

The background features a faded image of a stethoscope on the left and a document with chemical structures on the right. The document includes the text "ration of naphthalene." and a chemical structure labeled "p-BrC6H4-".

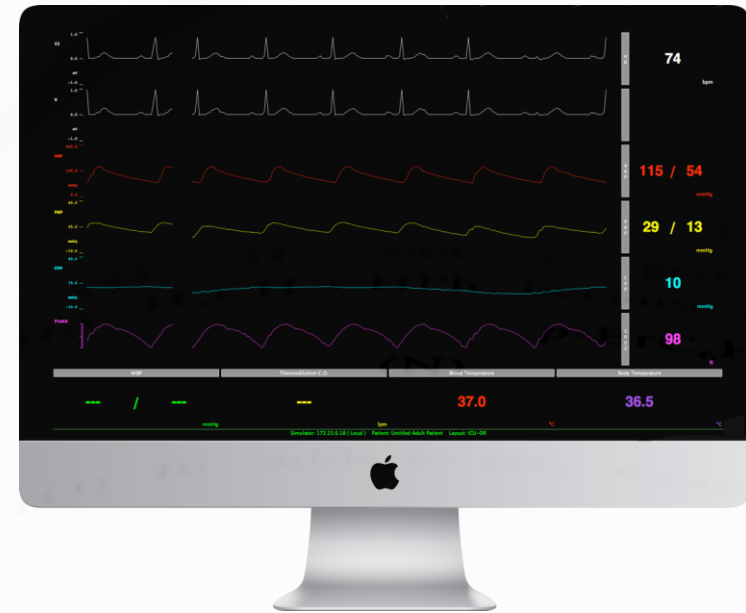
HFS Long-Term Knowledge Retention

An Innovative Cost-Effective Method

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HFS



Methods of Assessment:

1. Survey (attitude)

2. MCQ (knowledge)

3. Performance Checklist (performance)

KNOWLEDGE ACQUISITION AND RETENTION/DEGRADATION



Methods to enhance long-term knowledge retention:

1. Repeated HFS
2. Repeated teaching using different simulation modality (SP, PBL, screen-based simulation, virtual simulation)

Challenges:

1. Cost (\$700 - \$1500/hr, according to Gaba and McIntosh, 2006)
2. Mental skipping phenomenon
3. Technology and SP availability

LO



MCQ



MCQ



DEBRIEF



HFS

framework for knowledge application

MCQ

knowledge measure

Debriefing

learning takes place

HFS

PRE

DEBRIEF

POST

LONG-TERM

LO

MCQ

DEBRIEF



link



link



HYPOTHESIS

If the link between the **LEARNING OBJECTIVES**, **MCQ**, and **DEBRIEFING** is strong,

Then the **DEBRIEFING** experience can be re-activated via repeated **MCQ** administration.

