

FREE GUIDE

The USMLE Step 1 Buzzword Bible

Master the associations that appear on board-style exams.

**50 high-yield clues with the diagnosis, mechanism, and
exam trap.**

Cardiology | Hematology | Biochemistry | Microbiology | Pathology | Renal |
Neuro | GI | Endocrine

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How to Use This Guide

Study rule

Do not memorize buzzwords as isolated trivia. Tie each clue to a diagnosis, a mechanism, and one common wrong-answer trap.

- Read the buzzword and answer out loud before looking at the diagnosis.
- Explain the mechanism in one sentence. This is where Step 1 usually tests deeper knowledge.
- Review the trap line to separate similar conditions quickly.

Category Map

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The 50 Buzzword Cards

Cardiology and Vascular

01. Machine-like continuous murmur | Cardiology and Vascular

Diagnosis: Patent ductus arteriosus

Why it matters: Continuous left-to-right shunt from aorta to pulmonary artery after birth.

Exam trap: Rubella association; indomethacin closes PDA, prostaglandin E1 keeps it open.

02. Boot-shaped heart on X-ray | Cardiology and Vascular

Diagnosis: Tetralogy of Fallot

Why it matters: Right ventricular hypertrophy creates the classic boot-shaped cardiac silhouette.

Exam trap: Cyanotic child who squats: increased systemic vascular resistance improves right-to-left shunting.

03. Rib notching on X-ray | Cardiology and Vascular

Diagnosis: Coarctation of the aorta

Why it matters: Collateral intercostal arteries enlarge and erode inferior ribs.

Exam trap: Upper extremity hypertension with weak femoral pulses is the clinical anchor.

04. Water hammer pulse | Cardiology and Vascular

Diagnosis: Aortic regurgitation

Why it matters: Large stroke volume and rapid diastolic runoff cause bounding pulses.

Exam trap: Wide pulse pressure plus early diastolic murmur points to AR.

05. Crescendo-decrescendo systolic murmur | Cardiology and Vascular

Diagnosis: Aortic stenosis

Why it matters: Fixed outflow obstruction creates a systolic ejection murmur radiating to the carotids.

Exam trap: Syncope, angina, and dyspnea are the classic severe AS triad.

06. Electrical alternans | Cardiology and Vascular

Diagnosis: Cardiac tamponade

Why it matters: The heart swings in a large pericardial effusion, changing QRS amplitude beat to beat.

Exam trap: Beck triad: hypotension, muffled heart sounds, and JVD.

Hematology and Oncology

07. Heinz bodies and bite cells | Hematology and Oncology

Diagnosis: G6PD deficiency

Why it matters: Oxidative stress denatures hemoglobin; splenic macrophages remove the inclusions, making bite cells.

Exam trap: Triggers include sulfa drugs, primaquine, fava beans, and infections.

08. Smudge cells | Hematology and Oncology

Diagnosis: Chronic lymphocytic leukemia

Why it matters: Fragile mature lymphocytes rupture during smear preparation.

Exam trap: Older adult with painless lymphocytosis is a classic CLL presentation.

09. Auer rods | Hematology and Oncology

Diagnosis: Acute myeloid leukemia

Why it matters: Pink needle-like azurophilic inclusions occur in myeloblasts.

Exam trap: APL subtype can cause DIC and is treated with all-trans retinoic acid.

10. Starry sky appearance | Hematology and Oncology

Diagnosis: Burkitt lymphoma

Why it matters: Macrophages containing apoptotic debris sit among rapidly proliferating tumor cells.

Exam trap: MYC translocation t(8;14) is the board exam mechanism.

11. Reed-Sternberg cells | Hematology and Oncology

Diagnosis: Hodgkin lymphoma

Why it matters: Large binucleate cells with prominent nucleoli are CD15 and CD30 positive.

Exam trap: Orderly contiguous nodal spread helps distinguish Hodgkin lymphoma.

12. Bence-Jones proteins | Hematology and Oncology

Diagnosis: Multiple myeloma

Why it matters: Free immunoglobulin light chains are excreted in urine.

