

MR5

5th Comprehensive Review of the Medical College Admission Test (MCAT®)

Final MCAT® Recommendations

The MR5 is AAMC's fifth comprehensive review of the Medical College Admission Test (MCAT®) since the exam was first administered in 1928. In standardized testing, periodic reviews of examinations are considered a best practice — particularly in fields with rapidly-changing knowledge. The current version of the test has been in use since 1991, and the new version (expected to launch in 2015) is likely to be in place until 2030.

The MR5 Committee released its final recommendations for the future exam in November at the AAMC's annual meeting. Details about the proposed exam were released to the pre-health community at the same time.

Starting with background on the committee's charge and work, this update describes the principal conversations and essential work that provided the foundation of the committee's recommendations. It also contains a list of the committee's 14 recommendations, arguments in favor of the MR5 Committee's recommendations, and a description of the proposed exam.

The Process

The MR5 advisory committee was appointed by the AAMC in fall 2008. The committee was tasked with reviewing the MCAT® exam and recommending changes likely to increase the exam's value to medical school admissions committees and examinees. The 21 committee members include: medical school deans; admissions, educational affairs, student affairs, and diversity officers; basic and clinical sciences faculty; pre-health advisors and other baccalaureate faculty; a medical student; and a resident.

The MR5 committee solicited input from several blue-ribbon and advisory committees and groups including the AAMC-HHMI Scientific Foundations for Future Physicians (SFFP) Committee, the AAMC Behavioral and Social Sciences Foundations for Future Physicians (BSSFFP) Committee, the Holistic Review Project Advisory Committee, the National Association of Advisors for the Health Professions, the Canadian Council on Medical Education, the American Association of Colleges of Osteopathic Medicine, and other groups.

The MR5 committee received over 2,700 completed surveys from baccalaureate and medical school faculty, administrators, residents, and medical students about curricula, medical school admissions, and the current and future tests.

The MR5 committee held more than 90 outreach events to solicit input. It published brochures, project newsletters, and survey reports, and posted videos on the MR5 website. More than 4,000 stakeholders received regular e-newsletters.

Recommendations for the 2015 MCAT

The MR5 Committee's final recommendations consider the following: (1) the content and format of the new exam, (2) essential resources to support changes, and (3) what the AAMC should do to develop new measures of integrity, service orientation, and other personal characteristics admissions committees can use early in the process of student selection.

The committee's recommendations for the content and format of the new exam preserve what works best about the current MCAT® and eliminate what doesn't. They maintain a testing format that has already proven successful while further enriching the exam by giving attention to concepts future physicians are likely to need. The recommendations balance testing between the natural sciences, the social and behavioral sciences, and critical analysis and reasoning. They respond to the SFFP recommendations, BSSFFP tenets, and reflect current science. They ask examinees to demonstrate their knowledge by using their scientific thinking, research, and statistics skills. The recommendations communicate the fact that we as a society need students who are prepared to deal with the human and social issues of medicine. They stress the necessity of reading broadly to prepare for medical school.

More specifically,

1. The committee's recommendations describe four test sections:
 - Biological and Biochemical Foundations of Living Systems
 - Chemical and Physical Foundations of Biological Systems
 - Psychological, Social, and Biological Foundations of Behavior
 - Critical Analysis and Reasoning Skills
2. For the **natural sciences** sections, the proposed exam will:
 - test introductory biology, organic and inorganic chemistry, and physics concepts,
 - test highly-rated biochemistry concepts at the level taught in most first-semester biochemistry courses,
 - test cellular/molecular biology topics at the level taught in most introductory biology sequences,
 - target basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses, and
 - ask examinees to use their knowledge of natural sciences concepts to demonstrate skill in scientific inquiry and reasoning, research methods, and statistics.
3. For the **social and behavioral sciences**, the proposed exam will:
 - test examinees' knowledge and use of concepts in psychology, sociology, and biology that provide a solid foundation for learning in medical school about the behavioral and socio-cultural determinants of health,
 - target concepts taught at most colleges and universities in one-semester introductory psychology and one-semester introductory sociology courses, and
 - require examinees to use knowledge of social and behavioral sciences concepts to demonstrate skill in scientific inquiry and reasoning, research methods, and statistics.
4. The proposed **Critical Analysis and Reasoning Skills** section will test examinees' reasoning by asking them to critically analyze information provided by passages from a wide range of social and behavioral sciences and humanities disciplines. This section will not require specific knowledge in these disciplines but, by calling them out, may prompt students to read broadly as they prepare for medical school. Along with many others, passages about ethics and philosophy, cross-cultural studies and population health will be included.
5. The proposed exam eliminates the Writing Sample section.
6. The proposed exam will report scores on a scale similar to the current 1-15 scale, rather than on a pass/fail or other categorical scale, for each of the four sections.
7. The proposed exam is scheduled to launch in 2015.
8. The proposed exam will come with a schedule for regularly updating content. This is to ensure that the MCAT® keeps pace with the rapid changes that occur in science.

