USMLE
Basics to know

When to take exams?

What should you expect?

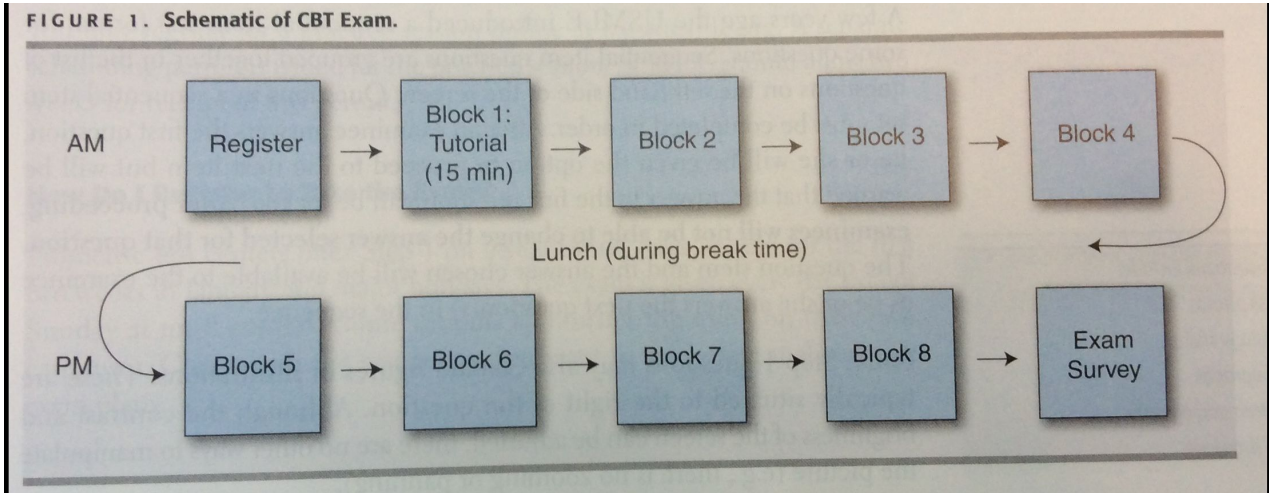
Step 1

- most important
- TESTS: principles and mechanisms
- the higher score the better chance
- electives + residency
- where: Frankfurt, Munich, Zagreb
- how much: $1,055 (around 27 000,- Kč)

  foundation for successful takers provided by faculty will pay you the whole amount back
- attempt: after pharmacology

Step 1 format

- 8-hour exam, computer-based test
- total of 308 multiple-choice items divided into 7 blocks of 44 items (60 min/block)
- 45 minutes of break time, plus another 15 if you skip the tutorial
- one-best answer



Step 1 content

- anatomy
- histology, embryology, molecular and cell biology
- behavioral sciences
- biochemistry, genetics
- biostatistics and epidemiology
- microbiology, immunology
- pathology
- pharmacology
- physiology

Step 2

- CK:
  - TESTS: applying knowledge
  - attempt: after Internal medicine state exam

- CS:
  - standardized patients
  - attempt: after Internal medicine state exam
  - electives

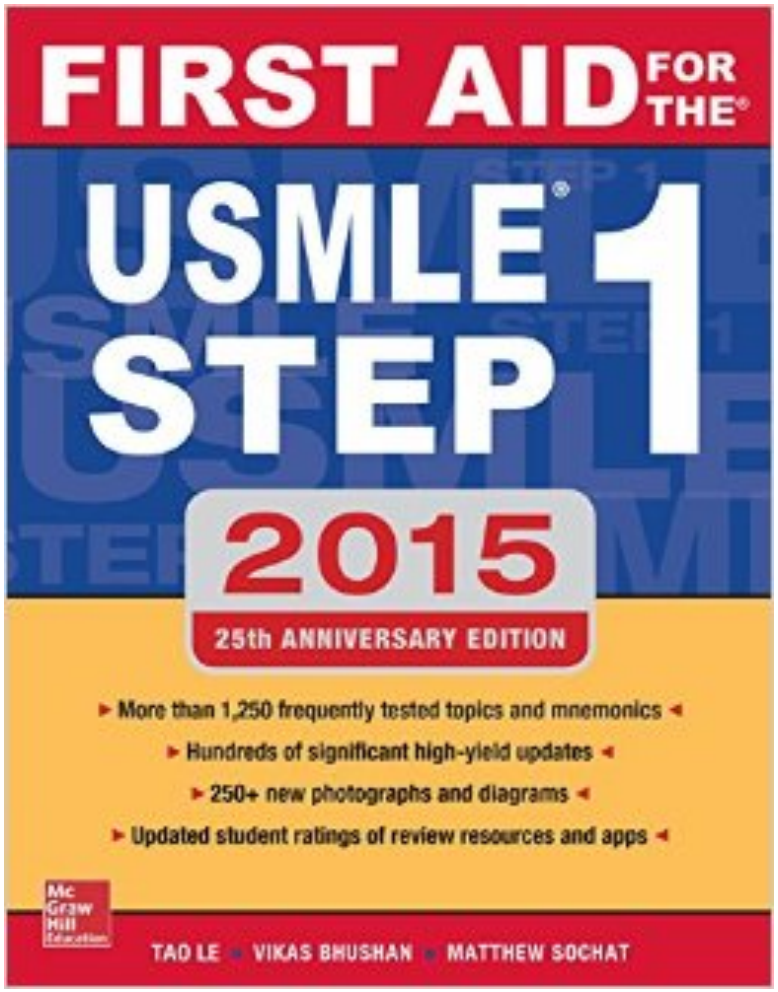
USMLE Step 1
Study Materials

Are there any books that would specifically target the USMLE content?

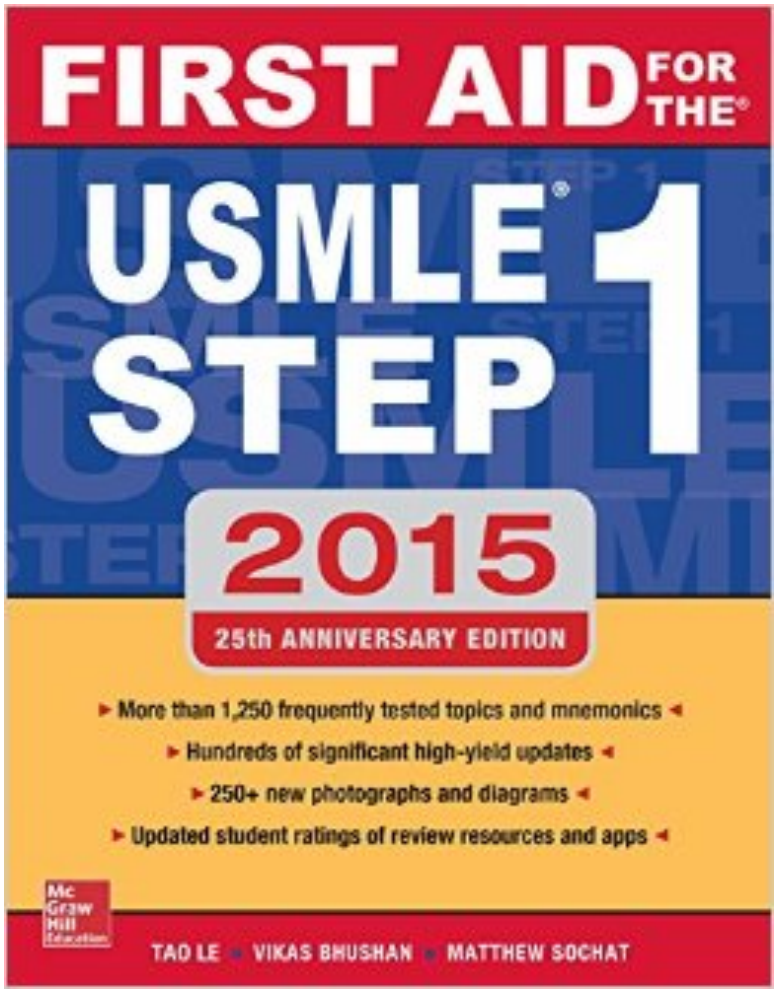
Or do I have to revise the same books once again?

