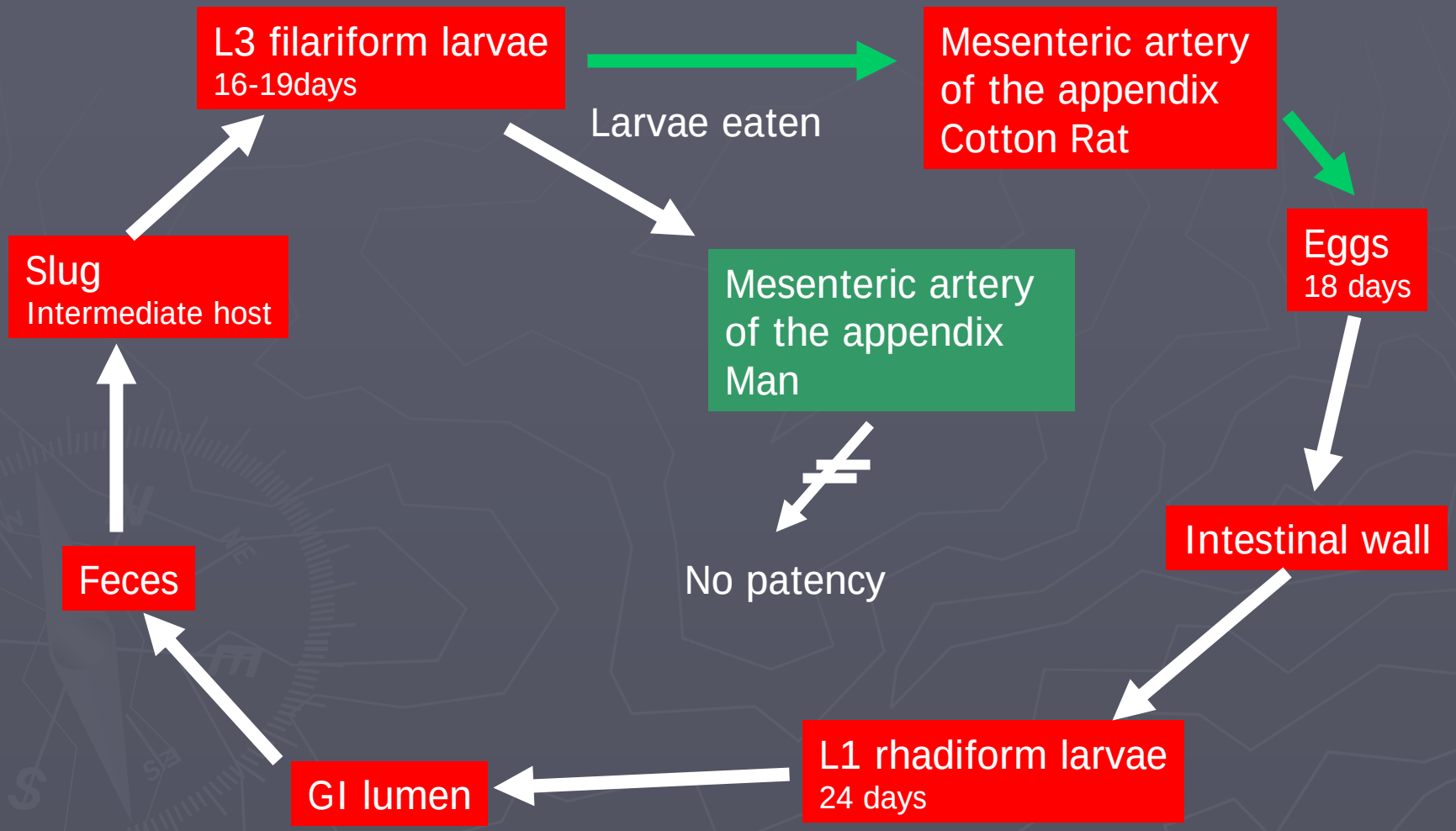

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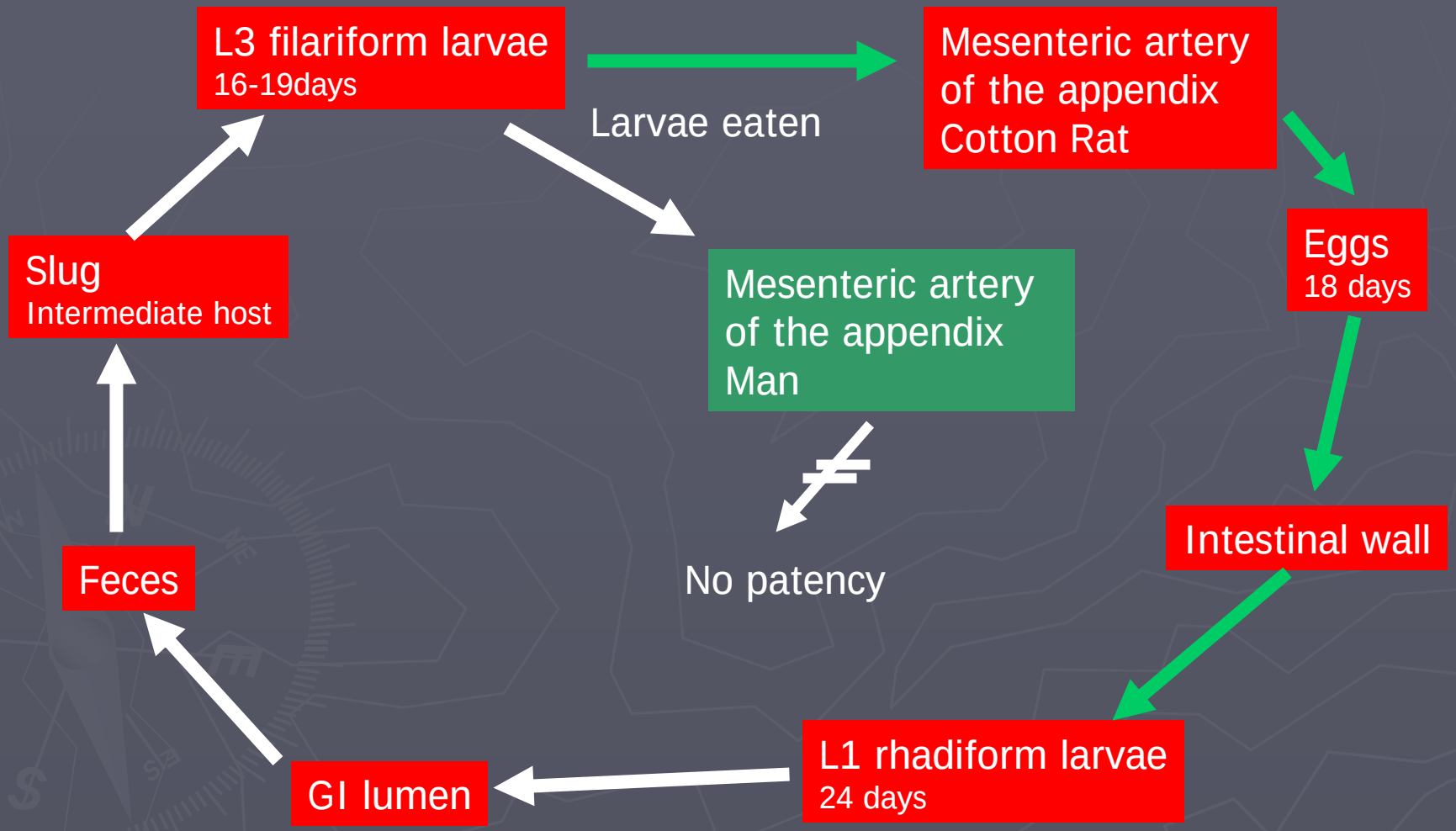

