Histopathology: Overview

Dr. K. Premkumar
Associate Professor
Dept of Biomedical Science
Bharathidasan University

Pathology

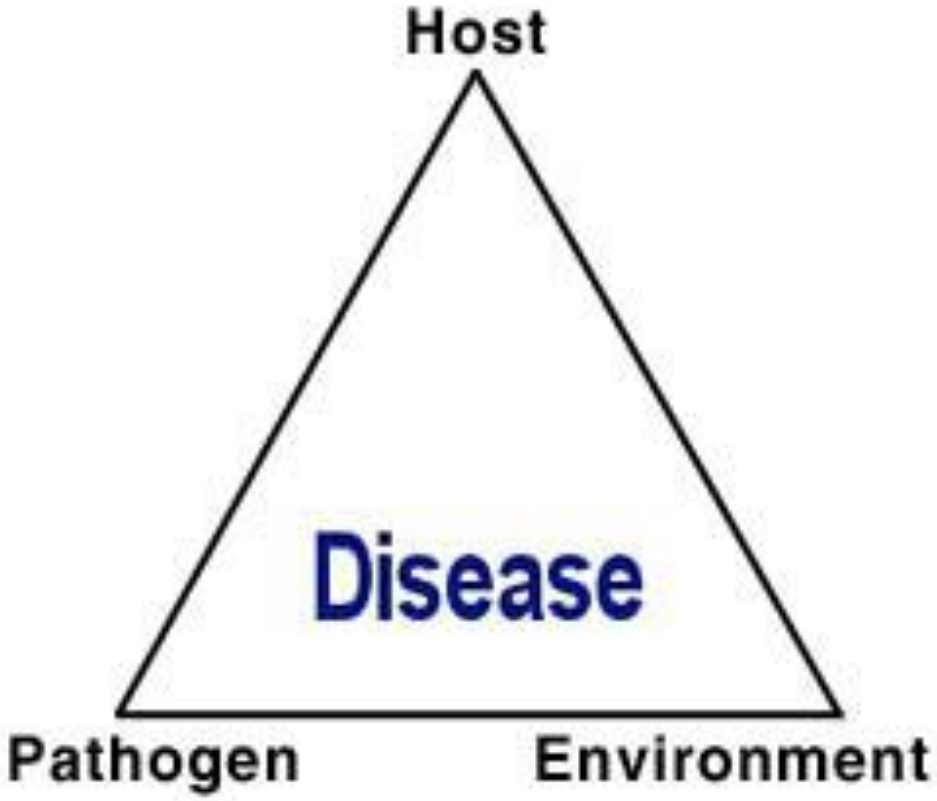
- Pathology is the study (*logos) of suffering/diseases* (*pathos)*

- Clinical practice to investigates of the causes (etiology) of the diseases and the mechanism (pathogenesis)