1. Review Books

MUST HAVE!

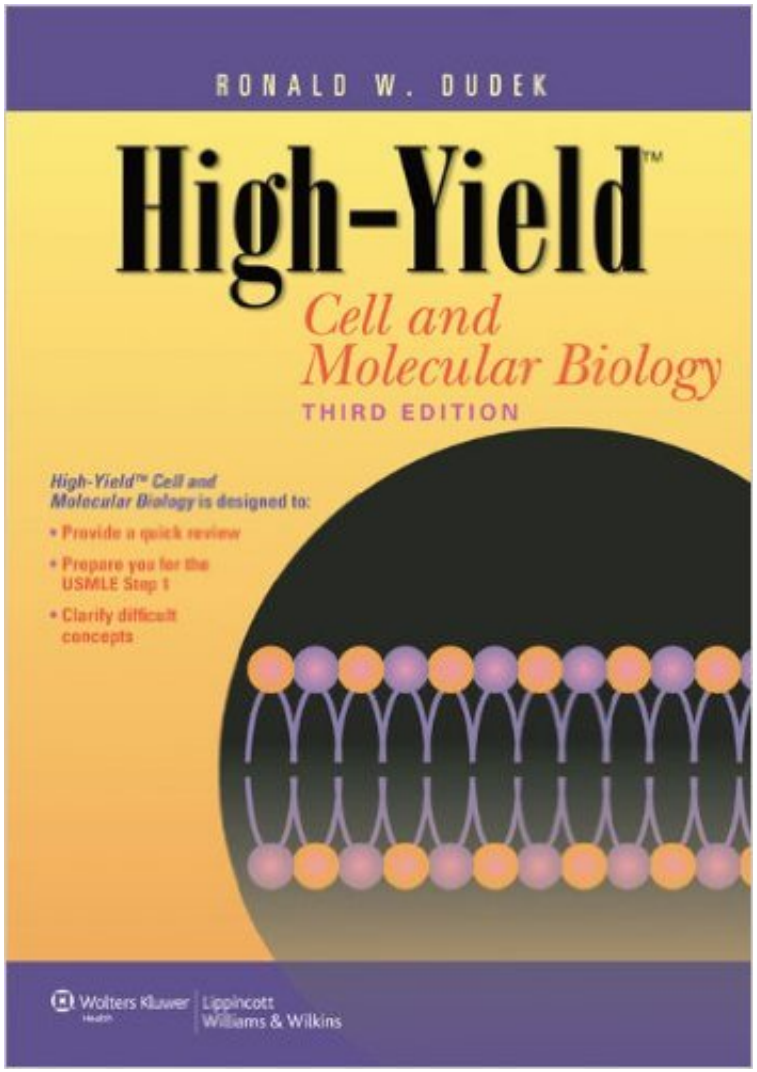

FIRST AID FOR THE
USMLE STEP 1
2015
25th ANNIVERSARY EDITION
More than 1,250 frequently tested topics and mnemonics
Hundreds of significant high-yield updates
250+ new photographs and diagrams
Updated student ratings of review resources and apps
TAO LE • VIKAS BHUSHAN • MATTHEW SOCHAT

anatomy, histology and embryology



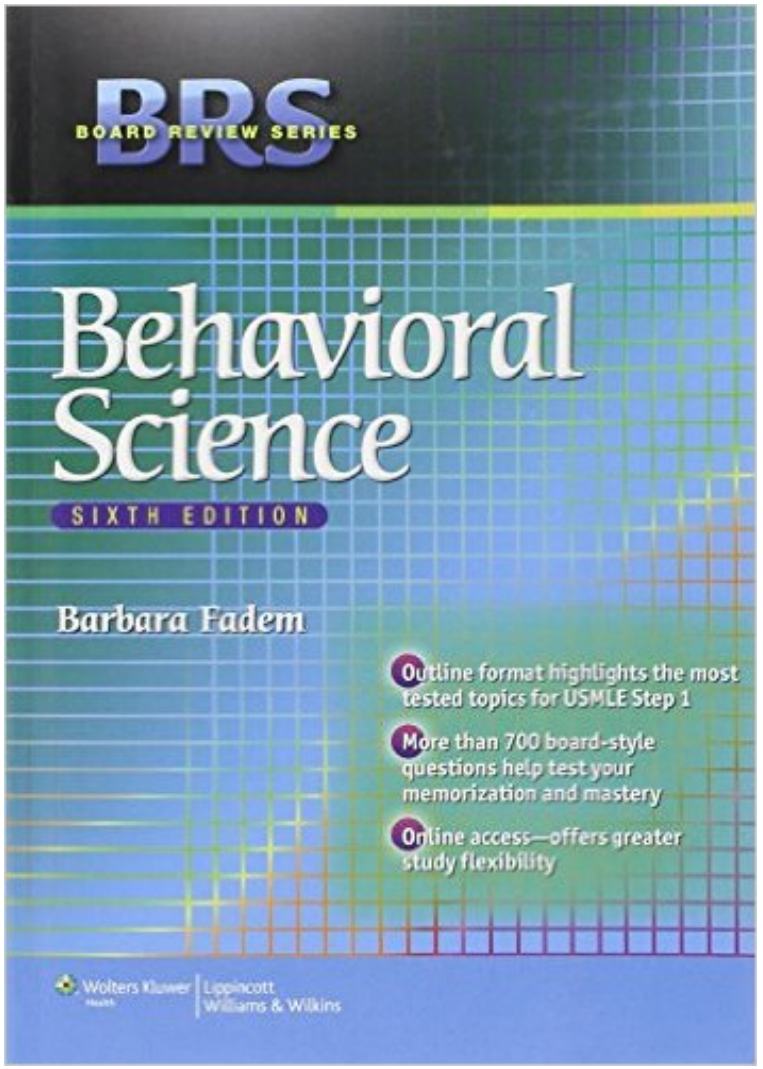
molecular and cell biology

- very good if you want to revise curriculum from biology and genetics
- don't spend too much time on it