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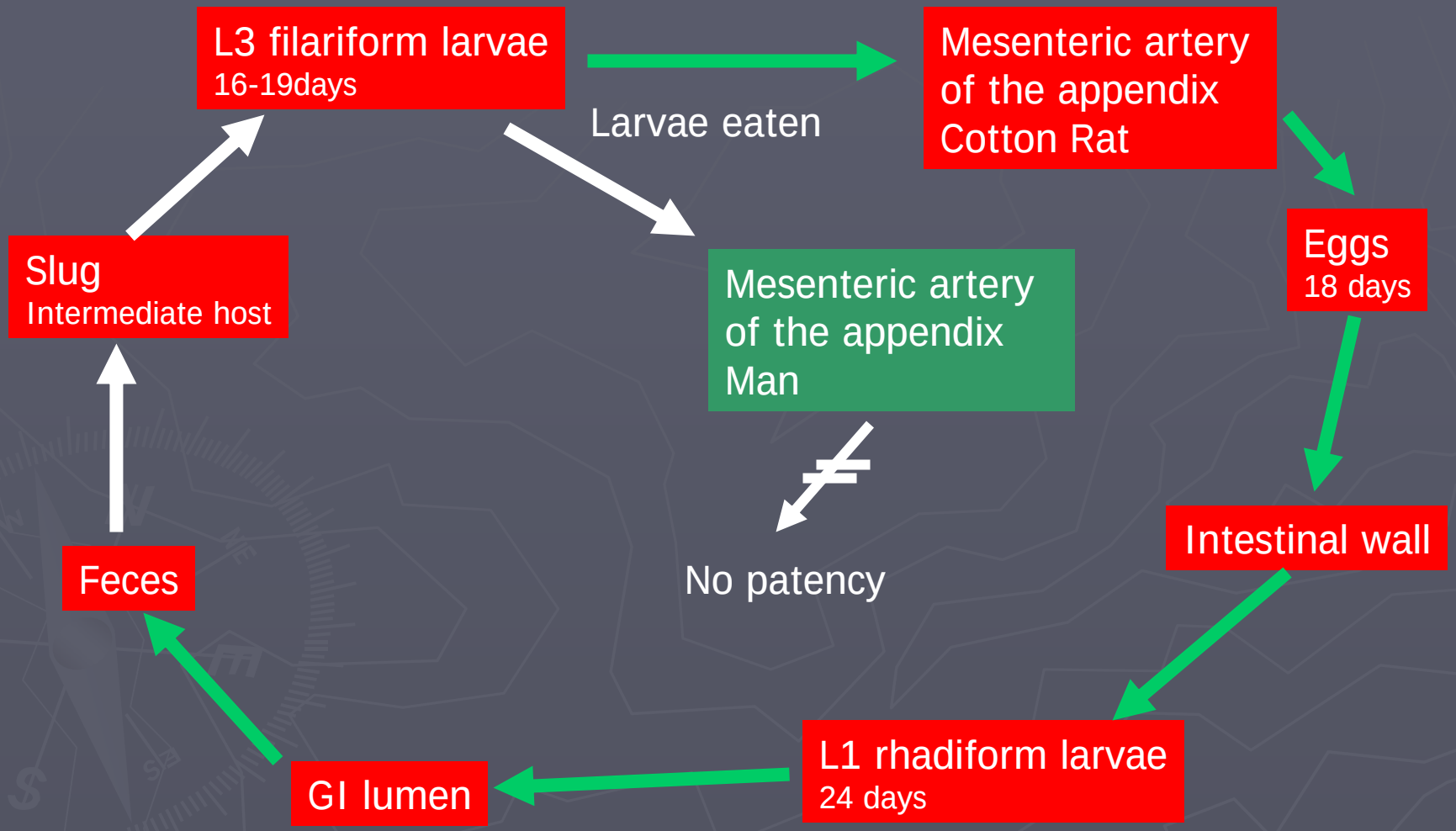

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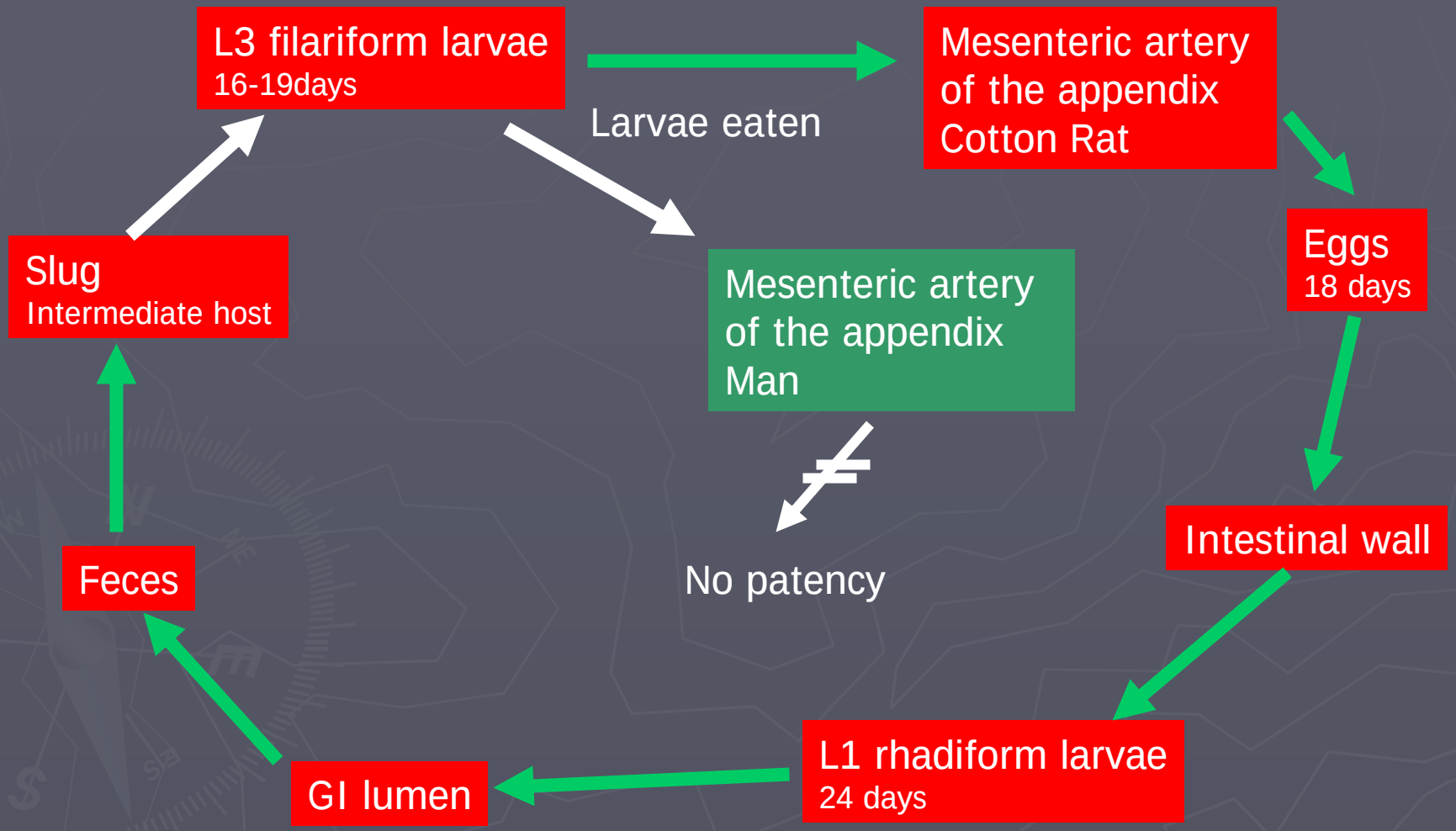