Exam trap: Bone pain, renal failure, anemia, and hypercalcemia are classic CRAB features.

13. Target cells | Hematology and Oncology

Diagnosis: HALT: HbC disease, Asplenia, Liver disease, Thalassemia

Why it matters: Excess membrane relative to hemoglobin creates a target-like red cell.

Exam trap: Use the whole vignette; target cells are a pattern, not one diagnosis.

14. Schistocytes | Hematology and Oncology

Diagnosis: Microangiopathic hemolytic anemia

Why it matters: RBCs fragment while passing through fibrin-rich or damaged microvasculature.

Exam trap: Think DIC, HUS, TTP, prosthetic valve hemolysis, or severe hypertension.

Biochemistry and Genetics

15. Musty or mousy body odor | Biochemistry and Genetics

Diagnosis: Phenylketonuria

Why it matters: Phenylalanine hydroxylase deficiency or tetrahydrobiopterin deficiency increases phenylalanine.

Exam trap: Fair skin, intellectual disability, and eczema strengthen the diagnosis.

16. Maple syrup odor in urine | Biochemistry and Genetics

Diagnosis: Maple syrup urine disease

Why it matters: Defective branched-chain alpha-ketoacid dehydrogenase impairs leucine, isoleucine, and valine metabolism.

Exam trap: Neurologic deterioration in an infant is the dangerous clue.

17. Cherry-red spot on macula | Biochemistry and Genetics

Diagnosis: Tay-Sachs or Niemann-Pick disease

Why it matters: Lipid accumulation in retinal ganglion cells leaves the fovea appearing red.

Exam trap: Hepatosplenomegaly suggests Niemann-Pick more than Tay-Sachs.

18. Crumpled tissue paper macrophages | Biochemistry and Genetics

Diagnosis: Gaucher disease

Why it matters: Glucocerebrosidase deficiency causes lipid-laden macrophages.

Exam trap: Bone crises and hepatosplenomegaly are high-yield associations.

19. Needle-shaped negatively birefringent crystals | Biochemistry and Genetics

Diagnosis: Gout

Why it matters: Monosodium urate crystals appear yellow when parallel to polarized light.

Exam trap: Podagra and hyperuricemia are classic clues.

20. Rhomboid-shaped positively birefringent crystals | Biochemistry and Genetics

Diagnosis: Pseudogout

Why it matters: Calcium pyrophosphate crystals appear blue when parallel to polarized light.

Exam trap: Often affects the knee and is associated with chondrocalcinosis.

Microbiology

21. Currant jelly sputum | Microbiology

Diagnosis: Klebsiella pneumoniae

Why it matters: Necrotizing pneumonia can produce thick bloody sputum.

Exam trap: Classically associated with alcohol use disorder and diabetes.

22. Ground-glass opacities on CXR | Microbiology

Diagnosis: Pneumocystis jirovecii pneumonia

Why it matters: Diffuse interstitial pneumonia occurs in immunocompromised patients.

Exam trap: AIDS patient with low CD4 count and dyspnea is a classic setup.

23. Sulfur granules | Microbiology

Diagnosis: Actinomyces israelii

Why it matters: Branching anaerobic gram-positive rods cause draining sinus tracts with yellow granules.

Exam trap: Jaw infection after dental work is a favorite clue.

24. Clue cells | Microbiology

Diagnosis: Bacterial vaginosis

Why it matters: Vaginal epithelial cells are coated by Gardnerella-associated bacteria.

Exam trap: Fishy odor after KOH and thin gray discharge are classic.

25. Strawberry cervix | Microbiology

Diagnosis: Trichomoniasis

Why it matters: Motile flagellated protozoa cause punctate cervical hemorrhages.

Exam trap: Treat partners; wet mount may show motile organisms.

26. Bird's beak on barium swallow | Microbiology

Diagnosis: Achalasia

Why it matters: Failure of LES relaxation and aperistalsis causes tapering of the distal esophagus.

Exam trap: Loss of inhibitory myenteric neurons is the key mechanism.

General Pathology

27. Apple-green birefringence under polarized light | General Pathology

Diagnosis: Amyloidosis

Why it matters: Congo red staining of beta-pleated sheet amyloid gives apple-green birefringence.

