

To Fitness Test Or Not To Fitness Test

A Recommendation for
MuscleHub
By Charlotte Muscroft

The Process: Joining MuscleHub



Potential member visits gym



Takes fitness test



Fills out application



Pays for membership

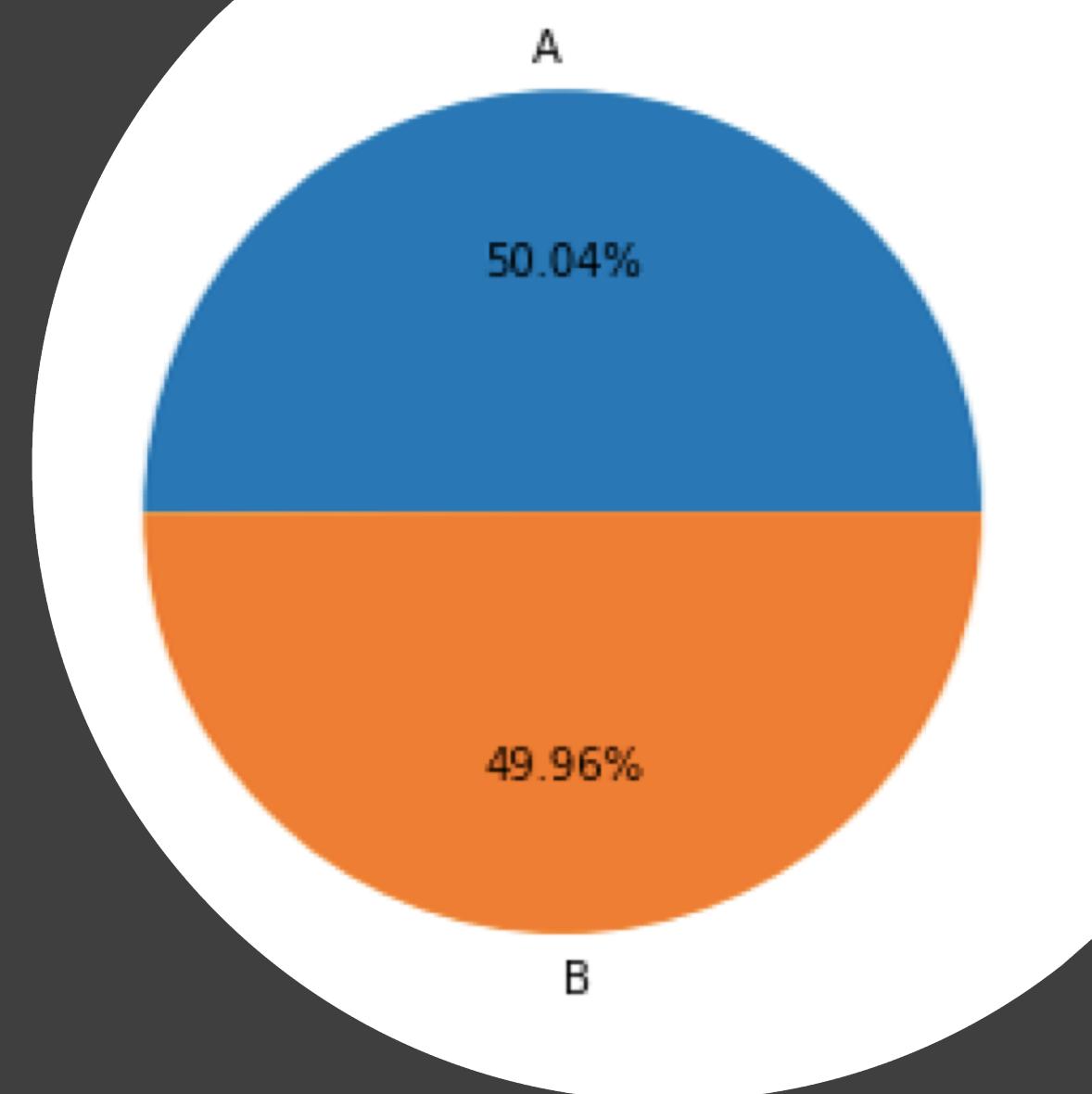
Is this the
best process?

Janet's hypothesis: Visitors that do not take the fitness test will be more likely to eventually purchase a membership to MuscleHub.

Question to answer: Does the fitness test impact MuscleHub visitors' decisions to apply and become members? How?

