

Session 6: Clinical Immunology

Text Chapters 12, 13, 14, 15, 16

Time: 10 Class periods

Objectives: Now that you understand the functioning immune system and how it defends the host against infectious disease, it is important to understand how it 'overreacts' (to innocuous non-self antigens and then to self antigens) to cause tissue damage. We will study the four classes of hypersensitivity and autoimmunity reactions. Lastly, we will study how the immune system can be manipulated to prevent infectious disease and inhibit tissue graft rejection, and how the immune system provides for surveillance against the development of cancer.

Chapter 12 – Over-Reactions of the Immune System

Intro *Read* Define: Hypersensitivity and allergic reactions.

12-1 *Read very carefully* Understand well the 4 classes of reactions (Fig 12.2).

Part I – Type I Hypersensitivity Reactions

Intro *Read* Define: Sensitized.

12-2 *Read* Understand Fig 12.3.

12-3 *Read* Review Fig 12.5.

12-4 *Read carefully* Review Figs 12.6 & 12.7. How does aspirin work?

12-5 *Read* Review Figs 12.9 to 12.10. Understand basic activities of eosinophils and basophils.

12-6 *Read* Review Fig 12.11.

12-7 *Read* Review Figs 12.12 to 12.14.

12-8 *Read* Review Fig 12.15.

12-9 *Read* Review Fig 12.17.

12-10 *Read carefully* Read Fig 12.18.

12-11 *Read carefully* Define: Anaphylaxis. Read Fig 12.19.

12-12 *Read* Review the language for general significance. Review Figs 12.21 & 12.22.

12-13 *Read* Review the language for general significance. Review Fig 10.24.

12-14 *Read* Review Fig 12.25.

12-15 *Read*

12-16 *Read carefully* Define: Desensitization.

Summ *Read*

Part 2 - Types II, III and IV Hypersensitivity Reactions

Intro *Read*

12-17 *Read carefully* Review Figs 12.26, 12.27 & 12.28.

12-18 *Read*

12-19 *Read carefully* Read Figs 12.31 & 12.32.

12-20 *Read* Review Figs 12.33 & 12.34.

12-21 *Read*

12-22 *Read carefully* Define: Delayed type hypersensitivity. Review Fig 12.35 and Read Figs 12.36 & 12.37.

12-33 *Read*

12-24 *Read*

Summ *Read*

Summary to Chapter 12 Read

Chapter 13 – Disruption of Healthy Tissue by the Immune Response

Intro Read Define: Autoimmune diseases and tolerance.

Part 1 – Autoimmune Diseases

Intro *Read*

13-1 *Read carefully* Review Fig 13.1 for reference.

13-2 *Read* Review.

13-3 *Read carefully* Understand Fig 13.2. Review Fig 13.3.

13-4 *Read* Understand endocrine glands as special targets for autoimmune disease (Fig 13.5)

13-5 *Read carefully* Understand autoimmune thyroid disease. Read Fig 13.6.

13-6 *Review*

13-7 *Review*

13-8 *Read carefully* Understand autoimmune diabetes. Review Fig 13.9.

13-9 *Read carefully* Understand SLE. Review Fig 13.10.

13-10 *Read carefully* Understand rheumatoid arthritis. Review Fig 13.12.

13-11 *Review*

13-12 *Read carefully* Understand multiple sclerosis and myasthenia gravis. Review Figs 13.15 & 13.16.

Summ *Read*

Part 2 – Genetic and Environmental Factors that Predispose to Autoimmune Disease

Intro *Read* Review Fig 13.18.

13-13 *Read.* Review Fig 13.19.

13-14 *Review*

13-15 *Review*

13-16 *Read* Understand significance of Fig 13.22.

13-17 *Read* Review Figs 13.2 & 13.24.

13-18 *Review*

13-19 *Review*

13-20 *Read* Review Fig 13.28.

13-21 *Review*

13-22 *Read* Read Fig 13.31. Review Fig 13.32.

13-23 *Read* Review Figs 13.33 & 13.34.

13-24 *Read* Review Fig 13.36.

13-25 *Read*

13-26 *Read*

Summ *Read*

Summary to Chap 13 *Read*

Chapter 14 – Vaccination to Prevent Infectious Disease

Intro *Read*

14-1 *Read very carefully* Understand the language well. *Read* Figs 14.1 & 14.2.

14-2 *Read very carefully* Understand the language well. *Review* Fig 14.3.

14-3 *Read* Define: Adjuvant. *Review* Fig 14.4.

14-4 *Read carefully*

14-5 *Read* Define: Herd Immunity. *Review* Fig 14.6.

14-6 *Read* *Review* Figs 14.7 to 14.9.

14-7 *Read* *Review* Fig 14.10.

14-8 *Read*

14-9 *Read*

14-10 *Read*

Summary to Chap 14 *Read*

Chapter 15 – Transplantation of Tissues and Organs

Intro *Read*

15-1 *Read very carefully* Understand the language very well. *Review* Fig 15.1.

15-2 *Review*

Part 1 – Transplantation of Solid Tissues

Intro *Read*

15-3 *Review* *Review* Fig 15.3

15-4 *Review* *Review* Fig 15.4

15-5 *Review* *Skip* the cartoon.

15-6 *Read* *Review* Fig 15.7.

15-7 *Read carefully* Understand Figs 15.8.

15-8 *Review* *Review* Fig 15.9.

15-9 *Read* *Review* Figs 15.10 to 15.12.

15-10 *Read*

15-11 *Read*

15-12 *Read* *Review* Fig 15.15. Understand action of prednisone.

15-13 *Read* Understand action of azathioprine, cyclophosphamide and methotrexate.

15-14 *Read* Understand use of cyclosporine A, FK506 and rapamycin. *Review* Figs 15.18 & 15.19.

15-15 *Read*

15-16 *Read* Pigs?

15-17 *Review*

Summ *Read*

Part 2 – Transplantation of Hematopoietic Stem Cells

Intro *Read*

15-18 *Review*

15-19 *Review*

15-20 *Read* *Review* Fig 15.26.

15-21 *Review*

15-22 *Read carefully* Define: GVHD.

15-23 *Review*

15-24 *Review*

15-25 *Review*

Summ *Review*

Summary to Chap 15 *Read*

Chapter 16 – Cancer and Its Interactions with the Immune System

Intro *Read*

16-1 *Read very carefully* Understand the language. *Review* Fig 16.1.

16-2 *Read carefully* *Review* Fig 16.3.

16-3 *Read* *Read* Fig 16.4.

16-4 *Read* *Read* Fig 16.5.

16-5 *Read*

16-6 *Read* *Review* Fig 16.7.

16-7 *Read* Define: Tumor specific antigens. *Review* Fig 16.9.

16-8 *Review*

16-9 *Review* *Review* Fig 16.13.

16-10 *Read* *Review* Fig 16.15.

16-11 *Read*

16-12 *Review*

16-13 *Skip*.

16-14 *Read carefully* *Review* Figs 16.18, 16.19, 16.21 & 16.22.

Summary to Chapter 16 *Read*