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Background

The testing effect is often considered to be a recollection-related phenomenon. However, a number of studies have begun to provide evidence that familiarity may also be involved.¹

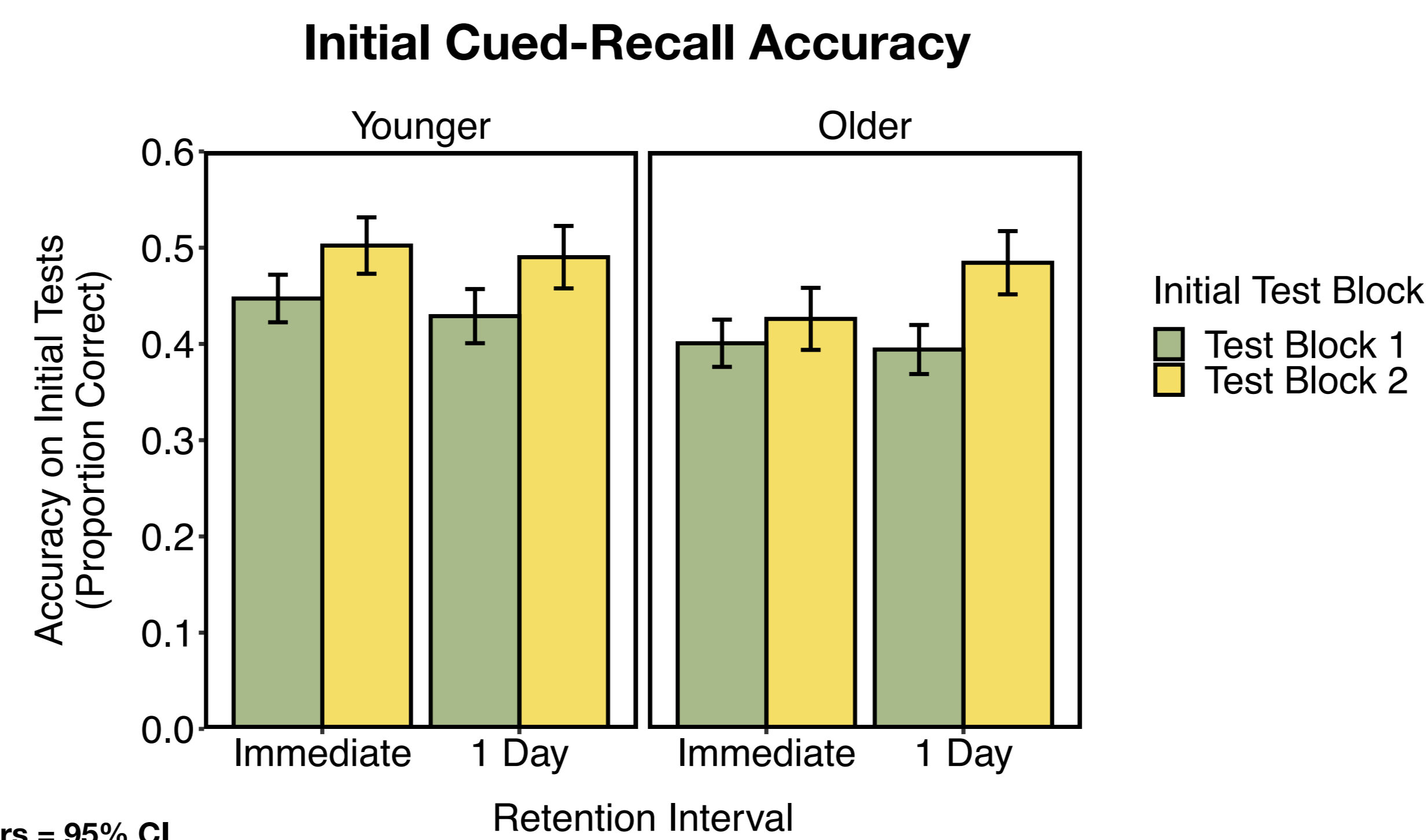
Further, although aging populations show marked declines in recollection, older and younger adults often benefit from testing to a similar degree.²

Together, these findings suggest that the testing effect in older adults may function via relatively preserved familiarity.

However, evidence in the literature thus far is mixed,^{3,4} and direct parameter estimates of familiarity have not been calculated when exploring these questions.

