



## Background

- Absorption in music is distinguished by:
  - State absorption:** transitory enjoyment and attention to the music one is experiencing in the moment.
  - Trait absorption:** willingness and ability for greater episodes of total attention spent engaged in music.
- High trait absorption is tied to greater enjoyment of negative emotions in music<sup>1</sup>.
- Music absorption has been linked to openness to experience and a preference for music high in arousal<sup>2,3,4</sup>.
- The Absorption in Music scale (AIMS)** is a measure of trait absorption that has been validated as a facet of musical reward on the extended **Barcelona Music Reward Questionnaire (eBMRQ)**<sup>5</sup>.
- While convergent validity has been established on these measures, it is unclear which groups score high on AIMS.

## Methods

**ABSORPTION IN MUSIC SCALE**

Name: \_\_\_\_\_ Date of Birth: \_\_\_\_\_  
Sex: \_\_\_\_\_ Date: \_\_\_\_\_

The following questions are about your experiences with music.

1. I will sometimes move my hand as if I were 'conducting' music

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

2. When listening to music, I sometimes temporarily forget where I am

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

3. I sometimes feel like I am 'one' with the music

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

4. When I listen to music I can get so caught up in it that I don't notice anything

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

5. When I feel that nobody understands me, I often turn on some music

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

6. I will stop everything that I'm doing in order to listen to a special song/piece of music that is playing

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

7. I can imagine a song/piece of music so vividly that it holds my attention as if I were hearing it live

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

8. When I hear good music I tend to lose my train of thought and forget what I was thinking about

1 2 3 4 5  
Strongly Disagree Somewhat Disagree Neutral (Neither Agree nor Disagree) Somewhat Agree Strongly Agree

Sample of Absorption in Music Scale (AIMS) [www.smartlaboratory.org/aims](http://www.smartlaboratory.org/aims)

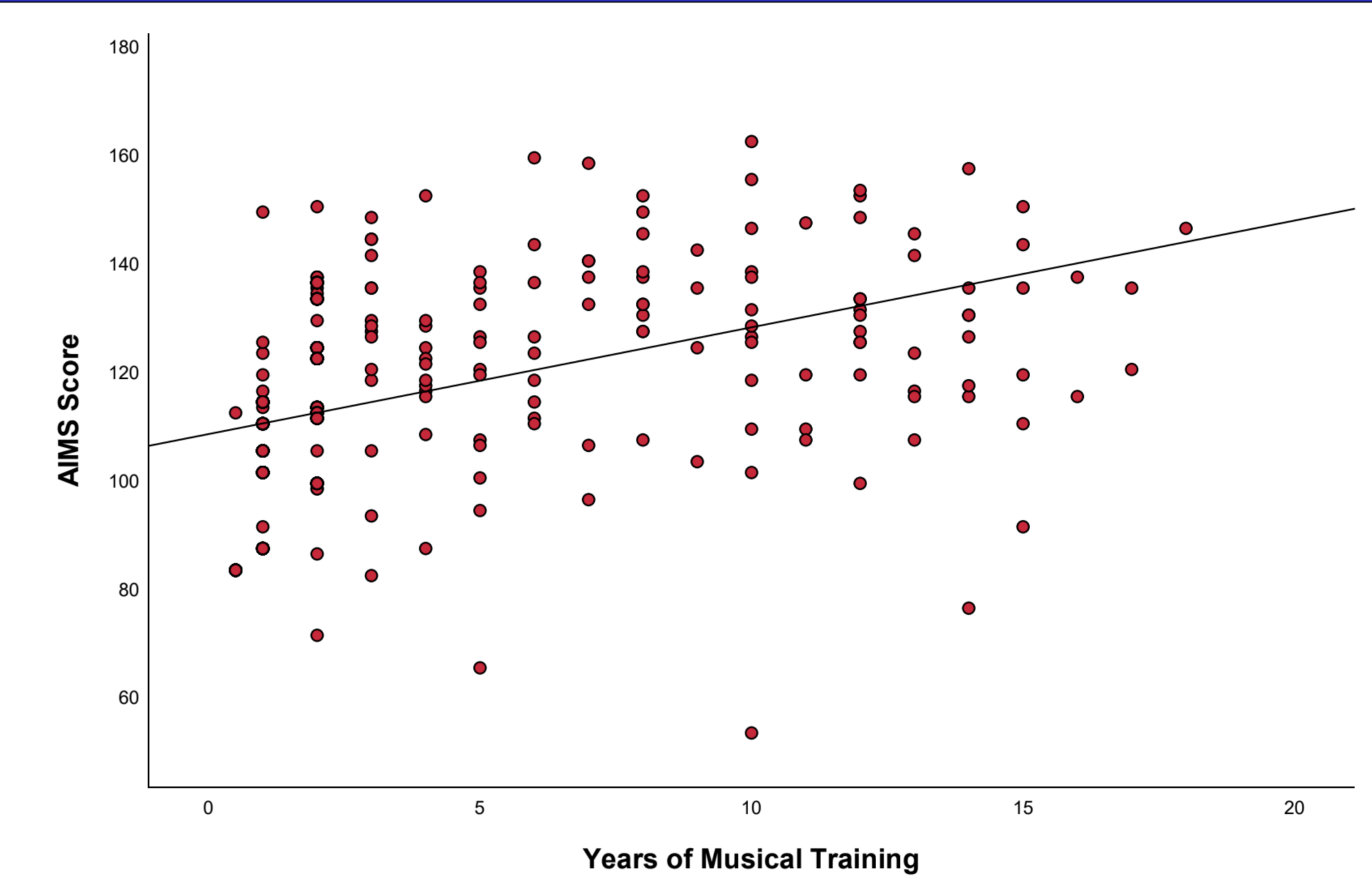
- Three independent data samples were used to measure age, sex and musical training on AIMS scores.
- Multiple linear regression of blended data was employed to measure predictors (age, sex, musical training) on outcome variable (AIMS scores).