The MR5 committee also recommends that resources for examinees, pre-health faculty, and medical school admissions committees:

9. Clearly describe the types of decisions test scores are and are not designed to support in a holistic review of applicants' qualifications.
10. Include detailed descriptions of the knowledge and skills the proposed exam will test to help prospective examinees prepare — with special attention to the needs of educationally-disadvantaged students and faculty at under-resourced institutions.
11. Provide low-cost preparation materials; discounts or waivers on testing fees and preparation materials for examinees who qualify for assistance; and — for qualifying examinees with disabilities — scholarships that offset the costs of the evaluations they need in order to apply for testing accommodations.
12. Through a new Validity Studies Service, help admissions officers track data and conduct research on the value and validity of the new exam for student selection at their schools.

To help medical schools consider data on integrity, service orientation, and other personal characteristics early in student selection, the committee recommends that the AAMC:

13. Vigorously pursue options for gathering data about personal characteristics through a new section of the AMCAS application and through standardized recommendation letters. The new section would ask applicants to reflect on experiences demonstrating their personal characteristics. The standardized letters would ask recommenders to rate and discuss those behaviors that demonstrate applicants' personal and academic characteristics.
14. Mount a rigorous research program aimed at discovering the extent to which applicants' personal characteristics may be measured as: part of a separate regional or national event, or locally by admissions committees using nationally-developed tools.

MCAT ²⁰¹⁵	~ # of Test Items	~ # of Testing Minutes
<p>Biological and Biochemical Foundations of Living Systems</p> <p>This section will be organized around the concepts described by the Scientific Foundations of Future Physicians (SFFP) Committee as important to entering medical students' success, and it will reflect medical school faculty members' ratings of the most important of these. This test asks examinees to combine their knowledge of the biological and biochemical foundations of living systems with their scientific inquiry and reasoning skills to solve problems that demonstrate their readiness for medical school.</p> <p>Processes that are unique to living organisms include growing and reproducing, maintaining a constant internal environment, acquiring materials and energy, sensing and responding to environmental changes, and adapting. This section of the exam will test the extent to which examinees know how cells and organ systems within an organism act independently and in concert to accomplish these processes. It also will test the extent to which examinees can reason about these processes at various levels of biological organization within a living system.</p>	65	95
<p>Chemical and Physical Foundations of Biological Systems</p> <p>This section also will be organized around the SFFP competencies and faculty members' importance ratings. It also will ask examinees to combine their knowledge of foundational concepts with their scientific inquiry, reasoning, research and statistics skills to solve problems that demonstrate readiness for medical school.</p> <p>Understanding the mechanical, physical, and biochemical functions of human tissues, organs, and organ systems is important to the study of medicine. This section will test the extent to which examinees know the basic chemical and physical principles that underlie the mechanisms operating in the human body. It will further test examinees' ability apply their understanding of these general principles to living systems.</p>	65	95
<p>Critical Analysis and Reasoning</p> <p>This section will test examinees' reasoning by asking them to critically analyze information provided by passages from a wide range of social and behavioral sciences and humanities disciplines. It will not require specific knowledge in these disciplines, all of the needed information will appear in the passages. Along with many others, passages from ethics and philosophy, cross-cultural studies, and population health will be included.</p>	60	90
<p>Psychological, Social and Biological Foundations of Behavior</p> <p>This section will test examinees' knowledge and use of the concepts in psychology, sociology, biology, research methods, and statistics that provide a solid foundation for learning about the behavioral and socio-cultural determinants of health and health outcomes in medical school. It will test the ways in which psychological, social, and biological factors influence our perceptions and reactions to the world, behavior and behavior change, what we think about ourselves and others, cultural and social differences that influence well-being, and the relationships between social stratification, access to resources, and well-being.</p>	65	95

For More Information

To learn more about the future exam, please see the: *Preview Guide to the MCAT²⁰¹⁵* (www.aamc.org/mcat2015/preview.pdf); video on MCAT²⁰¹⁵ (http://www.youtube.com/watch?feature=player_embedded&v=S8635VAnOeE); webinar series on MCAT²⁰¹⁵ (www.aamc.org/mcat2015/admins); and MR5 and MCAT²⁰¹⁵ websites (www.aamc.org/mr5 and www.aamc.org/mcat2015).

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