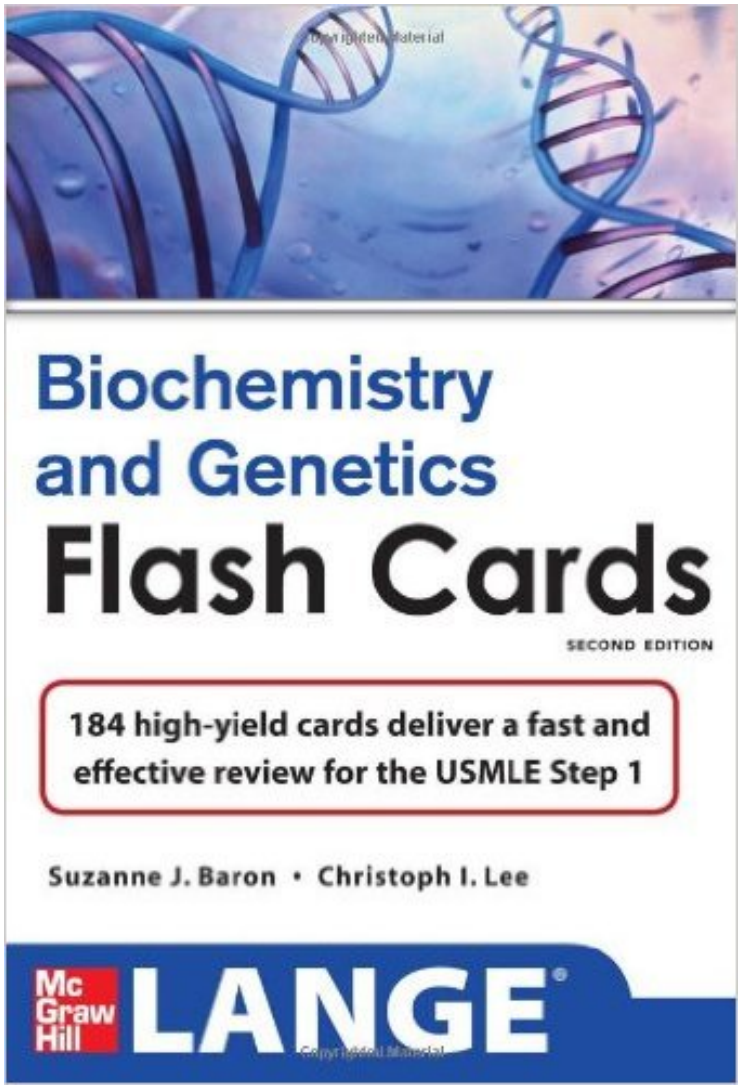
behavioral sciences

- it will most probably be your weakest subject
- some of the topics will be discussed during the sessions, it might be of a value in your studying



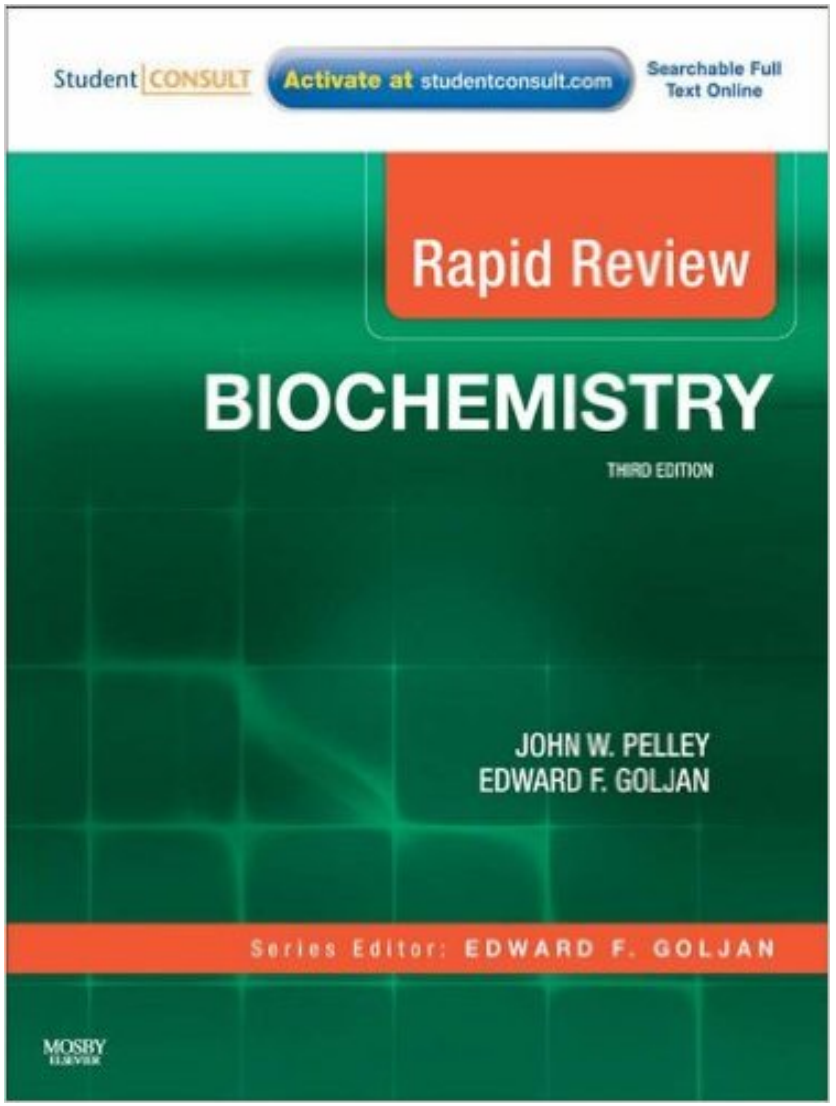
biochemistry, genetics

- not bad but found it
  not fully explained
- clinical presentations
  helped me imagine
  the patient



