

SCIENCE

Topic: PARASITOLOGY

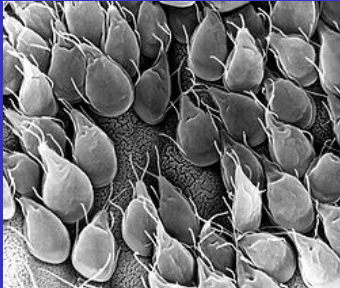
Class objective:

To provide an overview of parasites,
but to work out how much you already know!
(mostly common-sense general knowledge,
but in different context)

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PARASITOLOGY












Study of parasites



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PARASITE ASSEMBLAGES

Eukaryotic parasites

Protozoa			Arthropods		Helminths					
										
amoebae	flagellates	sporozoa	ciliates	ticks	mites	flies	insects	nematodes	cestodes	trematodes
						flies		roundworms	tapeworms	flatworms
						lice				flukes

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PARASITOLOGY

Type of symbiosis
("living together")

Parasite - gains benefit and causes harm to host
Cumulative harm results in clinical disease
(amenable to 'sensationalism')
(caution: vasovagal syncope)

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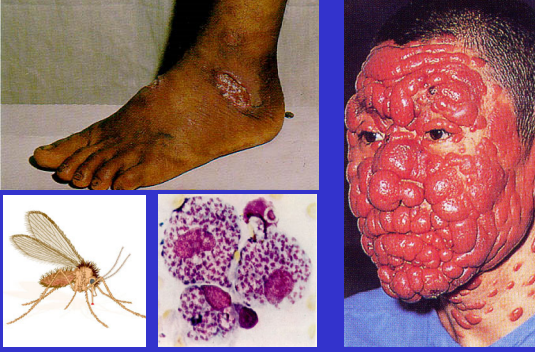
Protist: amoeba



Entamoeba

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Protist: flagellate



Leishmania

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Protist: sporozoan



Plasmodium

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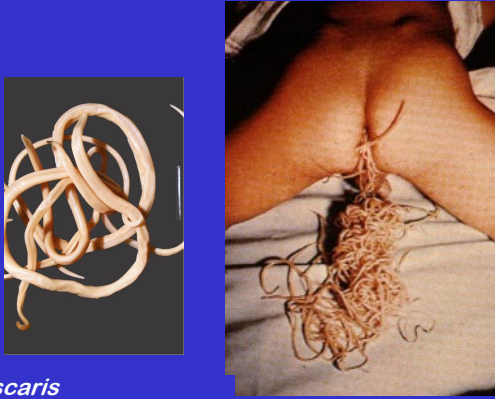
Protist: ciliate



Ichthyophthirius

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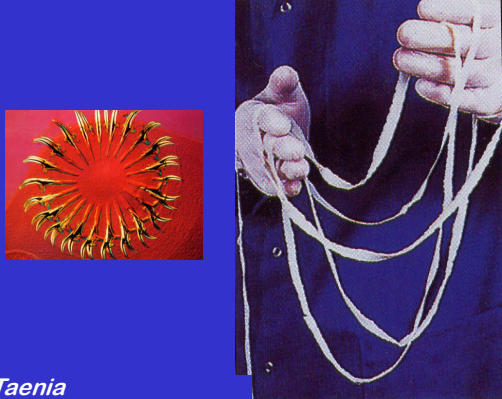
Helminth: nematode (roundworm)



Ascaris

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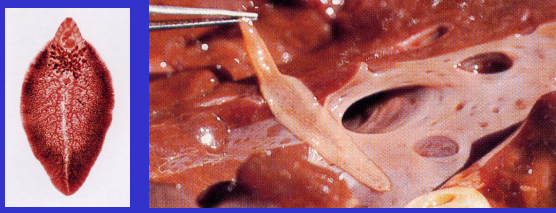
Platyhelminth: cestode (tapeworm)



Taenia

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Platyhelminth: trematode (flake)



Fasciola

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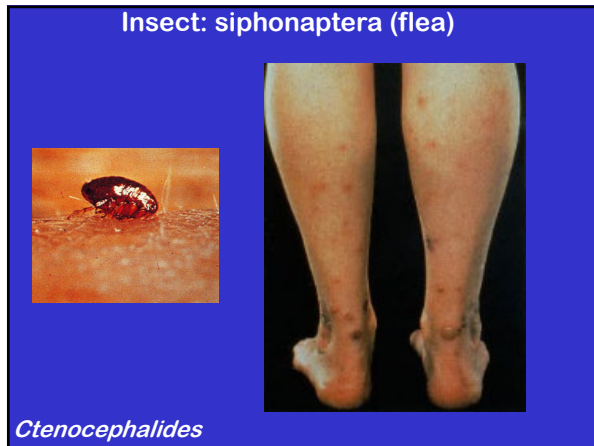
Insect: diptera (flies)



