



UEMS

Specialist Section of Orthopaedics and Traumatology

EBOT

European Board of Orthopaedics and Traumatology

Computer Based Testing in Orthopaedics

The way forward in the written
paper



Computer Based Testing - CBT

Advantages:

- ◆ Online examination
- ◆ Local test centre
- ◆ Europe wide
- ◆ Paperless – administration easier
- ◆ Especially suitable for larger numbers



UEMS
Specialist Section of Orthopaedics and Traumatology
EBOT
European Board of Orthopaedics and Traumatology

Computer Based Testing - CBT

Requirements:

- ◆ **Suitable provider**
- ◆ **User friendly software**
- ◆ **Relatively low cost with economies of scale**



EBOT Examination

Pre 2010:

- ◆ Exam once yearly 1st W/E October
- ◆ Written paper MCQ – True or false with negative marking
- ◆ Oral exam 5 x 30 minutes next day
- ◆ Pass rate around 50%



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

EBOT Examination

Current :

- ◆ **Online MCQ taken in June**
- ◆ **Multiple European centres**
- ◆ **100 questions SBA**
- ◆ **No negative marking**
- ◆ **Must pass part 1 to gain entry to part 2**



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

Results - 2010

Part 1: 50 candidates

- ◆ **Pass 37 74%**
 - ◆ **EU 16**
 - ◆ **Non EU 21**

- ◆ **Fail 13**
 - ◆ **EU 6**
 - ◆ **Non EU 7**



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

Results - 2010

Part 2: 35 Candidates

- ◆ **Pass 25 (71%)**
 - ◆ **EU 12 86%**
 - ◆ **Non EU 13 62%**
- ◆ **Fail 10**
 - ◆ **EU 2**
 - ◆ **Non EU 8**



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

Previous results

◆ 2001	11	73%	Rhodes
◆ 2002	16	63%	Stockholm
◆ 2003	12	75%	Amsterdam
◆ 2004	15	67%	Berlin
◆ 2005	11	46%	Madrid
◆ 2006	18	67%	Turin
◆ 2007	13	53%	Vienna
◆ 2008	14	50%	Geneva
◆ 2009	31	48%	Brussels



UEMS
Specialist Section of Orthopaedics and Traumatology
EBOT
European Board of Orthopaedics and Traumatology

Pearson Vue

- ◆ Professional provider with relevant expertise and experience
- ◆ American Boards
- ◆ RCGP (UK)
- ◆ RCP(Lond)
- ◆ Written Driving Test (UK)

Pearson Vue

city	2010 planned	2010 actual	2011 planned
Istanbul	12	12	30
London	39	13	24
Paris	0	0	16
Madrid	14	06	12
Athens	08	06	12
Frankfurt	07	0	07
Brussels	05	05	10
Amsterdam	09	00	09
Lisbon	04	04	08
Stockholm	05	03	06
Rome	06	02	04
Dublin	05	0	05
Manchester	09	02	04
Vienna	02	0	02



UEMS

Specialist Section of Orthopaedics and Traumatology

EBOT

European Board of Orthopaedics and Traumatology

Pearson Vue

- ◆ All administration on exam day
- ◆ Secure invigilation
- ◆ Paper downloaded to exam centre
- ◆ Answers uploaded to EBOT
- ◆ CERTS software optional
- ◆ Cost approx 100€ per seat



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

In training examination

Concept:

- ◆ Annual online written MCQ taken in each Training Programme
- ◆ Used for practice and as in training assessment
- ◆ Ranks trainees by year group
- ◆ Can be used to assess programme



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology

In training examination

Requirements:

- ◆ **Locally invigilated, using own PC**
- ◆ **Secure to avoid cheating**
- ◆ **Cheap to run**
- ◆ **Need large question database**



UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology



Online - low cost – minimal administration

1. Questions are compiled and candidates validated



2. Candidates register and take the exam online



3. Results are processed and reports generated





UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology



Question Creation



Writing committee members add questions to the online database.

Edit question

Status and grading: Status: Quality: Difficulty:

Basic data:

Question type (Required):

Short title (For quick identification):

Stem (Required):

Answer options:

- Anterior discectomy and fusion c2 c3 with a plate
- posterior fixation c1 to c3
- Anterior discectomy and fusion with graft
- hard occipito-mental collar
- Halo vest immobilisation



UEMS
Specialist Section of Orthopaedics and Traumatology
EBOT
European Board of Orthopaedics and Traumatology



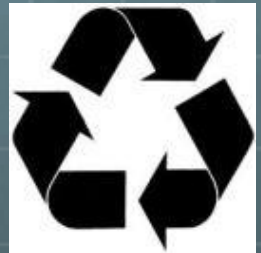
Discussion and approval



Questions can be projected, fine tuned and approved during a meeting or in small groups.



Question revision



Feedback from examinations can be used to improve questions.

Home Questions Exams

User: All Topic: All Status: All Quality: All Difficulty: All

[Add a new question](#)

- Basic Science(66)
- Lower Limb(100)
- Paediatrics(63)
- Spine(43)
 - 819 - degenerative spine
 - 894 - spine tumour
 - 344 - Tuberculosis spine
 - 346 - Cervical spine trauma
 - 910 - Cauda Equina
 - 975 - cobb angle scoliosis
 - 993 - renal metastasis
 - 939 - Spinal Shock
 - 956 - neuromuscular scoliosis
 - 001 - Extracompartmental vessel
 - 002 - Staph aureus discitis at ...
 - 003 - Elderly fall at home
 - 004 - Back pain in 12 year old ...
 - 005 - Unilateral radicular pain...