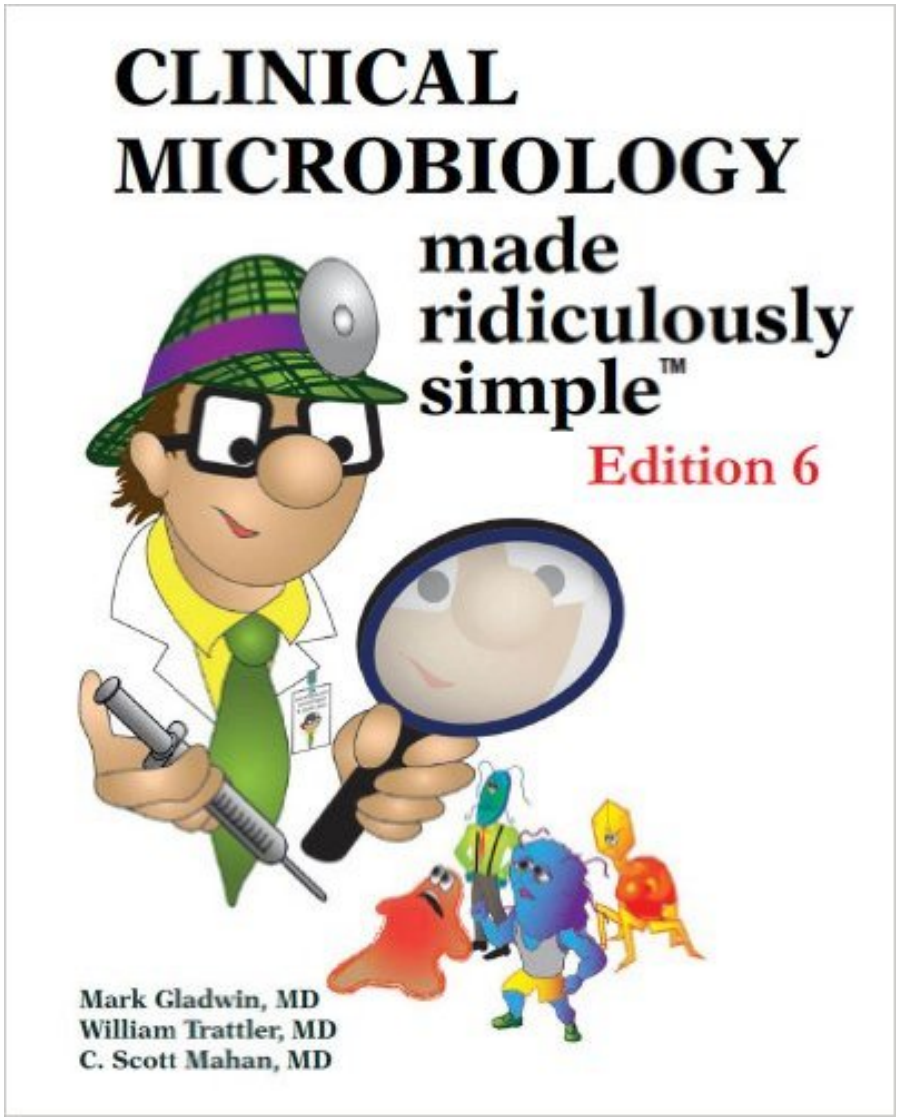
biochemistry, genetics

- might be an alternative to Lange Flash Cards but unfortunately haven't come across that yet



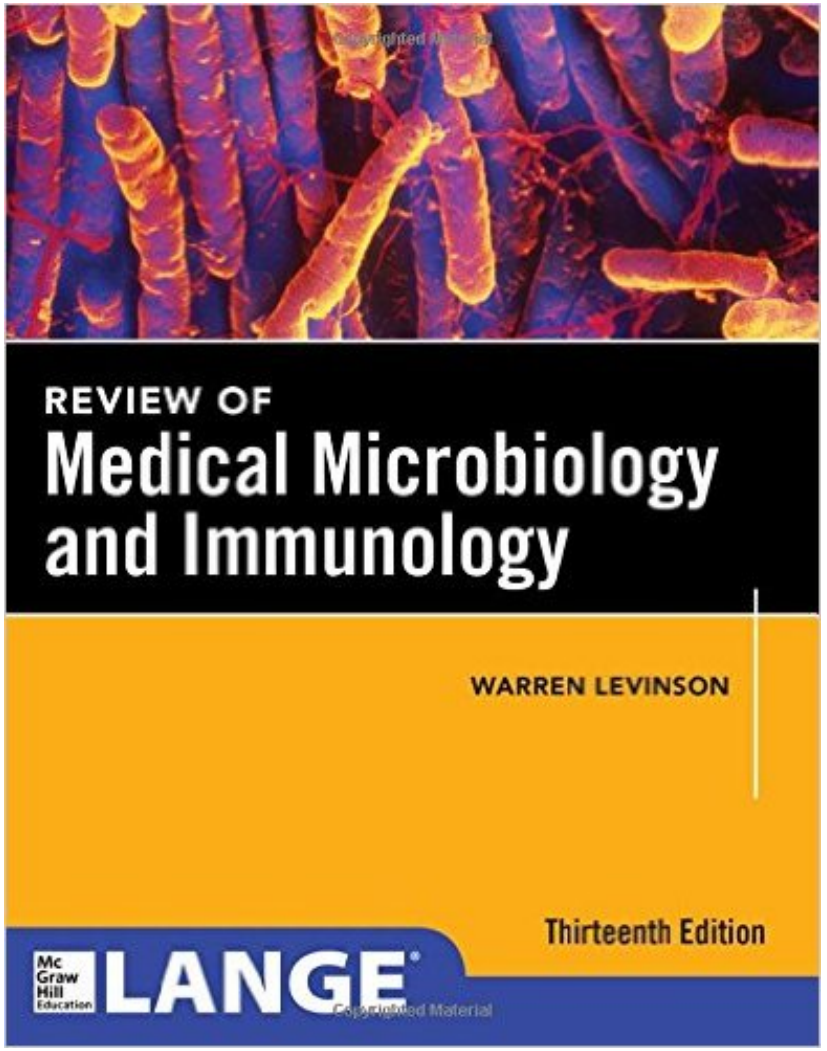
microbiology

- just awesome
- a lot of pictures, jokes and mnemonics helped me with memorizing



