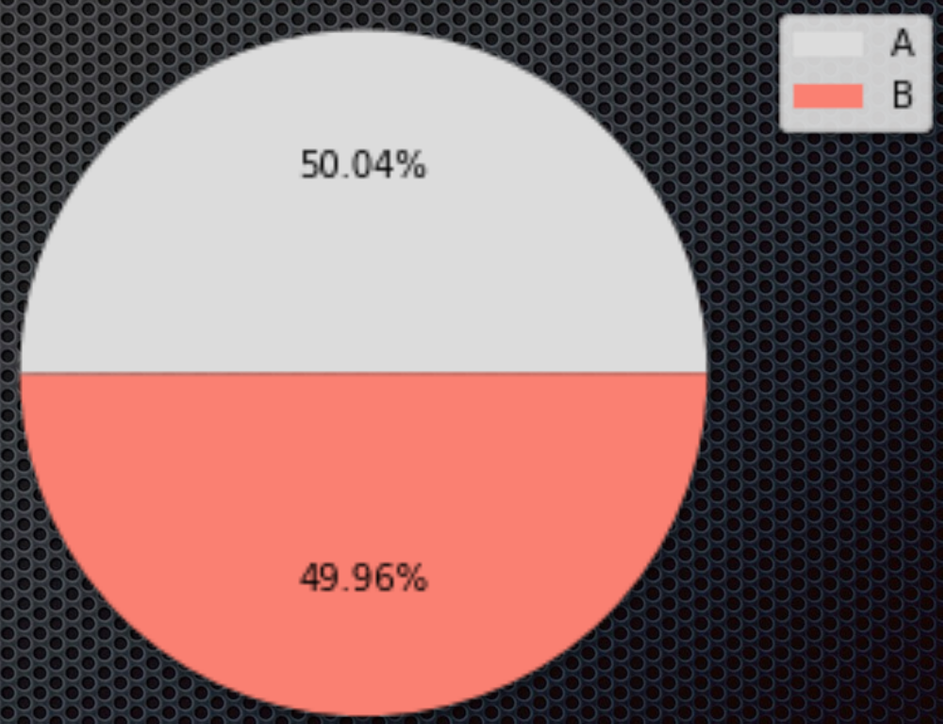
MuscleHub's Introductory Fitness Test

Results of an A/B Test

Description of A/B test

- New visitors to MuscleHub from 7/1/2017 to present were randomly assigned to one of two groups:
  - Group A: Received an introductory fitness test
  - Group B: Did not receive an introductory fitness test
- Groups were of approximately equal size (n_A = 2504, n_B = 2500)



Data collected

- Names, e-mail addresses, and genders of visitors during the test period were collected, together with their visit dates.
- Additional databases stored dates, where applicable, for:
  - Administration of introductory fitness test
  - Completion of membership application
  - Purchase of membership

