

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?

■ Medical Physics, Part 1 - General			■ Medical Physics, Part 1 - Clinical		
Year	Percent Passed	Number Taking	Year	Percent Passed	Number Taking
2007	86	397	2007	79	428
2008	78	383	2008	86	418
2009	77	469	2009	85	489
2010	77	506	2010	85	524
2011	72	692	2011	84	715
2012	82	536	2012	83	576

■ Medical Physics, Part 2 - Diagnostic			■ Medical Physics Oral - All Exam Takers		
Year	Percent Passed	Number Taking	Year	Percent Passed	Number Taking
2007	70	37	2007	47	229
2008	71	35	2008	57	289
2009	70	40	2009	55	287
2010	69	51	2010	53	319
2011	74	53	2011	56	363
2012	69	58	2012	56	390

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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. $\gamma = 42.57 \text{ MHz/T}$ 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
 - Your 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!

