Join the conversation…

#corporatelearning
#microlearning

#behaviorchange
#knowledgeretention

@Qstream
@wtoddmaddox

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Leveraging Psychology and Brain Science to Optimize Retention and Behavior Change

Continuous Learning with Best Practice
Mobile Microlearning

AMALGAM INSIGHTS
GUIDING TECHNOLOGY DECISIONS FROM KNOW TO YES

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In today's webcast you will take away…

- The case for continuous learning
- An understanding of spaced education and it's impact on knowledge retention and behavior change
- A method to evaluate best practice microlearning solutions
- Ideas for applying mobile microlearning to corporate learning programs

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The Need For Continuous Learning

Organizations are becoming more cross-functional and collaborative

The workplace and workforce are changing at an increasing rate

The ideal employee is "T" shaped

- Continuously upskilling to stay current
- Continuously reskilling to enhance breadth and cross-functional communication

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The Need For Continuous Learning

Every sector is being affected

- Life Sciences
- Healthcare
- Sales
- Financial Services
- High Tech
- Operations
- Education
- Consumer Goods…etc

Every skill is affected

- Hard skills (fact based)
- Soft skills (people skills)
- Situational awareness (know what knowledge and skills apply when)

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Effective Continuous Learning (Employee "Needs")

Requires tools that "Train for Retention"

- Testing
- Spaced training

Requires tools that enhance situational awareness

- Scenario-based storytelling

Optimally engage appropriate learning systems in the brain

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Effective Continuous Learning (Employee "Wants")

- Quick targeted learning (microlearning)
- In the daily workflow
- Mobile

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Employee Learning Needs and Wants

Needs (Desirable Difficulties)

- Training for Retention: Spaced testing and training
- Scenario-based storytelling (situational awareness)
- Engage appropriate learning system in the brain

Wants

- Mobile learning in the daily workflow
- Immediate feedback

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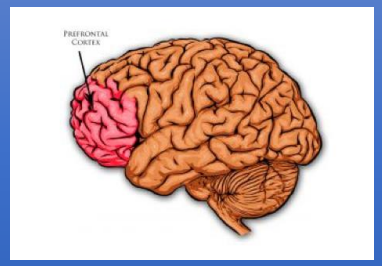
Learning Science

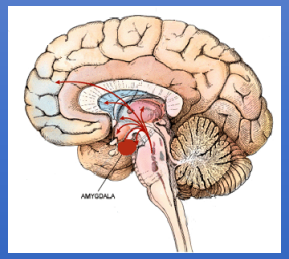
Psychology and Brain Science

Cognitive



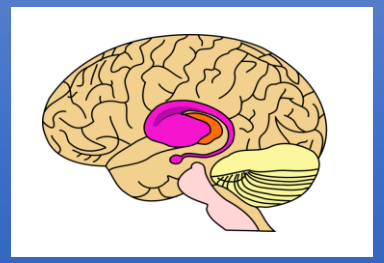
Prefrontal Cortex

Emotional



Amygdala + other limbic

Behavioral



Basal Ganglia

Learning

The Cognitive Skills System

Training For Retention

Always battling against the brain's natural tendency to forget

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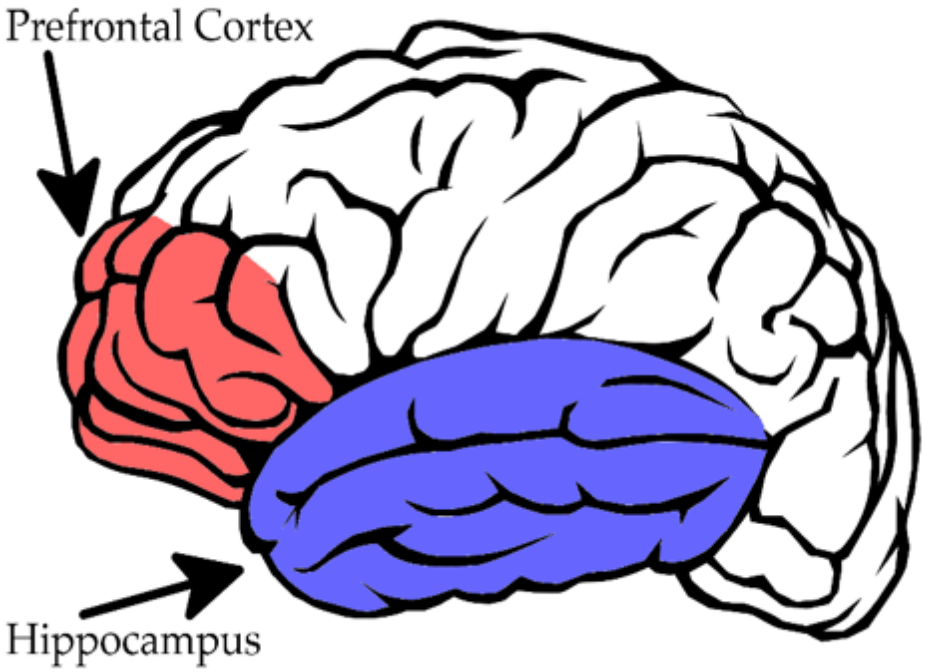
Training for Retention

