



## ASSESSMENT QUESTIONS: THE BASICS

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### Disclosures

- I am President of the American Board of Pathology for 2012. None of the questions illustrated are taken from the American Board of Pathology exams. However, I will use some of the same materials and advice that we give to test committee members
- Some of the examples are modified from those used in past SAMs modules, some are from UCF volunteer faculty or NBME sites

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### Objectives: Why have this session?

- ASC receives accreditation from ACCME for educational activities, assessment is useful for lots of education
- American Society of Cytopathology is now approved to give Self Assessment Modules (SAMs) by the American Board of Pathology for Maintenance of Certification,
  - Keeping this approval critical as more cytologists have time-limited certificates.
- Audits of SAMs has shown variable question quality
  - Those subscribing to ASC activities in the future will desire questions that mirror board type questions!
- At end of session, you should be able to write a well-constructed assessment question that is reliable and valid

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### The Best Question stems

- Clinical scenarios that focus on problem solving and interpretation (NBME format) but avoid excess verbiage
- Test important material, avoiding “picky” facts
- Do not test opinion; have accepted answer
- State item Positively, avoid negative phrases
- Avoid non-standard abbreviations, and dubious vague adverbs: often, frequently
- End with: which is the most likely? (or similar phrase)
- Do NOT end with: All of the following (are true) except
- **Ideal: poses clear question that can be answered without seeing list of distractors (avoid T/F)**

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### Examples of good question stems

- This image is from an FNA of a 2 cm parotid mass in a 38 y.o. female patient. The most likely diagnosis is:
- A pleural effusion from a 51 year old woman reveals cells with discrete, “targetoid” intracytoplasmic lumens containing mucin. What is the most likely diagnosis?
- These cells found on a Pap test from a 45 year old woman (photo shown) represent:
- An EUS-FNA of unilocular cyst in the uncinat process of a 65 y.o. man produces cyst fluid with only histiocytes and few inflammatory cells, amylase level 50 U/L, CEA level 3075ng/ml. Diagnosis?

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### The best answer choices:

- 4 or 5 responses (minimum 4), keep SHORT
- Homogeneous options that are independent and do not overlap, more on this later
- Consistent length of answers
  - Avoid having the correct answer the longest length as this clues in test-takers
- Options are positive not negative.
- Plausible choices: Avoid absurd, jargon, dubious, vague
- Never include: “All of the above” or “None of the above”. Avoid “always” and “never”. **SINGLE best answer!**
- If distractors are long, try rephrasing stem

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### Homogeneous distractors: What is this?

- **All distractors are similar categories. Examples are**
- Diagnosis
- Prognosis
- Clinical finding
- Ancillary or laboratory test result
- Risk factors
- Methods
- Management
- **Closeness of answers: consider your audience: if testing specialists need closer answer choices that require more knowledge to separate**

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### Few examples of homogeneous distractors

- Question about pancreatic lesion. Choices were:
  - A. Pseudocyst
  - B. Mucin producing neoplastic cyst
  - C. Underlying carcinoma
  - D. Serous cystic neoplasm
  - E. Gastrointestinal tract contamination
- Stem asks about stains in Classical Hodgkin lymphoma:
  - A. CD20 and CD3
  - B. CD45 and CD3
  - C. CD20 and CD79a
  - D. CD15 and CD30
  - E. CD20 and CD30

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### Creating higher ("second") order questions

- Requires examinees to figure out the diagnosis, tissue changes, etc, but then apply this knowledge to answer another question
- Emphasizes more complex "higher order" thinking, analysis, problem solving
- Examples are
  - Pathogenesis, clinical setting, risk factors
  - Likely other laboratory findings, special stain or genetic results
  - Prognosis
  - Management or next steps
  - Composition of cells, tissue, etc

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**What do you mean?**

**A 25 year old woman had these findings on Pap test. What is the most likely? Or what is best management?**

- Ancillary finding (ask about HPV or other molecular options)
- Clinical course
- Management (HPV testing, colposcopy, repeat Pap, etc)
- Risk factor options

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**Example of higher order question**

**A 50 year old man with painless lymphadenopathy had FNA performed (show photo). Which of the following immunophenotypes is most likely by flow cytometry?**