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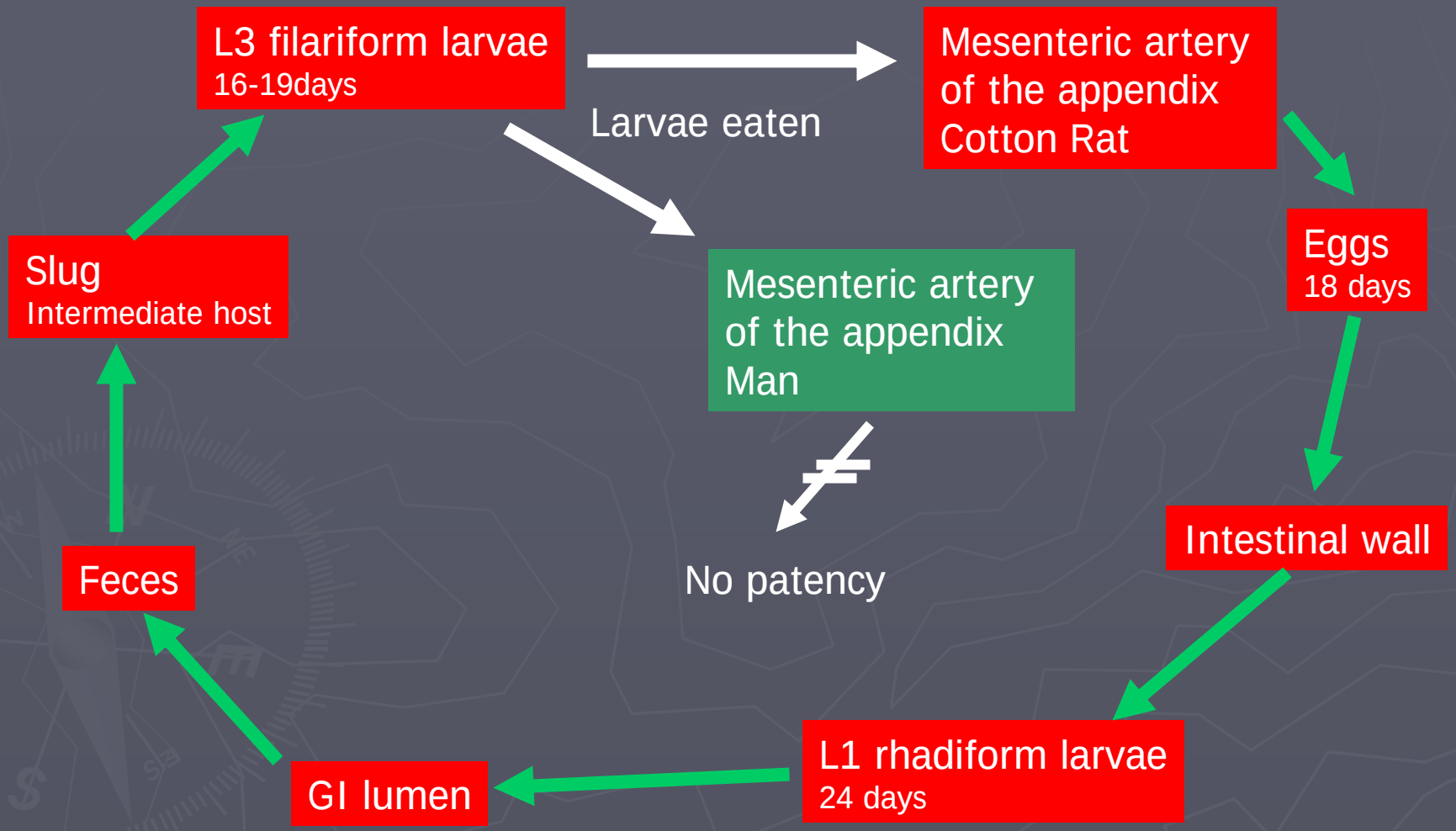

Life Cycle A costaricensis

- Prepatent period – none
- Patent period – none
- Factors influencing transmission – primarily an infection of children 6-13 years old

Disease Characteristics

- Acute appendicitis

Diagnosis

- Clinical suspicion
- Histology

Treatment

- Surgery is curative (appendectomy)
- May be a self limited course with complete recovery
- May respond to analgesics and corticosteroids
- Anti-helminth therapy may worsen the symptoms

Life Cycle – A cantonensis

- Definitive host – rat (rattus), man
- Where the adults live in the body – pul arteries of rats, brain or eye of humans
- Stage leaving the rat – L1 rhabdiform larvae
- Intermediate host – land and aquatic snails and slugs
- Infectious stage for the host – L3 filariform larvae via ingestion