Data to Help Answer the Question

- 5004 visitors in the database
- Randomly assigned into two groups
 - Group A – Took the Fitness Test with personal trainer
 - 50.04% or 2504 visitors
 - Group B – Did not take the Fitness Test
 - 49.96% or 2500 visitors



Tables in the Database

1

Visits – Info about every potential customer that set foot in the gym

2

Fitness Tests – Info on potential customers who took a fitness test (Group A)

3

Applications – Info on potential customers that filled out an application (Group A & B)

4

Purchases – Info on customers that purchased a MuscleHub membership.

Answering the Question

- Performed three Chi Square hypothesis tests to determine if there are statistically significant differences between Group A and Group B in applications and memberships with MuscleHub.
- Why Chi Square?
 - We are comparing two categorical datasets
 - Columns are each a different condition
 - Applied vs. Didn't Apply, Member vs. Not Member
 - Rows represent different outcomes.
 - Group A vs. Group B
 - We do not have an expected result to which we can compare the observed result, thus eliminating other hypothesis test options

Test 1 – Who is applying?

- Question to Answer: Which group yields more applications? Group A (Fitness Test) or Group B (No Fitness Test)? Is the difference significant?
- Null Hypothesis: There is no significant difference between groups A and B. Regardless of whether or not they take the fitness test, all visitors are just as likely to apply for MuscleHub membership.



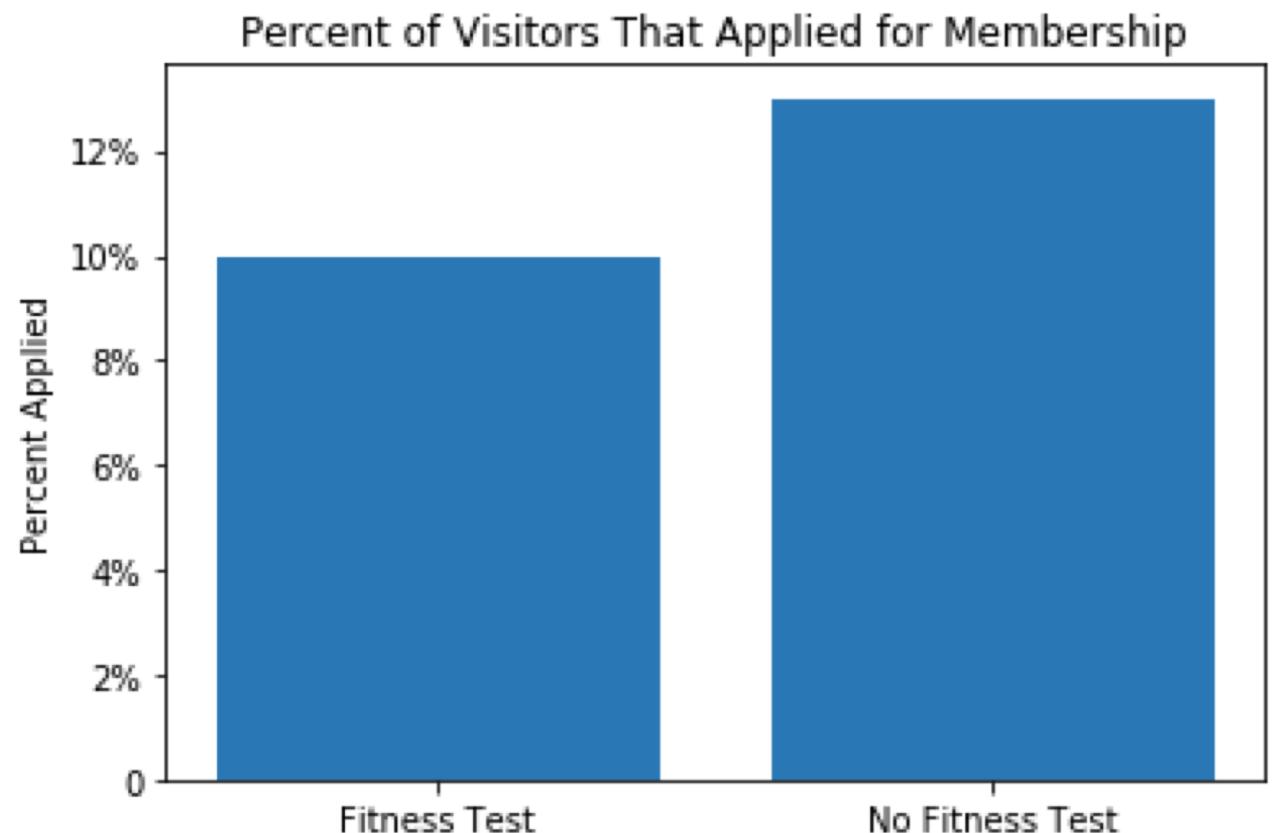
Test 1 Numbers

Group	Submitted Application	Did Not Submit Application	Percent of Visitors that Applied
A – Fitness Test	250	2254	9.98%
B – No Fitness Test	325	2175	13%

