

# 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 exanimated?
- 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



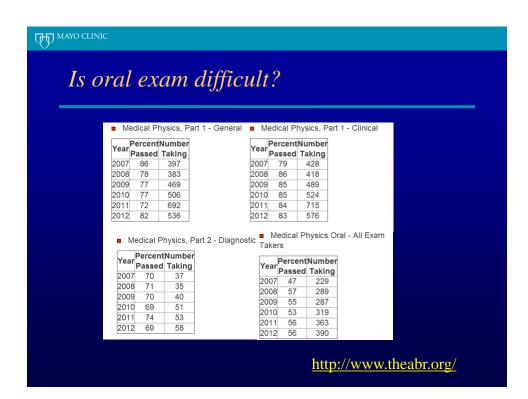
• Hotels are all close: pros and cons of booking a hotel right at exam site

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'





### 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. x = 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
  - The Essential Physics of Medical Imaging. Jerrold T. Bushberg, J. Anthony Seibert, Edwin M.
  - Review of Radiological Physics. Walter Huda and Richard M. Slone
  - 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?



- 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



## How can I do well during the exam?

- 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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