

Parasitic Helminths and Arthropod Agents and Vectors of Diseases

Objectives:

- Name the three main groups of parasitic helminths and their characteristic morphological features .
- Describe the life cycle of *Ascaris lumbricoides* as an example of parasitic heminth .
- Discuss the role of arthropods as agents and as vectors of diseases in humans.
- Give examples of the main arthropod vectors of diseases.

حط كل اوبجيكتف على شكل سؤال وجاوب عليه
وهذا المطلوب من المحاضرة. على كلام الدكتور



LECTURE

12

Color index

***Important**

*Further explanations

Classification of Parasites

Protozoa	Helminths
Unicellular Single cell for all function	Mulicellular Specialized cells
Amoebae: move by psudobodia. Flagellates: move by flagella. Ciliates : move by cilia Apicomplexa (sporozoa) Tissue parasites	Round worms (Nematodes) cylindrical, unsegmented Flat worms 1-Trematodes: leaf-like, unsegmented. 2-Cestodes: tape-like, segmented

N.B : *Taenia saginata* Example of a tapeworm

Location of helminths in the body:

Intestinal helminths:

Tissue helminths:

a) Nematodes

General features:

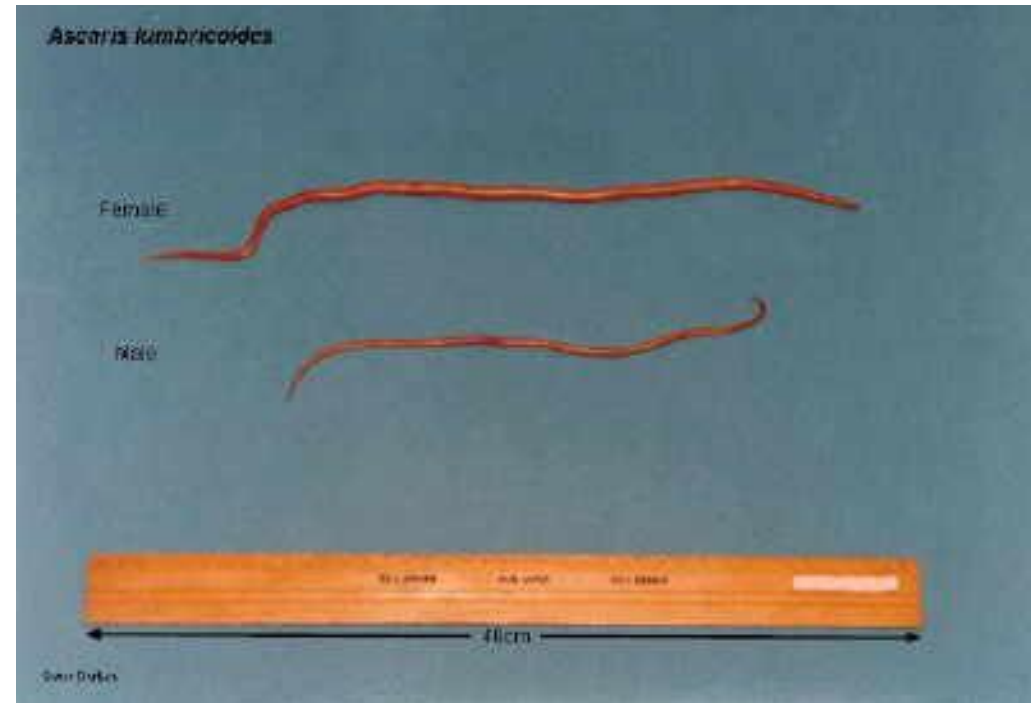
1. Elongated worm, cylindrical, unsegmented and tapering at both ends.
2. Variable in size, measure <1 cm to about 100cm.
3. Sex separate and male is smaller than female



Ascaris lumbricoides(roundworm)

The commonest human helminthes infection.

- Found in **jejunum** and upper part of **ileum**.
- Female (± 20 cm).longer than male (± 10 cm)
- Feed on semi digested food.

