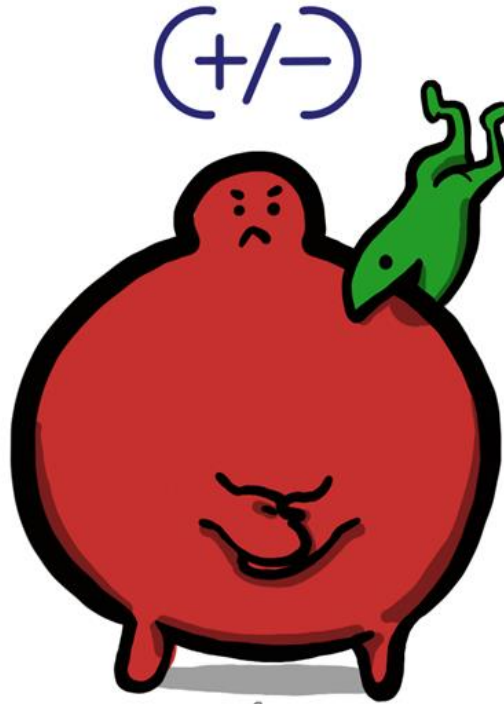


Introduction to Medical Parasitology



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Intended Learning Outcomes

- Define parasitology
- Differentiate between parasite, vector and host
- Described host-parasite relation
- Define core terms important in understanding the host-parasite relationship: parasite, pathogen, pathogenicity, disease, infection.
- Differentiate infection from diseases

parasite

حجمه اكبر من الفيروس والبكتيريا

Definitions

- **Medical parasitology** – the study of parasites which infect humans
- **Parasite** - one animal deriving its sustenance from another without making compensation. The uncompensated animal is the host.
- **Parasitology** - the science or study of host-parasite relationships.

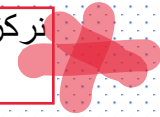
parasite; organism living in the host to give it protection and food

غير مستفيد\متضرر
يعني ما يستفيد باشي بس
parasite
بستفيد

مستفيد\متطفل
=parasite

Definitions

نركز بالمصطلحات ونفهمها لانها مهمة وييجي منها اسئلة



- **Host** - the partner providing food and/or protection. Some parasites require more than one host to complete their life cycle; Or may not require a host during some stage(s).
- **Definitive host** - the host in which sexual maturity and reproduction takes place.
- **Intermediate host** - the host in which the parasite undergoes essential development.
- **Reservoir (carrier) host** - the host harboring a parasite in nature, serving as a source of infection for other susceptible hosts. Reservoir hosts show no sign or symptom of disease.
- **Paratenic host** - an accidental host serving as a holding place for a parasite.

البراسايت يكون قادر على التكاثر

يكون قادر على النمو

ناقل من شخص لآخر

مثال; الحشرة وهي ماشية ممكن تلزق باي مادة بطريقها وتنقلنا اياها بطريقة غير مباشرة

Definitions

- 1 • **Symbiosis** - “living together,” a close association between two organisms. ثنين عايشين مع بعض العلاقة بينهم راح تكون على ثلاث اشكال
- 2 • **Mutualism** - both organisms are benefitted (bacteria in bowel). الثنين مستفيدين
- 3 • **Commensalism** - “eating at the same table;” One organism is benefitted, the other is unaffected. واحد مستفيد والثاني عادي لا مستفيد ولا متضرر
- **Parasitism** - one organism is benefitted at the expense of another (the host). الاول مستفيد والثاني متضرر وبصيرله مرض

Definitions

- **Eukaryote:** a cell with a well-defined chromosome in a membrane-bound nucleus. All parasitic organisms are eukaryotes
- **Protozoa:** unicellular organisms, e.g. Plasmodium (malaria)

البراسايت لما يكون بخلية وحدة بسميه
protozoa
- **Metazoa:** multicellular organisms, e.g. helminths (worms) and arthropods (ticks, lice)
- **An endoparasite:** “a parasite that lives within another living organism” – e.g. malaria, Giardia
- **An ectoparasite:** “a parasite that lives on the external surface of another living organism” – e.g. lice, ticks

Definitions

- **Zoonosis:** “a parasitic disease in which an animal is normally the host - but which also infects man”
امراض تنتقل من الحيوان للإنسان
- **Vector:** “a living carrier (e.g.an arthropod) that transports a pathogenic organism from an infected to a non-infected host”. A typical example is the female Anopheles mosquito that transmits malaria
هو أشهر نوع من الباعوض ينقل مرض الملاريا
- **Transmissibility:** The ability to spread from one host to another. This enables microorganisms to maintain the continuity of their species in the event of the death of the original host.

Parasitic Damage to Host

لما يدخل البراسايت بجسم الانسان ايش ممكن
يعمل !