Goal: Transfer knowledge from short-term memory (PFC) to long-term memory (hippocampus) through consolidation



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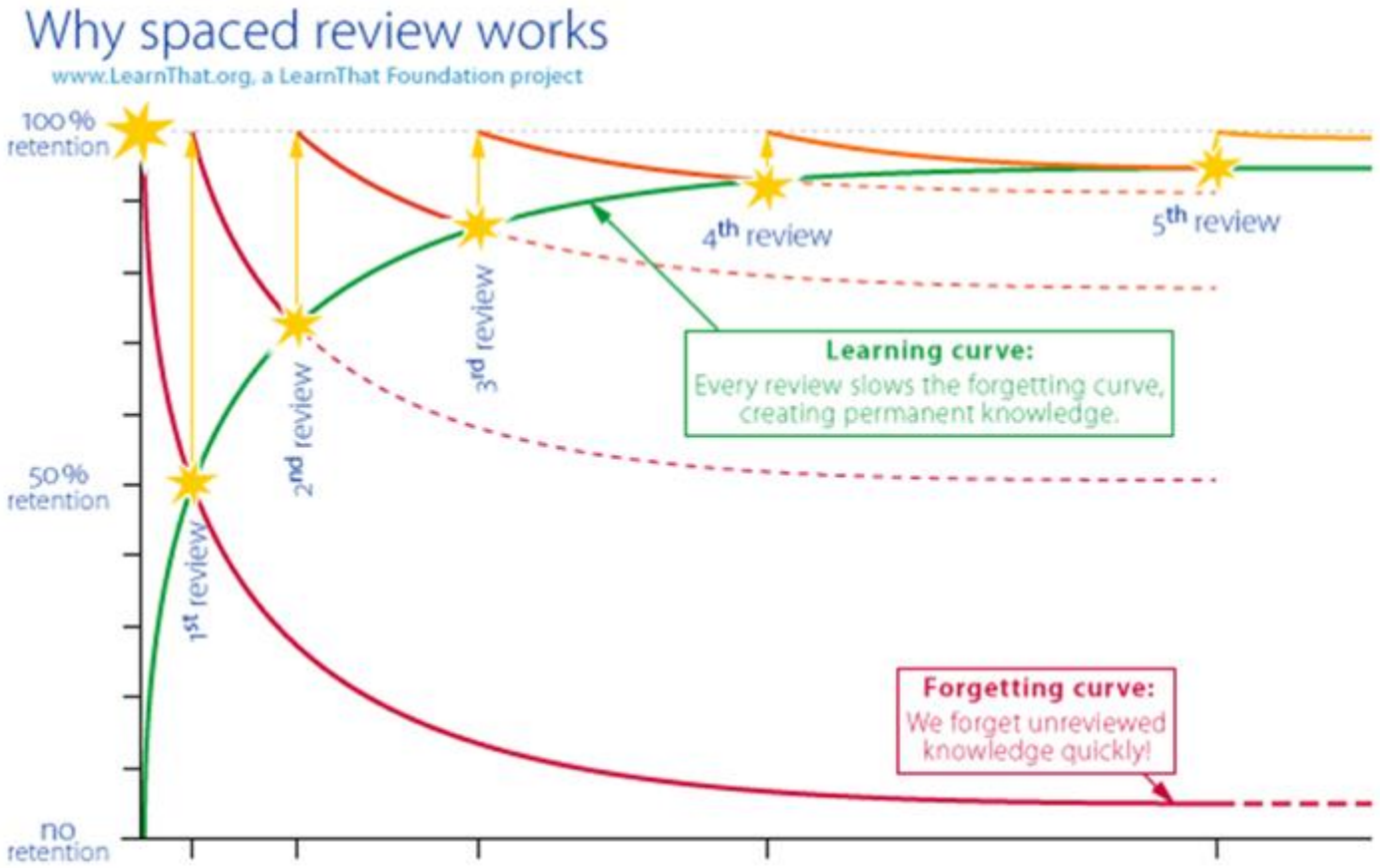
Training for Retention