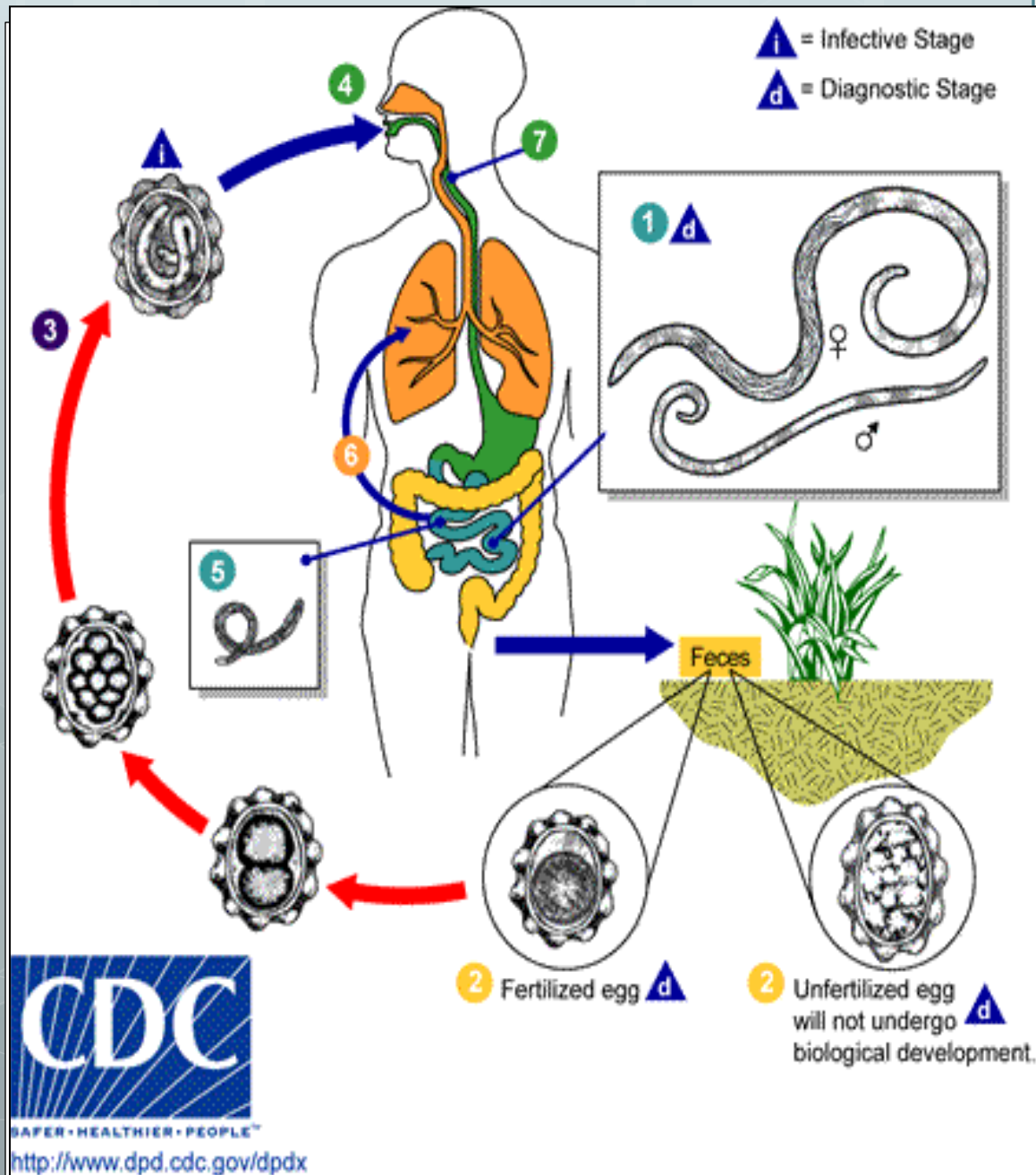


Ascaris lumbricoides

مهم لازم تعرف الخطوات (افتح الرابط في الاسفل لكي تعرف الخطوات)

Check out :