Anopheles

Hypoderma

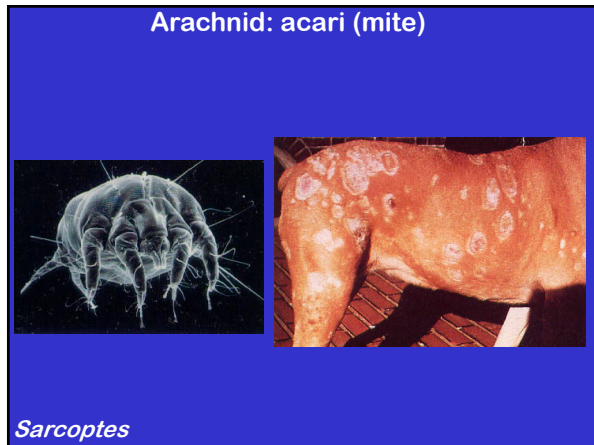
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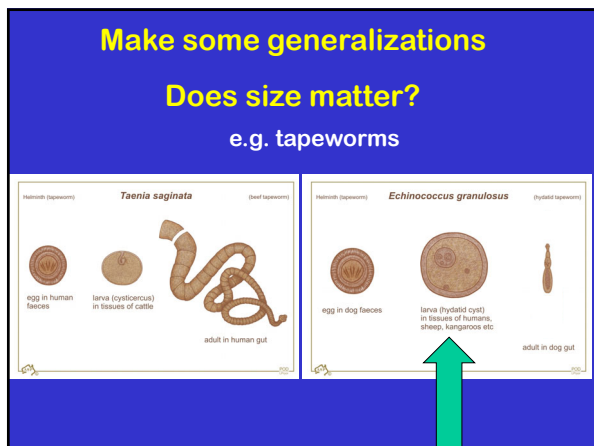
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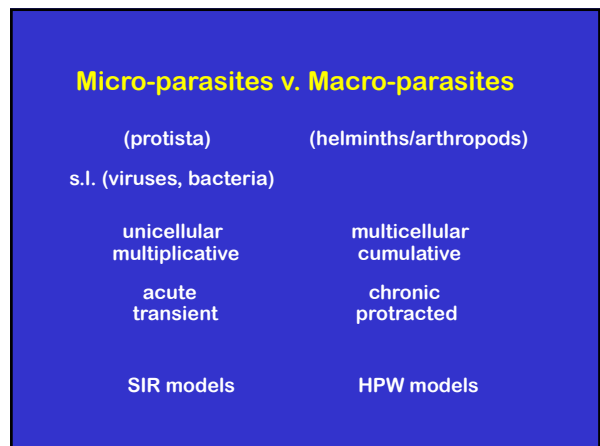
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Do you trust science?

e.g.
host specificity
viability
infectivity
pathogenicity/virulence
treatment (spectrum of reactivity)
control (disinfection)

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What can be done about parasitic infections/disease?

- Drugs (therapy/prophylaxis)
- Vaccines (prophylaxis/therapy)
- Management (prophylaxis)

Prevention is better than cure!
(but hard to prove)

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Mx of PARASIToses

Throw technology at it!
Huge advances in pharmacology, immunology
BUT profound problems with:
• emergence of drug resistance
• vaccine development
• cost
Complex problems often have simple solutions?

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Success story: *Dracunculus* (guinea worm)



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Transmission patterns

How are parasites transmitted?

Horizontally?
Vertically?

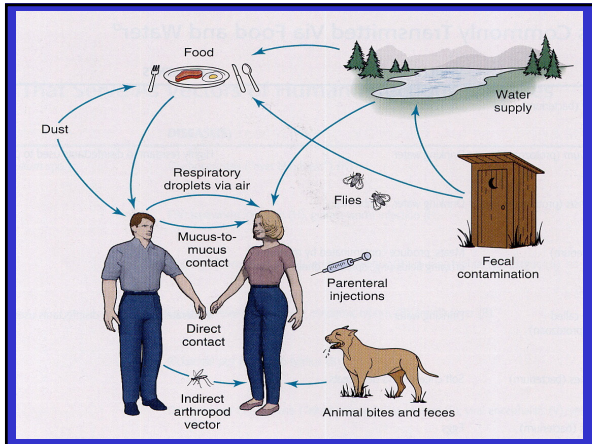
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Transmission patterns

Horizontally:
Faecal-oral
Vector-borne
Predator-prey
Direct contact
Respiratory

Vertically:
Transplacental
Transmammary

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Three **golden** rules
to manage
most infections!

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Avoid coprophagy

Personal hygiene
Public health
Water treatment
Sewage treatment

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Avoid haematophagy

Barriers
Insecticides
Biocontrol
(pathogens/pests/predators)

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Don't eat raw meat!



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Sensible zoophagy

Food production

Food storage

Food preparation

Food consumption

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Parasite control

Follow simple rules!

How to get the message out there?



It's all about EDUCATION!

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