Questions studied

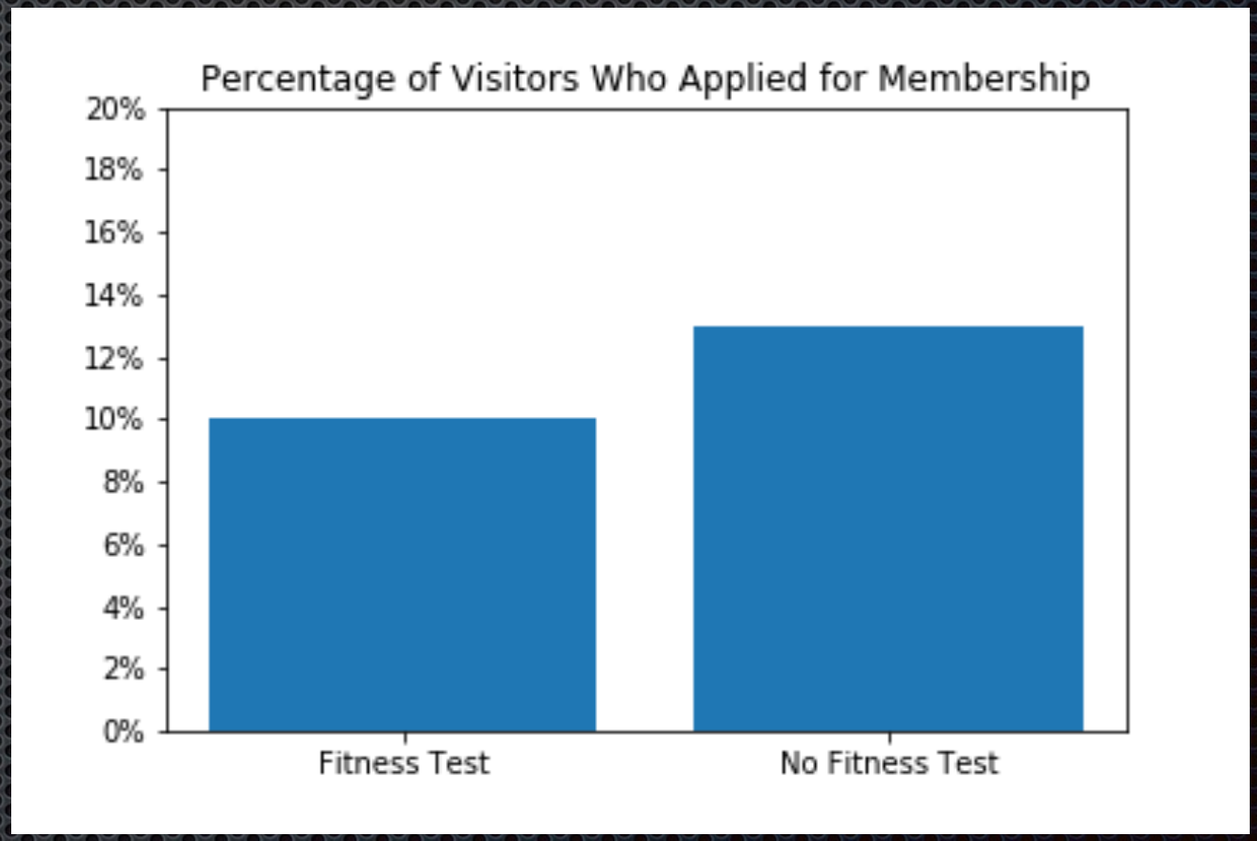
- Were visitors in either group significantly more likely to:
  - fill out an application?
  - convert an application to a membership?
  - both apply and purchase a membership?

Significance testing

- Each of the questions presented gives a “yes/no” categorical variable: *e.g.*, a given visitor either did of did not fill out an application.
- We want to see if the frequency of “yeses” in one of the A/B groups is significantly greater than in the other group.
  - We want to check whether the results of our A/B test would be *unlikely* to occur ($p < 5\%$) *if* visitors’ behavior were actually *independent* of their A/B group.
- The χ^2 test is an appropriate hypothesis test in this setting.