- Hypothesis Test 1 looked at the people who applied MuscleHub and tested to see if there was a significant difference in the number of applications between Group A and Group B

Test 1 Data Visualized

- 9.98 percent of visitors that took the fitness test applied for membership
- 13 percent of visitors that did not do the fitness test applied for membership
- Are these numbers statistically significant?



Test 1 Results

- P-Value = 0.0009647827600722304
- Reject Null Hypothesis as the p-value from the Chi Square Test is less than 0.05.
- There is a significant difference between Group A and Group B.
- **Significantly more visitors from Group B (No Fitness Test) applied for membership.**

Test 2 – Who purchases membership?

- Question to Answer: Once a visitor has picked up an application, is he or she more or less likely to purchase membership if he or she took the fitness test?
- Null Hypothesis: There is no significant difference between Group A and Group B. Once the visitor has the application, he or she is just as likely to purchase a membership regardless of whether or not he or she took the fitness test. The fitness test has no impact.



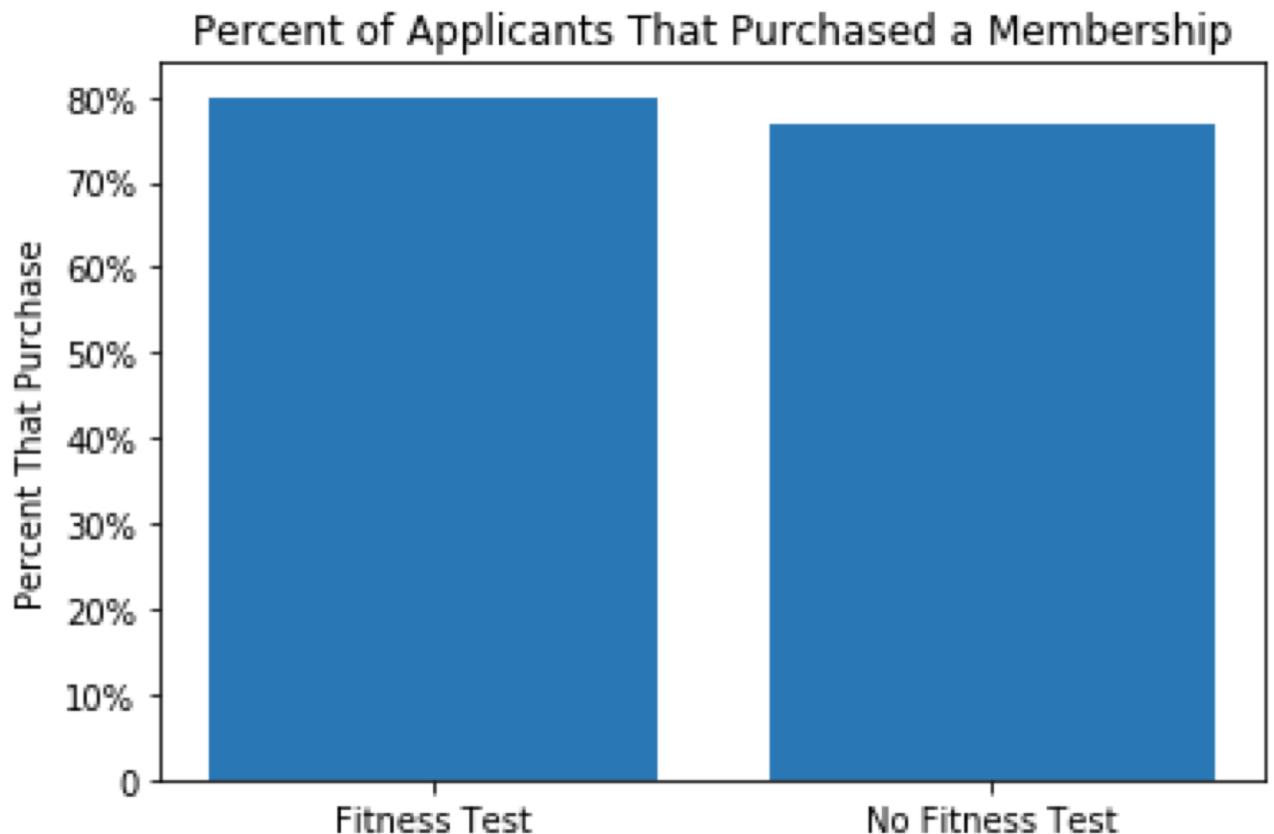
Test 2 Numbers

Group	Member of MuscleHub	Not a Member of MuscleHub	Percent that Purchased Membership
A – Fitness Test	200	50	80%
