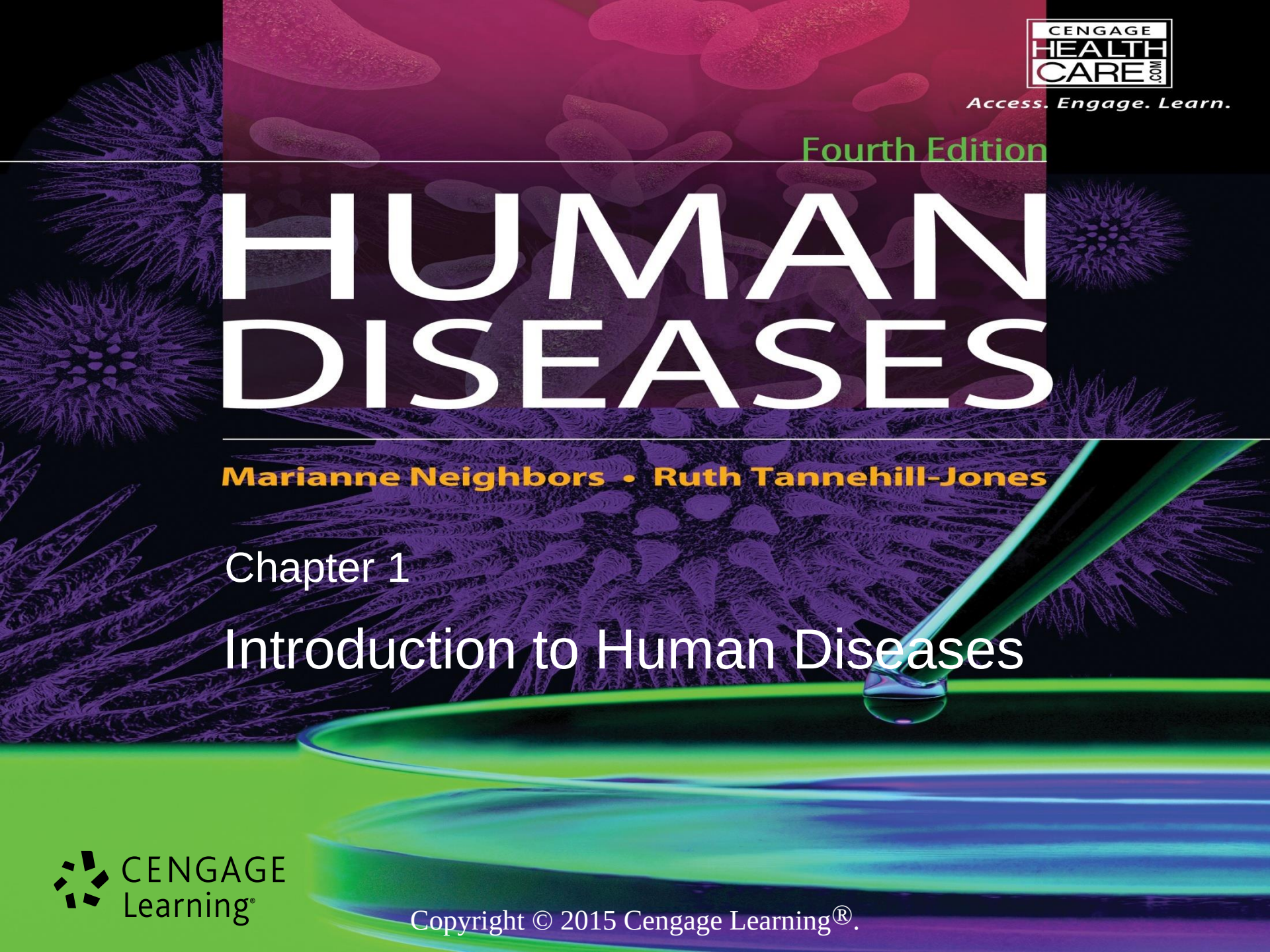
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HUMAN DISEASES
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Chapter 1
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The Basics:

OBJECTIVES/RATIONALE

Pathology is a result of disease and changes in homeostasis. The student will understand the mechanisms of pathology.

Concept

- Homeostasis
  - State of normalcy
  - The process of maintaining normal balance within the body
  - When homeostasis is not maintained, ***disease*** ensues.
  - Normal range or limits

Key Terms

- Pathology
  - Study of disease
- Pathologist
  - One who studies disease

Two common specialties are:

1. anatomic pathology – pathologists who perform autopsies to determine cause of death

2. clinical pathology – pathologists who review lab specimens to determine evidence of abnormal tissue, presence of chemicals

Some specifics about pathologists

- Experimental → research
- Academic → teaching
- Anatomic → clinic examinations
- Surgical → biopsies during surgery
- Clinical → laboratory study
- Hematology → blood
- Immunology → antigen & antibodies
- Microbiology → microorganisms **(pathogens)**

How to become a pathologist?

1. Doctor

   Bachelors degree, MCAT, Med school ; residency ; fellowships

2. Clinical Scientist

   Graduate student with higher degrees/certifications and most likely PhD's often in microbiology

3 Key Terms

- Disease
  - Change from normal; symptoms occur with a pathologic state present; due to alterations of homeostasis
- Disorder
  - Abnormality of function
- Syndrome
  - Symptoms caused by specific disease

Lets ID these terms:

- Vitamin D deficiency
- Leukemia
- AIDS
- Pneumonia
- Down
- Arthritis

- Disease?
- Disorder?
- Syndrome?

- Which of the terms can be synonymously used?