197 - Hangman's fracture

Status:	Used	Created by:	Philip Sell
Quality:	Final exam	Question type:	Multiple Choice - SCA
Difficulty:	Moderate	Created:	1 / 28 / 2011 8:54:05 PM
Category:	Spine	Last updated:	2 / 1 / 2011 2:42:51 PM

Basic data:

Title
Hangman's fracture

Stem
A type 2 hangman's fracture in a 74 year old would be best treated, according to the literature, with

Answer options:

- Anterior discectomy and fusion c2 c3 with a plate 33%
- posterior fixation c1 to c3 35%
- Anterior discectomy and fusion with graft 10%
- hard occipito-mental collar 5%
- Halo vest immobilisation 17%





UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology



Candidate application



Candidates complete the online form and upload the required documents.

A PDF file is automatically created of complete application for easy reading.

Name and salutation	
Title	Dr
First name	Joanna
Middle name(s)	
*Surname	Pasquali
Affiliation and address	
Department	Department of General Medicine
Institution	University of Copenhagen
Street	Blegdamsvej 9
Town/City	Copenhagen
Post Code	2100-N
Country	Denmark





UEMS
Specialist Section of Orthopaedics and Traumatology

EBOT
European Board of Orthopaedics and Traumatology



Candidate screening



Evaluation Approved Not approved

Confidential report

Candidate in private practices since May 2010. Not participant in a resident program in France but qualification from "conseil de l'ordre".

The supervisor isn't an orthopaedic surgeon but a general surgeon!

Save and continue to the next applicant >>

Candidates can be vetted online by members of the screening committee.



UEMS
Specialist Section of Orthopaedics and Traumatology
EBOT
European Board of Orthopaedics and Traumatology



Exam day

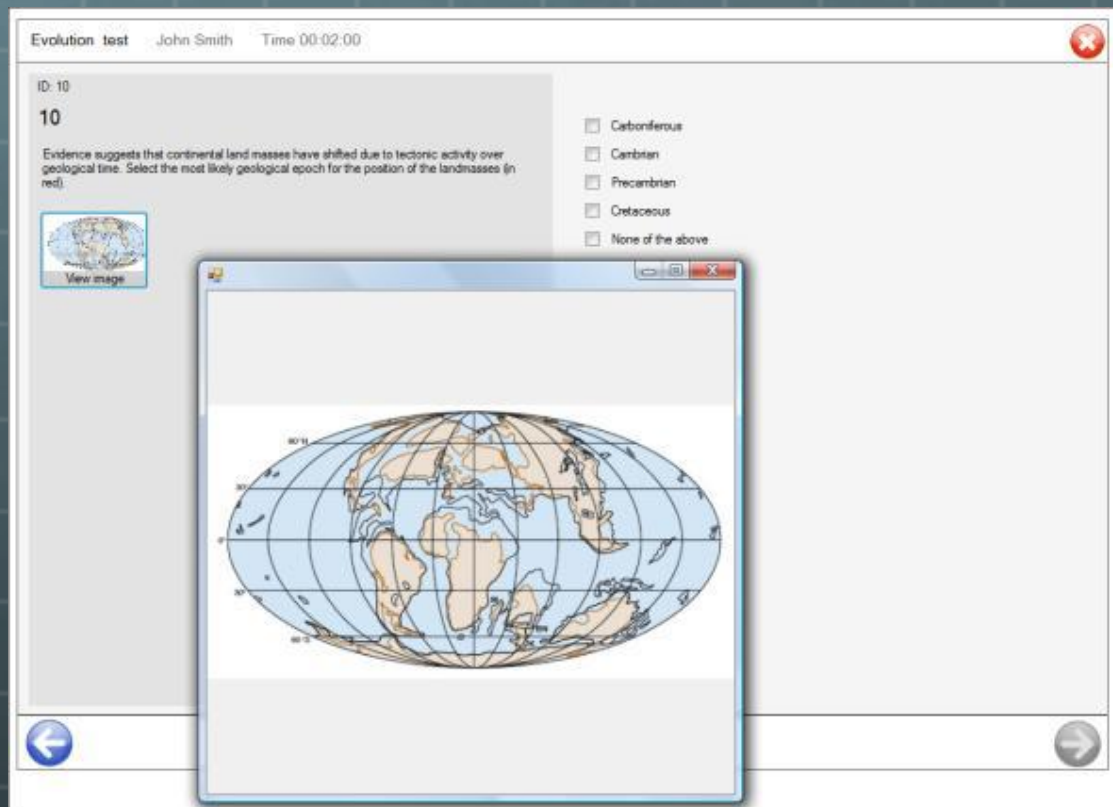


Exam accessed online but runs on windows computer.

Candidates can use own computer.

Fully power failure safe, internet safe, data access safe.

Clear presentation and easy navigation of questions during exam.



Administration, results and statistics

Administrator has an online overview of all processes.

Results compiled automatically.

Candidates' results can be compared year-on-year, between departments or countries.

Marks and grades can be optionally, forwarded to candidates through their user account.

Data and can be exported to different media for further processing.





UEMS
Specialist Section of Orthopaedics and Traumatology
EBOT
European Board of Orthopaedics and Traumatology



Benefits

- ✓ Fail-safe and secure exam
- ✓ Low cost per candidate
- ✓ Minimal administration
- ✓ Multiple, international exam locations
- ✓ Year-on-year improvement of questions



Question types supported

- ✓ Multiple choice
- ✓ True/False
- ✓ Essay style