- A. Positive: CD19, CD23, CD5; Negative: CD10, CD3
- B. Positive: CD3, CD5, CD8; Negative: CD19, CD20
- C. Positive: CD15, CD30; Negative: CD45, CD20, CD3
- D. Positive: CD20, CD5, cyclin D1; Negative: CD23, CD3
- E. Positive: CD3, CD30; Negative: CD19, CD10, CD5

*Note that all distractors are same length, and all are plausible for different types of lymphoma*

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**Example of good higher order question**

**This FNA is from a 50 year old with a painful Parotid gland mass. What is the amorphous material shown in photo?**

- A. Chondroid matrix
- B. Osteoid
- C. Fibrin degradation split products
- D. Basement membrane material
- E. Collagen type II

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**Absolute terms should be avoided, also distractors are not homogeneous**

**In patients with advanced dementia, Alzheimer's type, the memory defect**

- A. can be treated adequately with phosphatidylcholine (lecithin)
- B. could be a sequela of early Parkinsonism
- C. is never seen in patients with neurofibrillary tangles at autopsy
- D. is never severe
- E. possibly involves the cholinergic system

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**What NOT to Do:  
Multiple True/False questions (Avoid these!)**

**Which of the following is not a true statement of genodermatoses?**

- A. Recessively inherited diseases tend to be more severe
- B. Lamellar ichthyosis involves an increase in stratus corneum production coupled with a dramatic decrease in cell shedding
- C. A specific genetic mutation is at the core of each of the etiologies of these diseases
- D. All defects of each disease are present at birth\*\*
  - (also note negative stem)

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**Avoid stating numeric data inconsistently**

**Following a second episode of infection, what is the likelihood that a woman is infertile?**

- A. Less than 20%
- B. 20 to 30%
- C. Greater than 50%
- D. 90%
- E. 75%

*Better choices would be 1-5%, 6-10%, 11-20%, 21-30%, etc.*

*Lists of numbers are useful in cytology when asking about the risk of malignancy, etc.*

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**What do you think?**

**Which one of the following is most helpful in differentiating primary lung tumors from metastatic ones?**

- 1. Clinical history
- 2. Radiological findings
- 3. Clinical findings
- 4. Cytomorphology
- 5. Immunohisto/cytochemistry

*There may not be one single best answer, may be opinion*

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**What do you think?**

**Which of the following statements about mucinous cystic neoplasms (MCN) is false?**

- 1. MCN are typically malignant when detected.
- 2. MCN typically occur in the pancreatic body or tail of middle-aged women.
- 3. MCN are lined by mucinous epithelium that may display various degrees of dysplasia in a single cyst.

*This is a multiple true/false type of question with a negative stem. Answers are not homogeneous*

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**What do you think?**

**Which of the following statements regarding endocervical adenocarcinoma in situ is incorrect?**

- 1. It is the precursor lesion of most endocervical adenocarcinomas
- 2. Strips, feathering, nuclear overlap and columnar configuration are characteristic morphologic features.
- 3. Is associated with high risk HPV positivity in nearly 100%.
- 4. Unopposed estrogen is one of the etiologies
- 5. Usually hypercellular Pap specimens in properly sampled cases.

*This has similar issues: multiple T/F, negative stem, and lacks homogeneous distractors*

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### You can try fixing the question...

Which of the following best describes the cytological characteristic of endocervical adenocarcinoma-in-situ?

- A. Strips of columnar cells with feathering appearance
- B. Single dispersed oval cells with hyperchromatic nuclei
- C. Etc. (It may be hard to come up with enough choices)

• Probably is best to show a photo and give a clinical scenario. Then provide either 5 diagnoses, 5 management choices, 5 choices for etiology or risk factors

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### Take home points

- Question Stem: Clinical scenarios are ideal
  - Photos or practical questions ideal
  - Test important concepts appropriate for level
  - Attempt to use some higher level ("second order") formats
  - Do not use: Multiple true/false format or "All except" questions
- Distractors/answers: should be homogeneous and short
  - Never use "All of the above" or "None of the above"
- Have other individuals peer review your questions prior to submission. Getting feedback is critical to success
  - Committees will take active role in reviewing questions
  - SAMs questions will be required earlier so they can be reviewed
- Thanks for working with the ASC!

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