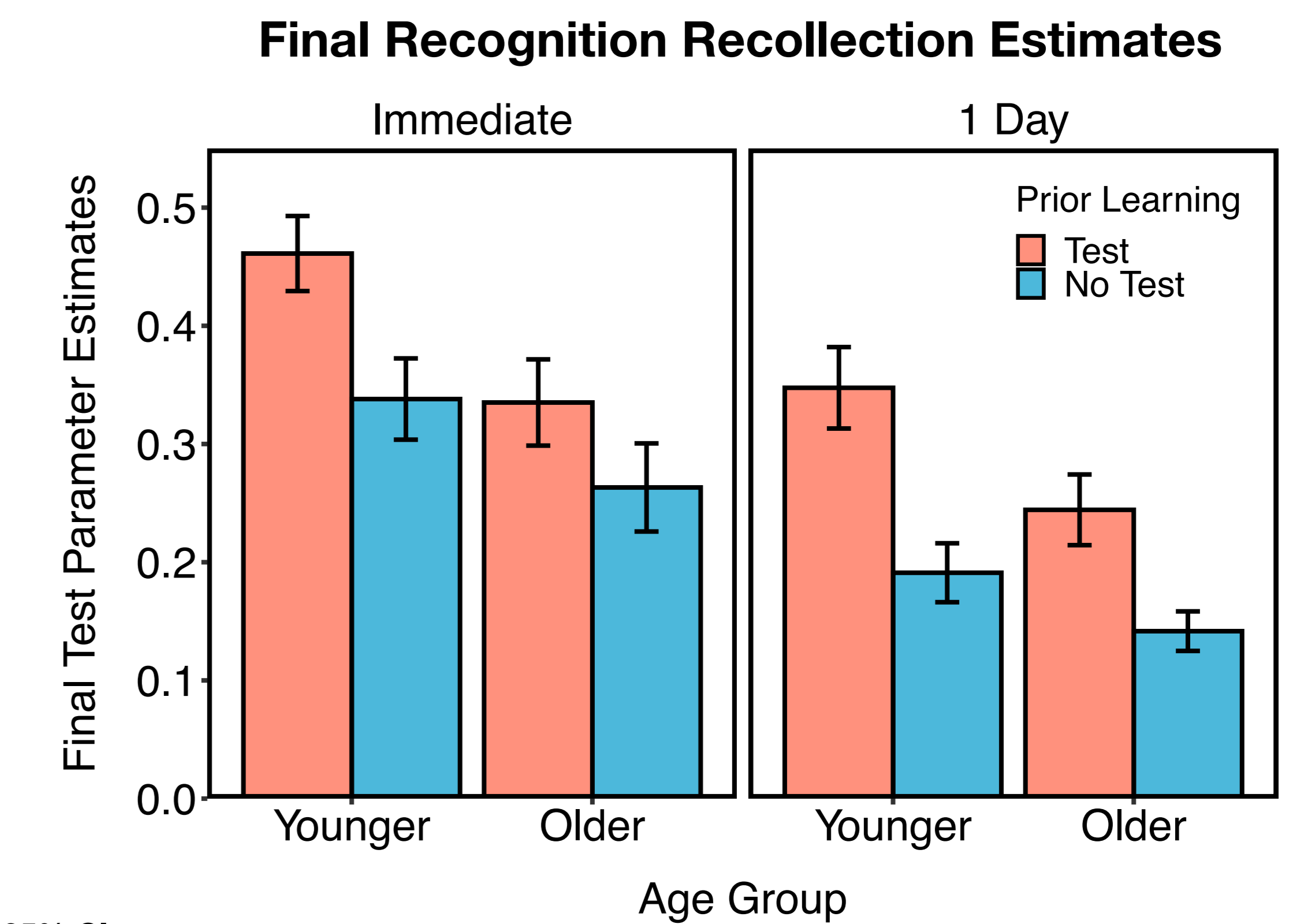
This project builds on this prior work by 1) exploring the processes that underlie the testing effect in older adults and 2) examining the extent to which these processes differ across age.

Older and younger adults performed similarly during initial testing.