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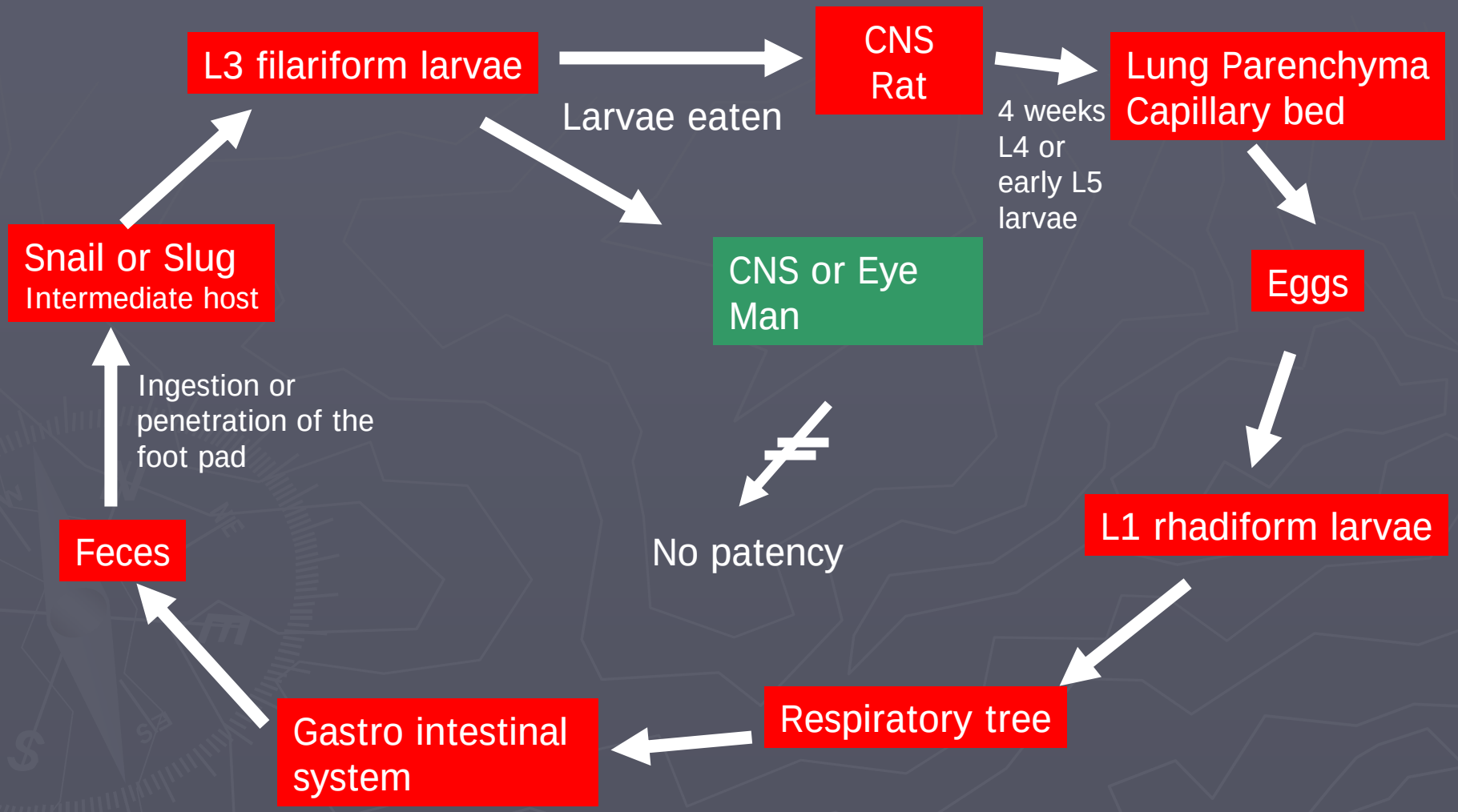
Life Cycle – A cantonensis



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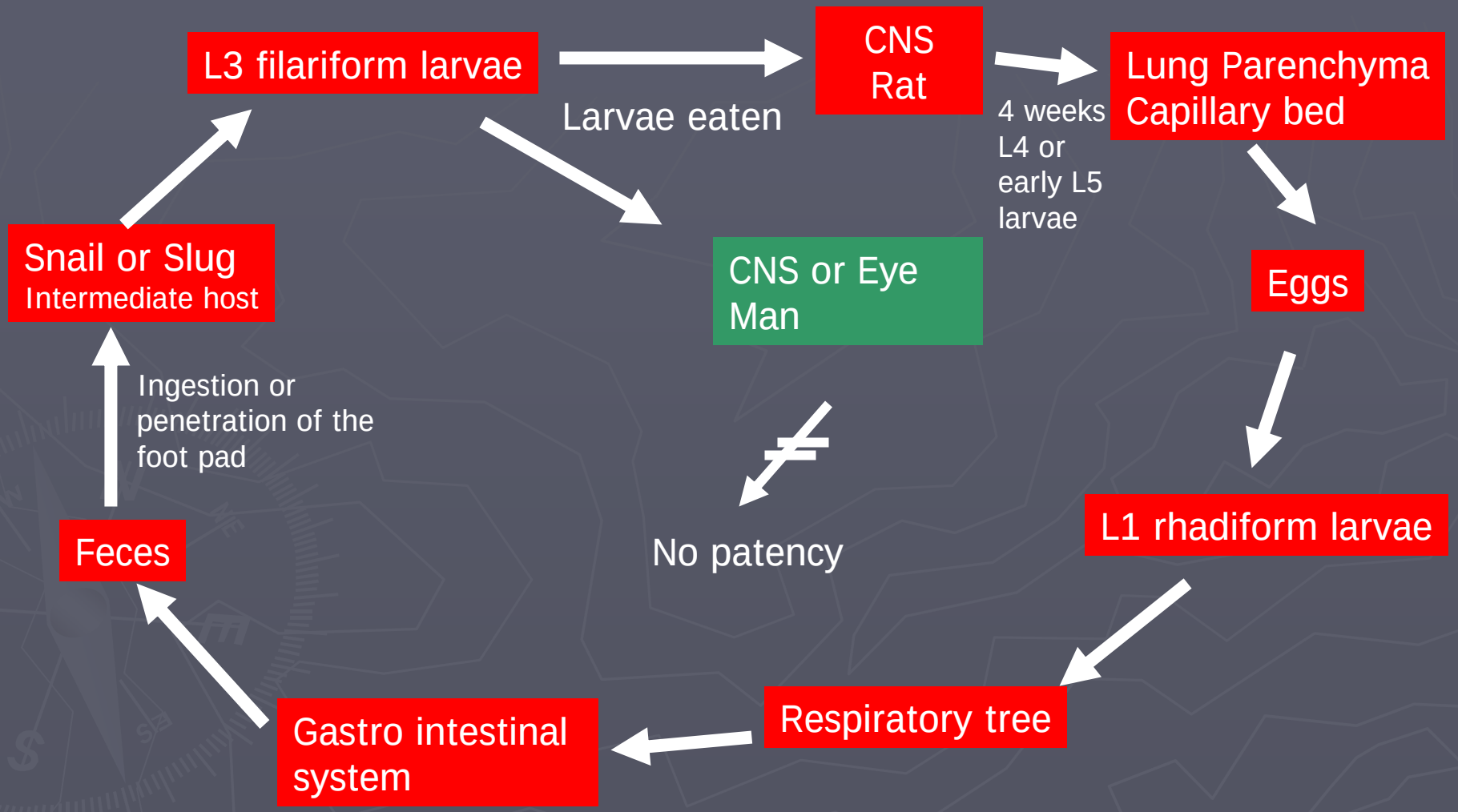