## Demographic Variables

	Est.	Std. Error	p Value
(Constant)	110.345	.775	< .001*
Age	-.280	.107	.009*
Biological Sex	2.720	.715	< .001*
Years of Musical Training	1.554	.222	< .001*

Multiple linear regression predictions of age, biological sex, and years of musical training.

## Musical Training



Linear regression with years of musical training showing positive linear trend on AIMS.

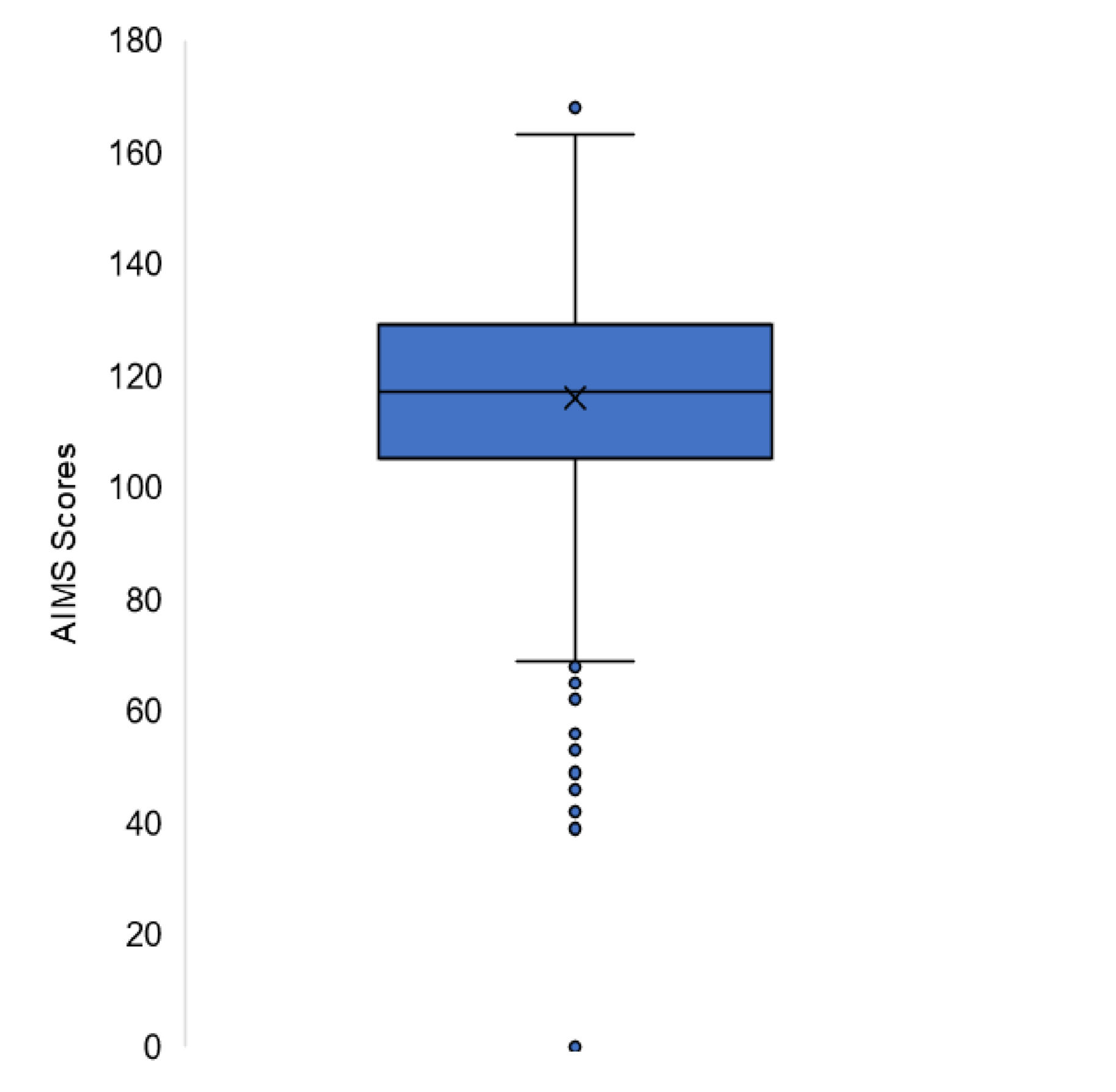
## Research Question

- Which demographic variables (i.e., age, sex, and musical training) characterize individuals who score high in musical absorption (AIMS)?

