Recommended knowledge in Tissue Degeneration and Regeneration

Cardiovascular

1) Structure and function of the cardiovascular and lymphatic system ("Pathophysiology" Chap 31)
2) Alterations of cardiovascular function ("Pathophysiology" Chap 32)

References:

Metabolism

1) Energy homeostasis
2) Regulation of body weight

References:
1. Book chapter
Dulloo AG. Energy balance and body weight homeostasis.
Chapter 6, Clinical Obesity in Adults and Children. 3rd edition; edited by Peter G. Kopelman, Ian D. Caterson and William H. Dietz, Willey-Blackwell publishers, Sussex, UK, pp67-81
Document provided on the master's moodle main page

2. Pubmed chapter article
Broskey NT, Johannsen D, Redman L. Regulation of Body Weight in Humans.

Hypoxia

1) Hypoxia and oxygen sensing
2) Erythropoietin and erythrocytosis

References:

Contacts:
Cardiovascular and theme
Prof. Zhihong Yang
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Metabolism
Dr. Yann Ravussin

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Hypoxia

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Recommended prerequisites/knowledge in Infection, Inflammation and Cancer

Infection

1. 1) Mechanisms of action of antibiotics
2. 2) Biochemical and molecular mechanisms of resistance of antibiotics
3. 3) Principle bacterial species responsible of infections for humans
4. 4) Diagnostic techniques of bacteriology in clinical bacteriology

References:

Any Infection and Microbiology Book, e.g. Medical Microbiology: With STUDENTCONSULT online access, 18e (Greenwood, Medical Microbiology) 18th Edition by David Greenwood BSc PhD DSc FRCPath (Editor), Richard C. B. Slack MA MB BChir FFPHM MRCPath DRCOG (Editor), Michael R. Barer MBBS PhD FRCPath (Editor), Will L Irving (Editor)
Series: Greenwood, Medical Microbiology
Paperback: 794 pages

Publisher: Churchill Livingstone; 18 edition (August 6, 2012) Language: English
ISBN-10: 0702040894

Inflammation (Immunology)

1. Concept of Inflammation
2. Innate Immunity
3. Acquired Immunity
4. Immune Cells
5. Immune Factors, including Cytokine, Chemokines,
6. Antigen Processing and Antigen Presentation
7. Concept of Danger Signals, including TOLL Receptors
8. Immune Organs, including Thymus, Spleen, Lymph nodes, Mucosa Associated Immune Tissue
9. Concept of Tolerance, Energy and Allergy
10. Concept of Vaccine
11. Concept of Memory

References:

Any Immunology Book, e.g. Immunology at a Glance, 10th Edition J. H. L. Playfair, B. M. Chain
ISBN: 978-0-470-67303-4
120 pages
Wiley-Blackwell

Cellular and Molecular Immunology, 8th Edition A.K. Abbas, A.H. Lichtman, S. Pillai
ISBN: 978-0-323-22275-4
533 pages

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Cancer

1. The concept of genetic/epigenetic origin of cancer
2. The notion of clonal evolution of cancer
3. The main hallmarks of cancer
4. The notion of tumor – host interaction
5. The principle of the metastatic cascade
6. Some basic principles of therapy (chemo, radio, targeted, immuno)

References:
The Biology of Cancer (2nd edition)
Robert A. Weinberg
Publisher: Garland Science
May 18, 2013
ISBN-10: 0815342209
Pages: 876
English

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Infection

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Cancer

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Recommended knowledge in Neuroscience

1. Anatomical and functional organization of the nervous system
2. Neurons and glial cells: structural characteristics, general properties, main subtypes
3. Bases of neuronal excitability: resting membrane potential and action potentials
4. Synaptic transmission: types of synapses, neurotransmitters systems, synapses ultrastructure and function, synaptic integration
5. Bases of synaptic plasticity
6. Development and differentiation of the nervous system
7. Fundamentals of some essential brain functions: motor, autonomic, and cognitive (perception, memory, language, executive functions)
8. Basic principles of human neuroimaging (EEG and fMRI) and neurostimulation (TMS)

References:


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