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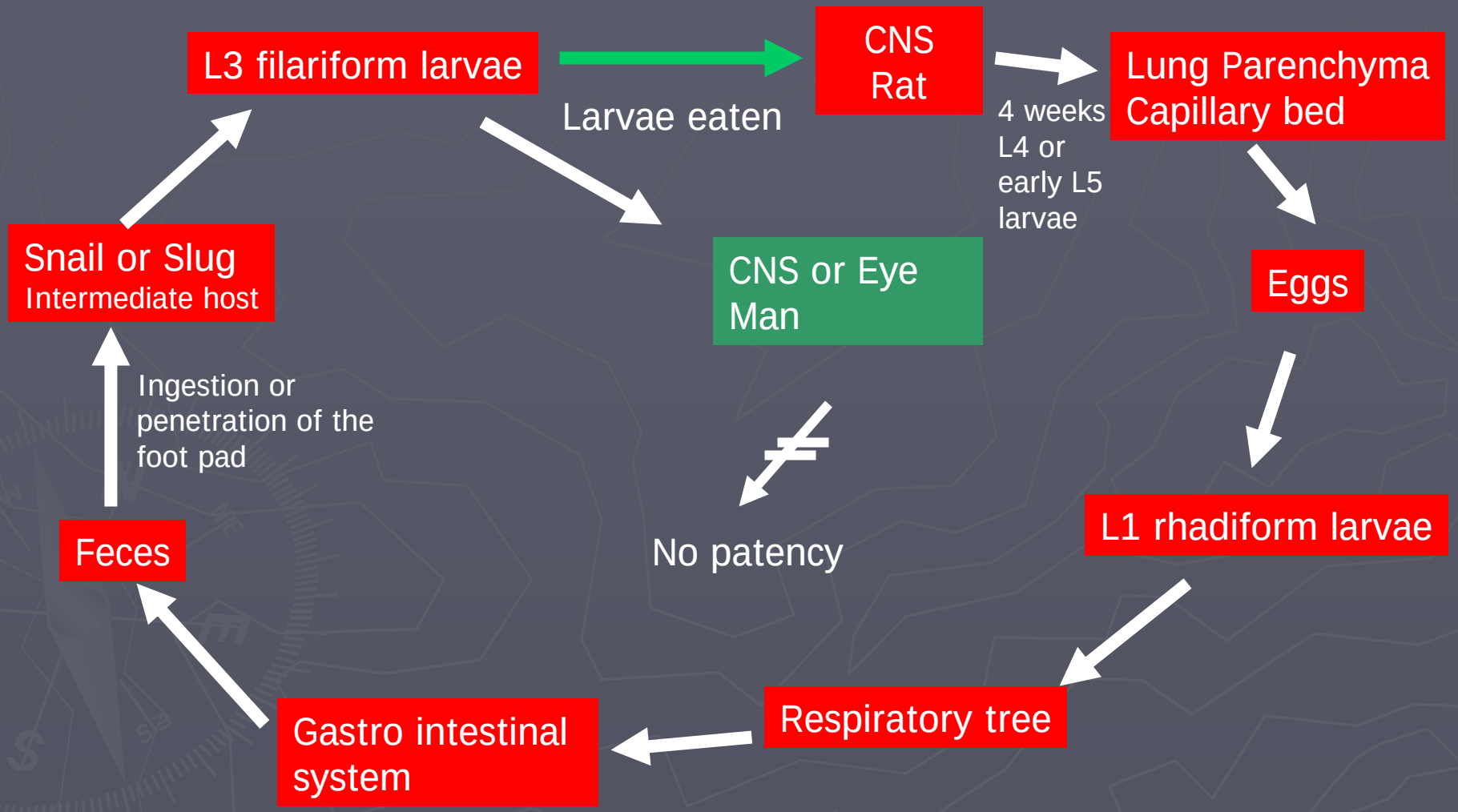

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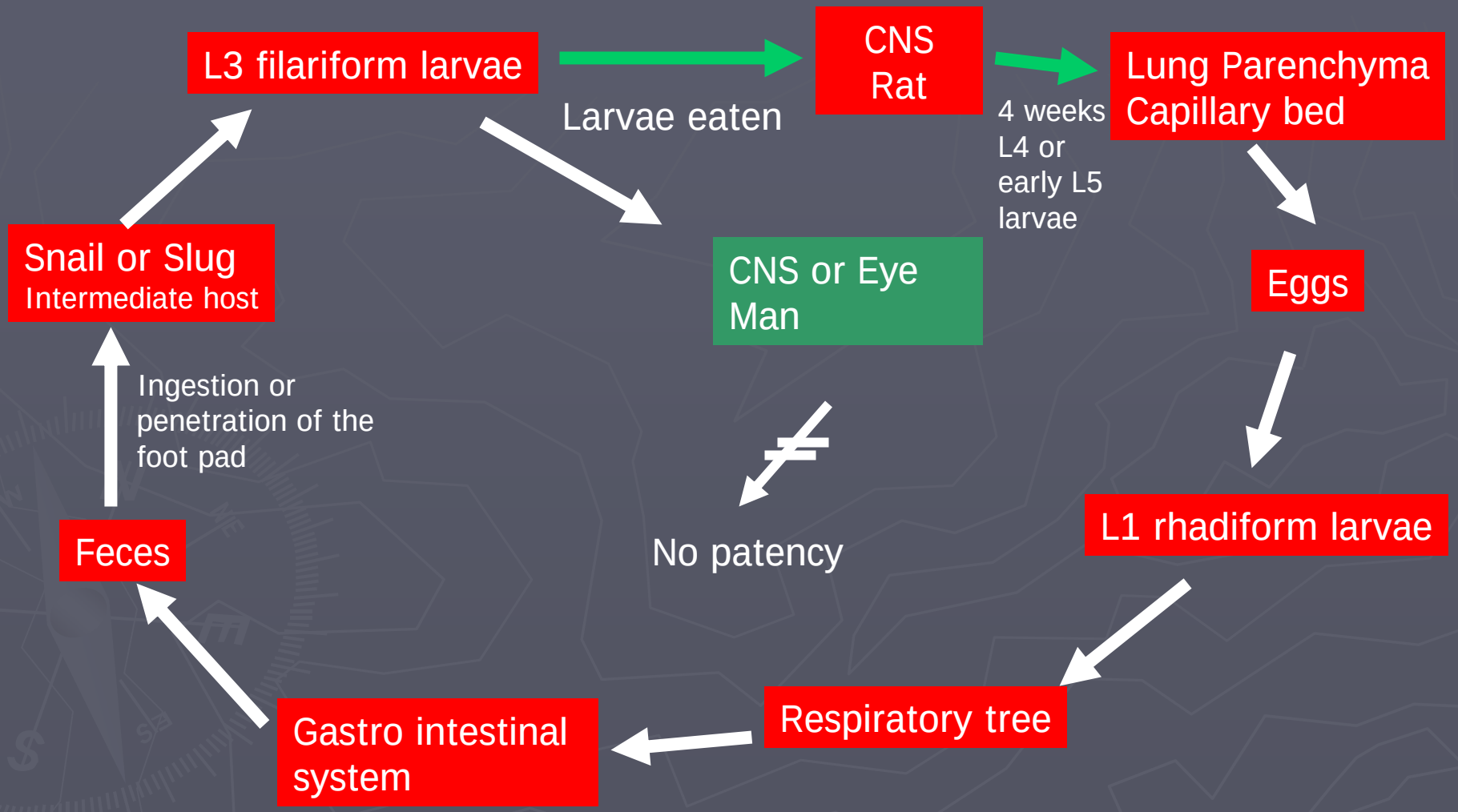