Exam trap: Know AL amyloid from plasma cells and AA amyloid from chronic inflammation.

28. Psammoma bodies | General Pathology

Diagnosis: Papillary thyroid carcinoma, serous ovarian carcinoma, meningioma, mesothelioma

Why it matters: Concentric laminated calcifications form in several tumors.

Exam trap: Use the mnemonic PSaMM, but do not treat it as one-disease specific.

29. Orphan Annie eye nuclei | General Pathology

Diagnosis: Papillary thyroid carcinoma

Why it matters: Clear nuclei with grooves and inclusions are classic.

Exam trap: Papillary thyroid carcinoma spreads through lymphatics.

30. Councilman bodies | General Pathology

Diagnosis: Viral hepatitis or yellow fever

Why it matters: Apoptotic hepatocytes become eosinophilic bodies.

Exam trap: This is a histologic clue for hepatocyte apoptosis.

31. Mallory bodies | General Pathology

Diagnosis: Alcoholic hepatitis

Why it matters: Damaged cytokeratin intermediate filaments form eosinophilic cytoplasmic inclusions.

Exam trap: AST greater than ALT, often with ratio above 2, supports alcohol-associated injury.

Respiratory and Renal

32. Tram-track appearance of GBM | Respiratory and Renal

Diagnosis: Membranoproliferative glomerulonephritis

Why it matters: Mesangial interposition splits the glomerular basement membrane.

Exam trap: Complement activation and dense deposit disease are common Step 1 associations.

33. Wire-loop glomerular lesions | Respiratory and Renal

Diagnosis: Lupus nephritis

Why it matters: Subendothelial immune complex deposition thickens capillary loops.

Exam trap: Diffuse proliferative lupus nephritis is a common high-yield answer.

34. Steeple sign on X-ray | Respiratory and Renal

Diagnosis: Croup

Why it matters: Subglottic narrowing from parainfluenza infection creates the steeple appearance.

Exam trap: Barking cough and inspiratory stridor support croup.

35. Thumbprint sign on X-ray | Respiratory and Renal

Diagnosis: Epiglottitis

Why it matters: Swollen epiglottis creates a thumb-like soft tissue shadow.

Exam trap: Drooling, tripod posture, and Hib association are key clues.

36. Hampton's hump on CXR | Respiratory and Renal

Diagnosis: Pulmonary embolism

Why it matters: Pleural-based wedge-shaped infarct can appear after pulmonary artery occlusion.

Exam trap: Sudden dyspnea, pleuritic chest pain, and risk factors matter more than the x-ray alone.

Neurology and MSK

37. Soap bubble appearance on X-ray | Neurology and MSK

Diagnosis: Giant cell tumor of bone

Why it matters: Expansile lytic epiphyseal lesion often occurs around the knee.

Exam trap: Skeletally mature young adult is the typical patient.

38. Onion skinning of bone | Neurology and MSK

Diagnosis: Ewing sarcoma

Why it matters: Concentric periosteal reaction occurs in a malignant small round blue cell tumor.

Exam trap: t(11;22) and diaphyseal lesion in a child are classic.

39. Codman triangle | Neurology and MSK

Diagnosis: Osteosarcoma

Why it matters: Aggressive periosteal lifting creates a triangular shadow.

Exam trap: Metaphyseal tumor around the knee in an adolescent is high-yield.

40. Ashleaf spots and shagreen patches | Neurology and MSK

Diagnosis: Tuberous sclerosis

Why it matters: Hamartomas affect skin, brain, kidneys, and heart.

Exam trap: Seizures, intellectual disability, and facial angiofibromas may appear.

41. Lisch nodules | Neurology and MSK

Diagnosis: Neurofibromatosis type 1

Why it matters: Iris hamartomas occur with a mutation on chromosome 17 affecting neurofibromin.

Exam trap: Cafe-au-lait spots and optic glioma are classic NF1 clues.

42. Kayser-Fleischer rings | Neurology and MSK

Diagnosis: Wilson disease

Why it matters: Copper deposits in Descemet membrane of the cornea.