Space testing/training is the foundation of Qstream

- Speeds learning
- Slows forgetting
- Consolidation

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The Emotion System

Situational awareness

- Overriding aim
  - "Read" ever changing situation
  - Predict the future
  - Know "what" to "do" when

- Scenario-based (situational) storytelling training
  - Non-routine, emotionally charged scenarios
  - Engage emotion centers and draw learner "in"
  - Facilitate retention/prime behavior change

Qstream Foundation: Situational Storytelling

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Principles of Situational-Based Questions

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Principles of Situational-Based Questions

- Tests non-routine situations that are context rich
- Action based decision-making
- Tests “high” skills
- Helps to reveal thinking
- All options are fully explained

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The Behavioral Skills System

Training for Behavior Change

- Interactive
- Real-time feedback
- Physical repetitions
- Scenario-based challenges
- Benefits from special tools like video training

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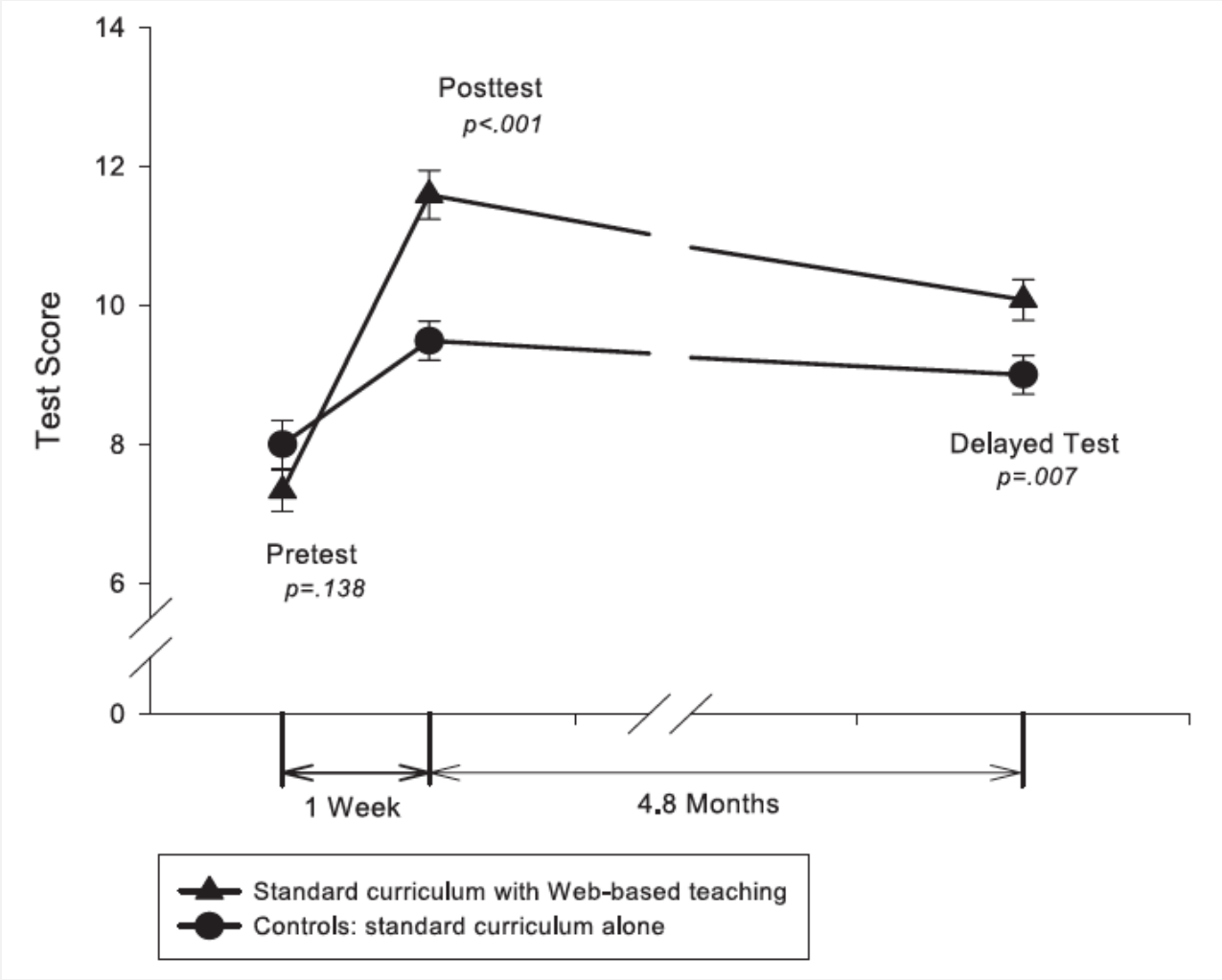
Multi-institutional Randomized Controlled Trial

