Preparing for the ABR Diagnostic Medical Physics Board Exams - Oral Exam

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Outline

• What is oral exam, why is it special?
• What materials are examined?
• How should I prepare oral exam?
• How can I do well during the exam?
• Any practical tips?
What is oral exam?

- The final step to be a board certified medical physicist.
- May 18-21, 2014 Louisville, KY

Hotels are all close: pros and cons of booking a hotel right at exam site

http://www.theabr.org/

How is oral exam performed?

- The oral examination is designed to test your knowledge and fitness to practice applied medical physics in the specified area(s).
- 5 examiners, 30 minutes each
- 5 questions in 5 categories (new categories in 2015)
- Have to pass all 5 categories to get certificate
- If one category failed, you are considered ‘conditioned’
Is oral exam difficult?

http://www.theabr.org/

What materials are examined?

Before 2015

• Radiation Protection and Patient Safety
• Patient-Related Measurements
• Image Acquisition, Processing and Display
• Calibration, Quality Control and Quality Assurance
• Equipment

2015 and After

• Radiography, fluoroscopy, and interventional radiology
• Computed tomography
• Non-ionizing techniques – MRI and ultrasound
• Shielding, radiation, and protection
• Radiation dosimetry and patient safety

• No nuclear medicine questions
• Emphasize on clinical experience
What materials are examined?

• Basic imaging principles
  – How are images generated?
  – Familiar with terminologies, basic anatomies
• Equipment components and functions
  – Familiar with sketched figures
• Quality Control
  – What tests need to be conducted
  – With what phantoms and equipment
  – What are the limitations of each measurement
• ACR accreditation

What materials are examined?

• Image quality assessment
  – Spatial resolution, low contrast detectability, geometry accuracy, ….
• Image artifacts
  – Appearance, Cause, Correction
• Familiar with typical values
  – e.g. $\gamma = 42.57$ MHz/T for H; CT# of water, fat, tissue; attenuation of US etc.
• Safety: Patient and operator
• Shielding and siting
  – ICRP 147; MRI siting
Do I need to read books?

• Books
  – Medical Imaging Physics. William R. Hendee and E. Russell Ritenour
  – Other books in each modality

• Reports
  – NCRP147
  – ACR accreditation: general requirement and phantom studies
  – AAPM reports

How should I prepare oral exam?

Rule #1
Start Early!

• Talk to people who recently took the exams
  – How they prepped
  – What they found to be useful

• Fully utilize your resources
  – Physicist, technologist and radiologist at your hospital
  – Your classmates, your friends, your colleagues …

• Prepare a list of ‘things you need to know’ for each imaging modality
Group Study

- Benefit of group study
  - Motivate and support each other
  - Learn faster
  - Fill in knowledge gaps
- Conduct group study effectively
  - Group members on the same page
  - Each in charge of a specific area, e.g. one modality
  - Meet regularly
  - Question/challenge each other (in a friendly way)
- Distance is not a problem

Mock oral exam

- Get senior medical physicists to help
- Benefit of mock oral exam
  - Get familiar with oral exam format
  - Organize thoughts and answers during exam
  - Alleviate stress in real exam
  - Identify areas to focus and improve
How can I do well during the exam?

• Answer questions correctly and effectively
  – Give short and precise answers
  – Talk about related topics if you don’t know the answer
  – Be honest, don’t make up an answer
  – No need to sweat out on a single specific question
  – Your feeling might be different as your result
  – Don’t feel bad if you were stopped by the examiner, it could be a good thing
  – Don’t guess which category each question is in

• Interact with examiners
  – Experienced medical physicists
  – You background is blinded to examiners
  – Different personal style of examiners
  – The purpose is to test your knowledge base and clinical experience, not to fail you. (They are helping you!)
  – Don’t argue with examiners
  – Examiners won’t tell your performance, good or bad
  – Final score is averaged among examiners
How can I do well during the exam?

• Other things to consider
  – Be confident
  – Dress appropriately
  – There might be a half hour break – the longest 30 min

Summary

• Know your exam
• Prepare a list of ‘things you need to know’
• Start early
• Group study if you can
• Answer questions precisely
• Interact with examiners
• Be confident, take it easy
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Good Luck!