

From the ABNM: Practice of Nuclear Medicine

J. Anthony Parker, MD, PhD; Associate Executive Director, American Board of Nuclear Medicine

Cognitive psychology has shown that retrieval practice is much better than traditional studying for long-term retention of learning. Testing has traditionally been thought of as a method of evaluation, but testing can also be used in a learning strategy as a form of retrieval practice (*1*). Testing is only one form of retrieval practice; retrieval practice is commonly used during nuclear medicine resident teaching. Teaching at the workstation often involves a staff member or another resident asking a question. The process of answering the question is retrieval practice. Furthermore, going over cases, both for resident teaching and during our daily practice of nuclear medicine, is an example of retrieval practice. We evaluate the history and the imaging and then search our knowledge base to come up with a diagnosis or a differential diagnosis. If we are unsure we may seek information from a colleague or ask Dr. Google. The bottom line is that retrieval practice is an exceptionally important part of our learning, both during training and during practice.

Continuing medical education (CME) and maintenance of certification (MOC) are often thought of as being separate from practice, in large part because of the bureaucratic overlay of CME and MOC. But the continuing learning process has always been a part of medicine; ongoing learning throughout one's career has traditionally been captured by the word "practice" in medical practice.

The American Board of Nuclear Medicine (ABNM) seeks to provide more value to the MOC process, making it more directly beneficial to practice. The challenge for the ABNM is to also make the MOC process credible to our patients and those who contend they represent our patients. Credibility provides value to ABNM certification both with respect to our patients and our colleagues. Credibility in the current environment means that there must be an evaluation. The challenge for the ABNM is to emphasize learning and deemphasize bureaucracy while providing credible diplomate evaluation.

Cognitive psychology has shown that learning from testing is enhanced by feedback (*1*). Although testing has a positive effect without feedback, one negative effect is that a person becomes more convinced of a wrong answer after committing to that answer on a test. Overcoming this negative effect is one of the benefits of feedback (*1*). Cognitive psychology has also shown that mass learning (e.g., "cramming" for a test) provides fluency and short-term recall but is poor at enhancing long-term retention (*1*). Part 3 of MOC, the MOC exam, suffers as a learning tool both be-

cause there is no feedback and because diplomates tend to prepare for the exam with mass learning.

One benefit of ABNM membership in the American Board of Medical Specialties (ABMS) is that we can learn from the best practices of other medical boards. The American Board of Anesthesiology (ABA) has been a best practice leader and has been developing innovative simulations for anesthesia emergencies. They have also been leaders in trying to integrate principles from cognitive psychology into their MOC Anesthesiology (MOCA) program. They have piloted the "MOCA minute," a combination of MOC Parts 2 and 3. Once each week, diplomates who had recently taken the MOC exam were provided with a single new question. The diplomates had 1 minute to answer a question similar to one that more than half the diplomates had answered incorrectly on the exam. The diplomate was then provided feedback about the correct answer and the principles needed to answer the question correctly. If the diplomate missed the question, then another similar question was presented after an interval. The MOCA minute provides spaced learning and feedback. Going forward, the ABA plans to use this type of approach as an alternative to the traditional MOC exam.

As a small board with limited resources, development of a program like the MOCA minute would usually not be possible for the ABNM. An advantage of being part of the ABMS is that we can share resources with other boards. The ABMS is in the process of developing MOCA minute-like resources for member boards. The ABNM will take part in this process. We believe that this process may increase the value of MOC for our diplomates while decreasing the bureaucratic burden of assuring our patients that the process is credible.

Like the ABA, the ABNM will likely run a CME pilot. One issue for us will be the rapid development of content for this effort. Anyone who shares our excitement about the potential for this project and is interested in helping with the content development effort is encouraged to contact me at Tony_Parker@BIDMC.Harvard.edu or the ABNM at ABNM@ABNM.org.

REFERENCE

1. Roediger HL, Butler AC. The critical role of retrieval practice in long-term retention. *Trends Cogn Sci.* 2011;15:20–27.



J. Anthony Parker, MD, PhD