351 medical students at 4 northeastern medical schools

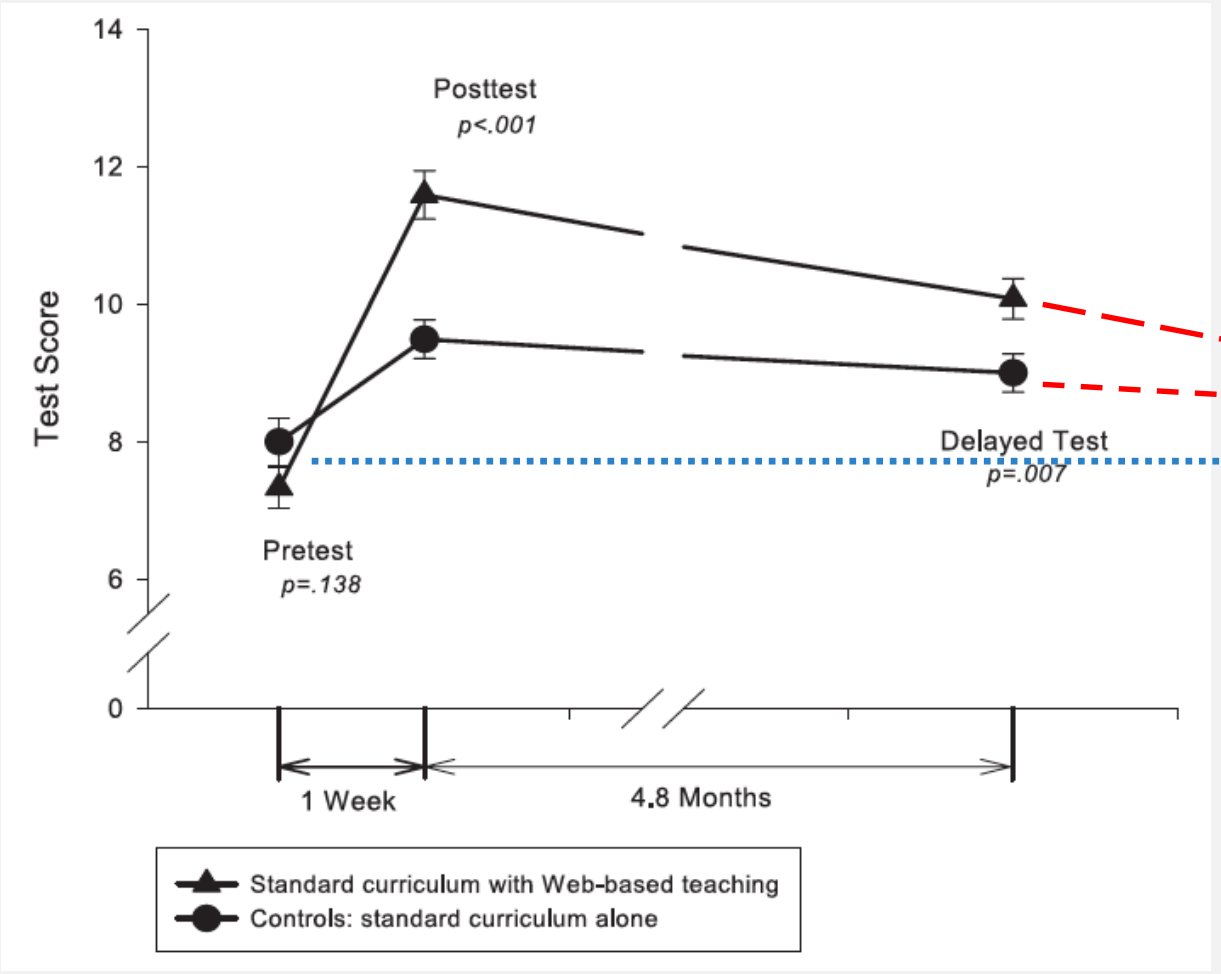
B. Price Kerfoot MD EdM



Acad Med. 2006;81(3):224-30.