<http://www.cdc.gov/parasites/ascariasis/biology.html>



CDC

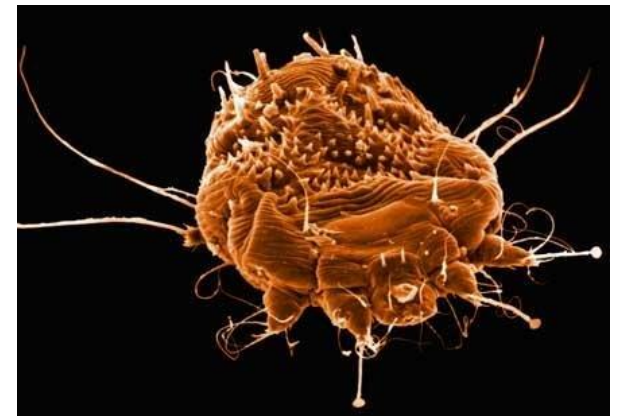
SAFER • HEALTHIER • PEOPLE™

<http://www.dpd.cdc.gov/dpdx>

MEDICAL IMPORTANCE OF ARTHROPODS

- 1) As aetiologic agents (causes) of diseases.
 - Tissue damage
 - Induction of hypersensitivity reactions.
 - Injection of poisons
 - Entomophobia (acarophobia)
- 2) As vectors of diseases:
 - I: Mechanical transmission - simple carriage of pathogens.
 - II: Biological transmission:
 - - cyclical
 - - propagative
 - - cyclopropagative
 - III: Transovarian transmission

Scabies



ATHROPODS OF MEDICAL IMPORTANCE

<p>Class <i>Insecta</i> الحشرات</p>	<p>Class <i>Arachnida</i> العناكب</p>	<p>Class <i>Crustacea</i> القشريات</p>
<ul style="list-style-type: none"> • Muscid flies: Housefly, Tsetse fly. Myiasis-producing flies. • • Mosquitoes البعوض : <i>Anopheles, Aedes, Culex</i>. • Sandfly ذباب الرمل (<i>Phlebotomus</i>) • Black fly (<i>Simulium</i>) • Fleas البراغيث • Lice القمل (<i>Pediculus, Phthirus</i>) • Bugs البق : <i>Cimex, Triatoma</i> • Bees النحل 	<ul style="list-style-type: none"> • Scorpions العقارب • Spiders العناكب • Ticks القراد : Hard, Soft • Mites السوس -<i>Sarcoptes scabiei</i>, -Dust mites 	<ul style="list-style-type: none"> • Water flea (<i>Cyclops</i>) <div data-bbox="1972 1148 2405 1339" style="background-color: #ADD8E6; padding: 5px; margin-top: 20px;"> <p>Not very important this slide</p> </div>

IMPORTANT ARTHROPOD VECTORS FOR HUMAN DISEASES

House fly (<i>Musca domestica</i>)	Mechanical transmission of many viruses, bacteria and parasites.
Mosquitoes البعوض	Anopheles: Malaria filariasis Culex: Filariasis, Viruses Aedes: Yellow fever, Dengue fever, Rift Valley Fever
Lice القمل	Body louse: vector for: Relapsing fever, typhus and trench fever.
Fleas البراغيث	Rat flea is vector for plague due to <i>Yersinia pestis</i> .
Ticks القراد	Soft ticks , some are vestors for : <i>Borrela duttoni</i> Hard ticks Include vectors for Babesiosis (protozoa), Q fever, and Rocky mountain spotted fever :
Tse tse fly (<i>Glossina</i>) ذبابة التسي تسي	Vector for African Trynanosomiasis (African sleeping sickness)
Black fly (<i>Simulium</i>) الذبابة السوداء	Vector for <i>Onchocerca</i> (river blindness)
Sand fly (<i>Phlebotomus</i>) ذبابة الرمل	Vectors for Leishmania and Sand-fly fever virus .
Cyclops	Vector for <i>Dracunculus medinensis</i>

Only know these two

LICE

Louse (singular), Lice (plural)