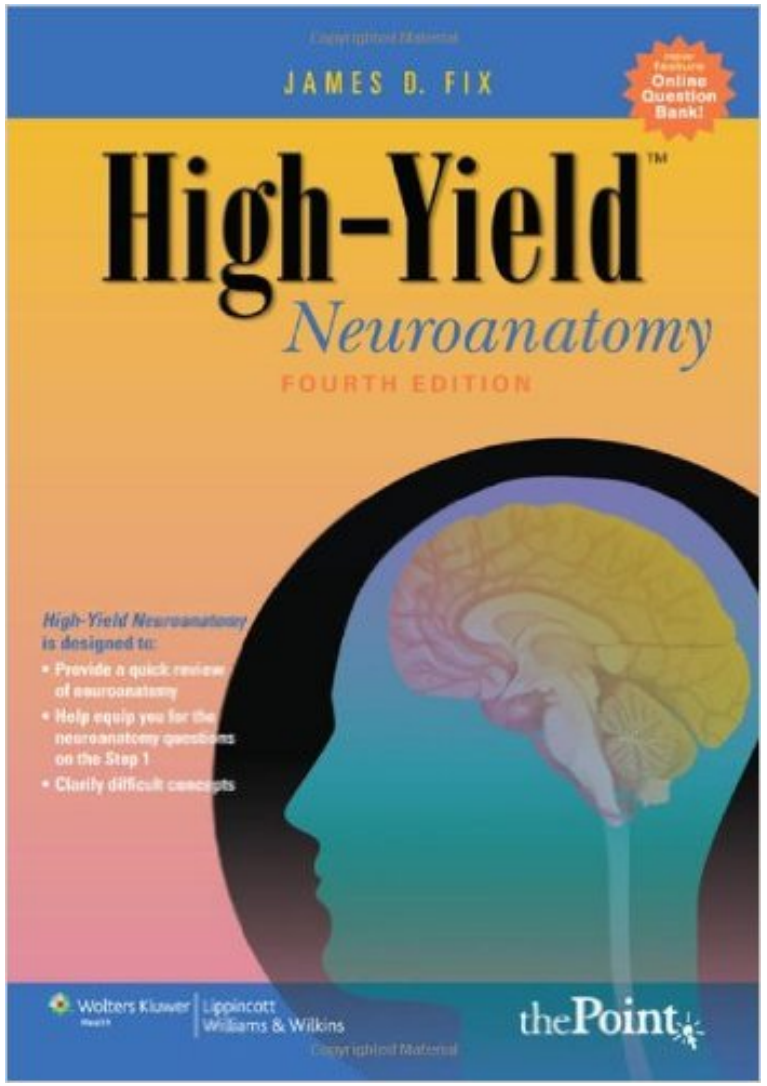
immunology

- just the immunology part which is perfectly explained



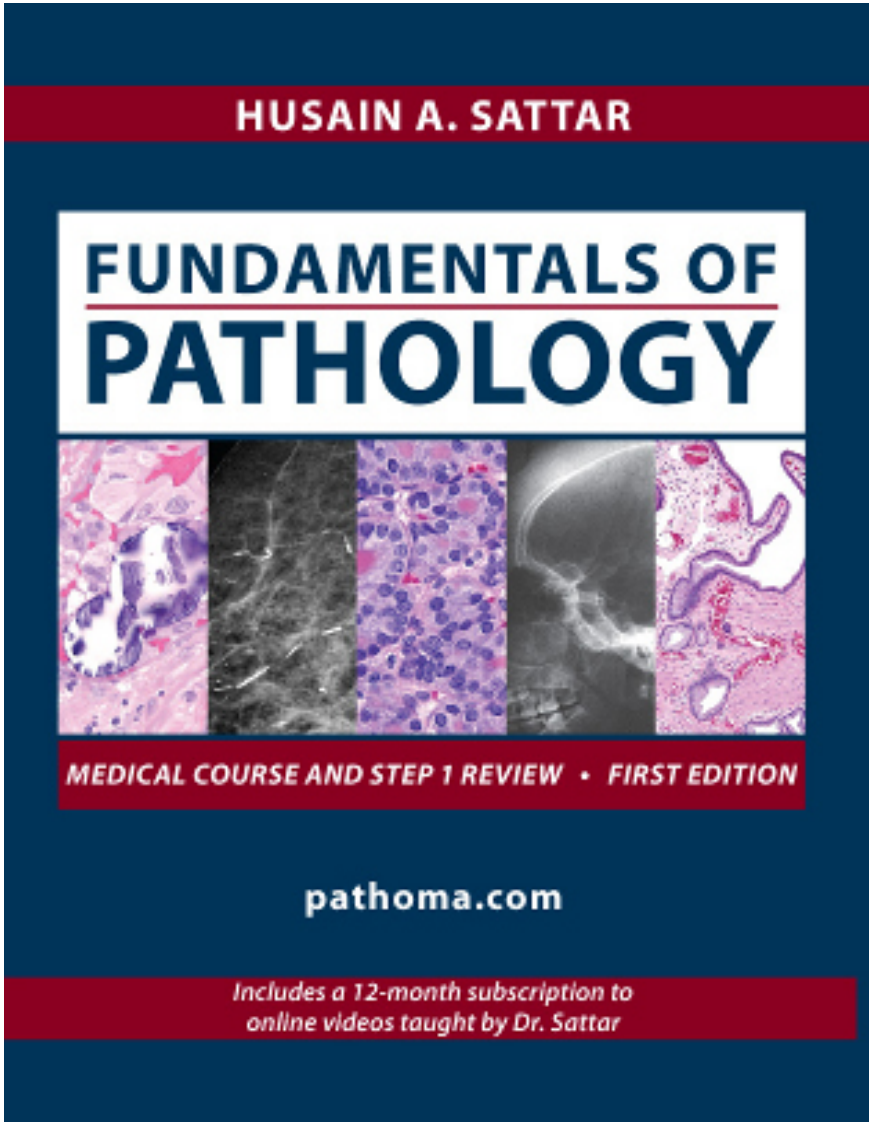
neuroanatomy

- a high-yield subject which should not be left out, taking into account it's not easy and not taught well (in terms of clinical correlations) at our faculty



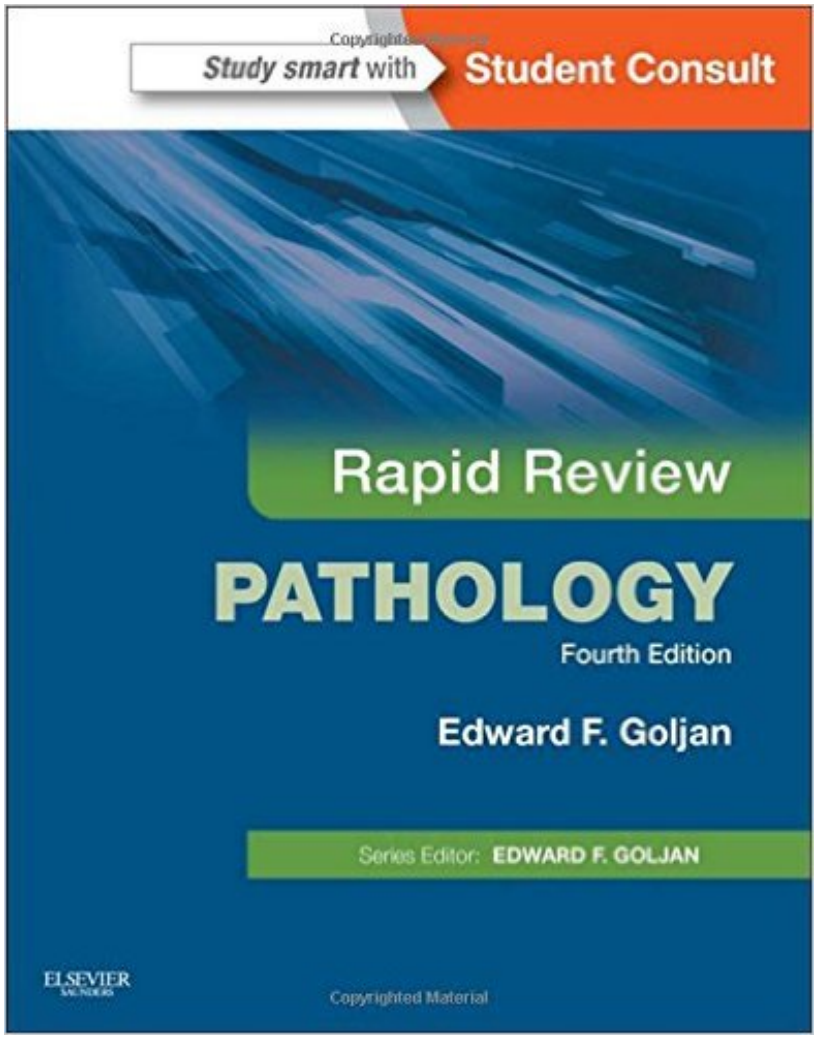
pathology

- book with video lectures
- best for the start
- easy to understand
- solid foundations to build upon
- one of the best books ever



pathology

- MUST HAVE!
- this book is essential! spend time on it, it will surely pay off
- Goljan audio is brilliant for consolidation of knowledge