B – No Fitness Test	250	75	76.92%

- Hypothesis Test 2 took the people that picked up an application and checked if they became members, testing to see if there was a significant difference between Group A and Group B

Test 2 Data Visualized

- Once they picked up the application, 80 percent of visitors that did the fitness test purchased memberships
- Once they picked up the application, 76.92 percent of visitors that did not do fitness test purchased membership
- Are these numbers statistically significant?

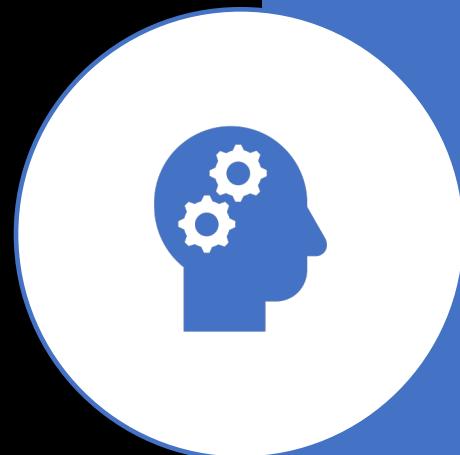


Test 2 Results

- P-value = 0.43258646051083327
- Maintain null hypothesis as p-value from Chi Square Test is greater than 0.05
- There is not a significant difference between Group A and Group B.
- **The fitness test did not have a significant impact on a visitor's likelihood to purchase a membership once he or she picked up an application.**

Test 3 – Broader look at who purchases memberships

- Question to Answer: Of all the visitors that came to MuscleHub, did Group A (Fitness Test) or Group B (No Fitness Test) produce significantly more memberships?
- Null Hypothesis: There is no significant difference between Group A (Fitness Test) and Group B (No Fitness Test). Regardless of whether or not they take the fitness test, all visitors are just as likely to purchase a MuscleHub membership.



