robbins basic Pathology

10th edition

# Cell Injury, cell death, and adaptations

## ~~Introduction to Pathology~~

## ~~Overview of Cellular Responses to Stress and Noxious Stimuli~~

## ~~Causes of Cell Injury~~

## ~~Sequence of Events in Cell Injury and Cell Death~~

### ~~Reversible Cell Injury~~

### ~~Cell Death~~

### ~~Necrosis~~

### ~~Apoptosis~~

### ~~Other Pathways of Cell Death~~

### ~~Autophagy~~

## ~~Mechanism of Cell Injury and Cell Death~~

### ~~Hypoxia and Ischemia~~

### ~~Ischemia-Reperfusion Injury~~

### ~~Oxidtive Stress~~

### ~~Cell Injury Caused by Toxins~~

### ~~Endoplasmic Reticulum Stress~~

### ~~DNA Damage~~

### ~~Inflammation~~

### ~~Common Events in Cell Injury From Diverse Causes~~

## Cellular Adaptations to Stress

### Hypertrophy

### Hypotrphy

### Atrophy

### Metaplasia

## Intracellular Accumulations

## Pathologic Calcification

## Cellular Aging

# Inflammation and repair

## ~~Overview of Inflammation: Definitions and General Features~~

## ~~Causes of Inflammation~~

## ~~Recognition of Microbes and Damaged Cells~~

## ~~Acute Inflammation~~

### ~~Reactions of Blood Vessels in Acute Inflammation~~

### ~~Leukocyte Recruitment to Sites of Inflammation~~

### ~~Phagocytosis and Clearance of the Offending Agent~~

### ~~Leukocyte-Mediated Tissue Injury~~

### ~~Other Functional Responses of Activated Leukocytes~~

### ~~Termination of the Acute Inflammatory Response~~

## Mediators of Inflammation

### ~~Vasoactive Amines: Histamine and Serotonin~~

### Arachidonic Acid Metabolites

### Cytokines and Chemokines

### Complement System

### Other Mediators of Inflammation

## Morphologic Patterns of Acute Inflammation

### Serous Inflammation

### Fibrinous Inflammation

### Purulent (Suppurative) Inflammation, Abscess

### Ulcers

## Outcomes of Acute Inflammation

## Chronic Inflammation

### Causes of Chronic Inflammation

### Morphologic Features

### Cells and Mediators of Chronic Inflammation

## Systemic Effects of Inflammation

## Tissue Repair

### Overview of Tissue Repair

### Cell and Tissue Regeneration

### Repair by Scarring

### Factors That Impair Tissue Repair

### Clinical Examples of Abnormal Wound Healing and Scarring

# Hemodynamic Disorders, Thromboembolism, and Shock

## Hyperemia and Congestion

## Edema

### Increased Hydrostatic Pressure

### Reduced Plasma Osmotic Pressure

### Lymphatic Obstruction

### Sodium and Water Retention

## Hemorrhage

## Hemostasis and Thrombosis

### Normal Hemostasis

### Thrombosis

### Disseminated Intravascular Coagulation (DIC)

## Embolism

### Pulmonary Thromboembolism

### Systemic Thromboembolism

### Fat Embolism

### Amniotic Fluid Embolism

### Air Embolism

## Infarction

### Factors That Influence Infarct Development

## Shock

### Pathogenesis of Septic Shock

### Stages of Shock

# Neoplasia

## Nomenclature

### Benign Tumors

### Malignant Tumors

## Characteristics of Benign and Malignant Neoplasms

### Differentiation and Anaplasia

### Local Invasion

### Metastasis

## Epidemiology

### Cancer Incidence

### Environmental Factors

### Age and Cancer

### Acquired Predisposing Conditions

### Interactions Between Environmental and Genetic Factors

## Cancer Genes

## Genetic Lesions in Cancer

### Driver and Passenger Mutations

### Epigenetic Modifications and Cancer

## Carcinogenesis: A Multistep Process

## Hallmarks of Cancer

### Self-Sufficiency in Growth Signals

### Insensitivity to Growth Inhibitory Signals: Tumor Suppressor Genes

### Altered Cellular Metabolism

### Evasion of Cell Death

### Limitless Replicative Potential (Immortality)

### Sustained Angiogenesis

### Invasion and Metastasis

### Evasion of Immune Surveillance

### Tumor-Promoting Inflammation as an Enabler of Malignancy

## Etiology of Cancer: Carcinogenic Agents

### Chemical Carcinogens

### Radiation Carcinogenesis

### Viral and Microbial Oncogenesis

## Clinical Aspects of Neoplasia

### Effects of Tumor on Host

### Grading and Staging of Cancer

### Laboratory Diagnosis of Cancer

# General Pathology of Infectious Diseases

## General Principles of Microbial Pathogenesis

### Categories of Infectious Agents

## The Microbiome

## Techniques for Identifying Infectious Agents

## Newly Emerging and Reemerging Infectious Diseases

## Agents of Bioterrorism

## Transmission and Dissemination of Microbes

### Routes of Entry of Microbes

### Spread and Dissemination of Microbes Within the Body

### Transmission of Microbes

## How Microorganisms Cause Disease

### Mechanisms of Viral Injury

### Mechanisms of Bacterial Injury

### Injurious Effects of Host Immune Responses

## Immune Evasion by Microbes

## Spectrum of Inflammatory Responses to Infection

### Mononuclear and Granulomatous Inflammation

### Cytopathic-Cytoproliferative Reaction

### Tissue Necrosis

### Chronic Inflammation and Scarring

### Infections in Individuals With Immunodeficiencies