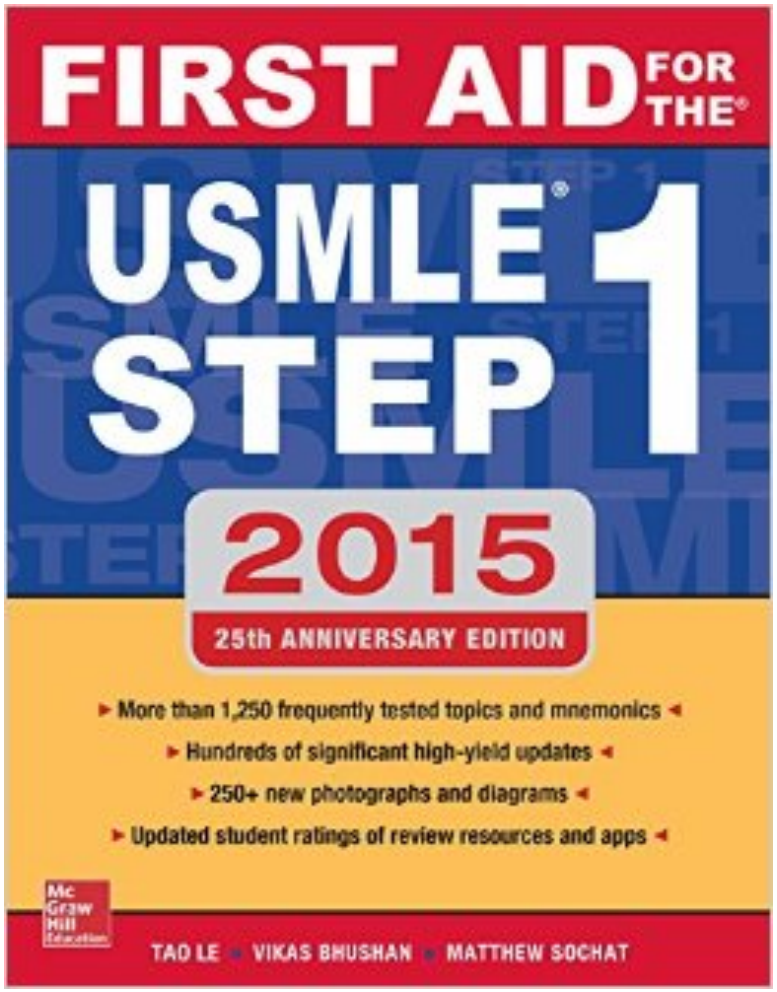


pharmacology

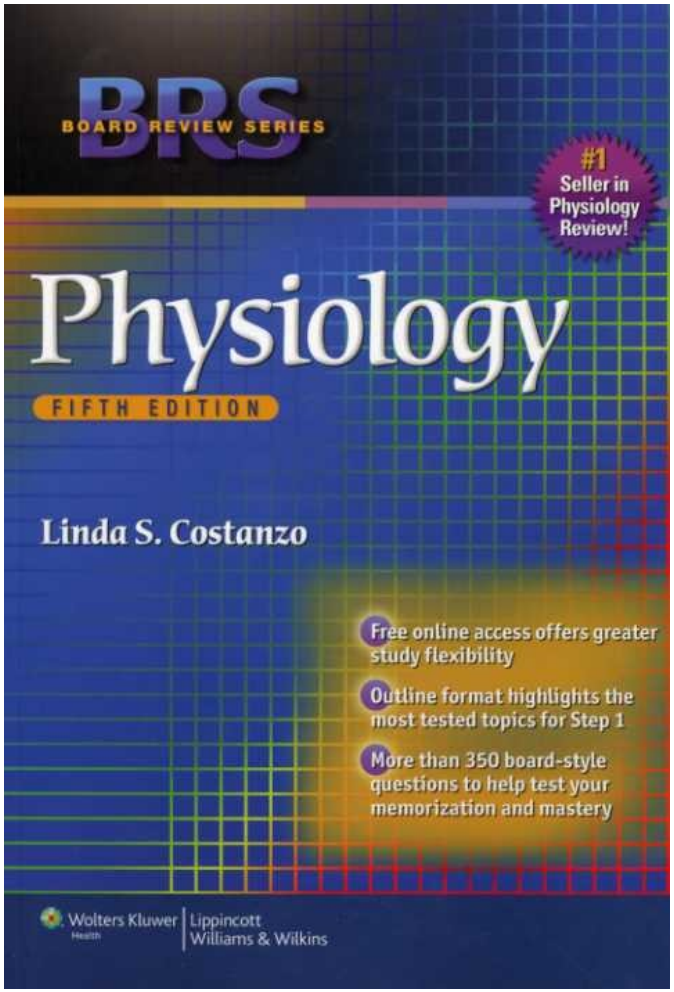
- book with video lectures

pharmacology

- after reading Rang&Dale's pharm I found revising pharm in First Aid sufficient



physiology


BRS
BOARD REVIEW SERIES
#1
Seller in
Physiology
Review!
Physiology
FIFTH EDITION
Linda S. Costanzo
Free online access offers greater study flexibility
Outline format highlights the most tested topics for Step 1
More than 350 board-style questions to help test your memorization and mastery
Wolters Kluwer Health
Lippincott
Williams & Wilkins

High-Yield Notes by Goljan

- frequently asked qs and topics you should focus on a few days before the exam on 36 pages

2. Timetables for studying

Taus Method

- basic timeline
- review books and other study materials
- question sources
- advice for 2w, week and day before the exam