## Participants

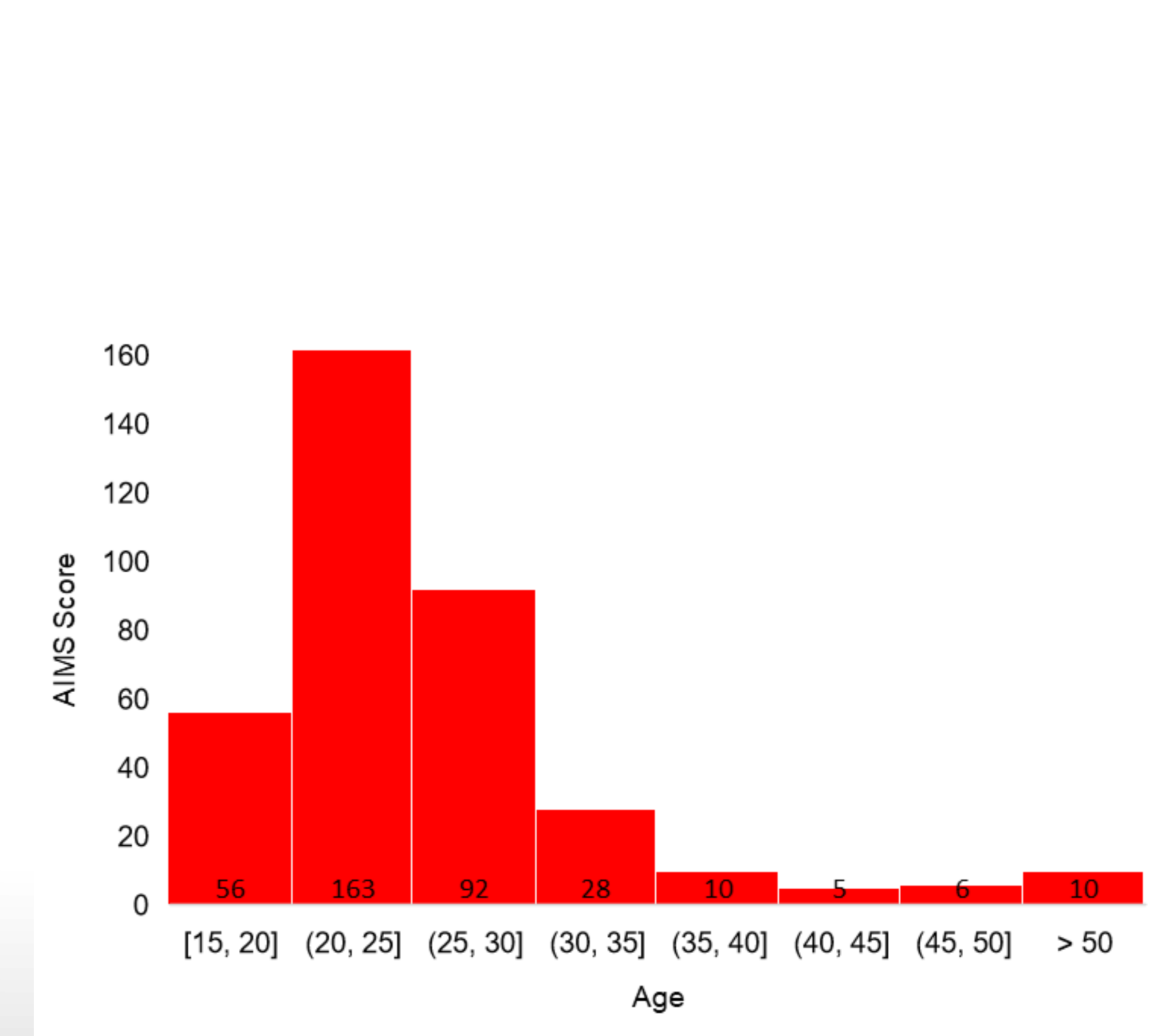
- N = 471 participants were collected from Toronto Metropolitan University
- Included 353 females, 112 males, and 6 not specified ( $M_{age} = 26.27$ ,  $SD = 7.92$ ).