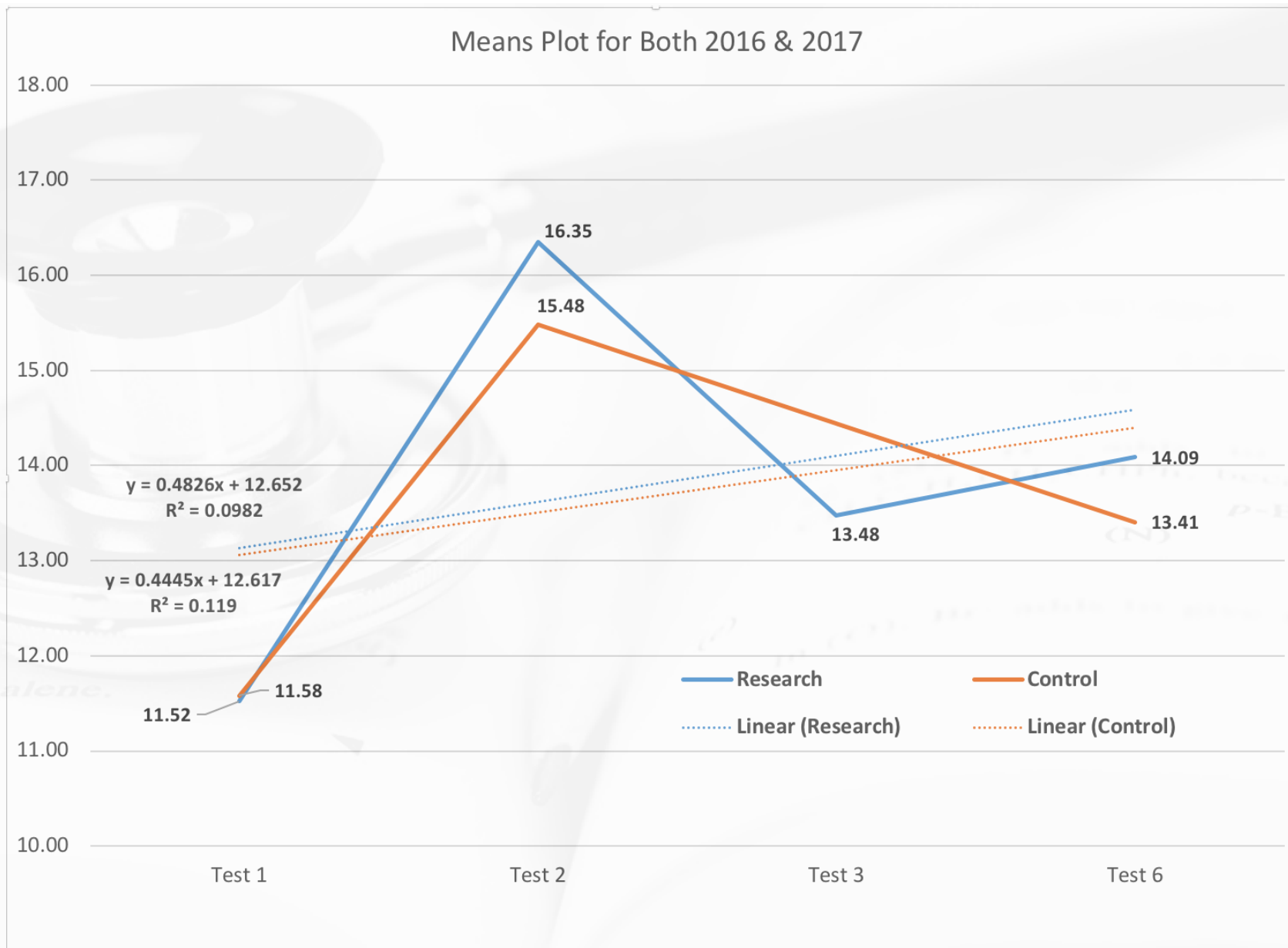
HFS-SPACED
HFS-LONG TERM

4 weeks
6 months



Study setting:

1. University of South Dakota, Sanford School of Medicine, 64 students per year
2. Sioux Falls Campus, 30 students (15 students research group, 15 students control group)
3. Duration: 2016 and 2017 academic years
4. Two HFS scenarios: atrial fibrillation and anaphylaxis
5. MCQ: 10 multiple choice questions per scenario (total 20)
6. Pre-activity MCQ – immediately before HFS
7. Scenario – 15-20 min, groups of 3-4 students
8. Debriefing – immediately after HFS, 30 min average
9. Post-activity MCQ – at the end of simulation session
10. Research group repeated the same 20 point MCQ 4 weeks after HFS (“spaced quiz”)
11. Both research and control group repeated the same 20 point MCQ quiz 6 months later



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RESULTS

- 1.No 100% score was achieved acutely
- 2.Research group had 5% better knowledge retention

