

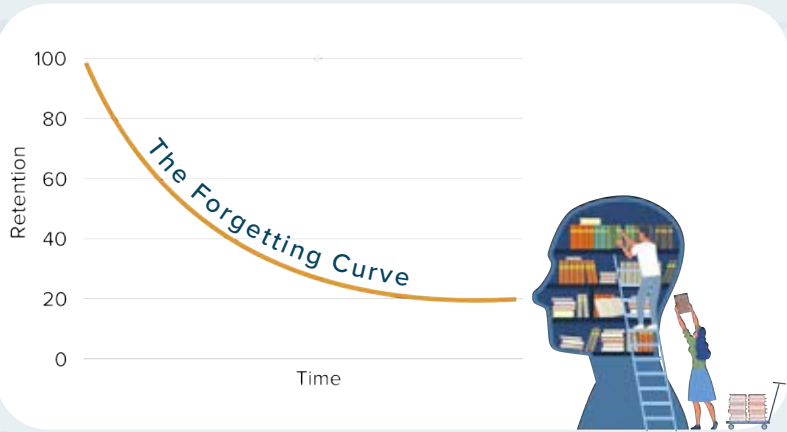
# WHAT IS THE EVIDENCE TO SUPPORT LONGITUDINAL ASSESSMENT?

Studies have found four central themes to keeping knowledge current and easily retrievable. The American Board of Family Medicine’s (ABFM) longitudinal assessment aligns with these key educational themes:

1. Individuals need to engage in appropriate training and study to keep cognitive skills current.
2. Individuals are not able to reliably and effectively assess one’s own competencies or to guide one’s own learning.
3. Testing and retesting is an efficient mechanism for promoting learning and retention. In the absence of such training and study, cognitive skills will decline over time.
4. Physicians learn and retain more when they expect to be tested on the knowledge and skills they are developing.

## 1: Cognitive Skills Need to Be Kept Current

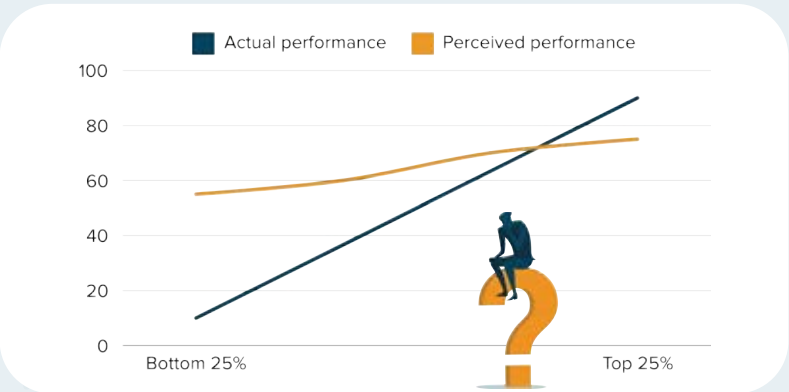
Physicians face standards of care that continuously evolve over time. If not maintained, learned information and procedures are forgotten over time (The Forgetting Curve).<sup>1</sup>



Caddick, Z. A., Fraundorf, S. H., Rottman; B. M., & Nokes-Malach, T. J. (2023). Cognitive perspectives on maintaining physicians’ medical expertise: II. Acquiring, maintaining, and updating cognitive skills. Cognitive Research: Principles & Implications, 8, 47.

## 2: Self-Assessment Is Not Enough

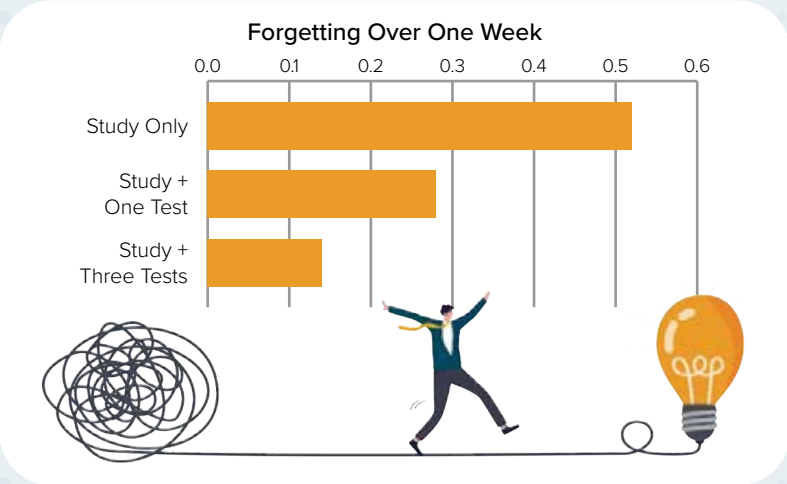
Individuals who perform poorly in a domain are often unaware they are doing poorly: you don’t know what you don’t know (Dunning-Kruger effect).<sup>2</sup>



Fraundorf, S.H., Caddick, Z.A., Nokes-Malach T.J., & Rottman, B.M. (2023). Cognitive perspectives on maintaining physicians’ medical expertise: III. Strengths and weaknesses of self-assessment. Cognitive Research: Principles & Implications, 8, 58.

## 3: Testing Enhances Learning and Retention

The act of retrieving targeted information from memory strengthens the ability to use it again in the future, known as the testing effect.<sup>3</sup>



Fraundorf, S.H., Caddick, Z.A., Nokes-Malach, T.J., Rottman, B.M. (2023) Cognitive perspectives on maintain physicians’ medical expertise: IV. Best practices and open questions in using testing to enhance learning and retention, 8, 53.

## 4: Goals and Consequences Motivate

Thoughtful engagement with the longitudinal assessment is a great motivator for learning!



Nokes-Malach, T. J., Fraundorf, S. H., Caddick, Z. A., & Rottman; B. M. (2023). Cognitive perspectives on maintaining physicians’ medical expertise: V. Using a motivational framework to understand the benefits and costs of testing. Cognitive Research: Principles & Implications, 8, 64.

<sup>3</sup>Roediger HL, Karpicke JD. Test-enhanced learning: taking memory tests improves long-term retention. Psychol Sci. 2006 Mar;17(3):249-55. doi: 10.1111/j.1467-9280.2006.01693.x. PMID: 16507066.

<sup>1</sup>Wixted, J. T., & Carpenter, S. K. (2007). The Wickelgren Power Law and the Ebbinghaus Savings Function. Psychological Science, 18(2), 133-134. <https://doi.org/10.1111/j.1467-9280.2007.01862.x>

<sup>2</sup>Kruger J, Dunning D. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. J Pers Soc Psychol. 1999 Dec;77(6):1121-34. doi: 10.1037//0022-3514.77.6.1121. PMID: 10626367.