## Overall AIMS Scores



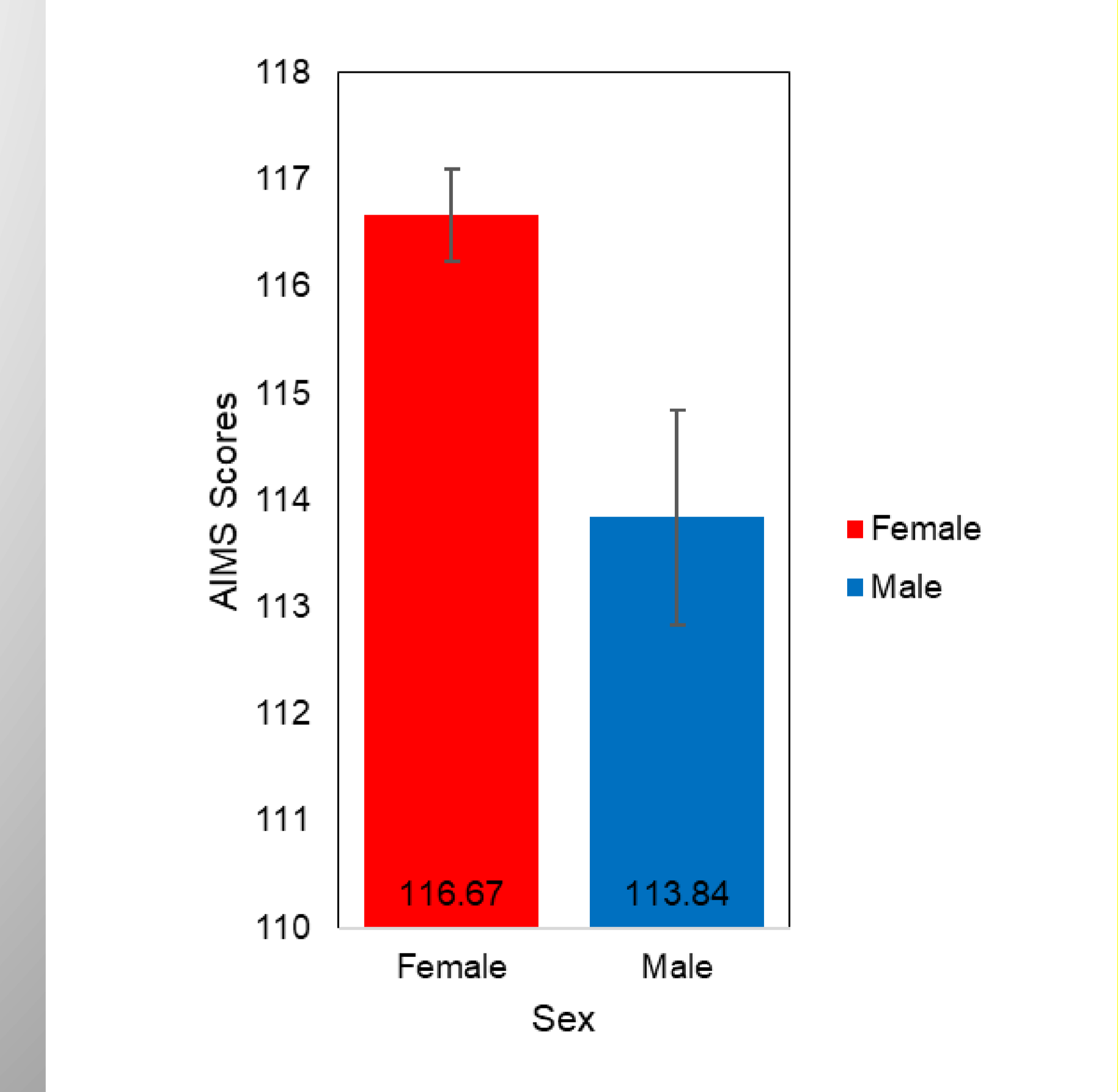
Midline represents median score, box represents first and third quartile, whiskers represent minimum and maximum scores. Cross represents mean scores.

## Age



Grouped age differences in AIMS scores.

## Sex



Mean distribution of sex on AIMS. Error bars represent standard error.

## Discussion

- This work can be used to distinguish quintiles of high- and low-absorbers as a pre-screening tool.
- Based on previous findings, individuals with higher musical absorption scores show greater engagement with music regardless of musical preference and perceived emotion, relative to state absorption<sup>6</sup>.
- Future work could benefit from measuring additional demographic variables on both state and trait absorption including years of training in music theory, musical preferences and differences in reward sensitivity.

## References

- Mas-Herrero, E., Marco-Pallares, J., Lorenzo-Seva, U., Zatorre, R. J., Rodriguez-Fornells, A. (2013). Individual differences in music reward experiences. *Music Perception, 31*, 118-138.
- Sandstrom, G. M., & Russo, F. A. (2013). Absorption in music: Development of a scale to identify individuals with strong emotional responses to music. *Psychology of Music, 41*(2), 212-228.
- Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of abnormal psychology, 83*(3), 268.
- Herbert, R. (2019). Absorption and openness to experience: An everyday tale of traits, states, and consciousness change with music.
- Kreutz, G., Ott, U., Teichmann, D., Osawa, P., & Vaitl, D. (2008). Using music to induce emotions: Influences of musical preference and absorption. *Psychology of music, 36*(1), 101-126.
- Hall, S. E., Schubert, E., & Wilson, S. J. (2016). The role of trait and state absorption in the enjoyment of music. *PLoS One, 11*(11), e0164029.