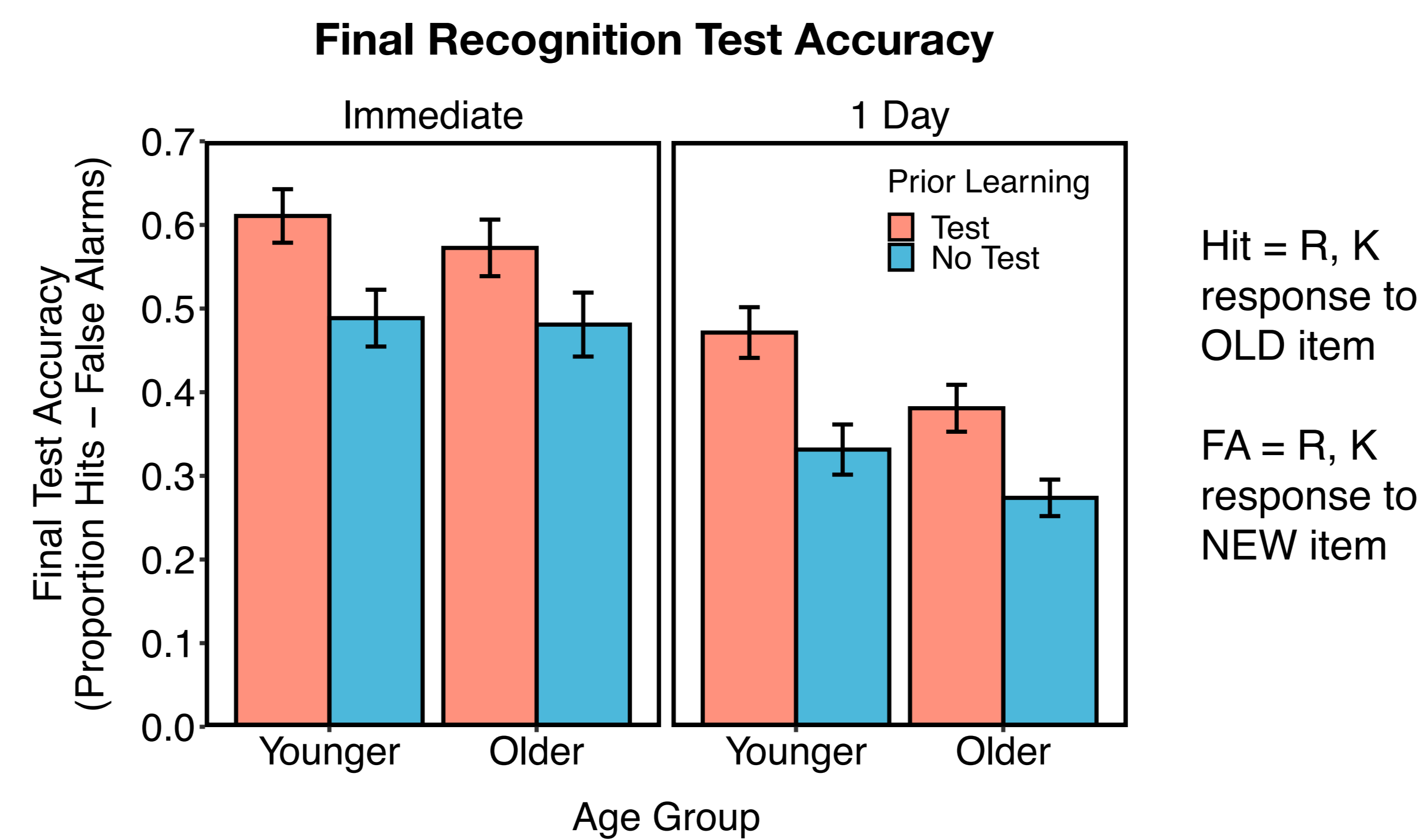
Error bars = 95% CI

Older adults exhibited a reduced testing effect in recollection relative to younger adults.