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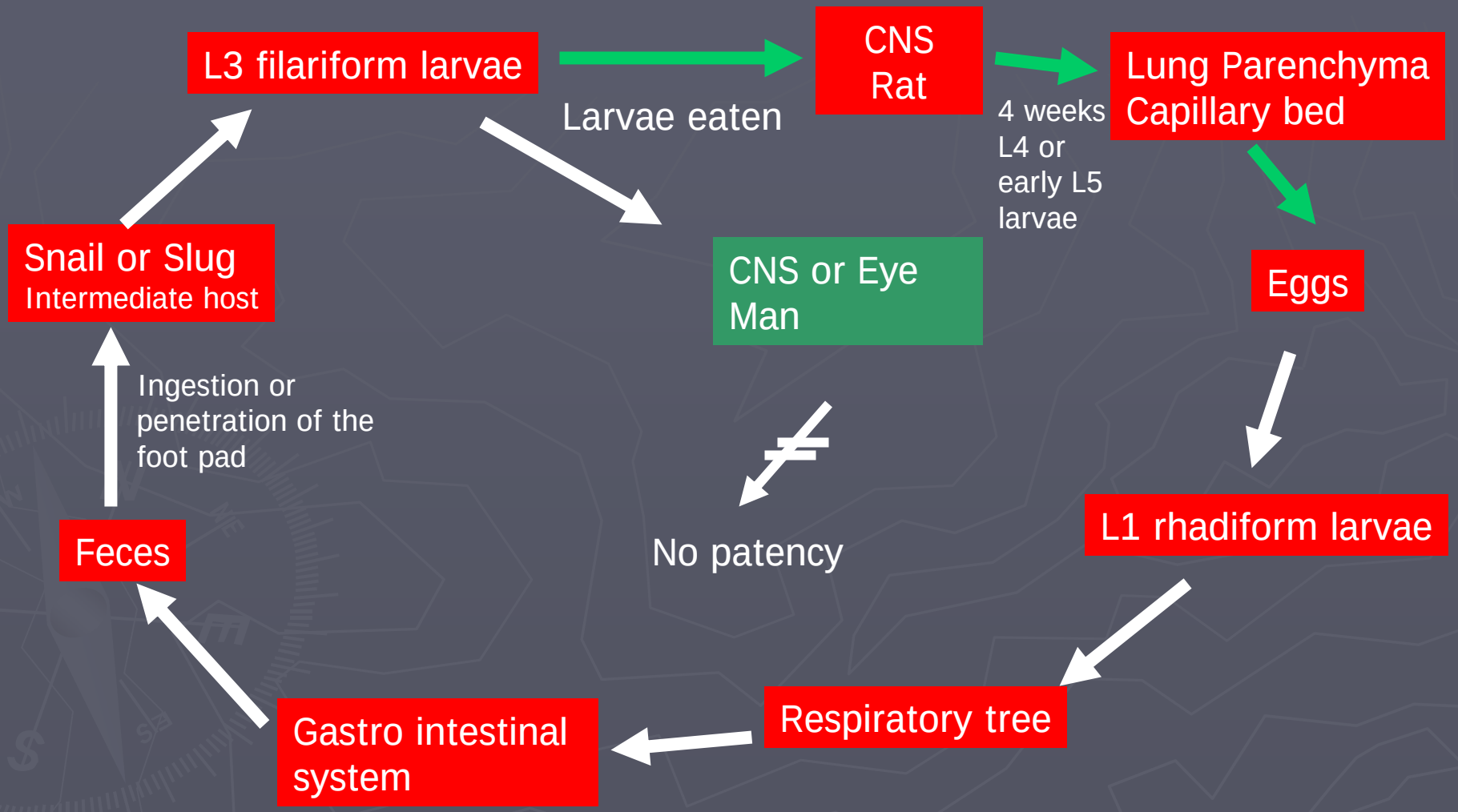

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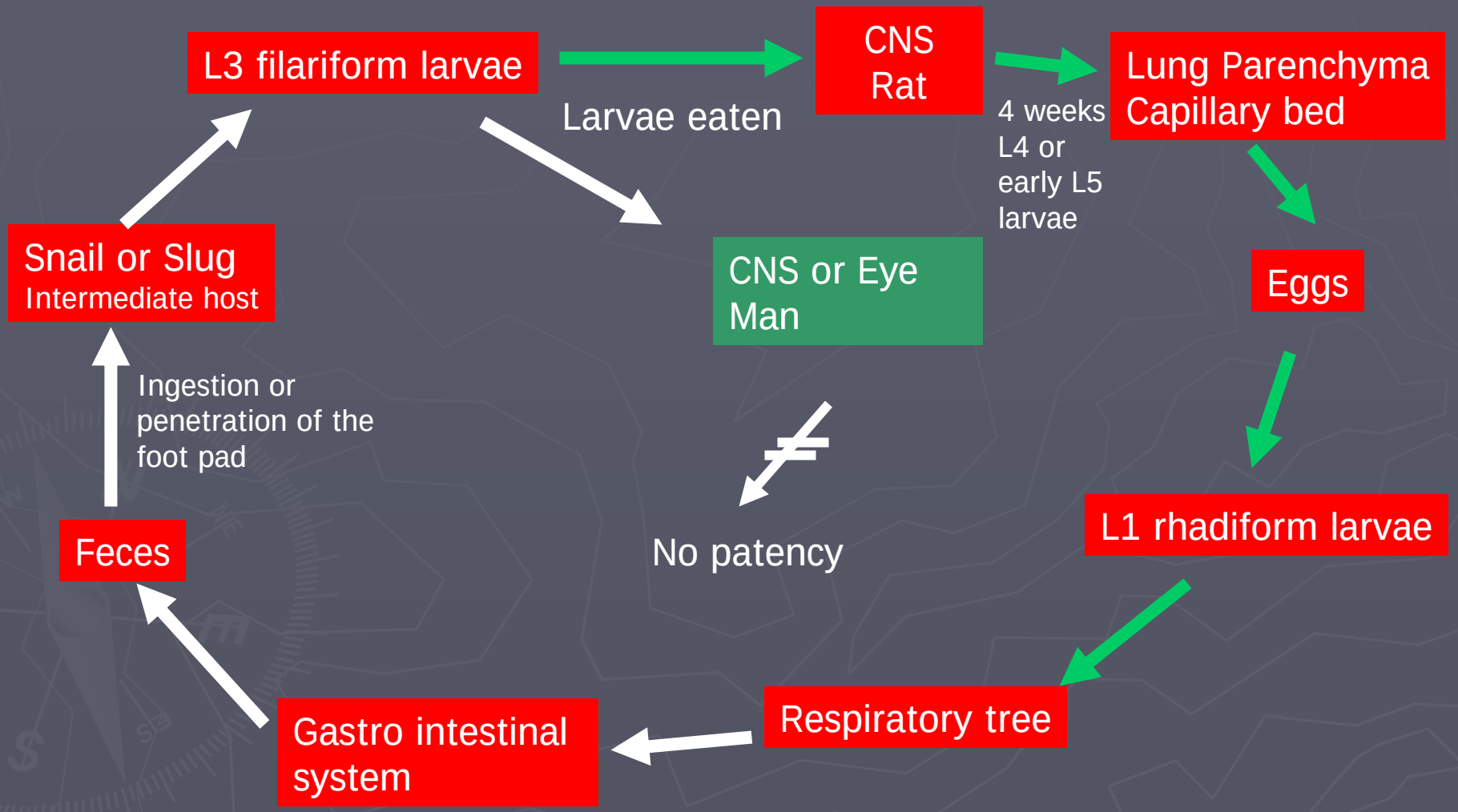