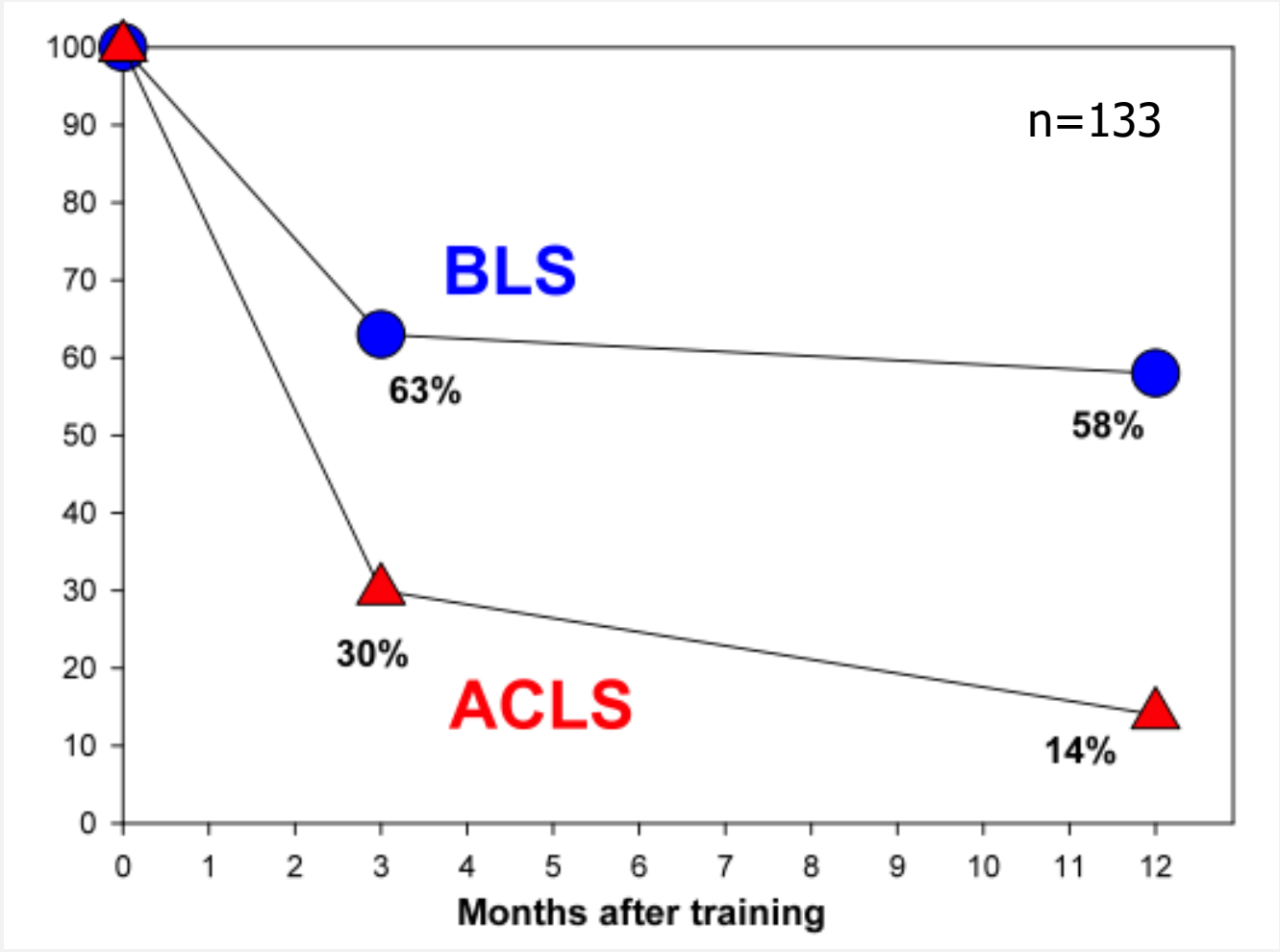
Multi-institutional Randomized Controlled Trial

351 medical students at 4 northeastern medical schools



Acad Med. 2006;81(3):224-30.

Retention of BLS and ACLS Training Among Nurses



Resusc 2008; 78: 59-65

Spaced Education Basics: The Spacing Effect

- Spaced
- Repeated
- Repeated at increasing intervals

- Increased efficiency of learning
- Reduction in the slope of the forgetting curve

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Spaced Education Basics: The Testing Effect

"retrieval practice"

Science

Retrieval Practice Produces More Learning than Elaborative Studying with Concept Mapping

Jeffrey D. Karpicke and Janell R. Blunt
Science 2011; 331:772-5.