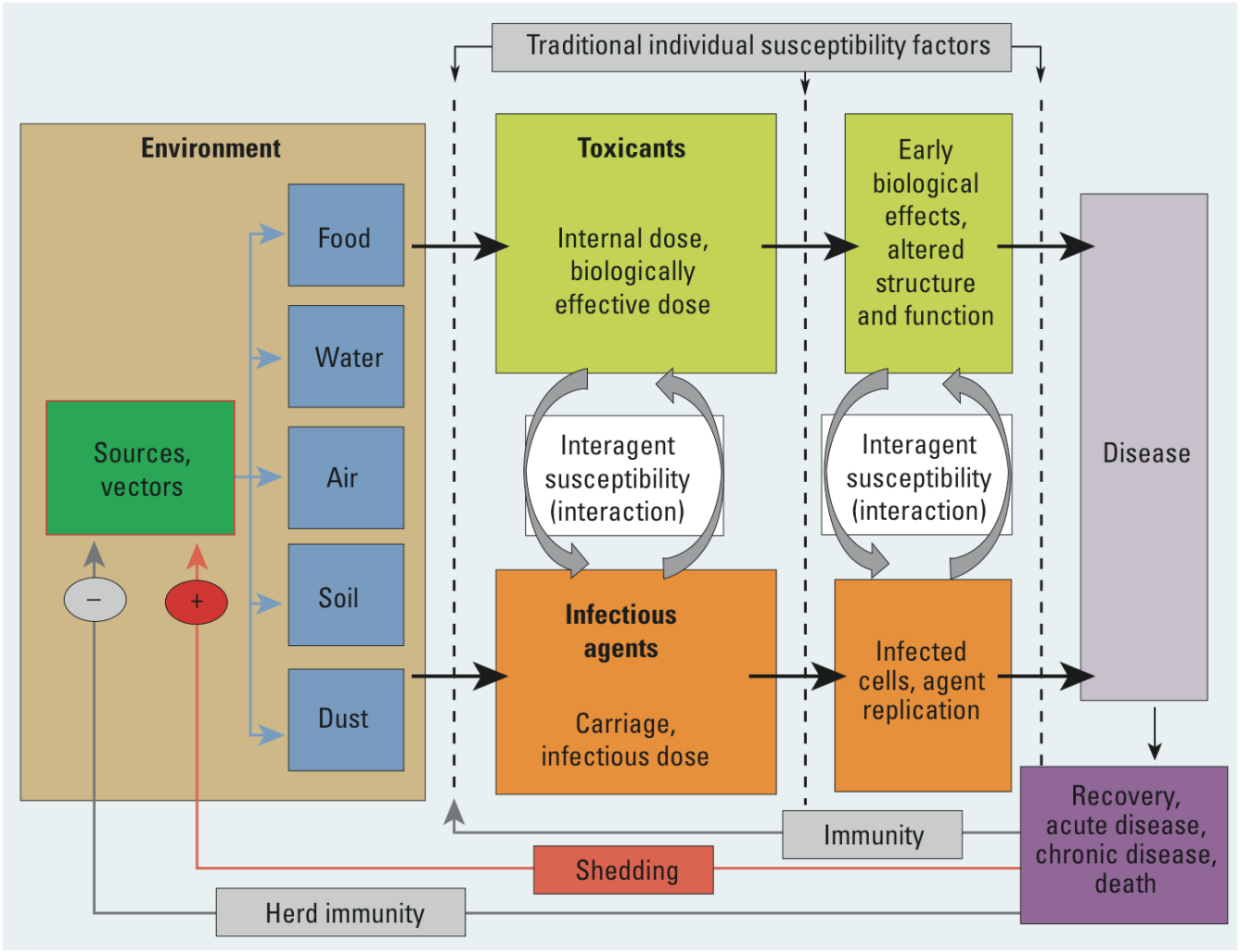
Etiology study of the cause of the disease

- Idiopathic – no identifiable causes
- Iatrogenic – occur as a result from medical treatment
- Congenital – disease existing at birth or before birth, involves in the development of fetus
- Acquired - develops post –fetally
- Nosocomial – due to being in a hospital
- Environments

The Disease Paradigm (simplified)



The Disease Paradigm (Complex)



Diagnosis

- Refers to the process of attempting to determine or identify a possible disease or disorder.

Prognosis

- Refers to the expected outcome of a disease

- **Signs** – objective alteration that can be observe or measured by another person; pulse rate, blood pressure, Temperature etc

- **Symptoms** – subjective experiences reported by the person, complains such as pain, nausea, vomiting etc

Epidemiology

- Is the study of tracking patters of disease occurrence and transmission among populations and by geographic areas.

- Incidence of a disease– is the number of new cases occurring in specific time of period

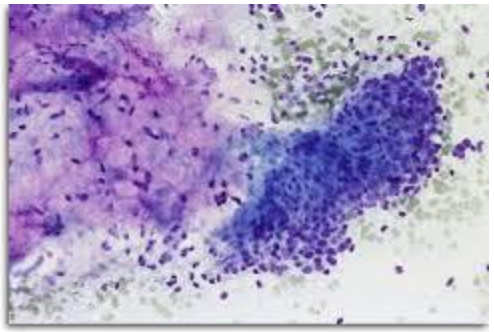
- Prevalence of a disease – is the number of existing cases within a populations during the specific time of period.

Subdivision of Pathologists

- Experimental pathologists – scientists spending most of their time in research
  - Investigate cause and mechanisms of disease
  - Jobs include – research and teaching

Anatomic Pathologists

- Perform autopsies, examine all tissues removed from live patients, and examine cell preparations to look for cancer cells
  - Includes:
    - Autopsy pathology
    - Surgical pathology
    - Cytopathology
    - Molecular (DNA, RNA) diagnosis



Clinical Pathologists

- Analyze various specimens removed from patients, such as blood, urine, feces, spinal fluid, or sputum for chemical substances, microorganism, antigens and antibodies, nucleic acids, atypical blood cells, and coagulation factors
  - Includes:
    - Chemistry
    - Microbiology
    - Hematology
    - Blood Banking
    - Immunopathy
    - Molecular Diagnosis