

How to Answer Multiple Choice Questions

USMLE
Test Taking Strategies

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Objectives

- Describe the parts of a general strategy for USMLE MCQ questions.
- Help you understand how strategy is something you develop based on how much content you master.
- Inspire you to self-analyze when doing practice questions, figuring out why you are getting questions wrong.

Overall strategy first, then adapt it to your way of thinking/knowledge

- 1st : Read last sentence first, highlight direction of question (increase, decrease, inhibit, most/least likely etc..). Then clarify/define to yourself key word.
- 2nd: quick glance at answer choices, if you've done enough practice questions, you should be able to predict a few ways they will describe the patient
- 3rd: Quick pause(s) as reading paragraph, recap 2-3 key details.
- 4th: Take a breath. Choose the best answer.

Content and strategy

Do practice questions with the goal to figure out what angles question writers like to take.

Top scorers can already anticipate where the questions might go, as soon as they've read the last sentence and glanced at the choices.

You need a decent amount of content mastery plus exposure to questions that show you hidden (not difficult) connections that are tested.

Doing question sets that are sub-divided will help you develop strategies/frameworks for different topics.

Uworld set of staphylococcus questions

• II. Bacteria

Staphylococci 644, 8533, 678, 679, 677, 646, 7218, 7219, 15210, 642, 727, 729, 14926, 62
Streptococci 724, 725, 734, 567, 735, 726, 14883, 723, 14934, 18141, 8, 730, 6643, 15578, 731, 1767,
Other Gram Positives 760, 1397, 11650, 1389, 6510, 1402, 1401, 19196, 1394, 15049, 1395, 966, 1997, 1101, 1398, 972, 1400, 107967, 1392, 1094, 14895, 1390, 1393, 15204, 1396
Gram Negative Rods 973, 14916, 15259, 1138, 15205, 15040, 1136, 105601, 1142, 1137, 8257, 6739, 19341, 1099, 7710, 11766, 1098, 1140, 1096, 1097, 1135
Other Gram Negatives 1005, 964, 20014, 13402, 14925, 1932, 1007, 1092, 7650, 963, 1853, 1422, 1154, 1025, 1895, 1004, 1027, 738, 1949, 977, 743, 11818, 1835, 1601, 1103, 11927, 1143, 15255, 960
Spirochetes 651, 1315, 906, 15419, 18620, 7581, 1316
Zoonotic Infections 1761, 107526, 107139, 106795, 11859, 15067, 14855, 1676, 15400, 20207, 15543, 22603, 1897, 11547, 15407, 15075, 1898
Mycobacteria 1215, 1312, 1313, 1314, 8384

			Education objectives
Staph aureus/ Scalded skin syndrome	680	Q: which of following most likely cause of pt's sx? 6 mo old boy poor feeding, irritability, rash, well till 2 days ago. P/E diffuse erythema and desquamation most prominent at neck, axillae, inguinal folds, perioral region. Perioral area also has crusting and lips are dry and cracked, but mucosal membrane normal. Epidermis easily comes off with gentle pressure at erythematous base. A: exotoxin-mediated skin damage.	Staphylococcal scalded skin syndrome occurs in infants and is due to production of exfoliative toxins by Staph aureus. The toxins cleave desmoglein in desmosomes, leading to widespread epidermal shedding, especially with gentle pressure (i.e. Nikolsky sign). Membranes are spared.
Staph aureus/food poisoning	644	Q: Most likely cause? vomiting 2 hrs after a picnic, chicken salad, sx improve supportive care. A: Ingestion of preformed enterotoxin	Staph food poisoning - ingestion of preformed, heat-stable enterotoxin (rapid-onset (<6 hours) n/v. due to improper food handling and eggs, dairy products, and mayonnaise-based salads).
Staph aureus /food poisoning	15210	Q: which following strategies would have been most effective in preventing pt's illness? 12 yo girl urgent care nausea, vomiting, crampy abdominal pain 3 hrs after summer cookout in park, where consumed potato salad, coleslaw, and hamburger. Two other children had similar sx. No chronic conditions and previously well. P/E No fever, abdomen soft. Symptoms resolve with supportive care. A: Keeping prepared foods refrigerated while storing.	Staphylococcal foodborne illness is due to the consumption of preformed enterotoxin in contaminated food. Most cases can be prevented by washing hands thoroughly prior to food prep (pre- and post-cooking), and ensuring proper refrigerated storage (pre- and post-cooking) and bacterial proliferation/enterotoxin production).
Staph aureus/virulence factor	677	Q: organism most likely responsible for pt's infection synthesizes a protein as part of its peptidoglycan cell wall that does which of the following? 45 yo M pain, swelling, erythema R leg. Minor cut to leg few days ago while cleaning garage. P/E: Indurated region surrounding minor cut, draining purulent exudate. Dx with cellulitis and started on appropriate tx. Gram stain shows gram-positive cocci in clusters. A: Binds the Fc portion of IgG.	Protein A is a virulence factor found in peptidoglycan cell wall of Staph aureus that binds to the Fc portion of IgG, leading to impaired complement activation, opsonization, and phagocytosis.
Staph aureus/virulence factor	677	Q: which of following bacterial virulence factor most likely contributed to pt's necrotizing infection? 36 yo man worsening fever productive cough SOB. Influenza like illness previous week. 102/100/50, pulse 122, RR 26, pulse ox 86%, P/E: ill appearing lethargic. Crackles RLL. Leukocyte 20k. Chest imaging: extensive parenchymal consolidation and cavitation suggest abscess RML and RLL. Culture	Staph aureus strains that express Panton-Valentine leukocidin (PVL) protease that kills leukocytes and causes necrosis, are most likely to cause skin or soft-tissue abscess and invasive disease (eg necrotizing pneumonia). PVL expression is most common in community-acquired methicillin-resistant strains.