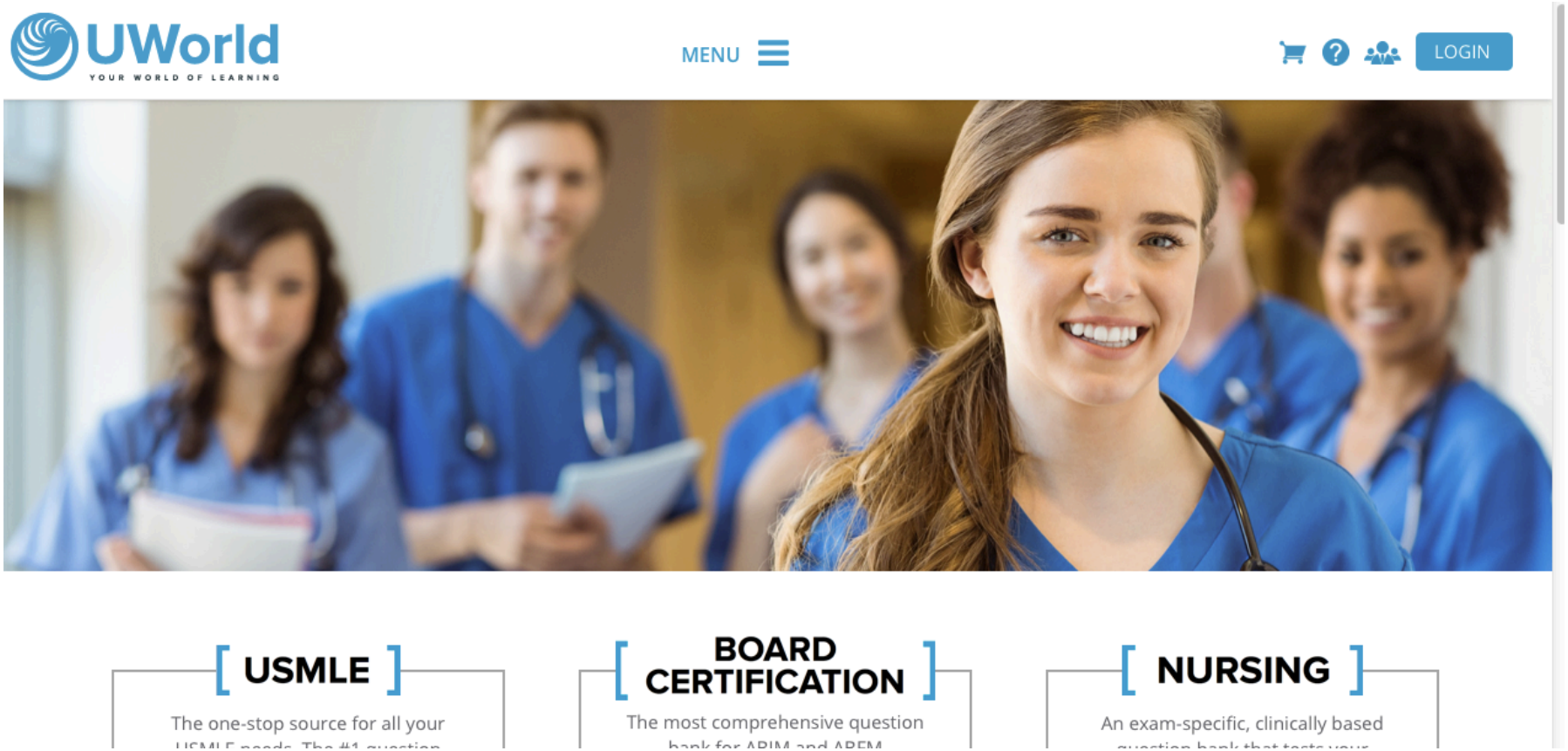
3. QBank

Practicing a lot of questions (2000-3000) is essential in order to succeed

UWorld.com

- I highly recommend purchasing this one because is the most similar to the actual exam
- Over 2350 exceptionally well-written multiple-choice questions
- Questions are conceptual, focus on high-yield topics, and require multistep critical thinking
- Detailed explanations with vivid illustrations and charts that are easy to understand and remember
- board-simulated software interface for the feel of an actual exam
- Compare performance scores with other UWorld users and identify areas for improvement

UWorld.com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The one-stop source for all your
BOARD CERTIFICATION
The most comprehensive question
NURSING
An exam-specific, clinically based

4. Take home message

Study patiently and plan in advance.

What study materials are key to success?

- First Aid
- RR Pathology + audio lectures by Goljan
- High Yield Notes by Goljan
- UWorld Qbank

Useful links I

- Registration
  - www.usmle.org
  - www.ecfmg.org
  - www.prometric.com
  - www.aamc.org
  - www.nrmp.org

- Students forums
  - www.prep4usmle.com
  - www.valuemd.com
  - www.studentdoctor.net

- Sample tests
  - www.usmleworld.com
  - www.nbme.org

Useful links II

- Marek Čierny's blog
  - usmle.eu
  - http://marek.cierny.cz/usmle-step-1.html
- Timotej Vataha's blog
  - https://medium.com/@timotejvataha/how-i-made-it-through-usmle-step-1-c91dca6f92f7#.kgj64df4h
- Information from faculty about USMLE
  - http://www.med.muni.cz/index.php?id=1440
- Scholarship for USMLE
  - https://is.muni.cz/auth/stipendia/studium_reg_stip_prog_show?fakulta=1411;lang=en;nocolor=1;ukaz=417

„A mind of moderate capacity which closely pursues one study must infallibly arrive at great proficiency in that study.”