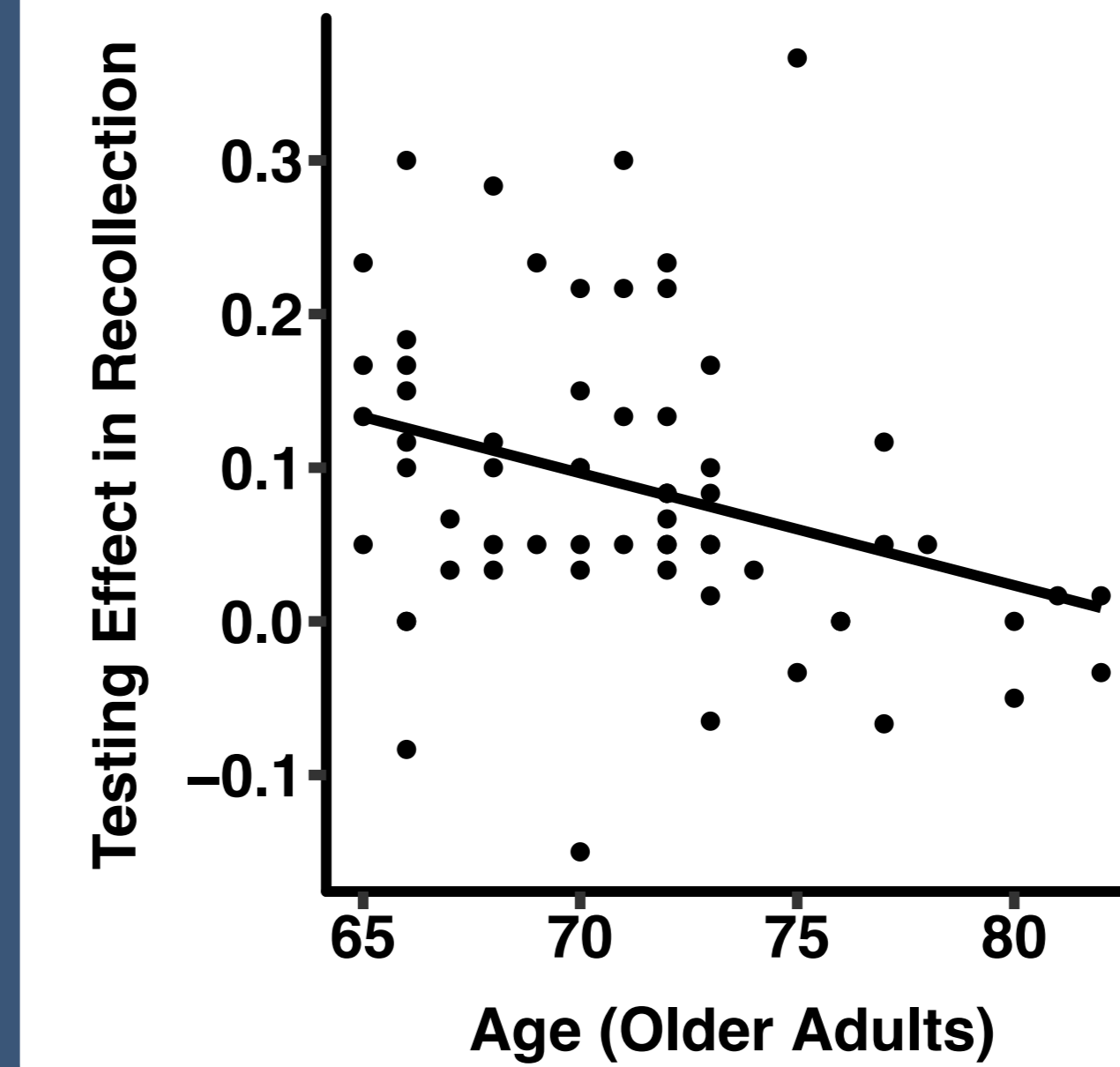
Error bars = 95% CI

Older and younger adults exhibited a similar testing effect in overall accuracy.



Error bars = 95% CI

Age and the Testing Effect in Recollection: Older Adults



Increased age relates to decreases in the testing effect in recollection, even after controlling for initial test performance.

Within older adults:

Age and the testing effect in recollection:
 $r_s = -.38, p = .002$

Controlling for initial test performance:
 $partial r_s = -.41, p = .001$

Methods

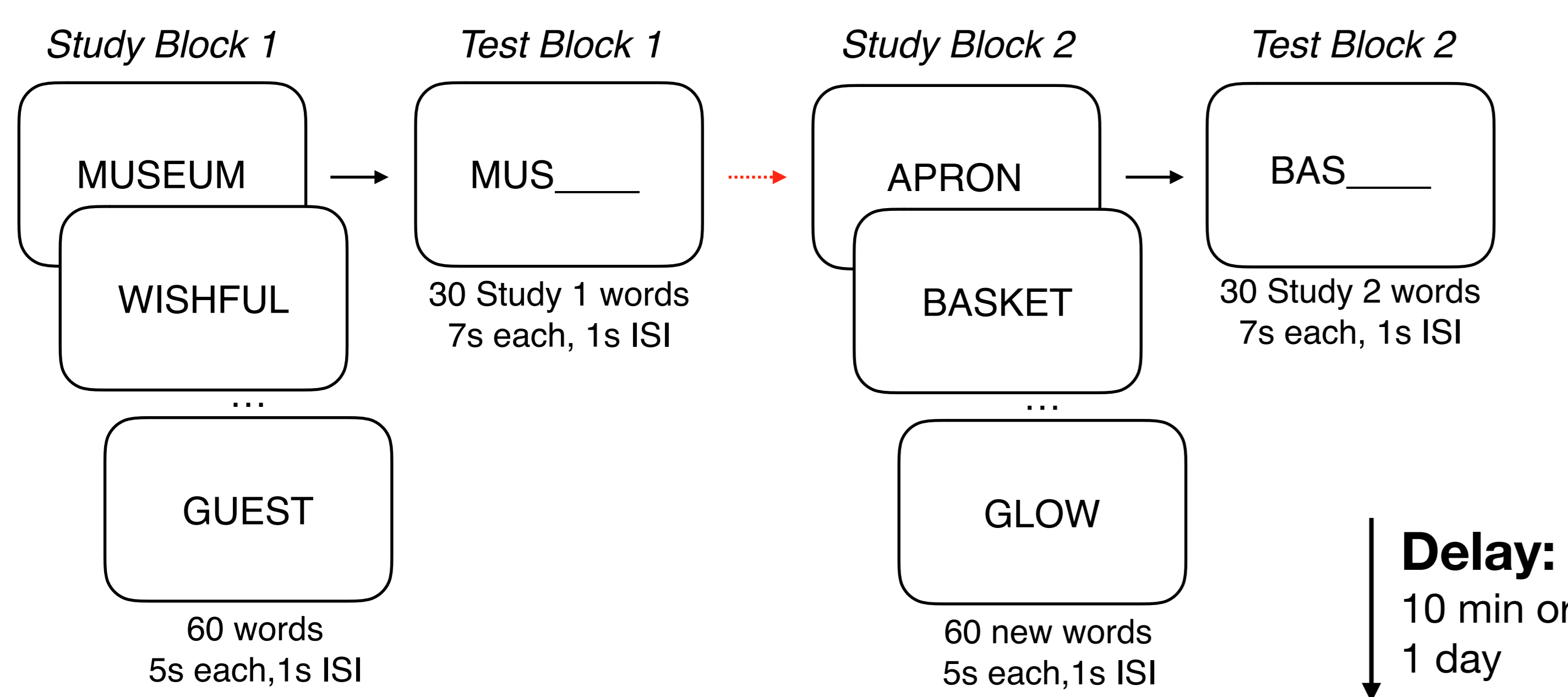
Younger Adults:

N = 60; Additional excluded: N = 2
 (44 F, mean age = 19.6 yrs; 18-22 yrs)

Older Adults:

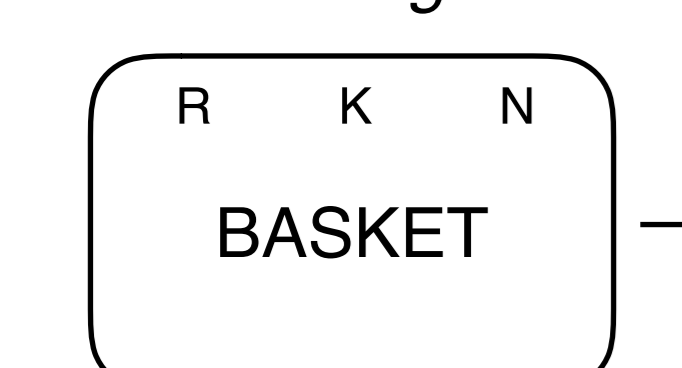
N = 64; Additional excluded: N = 0
 (45 F, mean age = 71.3 yrs; 65-82 yrs)

Session 1: Participants studied 120 words and took cued-recall tests on half of the words.



Session 2: Participants took a Remember-Know-New recognition test including all 120 old words and 120 new words. Older adults then completed the MMSE.

