



GUIDELINES FOR CONSTRUCTING MULTIPLE-CHOICE CLINICAL CASE PRESENTATIONS

A standard multiple-choice question consists of two standard parts: a problem (*stem*) and a list of suggested solutions (*options*). The stem is best written in the form of a complete statement. The list of options contains one correct or best option (*answer*) and a number of incorrect or inferior options (*distractors*). When constructing a clinical case presentation, the stem includes a patient vignette. Components of a patient vignette are below:

- Age, Gender (e.g., A 45-year-old man)
- Site of Care (e.g., comes to the emergency department)
- Presenting Complaint (e.g., because of headache)
- Duration (e.g., that has continued for 2 days).
- Patient History (with Family History?)
- Physical Findings
- +/- Results of Diagnostic Studies
- +/- Initial Treatment, Subsequent Findings, Etc.

The patient vignette is followed by one or more lead-in questions and (4-5) options. See example below:

An unresponsive 58-year-old woman is brought to the emergency department after collapsing at a local shopping mall. Her family reports that she felt well that morning but developed a progressively severe headache. She has had hypertension and atrial fibrillation and is taking an antihypertensive medication and an oral anticoagulant. Her blood pressure is 220/130 mm Hg and she has apnea alternating with hyperpnea. She responds only to noxious stimuli with extensor posturing involving the right arm and leg. Funduscopic examination shows papilledema involving the left optic disc. Pupils are 3.0/7.0 (R/L) with no reaction to light on the left. There is a left gaze preference. There is diffuse hyper-reflexia, R > L, and bilateral Babinski signs are present.	— stem
The dilated, unreactive left pupil is most consistent with injury to which of the following structures on the left?	
distractor — A. Optic nerve	— options
distractor — B. Optic tract	
answer — *C. Oculomotor nerve	
distractor — D. Lateral geniculate nucleus	
distractor — E. Superior colliculus	

This document provides guidelines to writing good multiple-choice items and concludes with a checklist when reviewing each multiple-choice item.

Test items

- Construct each item to assess a single written objective.
 - Make sure the item can be answered without looking at the options.
 - Avoid “tricky” and overly complex items.
 - Avoid textbook, verbatim phrasing
 - Use proper grammar, punctuation, and spelling.
 - Present the answer in each of the option positions approximately an equal amount of times, and in random order.
- * *Focus on important concepts; don't waste time testing trivial facts.*

Stems

- Base each problem on a specific item stated clearly in the stem.
- Include as much of the item in the stem, but do not include irrelevant material.
- State the stem in positive form (in general).
- Avoid superfluous information.
- Avoid negatively phrased items (e.g., those with *except* or *not* in the lead-in question).
- Don't begin stems with the phrase, “Which of the following is true (or false)?” or “Each of the following statements is correct EXCEPT.”

Options

- Word the options clearly and concisely.
- Use plausible distractors.
- Include one and only one correct or clearly best answer in each item.
- Write options that are grammatically consistent and logically compatible with the stem; list them in logical or alphabetical order.
- Write distractors that are plausible and the same relative length as the answer.
- Avoid using absolutes such as *always*, *never*, and *all* in the options; also avoid using vague terms such as *usually* and *frequently*.
- Avoid using *none of the above* or *all of the above* as an option.
- Do ask questions with a varying number of options.
- Keep the options mutually exclusive.
- Keep the options homogeneous in content.
- Keep the options free from clues as to which response is correct.
- Keep options parallel in form.
- Keep options similar in length.

Reference

Case, S.M and Swanson, D.B. Constructing written test questions for the basic and clinical Sciences (3rd Edition, revised). Philadelphia, PA: National Board of Medical Examiners, 2002.