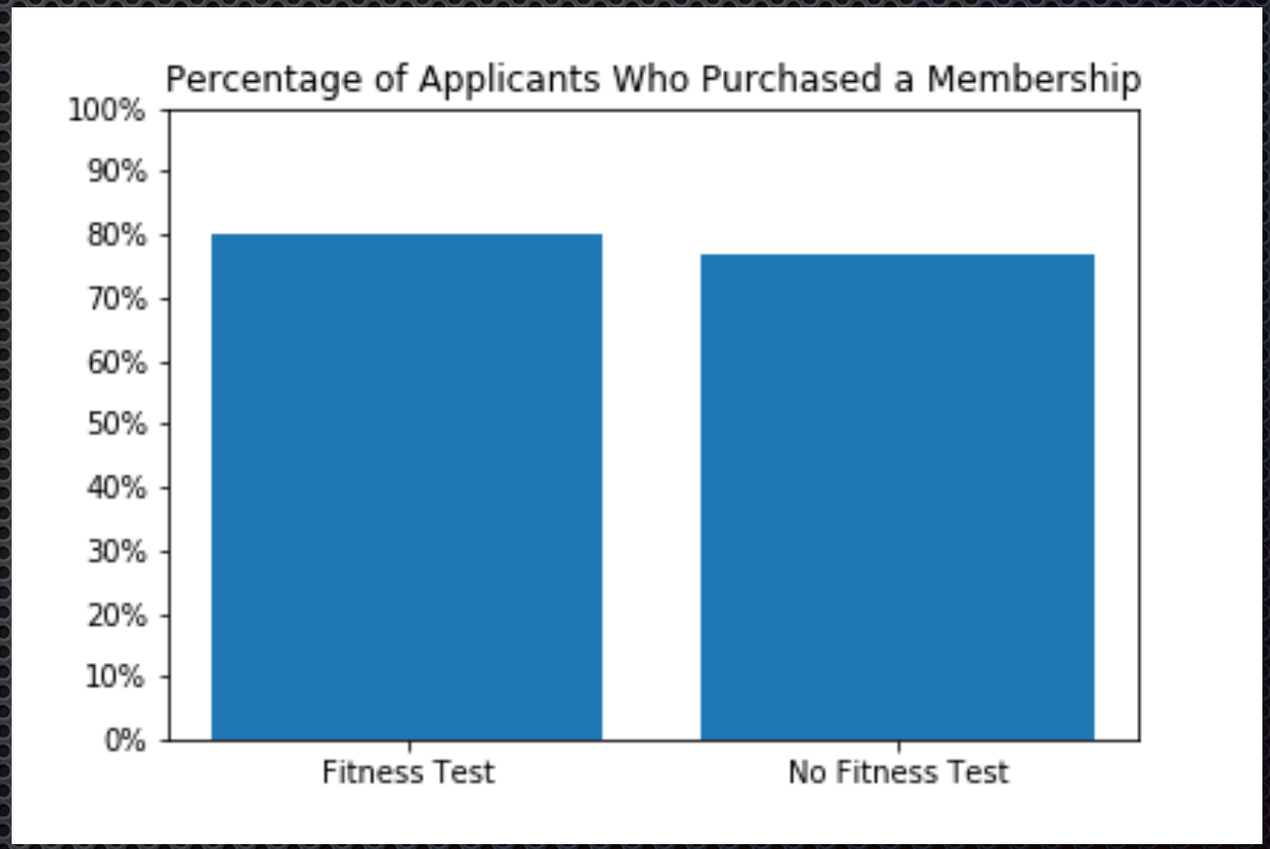
Results: Converting visits to applications

- Visitors who received a fitness test were **significantly less likely to apply for membership**.
  - Group A (test): ≈ 10%
  - Group B (no test): 13%
    - $p < 0.001$