DISCUSSION

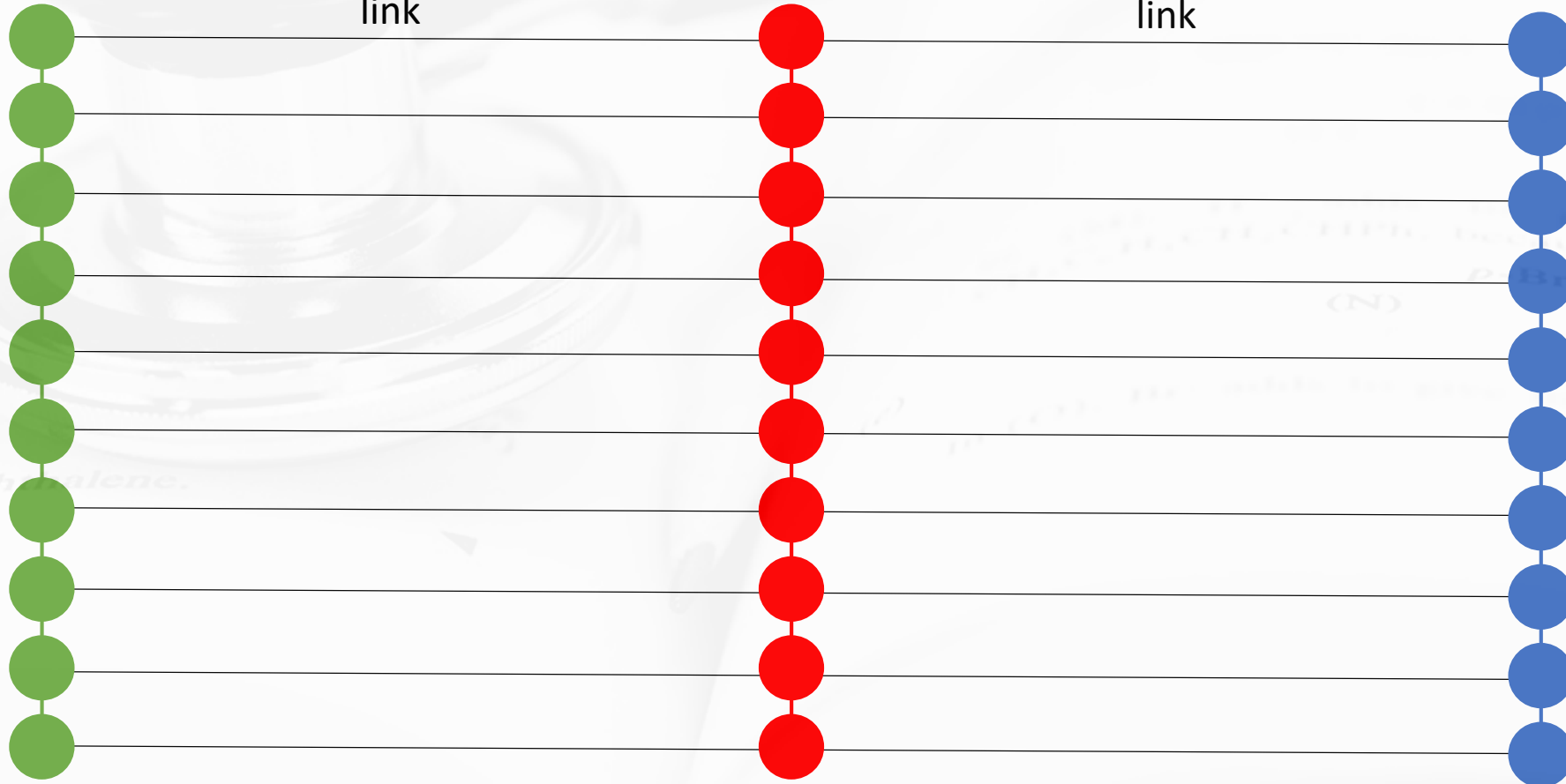
LO

MCQ

DEBRIEF

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Conclusion

1. HFS creates a framework for learning
2. **Learning occurs during debriefing**
3. The strength of the link between the LOs, MCQ and the debriefing points determines the acute knowledge gain and the long-term retention.
4. Do not teach for the test but rather test what you teach.



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