– Mary Shelley, *Frankenstein*

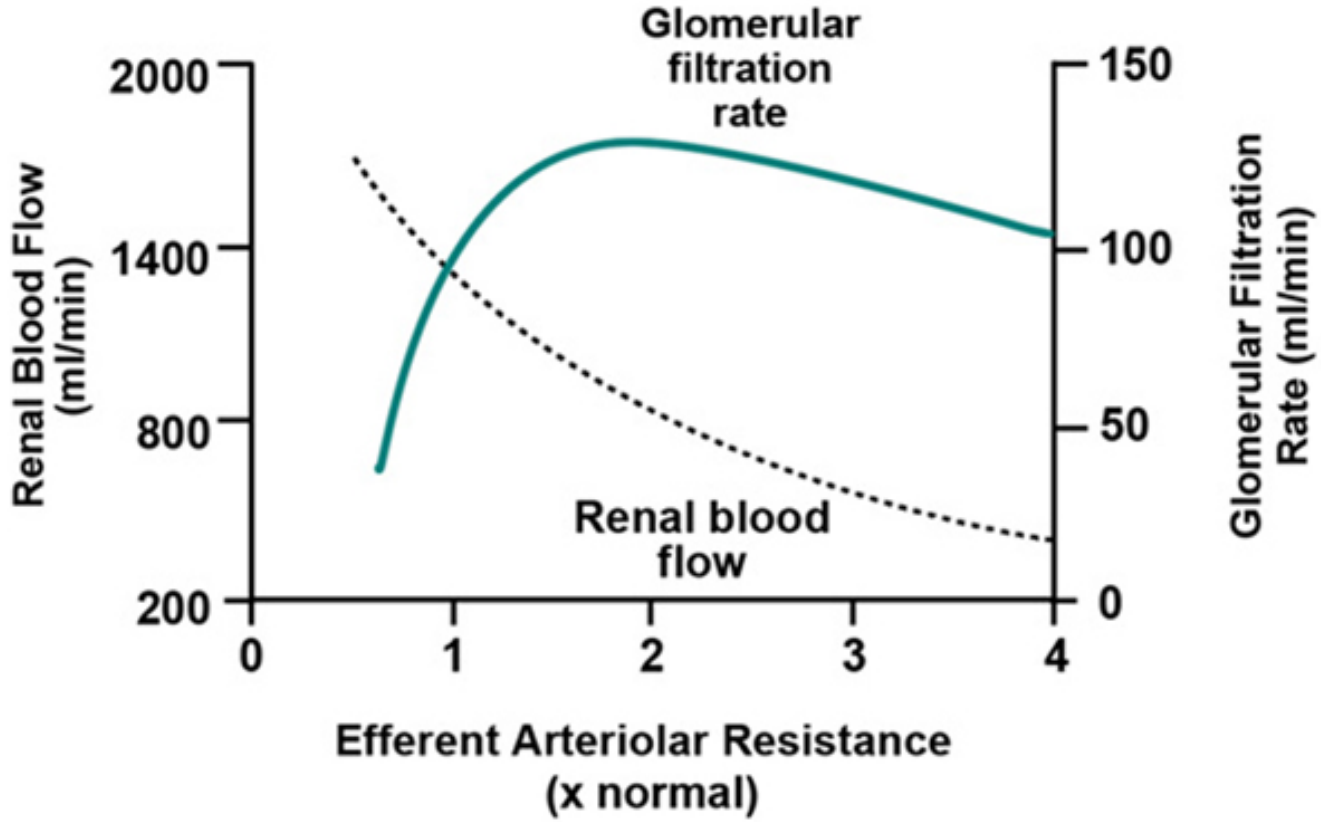
5. Questions

A 40-year-old woman receives an intravenous infusion of drug X that selectively constricts the efferent arterioles in her kidneys. Following the infusion, total cardiac output and renal afferent arteriolar tone are unchanged, but renal efferent arteriolar tone and total renal vascular resistance have both increased. Which of the following sets of changes most likely occurred following the infusion of drug X?

	GFR	FF	Renal Plasma Flow
A.	↓	↓	↑
B.	↓	↑	↓
C.	↓	↑	-
D.	↑	↓	-
E.	↑	↑	↓

	GFR	FF	Renal Plasma Flow
E.	↑	↑	↓

FF = GFR / RPF



A 26-year-old woman is brought to the emergency department 3 hours after ingesting approximately 50 tablets of aspirin in a suicide attempt. She is nauseated, confused, and sleepy. Her pulse is 130/min, respirations are 30/min, and blood pressure is 100/60 mm Hg. Which of the following sets of laboratory values is most likely on evaluation of blood obtained before treatment?

	HCO_3^-	pH	PCO_2
A.	↑	↓	↑
B.	↓	↓	↓
C.	↓	↓	↑
D.	↑	↓	-
E.	↑	↑	↑

	HCO_3^-	pH	PCO_2
B.	↓	↓	↓

- respiratory alcalosis progressing to metabolic acidosis
- tinnitus and hyperventilation
- renal toxicity
- increased anion gap

A 24-year-old woman suffers from epistaxis, gingival bleeding, and menorrhagia. Her mother and grandmother have similar symptoms, and her brother has incisional bleeding after surgery and dental extractions. They all have similar laboratory findings, including a prolonged bleeding time, reduced levels of factor VIII, normal platelet aggregation, and reduced ristocetin cofactor activity. This family has a disorder characterized by a deficient or defective protein. In normal patients, which of the following binds to the affected protein at the platelet membrane?

(A) Adenosine diphosphate (ADP)

(B) Calcium

(C) Glycoprotein GPIb

(D) Platelet factor 3 (PF3)

(E) Prostacyclin

(F) Serotonin

(G) Thromboplastin

(H) Thromboxane A_2

The correct answer is C. Glycoprotein GPIb on the platelet membrane is a receptor for von Willebrand factor (a plasma protein that circulates in a complex with factor VIII) and for thrombin.

ADP (**choice A**) is a powerful inducer of platelet aggregation and strengthens the platelet plug by the addition of more activated platelets.

Calcium (**choice B**) is essential for increasing the degree of platelet aggregation and for strengthening the platelet plug. It is also a necessary cofactor in the coagulation cascade.

Platelet factor 3 (**choice D**) is involved in platelet plug formation.

Prostacyclin (**choice E**) is synthesized by blood vessel endothelial cells and inhibits platelet aggregation.

Serotonin (**choice F**), along with epinephrine and kinins, is a vasoactive amine that promotes vasoconstriction.

Thromboplastin (**choice G)** initiates a series of reactions resulting in the formation of a permanent clot.

Thromboxane A_2 (**choice H**) is synthesized by platelets and promotes aggregation.

von Willebrand disease

Intrinsic pathway coagulation defect: ↓ of vWF -> ↑ PTT (vWF acts to carry/protect factor VIII).

Defect in platelet plug formation.

Autosomal dominant. Mild but most common inherited bleeding disorder. Diagnosed in most cases by ristocetin coffactor assay (↓ agglutination is diagnostic). Treatment: desmopressin, which releases vWF stored in endothelium.

Lab: PC: normal PT: normal

BT: prolonged PTT: prolonged

A 5-year old, mentally retarded boy is brought to the city from a rural community for evaluation. A careful history reveals mental retardation in a number of other family members, especially the males. Physical examination is remarkable for a long face with large ears, a large jaw, and bilateral enlargement of the testes. This presentation is suggestive of

(A) Down syndrome

(B) Edwards syndrome

(C) Fragile X syndrome

(D) Klinefelter syndrome

(E) Turner syndrome

The correct answer is C. Enlarged testes are the most specific phenotypic feature to suggest fragile X syndrome in an individual who appears to have a hereditary mental retardation. The condition has unusual genetics, as it is related to expansion of a CGG repeat sequence located on the X chromosome. The larger number of repeats, the higher probability of significant retardation; hence the retardation tends to become more severe in successive generations, as more CGG repeats accumulate. Sisters of affected males tend to show milder retardation than their brothers.

Features of Down syndrome (**choice A**), or trisomy 21, include mental retardation, epicanthal folds, dysplastic ears, hypotonia, a horizontal palmar crease (simian crease), redundant neck skin, and a short trunk.

Edwards syndrome (**choice B**), or trisomy 18, causes death in infancy. Characteristics include rocker-bottom feet, low set ears, micrognathia, congenital heart disease, and mental retardation.

Klinefelter syndrome (47,XXY; **choice D**) is associated with testicular atrophy, a eunuchoid body shape, long extremities, and a small penis.

Turner syndrome (45,X; **choice E**) produces a female phenotype with a short stature, ovarian dysgenesis, and webbing of the neck.

Trinucleotide repeat expansion diseases

- **Hunting**ton disease, **my**otonic dystrophy, **Fried**reich ataxia, fragile **X** syndrome
- ,,**Try** (trinucleotide) **hunting** for **my fried eggs** (X)”

If you have any questions don’t hesitate to contact us.

See you at USMLE @ Masaryk ☺

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