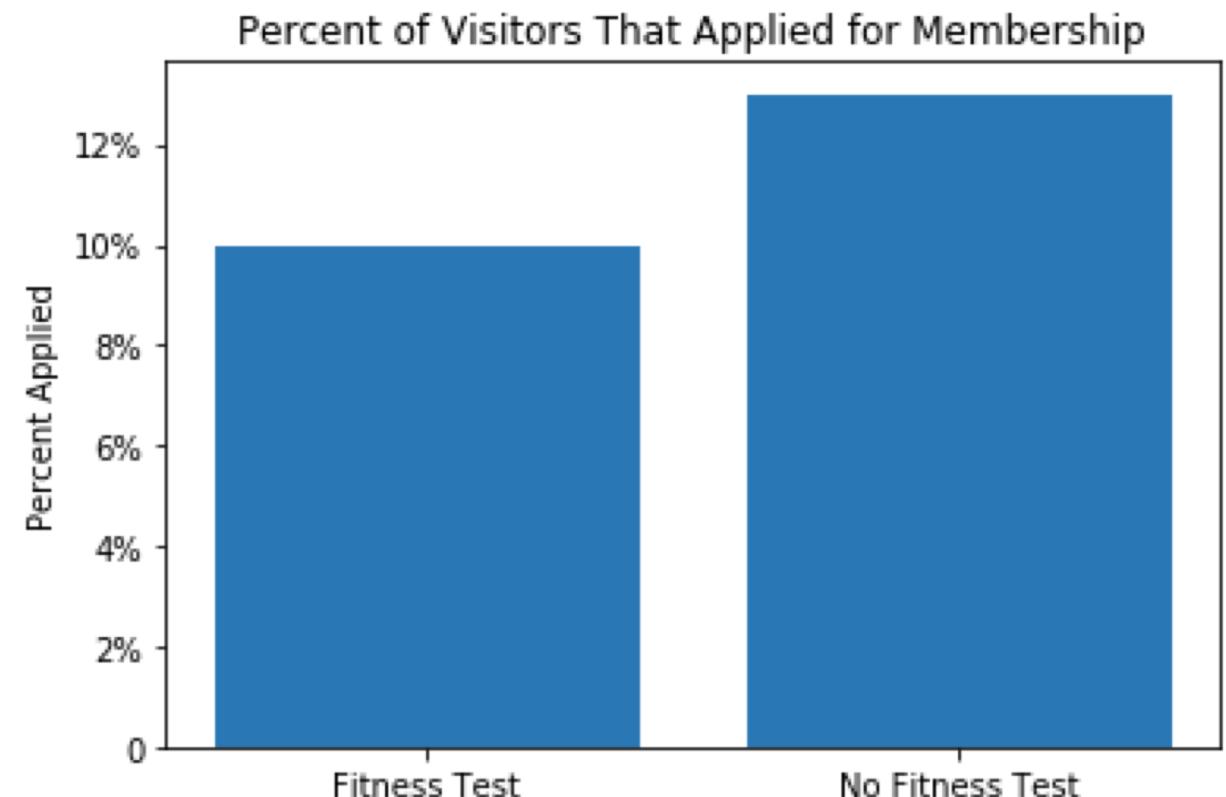
Test 3 Numbers

Group	Member of Muscle Hub	Not a Member of MuscleHub	Percent of Visitors that Purchased Membership
A – Fitness Test	200	2304	7.98%
B – No Fitness Test	250	2250	10%

- Hypothesis Test 3 looked at everyone that visited MuscleHub and tested to see if there was a significant difference in the memberships between Group A and Group B

Test 3 Data Visualized

- 7.98 percent of visitors that did the fitness test purchased membership
- 10 percent of visitors that did not take the fitness test purchased membership
- Are these numbers statistically significant?



Test 3 Results

- P-value is 0.014724114645783203
- Reject Null Hypothesis as p-value from Chi Squared Test is less than 0.05
- There is significant difference between Group A (Fitness Test) and Group B (No Fitness Test).
- **Significantly more visitors from Group B (No Fitness Test) purchased MuscleHub Memberships.**

Qualitative Data – Feedback from visitors

I always wanted to work out like all of the shredded people on the fitness accounts I see on Instagram, but I never really knew how to start. MuscleHub's introductory fitness test was super helpful for me! After taking the fitness test, I had to sign up and keep coming back so that I could impress my trainer Rachel with how much I was improving! - Cora, 23, Hoboken

When I walked into MuscleHub I wasn't accosted by any personal trainers trying to sell me some mumbo jumbo, which I really appreciated. Down at LiftCity they had me doing burpees 30 seconds after I walked in the door and I was like "woah guys slow your roll, this is TOOOO much for Jesse!" I still ended up not signing up for a membership because the weight machines had all those sweat stains on them and you know, no thanks. -Jesse, 35, Gowanus

I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it.
- Sonny "Dad Bod", 26, Brooklyn

I saw an ad for MuscleHub on BookFace and thought I'd check it out! The people there were suuuuper friendly and the whole sign-up process took a matter of minutes. I tried to sign up for LiftCity last year, but the fitness test was way too intense. This is my first gym membership EVER, and MuscleHub made me feel welcome. - Shirley, 22, Williamsburg

Summary of Qualitative Data

- Four responses included in Qualitative Data
- 50 percent (2) responses said that they liked that MuscleHub did not have a fitness test. These responses found the fitness test at LiftCity off-putting.
- One response took the fitness test at MuscleHub and had a negative experience
- One response loved the fitness test
- $\frac{3}{4}$ of the responses indicated that the fitness test does not yield a positive experience

Recommendation for MuscleHub

MuscleHub should remove the fitness test from the membership process.

Quantitative data proves that visitors from Group B (No Fitness Test) are more likely to both apply for & purchase MuscleHub memberships than visitors from Group A (Fitness Test). Janet's hypothesis was supported by the data.

Qualitative data shows that most visitors preferred to not take the Fitness Test, and not having the Fitness Test gave MuscleHub an advantage over LiftCity