U world set of Leukemias questions

- ☒ Hematology & Oncology (229)
- ☒ Normal hematologic structure and function (10)
- ☒ Hemostasis and thrombosis (36)
- ☒ Plasma cell disorders (2)
- ☒ Platelet disorders (15)
- ☒ Red blood cell disorders (85)
- ☒ Transfusion medicine (4)
- ☒ White blood cell disorders (48)
- ☒ Principles of oncology (22)
- ☒ Miscellaneous (7)

• III. White Blood Cells

Acute Leukemia 1798, 1405, 1571, 1963, 1406, 20673, 15278, 1403, 18769, 1570

Chronic Leukemia 11750, 12278, 1569, 8281

Hodgkin Lymphoma 1626, 1864,

Non-Hodgkin Lymphoma 1627, 108087, 1755, 1086, 1918, 1629, 1911, 1630,

Plasma Cell Disorders 15133, 6530, 1054, 15134, 15467, 872, 12101, 15466, 1964

Amyloidosis 7625, 94, 746, 7628, 7611

Myeloproliferative Disorders 19537, 1586, 15248, 11456, 8540, 14816, 8591, 8559

Antimetabolites 718, 18703, 1818, 15293, 20372, 19689,

Alkylating Agents 1816, 7623,

Antitumor Antibiotics 1014, 14848, 1819

Microtubule Inhibitors 1894

DNA Drugs 15706, 2018

OR

Enter Question Ids separated by comma (,)

1798, 1405, 1571, 1963, 1406, 20673, 15278,
1403, 18769, 1570, 11750, 12278, 1569, 8281

LEUKEMIAS

T-ALL

T-ALL is characterized by circulating lymphoblasts that express terminal deoxynucleotidyl transferase (TdT) and CD 3. T-ALL often presents in adolescents/young adults with a mediastinal mass.

ox 94%,
P/E diffusely diminished breath sounds, clusters of enlarged cervical lymph node palpable b/l. CXR large mediastinal mass. Leukocyte count elevated , peripheral smear shows abnormal wbc. Image shown
A: T-lymphoblastic leukemia

AML

The finding of Auer rods (linear purple-red inclusions within immature myeloid precursors) is helpful in making the diagnosis of acute myeloid leukemia. Auer rods are not found in acute lymphoblastic leukemia. In CML, there are more mature cells and fewer blasts.

1570
Q: most likely diagnosis?
63 yo M fatigue easy bruising no lymphadenopathy
H 8, Plt 40, leukocyte 20,5 k
A: Acute myeloid leukemia
Image of peripheral blood smear shown

APML

Auer rods are deformed azurophilic granules found in the cytoplasm of myeloblasts that stain positively for myeloperoxidase. Auer rods are found in abundance in AML M3 (acute promyelocytic leukemia)

1406
Q: These cells contain structures that would stain positive for which of following?
36 yo persistent F, bleeding gums, sore throat.
Periph blood microsc image s hown.
A: Myeloperoxidase

1403
Q: which protein most likely to be abnormal in hematopoietic cell of pt?
32 M prog fatigue, bruising, gumm bleeding. p/E sever echymos
H 7.8, plt 65k, leuko 3k, pt 22, ptt53, fibrinogen 134, d-dimer 4.1
bn bionsv and fish = balanced