Criterion Recognition Test



Mini-Mental State Examination⁵ (Older Adults only)

Independence Remember-Know Procedure⁶

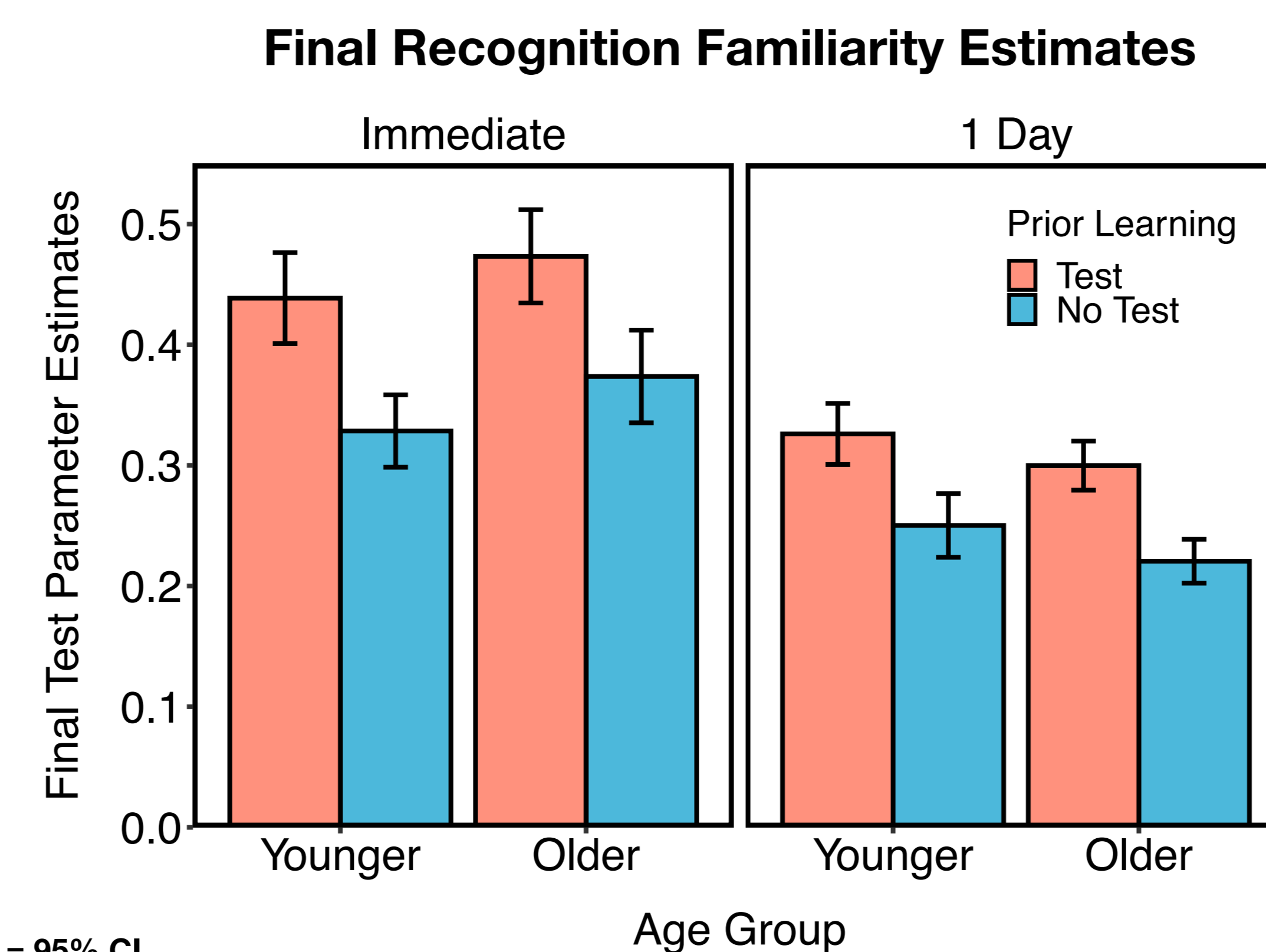
Recollection

Hit(Remember) - FA(Remember)

Familiarity

Hit(Know) - FA(Know)
 1 - Hit(Remember) - 1 - FA(Remember)

Older and younger adults exhibited a similar testing effect in estimates of familiarity.



Error bars = 95% CI

Conclusions

1. A testing effect was observed in both recollection and familiarity in older and younger adults on both immediate and delayed tests.

This adds to the growing literature suggesting that the testing effect can be supported by changes in recollection and familiarity.

2. However, the testing effect in recollection was reduced in the older relative to younger adults, whereas the testing effect in familiarity was stable across age.

These findings suggest 1) that retrieval practice can lead to benefits in older adults qualitatively similar to those observed in younger adults, but 2) that there may be reduced benefits of retrieval practice in older adults on more recollection-based tasks.

References

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This research was supported by the National Science Foundation Graduate Research Fellowship Program under Grant No. DGE-1745038 and the James S. McDonnell Foundation. Presented at the 61st Annual Meeting of the Psychonomic Society, held Virtually.

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