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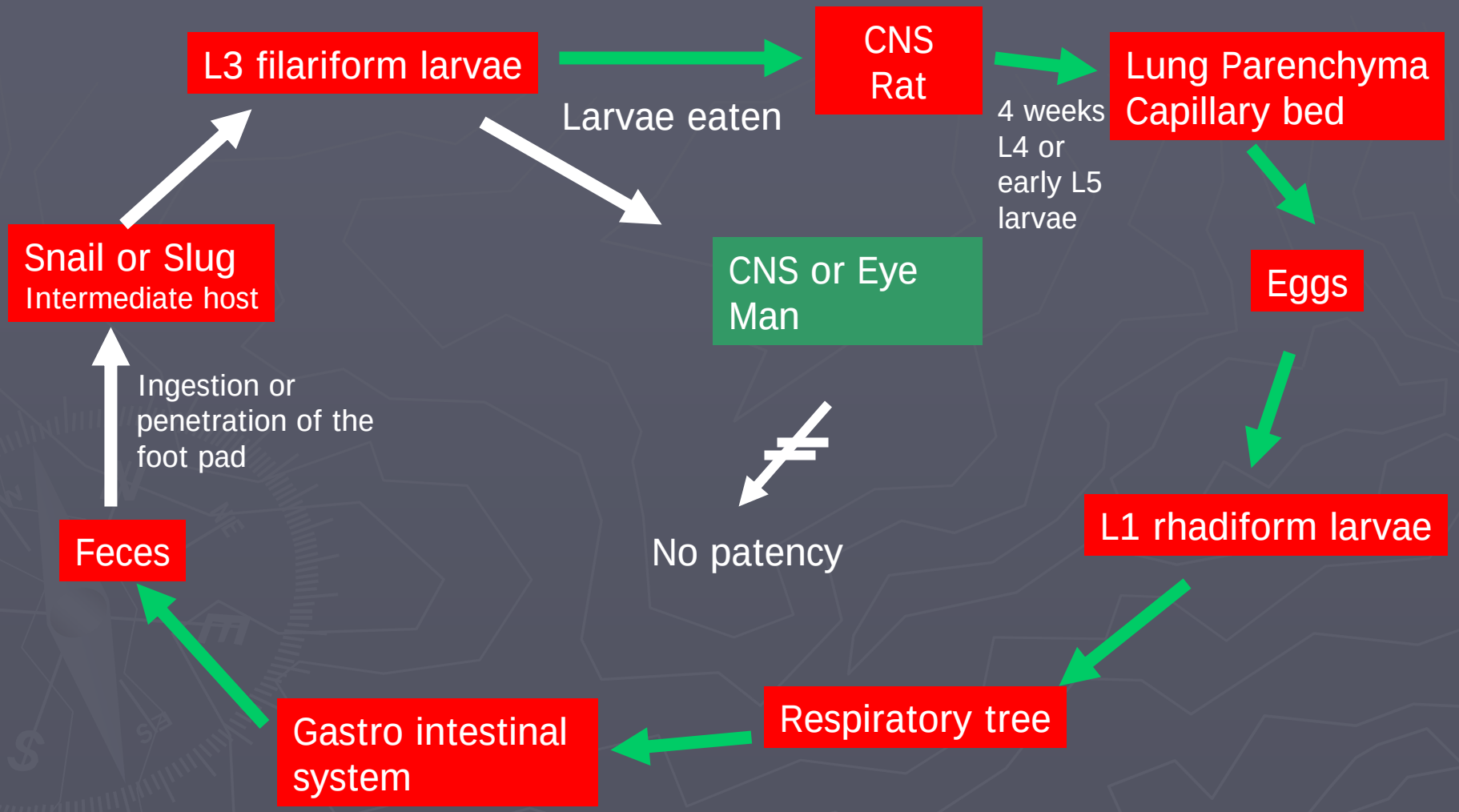

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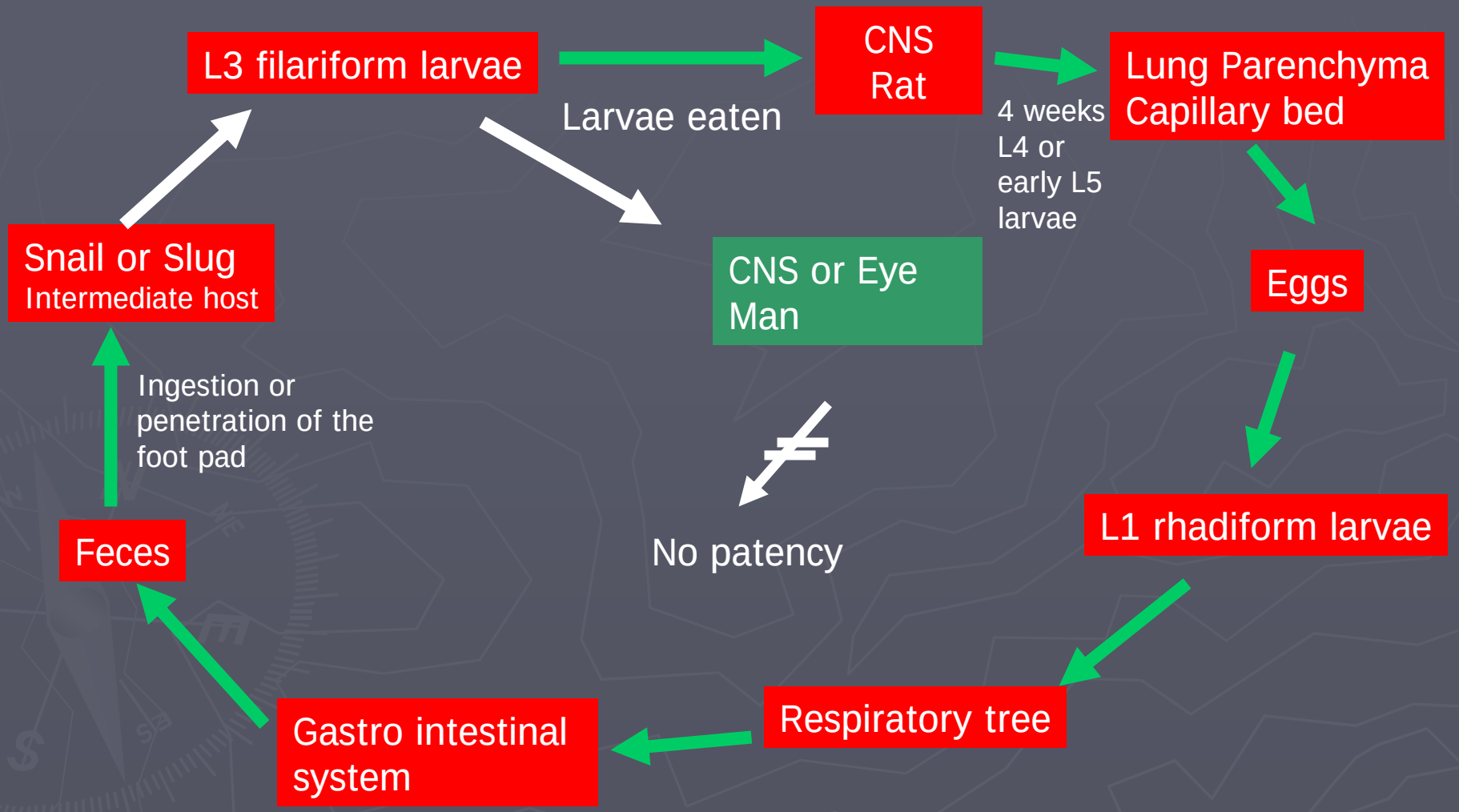