Test-Enhanced Learning
Taking Memory Tests Improves Long-Term Retention

Henry L. Roediger, III, and Jeffrey D. Karpicke.
Psych Sci 2006; 17:249

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Which of these strategies below can help minimize the amount of food you eat at a mealtime?

*(Please select **TWO** correct answers.)*

Choose all that apply

- [ ] Keep serving dishes on the table
- [ ] Use small plates
- [ ] Remove your plate from the table as soon as you are finished
- [ ] Try to eat quickly

Submit

Choices

Participants who answered the entire question correctly

77%

Here is the breakdown by individual choice:

You	Key	Choices	Responses
	✗	Keep serving dishes on the table	5%
●	✓	Use small plates	96%
●	✓	Remove your plate from the table as soon as you are finished	80%
	✗	Try to eat quickly	3%
Total			510 responses

Results

Congratulations, your answers are correct!

Your total score: 80

You just scored 80 points for answering correctly on your first attempt of this question

Rank	Team	Points (ave.)
1	Lobster Brigade (ME,NH,VT)	10755.4
2	Blue Ridge Bunch (VA,WV,OH,MO)	10620.1
3	Keystones (PA)	9851.6
4	Southern Stars (GA,AL,TX)	9732.1
5	Mid-Atlantic Coasters (NJ,NY,DE)	9482.6
6	Sweet Carolinas (NC,SC)	9472.2
7	Minutemen (MA,CT,RI)	9423.9

Explanation

Take-Home Message:
Eating from smaller plates will help you avoid overeating.

Explanation of Correct Answers:

- The dinner plates we most often see today are about 12 inches in diameter. In the early 1980s, the average plate was about 10 inches in diameter. That relates to about 44% increase in surface area! Using smaller plates will make you feel like you are eating more while ensuring you can't "fill" the plate as much as you can a bigger sized one.
- Removing your plate from the table when you are done eating is another way be sure that you don't continue to eat when you're no longer hungry. If you keep looking at an empty plate you may be tempted to put more on the plate in order to feel like you are "being social" or it other times you may continue to eat out of boredom. Second helpings can be a big source of unneeded extra calories.

Explanation of Incorrect Answers:

- It's a good idea to remove serving dishes from the table once you are done to stop you from being tempted to take a second helping.
- Eating quickly often leads to overeating and should be avoided. It takes a while for the food we eat to be absorbed and quieten the hunger signals. If you eat to quickly you'll be through your third helping before the signal from the first helping gets to your brain.

Next Question

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Qstream Works

- **Increases knowledge & retention**
  - Academic Medicine 2012; 87: 1443-1449 --- ***UGME***
  - Journal of the American College of Surgeons 2010; 211: 331-72673 --- ***GME***
  - Annals of Surgery 2012; 256: 33-38 --- ***CME***
- **Improves self-assessment of knowledge**
  - American Journal of Surgery 2009; 197: 89-95.
- **Changes behavior**
  - American Journal of Surgery 2009: 197, 252-257
  - American Journal of Preventive Medicine 2010; 39: 472-8
  - Journal of Continuing Education in the Health Professions 2011; 31:103-8
  - British Medical Journal Quality & Safety 2012; 21: 819–825.
  - Palliative Medicine 2014; 28: 521-529.
  - Circulation CQO 2014; 7 :468-474.
- **Well-accepted by learners**
  - Demonstrated in all trials to date