- **Trauma** - damage to tissues, intestine, liver, eye.
- **Lytic action** - activity of enzymes elaborated by organism. تكسير الخلايا
- **Tissue response** - localized inflammation, eosinophilia.
- **Blood loss** - heavy infection with hookworm may cause anemia.
- **Secondary infections** - weakened host immunity susceptible to bacterial infection, etc.

hookworm;
الها اسم ثاني
Ancylostoma
زي كانه الها اسنان بتقدر تمسك بال
blood vessel
وتفقعها وتعمل
blood loss and anemia

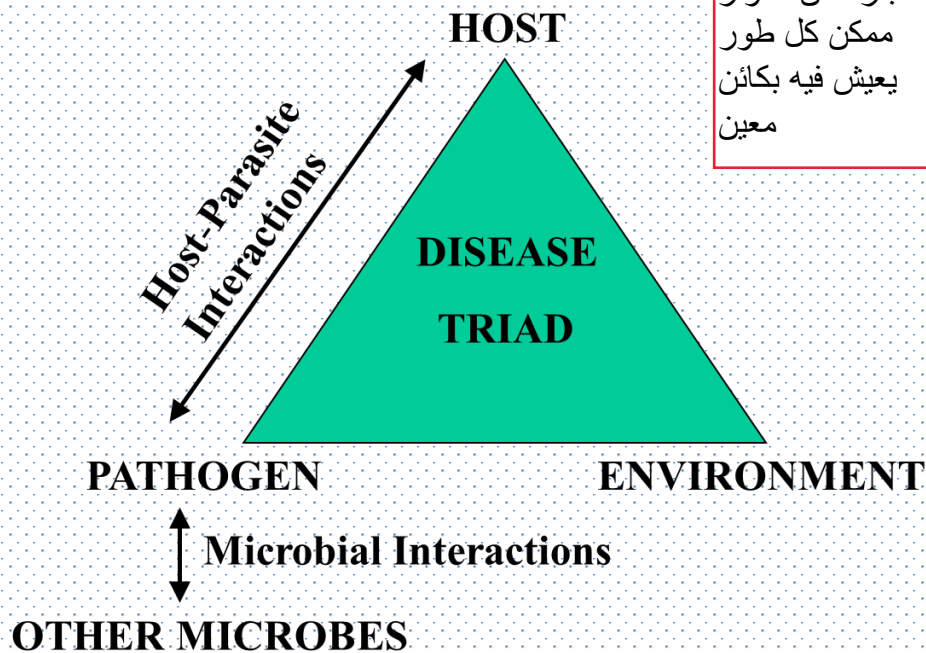
Modes of Infection

بيئة مش نظيفة

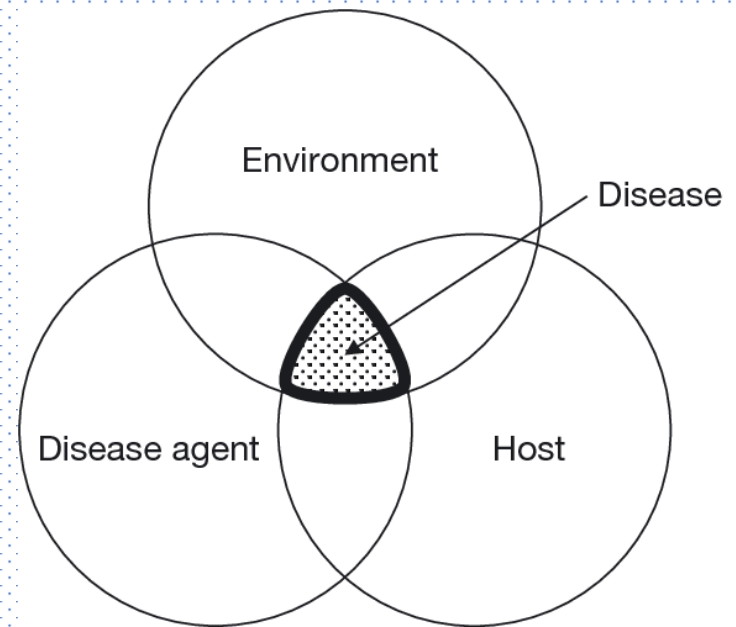
- **Filth-borne or contaminative** - where personal hygiene and community sanitation lacking. Infectious stages remain viable for long periods in contaminated soil. مي واطربة ملوثة
- **Soil or water-borne** - water or dirt which can contain eggs, etc.; Larvae can penetrate skin of bare feet or enter skin in infested water. اكل مش مستوي
- **Food-borne** - inadequately cooked beef, pork, fish, shell fish.
- **Arthropod-borne** - the most difficult of all to control. Mosquitoes transmitting malaria, etc. حشرة تنقل المرض من انسان لانسان

Host-Parasite Relationship

- ❖ Is characterized by the fighting of the organism to invade the body and the body defending itself by protective measures.



البراسايت اله
life cycle
عبارة عن اطوار
ممكن كل طور
يعيش فيه بكائن
معين



Pathogenicity Vs. Virulence

- **PATHOGENICITY:** the quality of producing disease or the ability to produce pathologic changes

مدى قوة المرض

- **VIRULENCE:** the disease-producing power of an organism or the degree of pathogenicity within a group or species

Infection Vs. Disease

INFECTION: the colonization and/or invasion of pathogenic microorganisms in the host with or without the manifestation of disease

اي كائن دخل جسم الانسان وعمل
colonization
سواء سبب مرض او ما سبب

These infections that are not manifested as clinical disease, are termed **subclinical** or **silent infection**.

DISEASE: is the destruction of host tissue by the organism due to invasion of tissues, toxin production or other virulence factors

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الانسان وسبب مرض
وظهرت الاعراض

Thank You