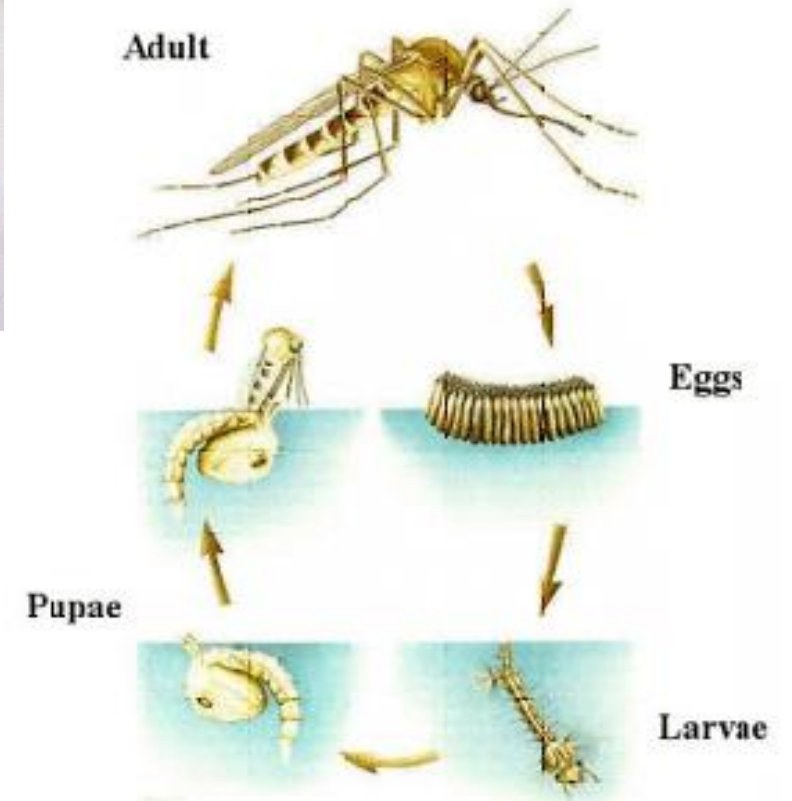
Pediculus humanus



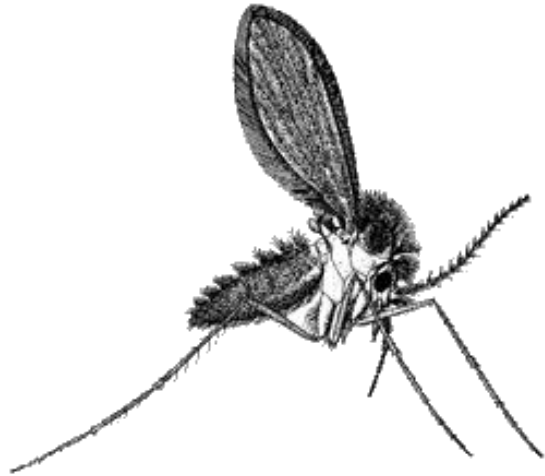
Mosquitoes



- Cosmopolitan , more than 3000 species.
- **Mosquitoes breed in water.**
- Larval and pupal stages always aquatic
- Mouth parts in female adapted to piercing and sucking blood.
- Genus and species distinguished by morphology of adult and deveopmetal stages.



Phlebotomus (Sand fly)



MCQ'S

1) Cestodes are segmented leaf like worms:

a)True b>false

2) Unfertilized eggs may be ingested but are not infective:

a)True b>false

3) Sand fly always causes leishmania:

a)True b>false

4)The female roundworm is longer than the male:

a)True b>false

4) A
3) B
2) A
1) B

Done By:

- عبد العزيز المانع
- ناصر القحطان
- مجد الرويتع
- أسامة عبدالقادر
- فراس السويداء
- عبدالعزيز النويبت
- سعيد الناصر
- يزيد السعدان
- خليل الهنداس
- آيه الدايل
- حنان خشيم
- منال الحمدان
- وجدا الهذلان
- جواهر العمران
- أمل أفراح
- الهنوف المهنا
- ظاهرة الجهني
- الجوهرة الدهش
- روى العوهلي
- نوف المسعود
- ريما الحماد
- ريما هزازي