Keeping track of content mastery

Read the section of first aid, close the book and see how much you can remember. Estimate the percentage and write it in the next column.				
Hematology	Subtopic	Percent of sub-section able to understand and recall	Notes (write which concepts need review, or more in depth)	Uworld QIDs and
Embryology	Fetal erythropoiesis-hemoglobin development	50%		
	Blood groups	50%		
	Hemolytic disease of the fetus and newborn	50%		
Anatomy	Hematopoiesis	50%		
	Neutrophils	50%		
	Erythrocytes	50%		
	Thrombocytes (platelets)	50%		
	Monocytes	50%		
	Macrophages	50%		
	Dendritic cells	50%		
	Eosinophils	50%		
	Basophils	50%		
	Mast cells	50%		
	Lymphocytes	50%		
	Natural killer cells	50%		
	B cells	50%		
	T cells	50%		
	Plasma cells	50%		
Physiology	Hemoglobin electrophoresis	50%		
	Antiglobulin test	50%		
	Platelet plug formation (primary hemostasis)	50%		
	Thrombogenesis	50%		

If a tree falls in the forest and no one is there, does it make a sound?

To get the answer right, you first have to clarify and define what they are specifically asking about.

The falling tree will create vibrations in the air and ground, but that's not what they are asking.

The answer is no.

The sound is what happens when the ears feel that pressure and translate it into electrical signals.


Deciding what to highlight


Less is more.


last sentence: Highlight direction or specifier (most likely, least likely, increase, decrease, inhibited, enhanced, except) and words that needs to be clarified.


Within paragraph: highlight distinguishing key words : Pertinent + or pertinent - that you think will help you choose between 2 choices.

639 Which of the following factors is essential for the differentiation of the cells described by the pathologist?

 Item 4 of 8
Question Id: 639

 Mark

 Previous

 Next

A 67-year-old man comes to the office with right tibial pain that started 3 months ago and has increased in intensity over time. He also has had progressive hearing impairment for the last year. Physical examination reveals local tenderness and a lumpy protuberance over the right tibia. After extensive evaluation, the patient undergoes a bone biopsy. The pathologist identifies numerous multinucleated cells, some containing over 100 nuclei. Which of the following factors is essential for the differentiation of the cells described by the pathologist?

- ☐ A. Fibroblast growth factor (13%)
- ☐ B. Insulin-like growth factors (4%)
- ☐ C. Osteoprotegerin (14%)
- ☒ D. Receptor activator of nuclear factor kappa-B ligand (52%)
- ☐ E. Transforming growth factor beta (14%)

Missing connections

				Osteoclasts originate hematopoietic stem cells. needs MCSF and RANKL for differentiation. Paget increased # abnormal osteoclasts, bone turnover, disorg remodel.
Cell biology of bone	50%	"numerous multinucleated cells, some containing over 100 nuclei" + Receptor activator of nuclear factor kappa-B ligand is "essential" for differentiation of osteoclasts.	639	
Overuse injuries of the elbow				
Clavicle fractures				
Wrist and hand injuries				
Common knee conditions				
Common musculoskeletal conditions				
Childhood musculoskeletal conditions				
Common pediatric fractures		E		
Achondroplasia				
Osteoporosis				
Osteopetrosis				
Osteomalacia/rickets				
				Osteoclasts originate hematopoietic stem cells. needs MCSF and RANKL for differentiation. Paget increased # abnormal osteoclasts, bone turnover, disorg remodel.
Osteitis deformans	50%	"numerous multinucleated cells, some containing over 100 nuclei" + Receptor activator of nuclear factor kappa-B ligand is "essential" for differentiation of osteoclasts.	639	
Avascular necrosis of bone				

Last two, table questions

- Instead of looking for which one is right, look for evidence against one of the two.
- Do high yield table based questions on amboss till it's second nature.
- Ask yourself about allergies, and contra-indications.

Keep track and experiment

- why you are missing questions (especially assessments)
- If making silly mistakes, can try different strategies with highlighting, or taking micro pauses.
- Keep track of how much content you are able to recall by sub-section and review when necessary.

Thinking in frameworks and illness scripts, anticipation

<https://clinicalproblemsolving.com/reasoning-content/>

<https://clinicalproblemsolving.com/illness-scripts/>

<https://blackbook.ucalgary.ca/schemes/pediatric/abdominal-mass-2/>

Key takeaways

Success in answering questions is based on a decent grasp on content PLUS having done enough questions to remember and anticipate the angles that test writers take.

It's important to “get in the lab”, keep track of your content knowledge, and dissect the practice questions that you do. The more questions you do, the more granular your question answering strategy will get, with slight variations per sub-topic.

Mèt kò veye kò

“What must I do, is all that concerns me, not what the people think. This rule, equally arduous in actual and in intellectual life, may serve the whole distinction between greatness and meanness. It is the harder because you will always find those who think they know what is your duty better than you know it. It is easy in the world to live after the world’s opinion; it is easy in solitude to live after our own; but the great man is he who in the midst of the crowd keeps with perfect sweetness the independence of solitude”