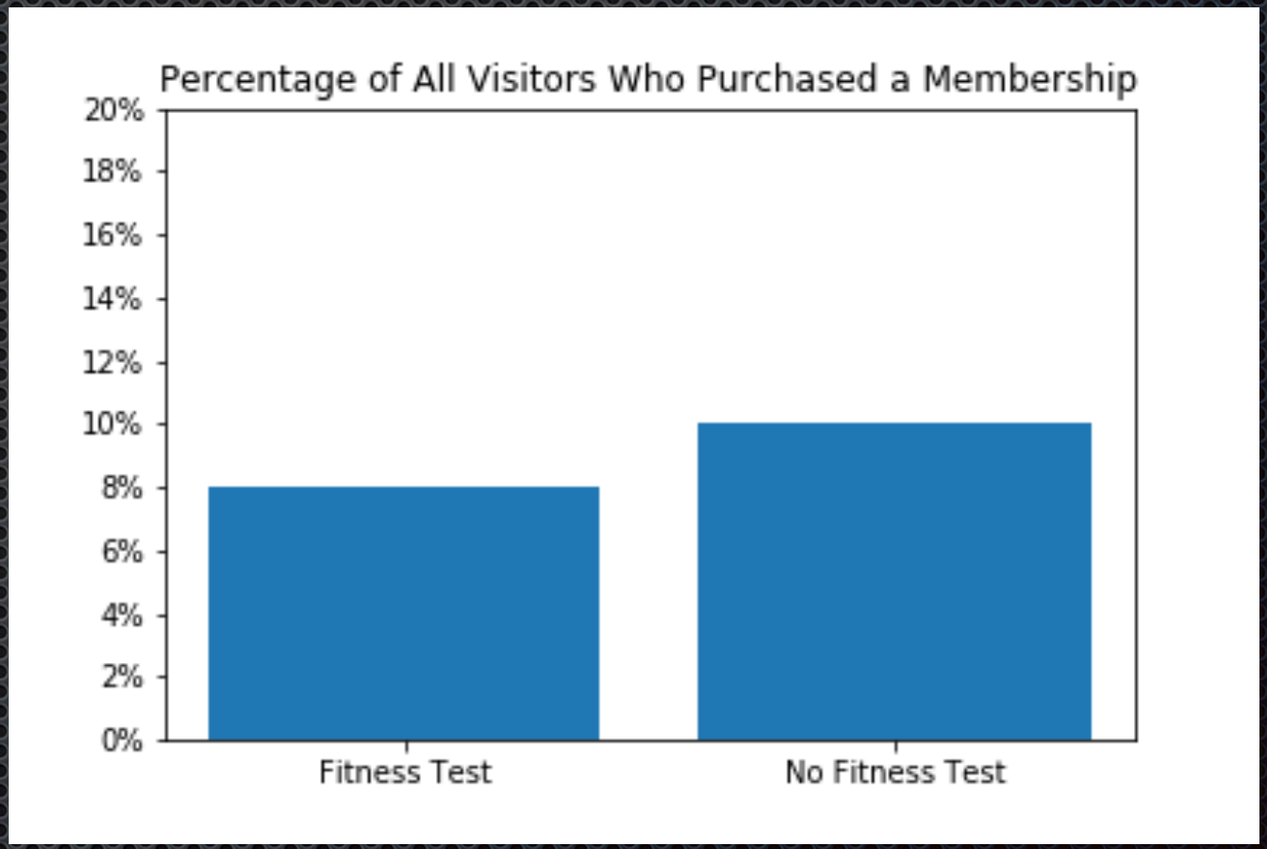
Results: Converting applications to purchases

- For visitors who filled out an application, there was **no significant difference in purchase rates**.
  - Group A (test): 80%
  - Group B (no test): ≈ 77%
    - $p > 0.43$



Results: Converting visits to purchases

- Visitors who received a fitness test were **significantly less likely to end up purchasing a membership**.
  - Group A (test): ≈ 8%
  - Group B (no test): 10%
  - $p < 0.015$



Anecdotal evidence: Visitor feedback

- Comments were collected from 4 visitors—2 in Group A and 2 in Group B. Sample size is small, but comments were consistent with conclusions that visitors who take the fitness test are less likely to apply and to purchase a membership:
  - 3 of 4 comments expressed displeasure with fitness tests.
    - The 2 visitors who *did not* receive a fitness test compared MuscleHub favorably to LiftCity, precisely because they found LiftCity's introductory fitness test to be "TOOOO much" or "way too intense."
    - However, the remaining comment did characterize the fitness test as "super helpful" and suggested that the test was an important factor in deciding to purchase a membership.

Recommendations

- The A/B test provides evidence that visitors who receive a fitness test are significantly less likely to apply for membership and, more importantly, eventually to purchase a membership.
- That statistical evidence is consistent with limited anecdotal evidence.
- MuscleHub should accordingly abandon the mandatory introductory fitness test.
  - If cost-efficient, we could consider offering an optional fitness test for visitors who would find it helpful.