Writing assessment items

1. Four questions must be prepared for each competency. Each one should align to a competency and integrate one or more learning outcomes.

2. The AOSpine levels of Principles, Advanced, and Masters will be addressed by having two easy questions and two difficult questions for each competency (examples are provided on pages 2 and 3).

3. Questions should focus on the patient problems in this area of practice and use case scenarios to present clinical decisions that a surgeon would face.

4. The four answer options should have one clearly preferred (correct) answer - the incorrect options should be less appropriate or inappropriate for the situation (Tip: for wrong options, think about errors that are made and sequencing of steps).

5. Each answer should be referenced (consider your references when writing).

6. Feedback rationale should explain the correct and incorrect answer options.

7. Images (x-rays, MRIs, photos) should be included if the participant needs to interpret them in order to be able to answer the question.

8. Follow best practice question-writing principles by avoiding bias and common mistakes (eg, avoid phrasing in negative and no “all of the above”).

AOSpine International
Stettbachstrasse 6, 8600 Dübendorf, Switzerland
T +41 44 200 24 25, F +41 44 200 24 12
info@aospine.org, www.aospine.org

Competency 4	**Order appropriate imaging**	
Question 1	Level of difficulty: Easy or difficult	Easy (precourse)

A 76-year-old female had a minor fall on her buttocks 4 weeks ago when she missed the chair behind her. She now reports lower back pain, which increases with flexion and upon standing and sitting. No neurological deficits are present. She has a history of breast cancer but has been tumor free for 8 years.

Which of the following is the most appropriate next step?

Option A	CT scan
Option B	**MRI with or without contrast medium**
Option C	Bone scan
Option D	Flexion/extension x-ray views
Answer	B
Rationale	MRI will provide most of the information you need to determine your treatment strategy. It can show whether the fracture is still fresh (bone edema), degenerative changes that might be responsible for the lower back pain, and the current status of the spinal canal. In addition, it can confirm a diagnosis of metastasis with a pathological fracture. A CT scan can show bony changes but gives less information on underlying pathology. A bone scan can confirm malignancy but is not the first imaging technique to choose for this purpose. Flexion/extension x-ray views would provide no additional information.
Reference(s)	**Krug R, Burghardt AJ, Majumdar S, et al** (2010) High-resolution imaging techniques for the assessment of osteoporosis. *Radiol Clin North Am*; 48:601–621. **Blumenkopf B, Juneau PA** (1988) Magnetic resonance imaging (MRI) of thoracolumbar fractures. *J Spinal Disord*; 1(2):144–150.

Reviewer comments, etc	
Name	**Comment**
Copyright	Image permission provided by Michael Mayer (July 2010)

AOSpine International
Stettbachstrasse 6, 8600 Dübendorf, Switzerland
T +41 44 200 24 25, F +41 44 200 24 12
info@aospine.org, www.aospine.org

Competency 7	**Reduce/decompress/stabilize** appropriately	
Question 4	Level of difficulty: Easy or difficult	Difficult (postcourse)

A 56-year-old multimorbid patient falls from a roof. He has no neurological deficits but has bilateral calcaneal fractures and an L3 fracture (as shown in the image). He has had two myocardial infarctions in the past, and has two coronary stents, diabetes mellitus, arterial hypertension, and COPD. The anesthetist reports that the patient is inoperable ("not fit for surgery").

What is the best treatment option for this patient?

Option A	Kyphoplasty
Option B	**Lumbar brace for 3 months, weekly control x-rays**
Option C	Thoracolumbar extension brace for 3 months
Option D	Consult another anesthetist
Answer	B
Rationale	This patient is at too high a risk for surgery. Therefore, nonoperative treatment is the only option. Kyphoplasty is contraindicated because of the coronal-split fracture, and a 4-point extension brace is not necessary. If an increase of the split can be avoided in this A2.2 fracture, the probability of healing with the use of a short brace is good.
Reference(s)	**Magerl F** (1982) External fixation of the lower thoracic and lumbar spine. *Uhthoff HK (ed), Current Concepts of Internal Fixation of Fractures*. Berlin, Heidelberg:Springer-Verlag, 353–366. **Shen WJ, Liu TJ, Shen YS** (2001) Nonoperative treatment versus posterior fixation for thoracolumbar junction burst fractures without neurologic deficit. *Spine*; 26(9):1038–1045.

Reviewer comments, etc	
Name	**Comment**
Copyright	Image permission provided by Bryan Ashman (October 2010)

AOSpine International
Stettbachstrasse 6, 8600 Dübendorf, Switzerland
T +41 44 200 24 25, F +41 44 200 24 12
info@aospine.org, www.aospine.org