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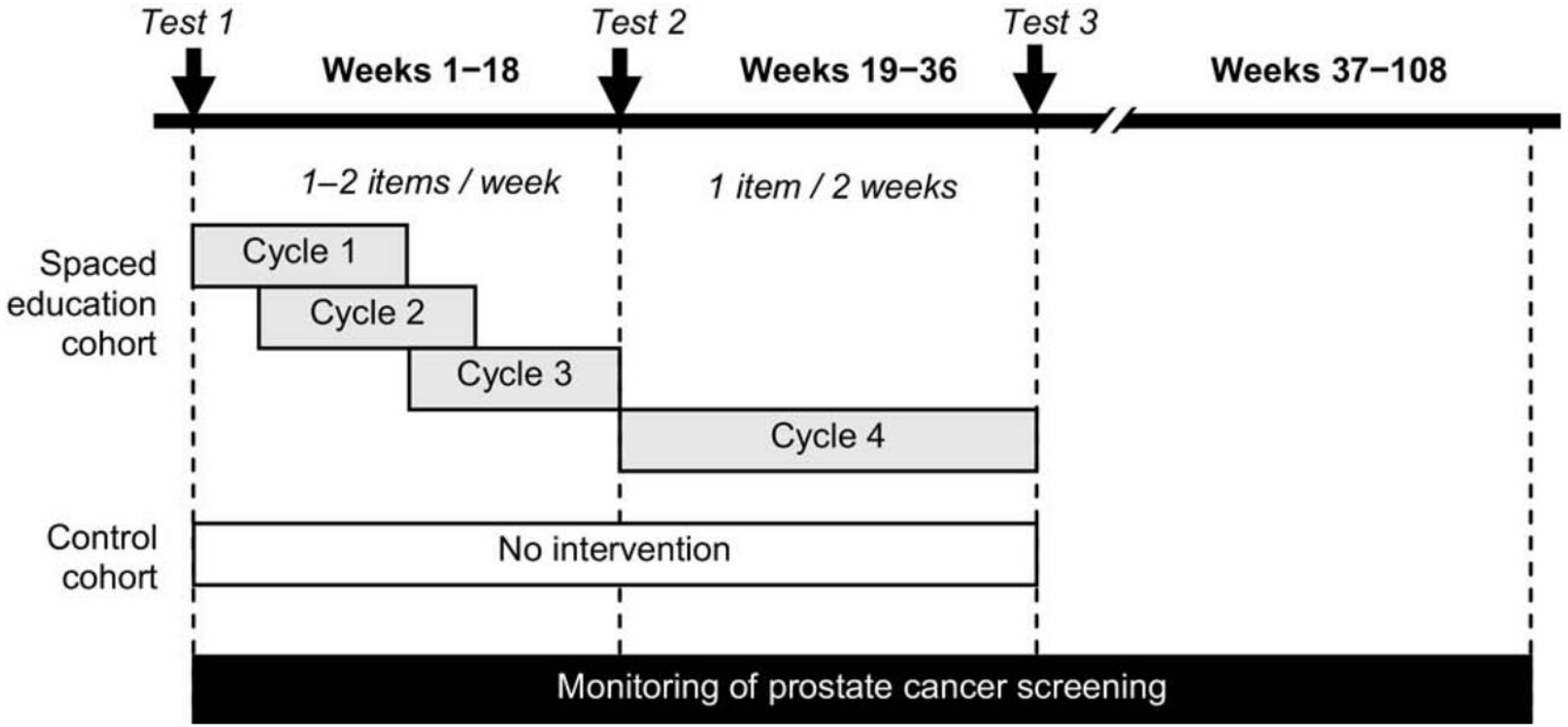
Durable Improvements in Prostate Cancer Screening from Online Spaced Education