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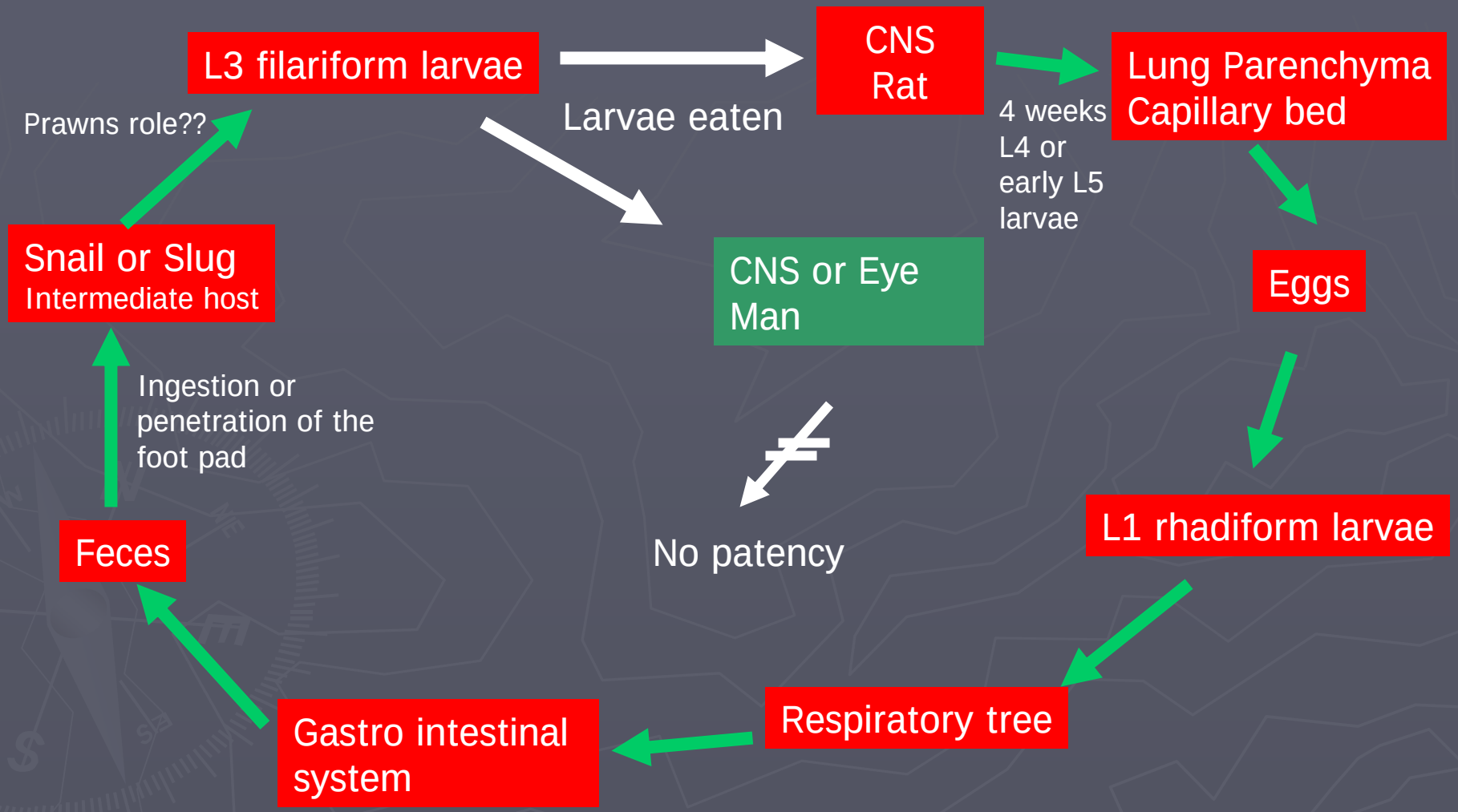

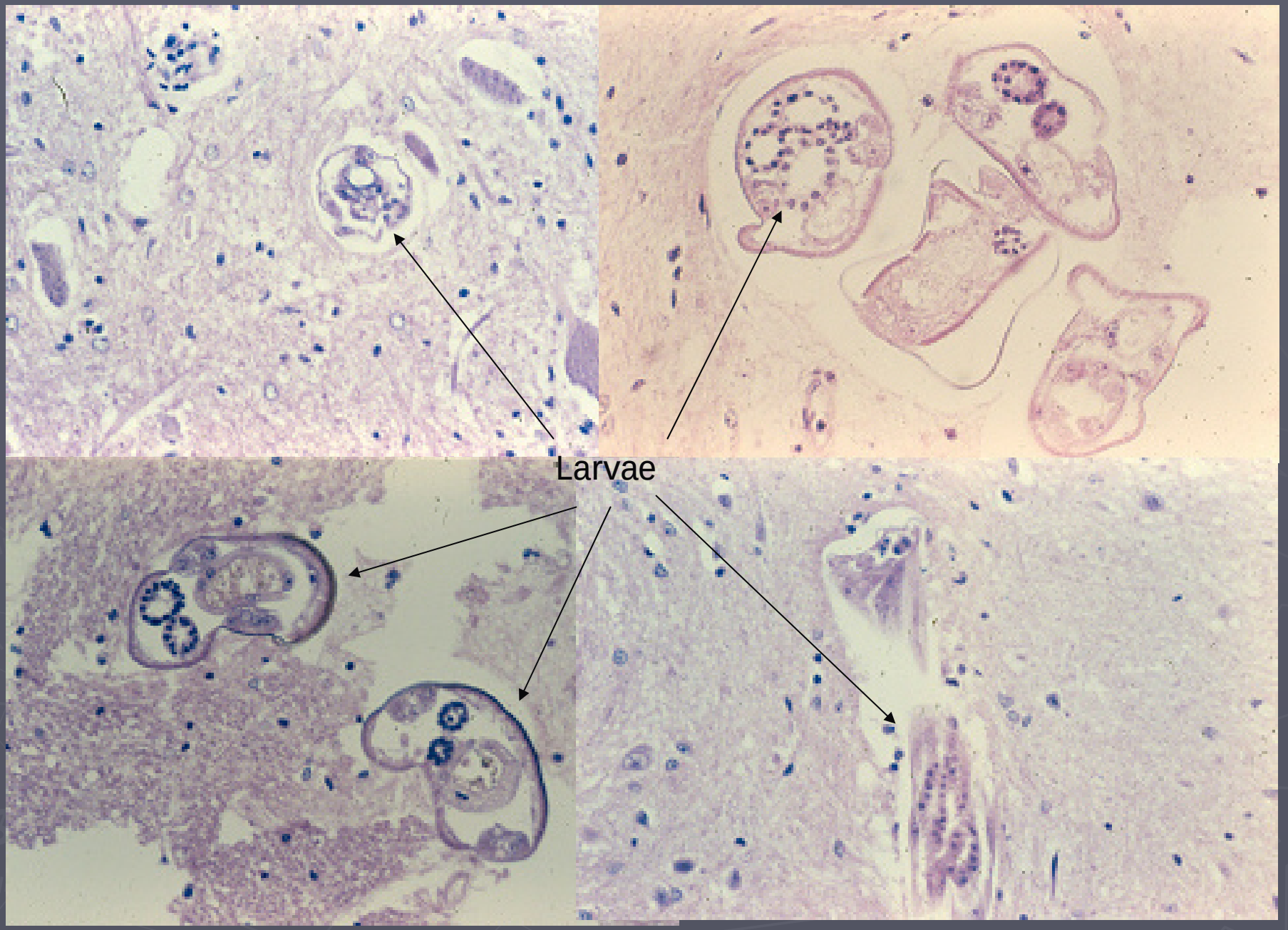
Larvae

Diagnosis

- Clinical suspicion
- Histology

Treatment

- May be a self limited course with complete recovery
- May respond to analgesics and corticosteroids
- Antihelminth therapy may worsen the symptoms

Control Measures

- Avoid the eating of undercooked fresh water prawns, snails planarians, and slugs in endemic areas
- Rodent, snail, slug and planarian control in endemic areas