Exam trap: Low ceruloplasmin, liver disease, and movement disorders point to ATP7B mutation.

Gastrointestinal

43. String sign on contrast study | Gastrointestinal

Diagnosis: Crohn disease

Why it matters: Transmural inflammation and fibrosis narrow the bowel lumen.

Exam trap: Skip lesions, fistulas, and granulomas support Crohn over ulcerative colitis.

44. Lead pipe colon | Gastrointestinal

Diagnosis: Ulcerative colitis

Why it matters: Chronic mucosal inflammation can remove haustra.

Exam trap: Continuous disease beginning at the rectum is the exam pattern.

45. Coffee bean sign on X-ray | Gastrointestinal

Diagnosis: Sigmoid volvulus

Why it matters: Twisted dilated sigmoid colon creates a coffee-bean shape.

Exam trap: Older patient with constipation and abdominal distension is classic.

46. Double bubble sign | Gastrointestinal

Diagnosis: Duodenal atresia

Why it matters: Gas fills the stomach and proximal duodenum with distal obstruction.

Exam trap: Association with Down syndrome is high-yield.

47. Olive-shaped mass in infant | Gastrointestinal

Diagnosis: Pyloric stenosis

Why it matters: Hypertrophy of the pylorus causes gastric outlet obstruction.

Exam trap: Nonbilious projectile vomiting with hypochloremic metabolic alkalosis is classic.

48. Red currant jelly stool | Gastrointestinal

Diagnosis: Intussusception

Why it matters: Telescoping bowel causes ischemia and bloody mucus stool.

Exam trap: Often occurs in children; lead point can be Meckel diverticulum.

Endocrine

49. Moon facies and buffalo hump | Endocrine

Diagnosis: Cushing syndrome

Why it matters: Excess cortisol redistributes fat and causes protein catabolism.

Exam trap: Think hypertension, hyperglycemia, purple striae, and proximal muscle weakness.

50. Bronze diabetes | Endocrine

Diagnosis: Hemochromatosis

Why it matters: Iron overload causes skin hyperpigmentation, pancreatic damage, and liver disease.

Exam trap: HFE mutation with increased intestinal iron absorption is classic.

Rapid Reverse Index

Cover the right column, answer from memory, then check yourself.

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02	Boot-shaped heart on X-ray	Tetralogy of Fallot
03	Rib notching on X-ray	Coarctation of the aorta
04	Water hammer pulse	Aortic regurgitation
05	Crescendo-decrescendo systolic murmur	Aortic stenosis
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07	Heinz bodies and bite cells	G6PD deficiency
08	Smudge cells	Chronic lymphocytic leukemia
09	Auer rods	Acute myeloid leukemia
10	Starry sky appearance	Burkitt lymphoma
11	Reed-Sternberg cells	Hodgkin lymphoma
12	Bence-Jones proteins	Multiple myeloma
13	Target cells	HALT: HbC disease, Asplenia, Liver disease, Thalassemia
14	Schistocytes	Microangiopathic hemolytic anemia
15	Musty or mousy body odor	Phenylketonuria
16	Maple syrup odor in urine	Maple syrup urine disease
17	Cherry-red spot on macula	Tay-Sachs or Niemann-Pick disease
18	Crumpled tissue paper macrophages	Gaucher disease
19	Needle-shaped negatively birefringent crystals	Gout
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31	Mallory bodies	Alcoholic hepatitis
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33	Wire-loop glomerular lesions	Lupus nephritis
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39	Codman triangle	Osteosarcoma
40	Ashleaf spots and shagreen patches	Tuberous sclerosis
41	Lisch nodules	Neurofibromatosis type 1
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43	String sign on contrast study	Crohn disease
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50	Bronze diabetes	Hemochromatosis

Need Help Connecting the Clues?

Tutoring session

Stuck on a topic? Book a \$60 high-yield tutoring session with an MD through Sinoe Medical Association.

Bring the disease names that keep confusing you. The goal is not just memorization; the goal is to connect the clue to mechanism, pathology, and the best answer choice under exam pressure.