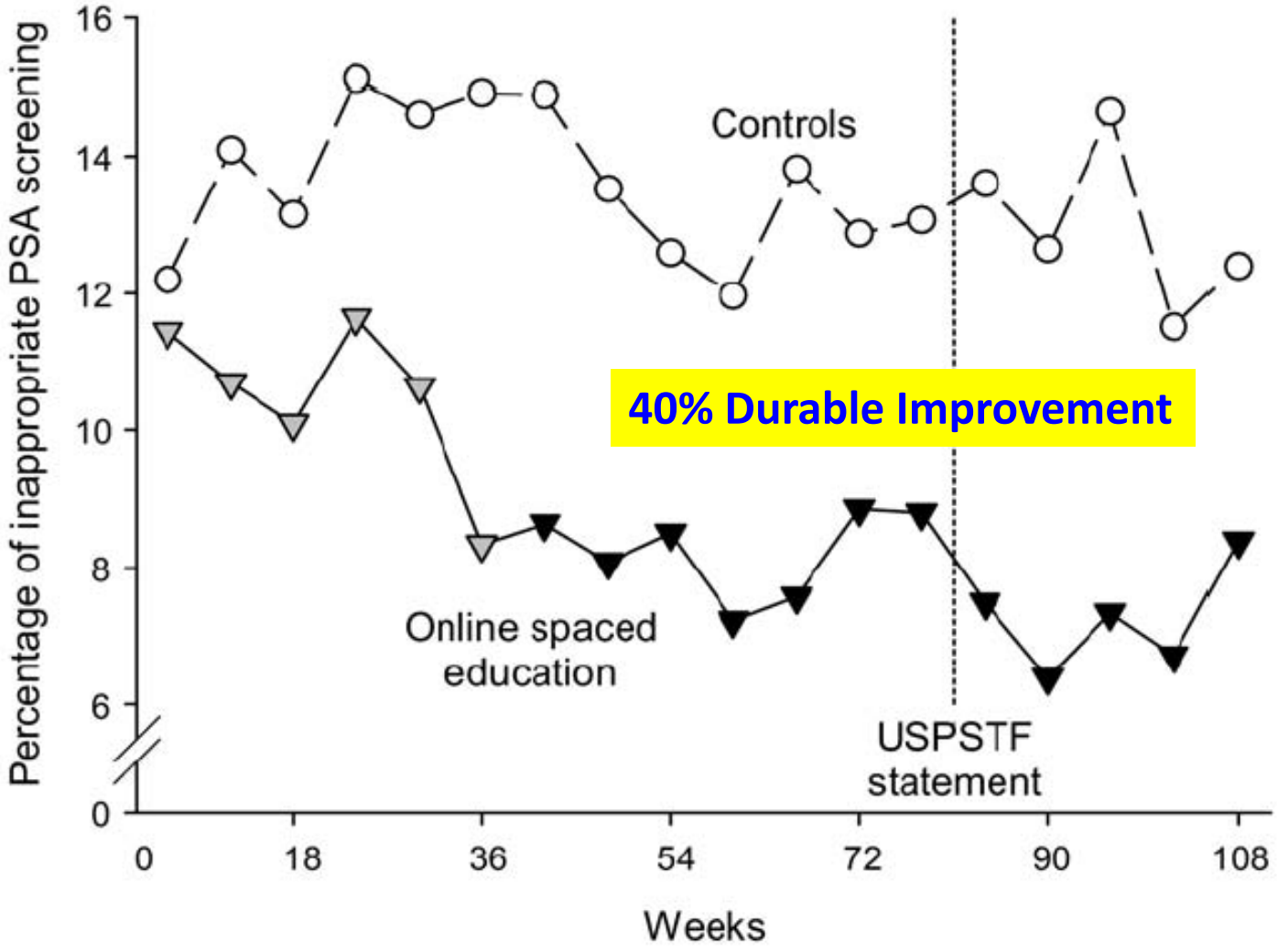
A Randomized Controlled Trial

B. Price Kerfoot, MD, EdM, Elizabeth V. Lawler, MPH, DSc, Galina Sokolovskaya, MS, David Gagnon, MD, MPH, PhD, Paul R. Conlin, MD



Am J Prev Med 2010; 39: 472-8

Improves Cancer Screening Behaviors



- 93% requested to participate in future programs

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Original Article

An Online Spaced-Education Game Among Clinicians Improves Their Patients' Time to Blood Pressure Control

A Randomized Controlled Trial

B. Price Kerfoot, MD, EdM*; Alexander Turchin, MD, MS*; Eugene Breydo, PhD; David Gagnon, MD, MPH, PhD; Paul R. Conlin, MD

When Doctors Play This Game, You Get Better Medical Care

by NANCY SHUTE

May 21, 2014 11:44 AM ET

Hey docs! Play this online game and learn how to do a better job of getting our blood pressure under control!

111 clinicians
14,366 patients

Circulation
Cardiovascular Quality and Outcomes
Journal of the American Heart Association

Circulation CQO 2014; 7:468-474

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Applications in the Workplace

SALES & MARKETING

- Sales onboarding
- Sales kickoff
- Sales skills
- Sales process
- Pricing
- Positioning/brand
- Product knowledge
- Channel enablement
- Competition

LEARNING & DEVELOPMENT

- Training reinforcement
- Leadership development
- Talent management
- Onboarding
- Diversity
- Change management
- Training reinforcement
- Manager enablement
- Coaching guidance

OPERATIONS

- Process change
- Software roll-out
- Compliance procedures
- Regulatory change
- Field operations
- Six Sigma

LIFE SCIENCES & HEALTHCARE

- Patient safety
- Joint commission
- Diagnosis
- Treatment
- Prescription
- CME
- Residency & nursing
- Medical affairs
- Site monitor training

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Guiding principles to modern learning
….based on the latest brain science research

MAKE IT EASY

Break training content into bite-sized, scenario based challenges

MAKE IT STICK

Use a proven methodology to improve knowledge, advance skills and change on-the-job behavior

MAKE IT MOBILE

Reduce training costs and reduce training time

MAKE IT ENGAGING

Keep people engaged with game mechanics, peer socialization and personalized coaching

MAKE IT MEASURABLE

Use proficiency as a measure for ROI and identify gaps to inform further training initiatives

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Qstream Future

- No surprise to this learning scientist that Qstream's reach is expanding
- All learning happens in the same brain via the same systems
- If effective in healthcare and sales, then Qstream will be broadly effective

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Questions?

Thank You!

Qstreamhealthcare.com/blog

Twitter.com/QstreamCME

Qstreamhealthcare.com/Resources

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