Key Terms

- Pathogens
  - Microorganisms or agents that cause disease
  - What are some?
- Pathologic
  - Caused by disease process
- Pathogenesis
  - Description of how a particular disease progresses
    - Acute: Short-term with sudden onset
    - Chronic: Long-term or slow healing process

Pathogenesis

Example: common cold

1. Cause = exposure & inoculation of cold virus

2. Incubation time = virus multiplies

3. Manifestation = host begins to have signs and symptoms (sore throat, itchy eyes, runny nose, etc.)
4. Recovery = return to previous state of health

Sort Examples

ACUTE **CHRONIC**

middle ear infection

diabetes mellitius

hypertension

laceration

asthma

UTI (urinary tract infection)

hematoma

broken clavical

cyctic fibrosis

gasroenteritis

Etiology

- Cause of disease
- Idiopathic
  - Cause unknown
- Iatrogenic
  - Problem related to treatment
  - EX: anemia in chemotherapy patients
- Nosocomial
  - Disease acquired from hospital environment
  - EX: MRSA infection from hospital procedure/exposure

STANDARD PRECAUTIONS–pg 6

1. Hand Washing – antimicrobial soaps; elbow greetings
2. Respiratory Etiquette – cover mouth; 3 ft distance
3. Gloves –change between patients & contact
4. Masks & Face Shields –protects patient & caregiver
5. Gowns- should not be worn out of hospital
6. Equipment-clean properly
7. Disinfecting & Sterilizing Environment
8. Linens- change frequently
9. Blood – Borne Pathogens – Sharps container

Predisposing Factors

- Age
- Sex
- Environment
- Lifestyle
- Heredity
- Stress
- Pre existing illness

Diagnosis

- Identification or naming of disease
- Medical history
- Physical examination
- Diagnostic tests

Diagnosis

- Symptoms or Manifestations
  - Problems reported by patient- pain, upset stomach
- Signs
  - Examples: temperature, blood pressure, respiratory rate, abnormal heart sounds, mass, enlarged organs, edema (swelling)
  - What physician sees or measures
- Skills used by physician:
  - Auscultation
  - Palpation
  - Percussion

Diagnosis

- Diagnostic tools – page 8
  - Urinalysis
  - CBC (complete blood count)
  - Chest X-ray
  - EKG or ECG

Prognosis

- Prognosis
  - Expected outcome including length of time
- Acute
  - Sudden onset with short duration
- Chronic
  - Insidious and long-lasting

Prognosis

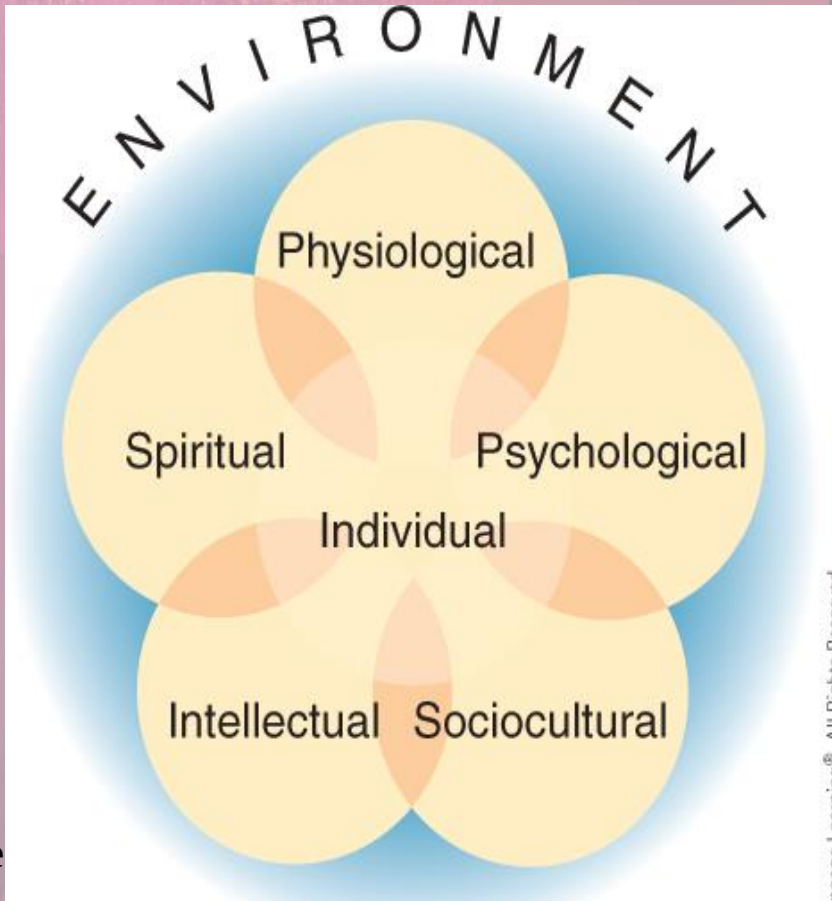
- Remission
  - Disappearance of symptoms
  - EX:
- Exacerbation
  - Flare-up of symptoms
  - EX:
- Complication
  - Onset of second disease or disorder
  - EX:

Prognosis

- Survival Rate
  - Prognosis for the % of people still living after diagnosis
- Mortality Rate
  - Mortal or subject to death
- Fatal/lethal
  - Deadly

Treatment – Holistic Medicine

- Holistic medicine
  - Consideration of whole person
    - Rather than just physical symptoms
  - Interaction between spiritual, cognitive, social, physical, and emotional areas
  - Areas work interdependently



Treatment

- Interventions:
  - Medication
  - Surgery
  - Exercise
  - Nutrition
  - Physical therapy
  - Education

Treatment

- Preventive
  - Care given to prevent disease- best choice
- Palliative
  - Care given to prevent discomfort, but not cure
  - End of life treatments often using hospices

Medical Ethics – page 10

- Complicated by technological advances
- Difficult as touch core of our humanity
- Role of ethics committee
- Economic concerns