According to Hans Selye, "stress is the nonspecific response of the body to any demand," (Selye, 1976, p. 14). People react to stress physiologically when the Somatic Nervous System is activated in the presence of stress, and in turn, there are physiological effects including blood pressure (Trapp, Frade, Schillaci, Avian, & ... Baulmann, 2014). Even for people who are in good health, heart rate, systolic blood pressure, and diastolic blood pressure are often increased when there are stressors present (Conley, Lehman, 2012).

Stress not only influences the body physiologically, but it also influences decision making, more specifically, risk taking (Jordan, Sivanthan, Galinsky, 2011). Many psychological tests, including the Balloon Analogue Risk Test (BART) have shown a positive correlation with risk taking and more use of drugs and alcohol (DeMartini, Leeman, Corbin, Toll, Fucito, Lejuez, O'Malley, 2014). It was hypothesized that the presence of stress would increase blood pressure which would facilitate greater risk taking.

Method

- **Participants**
  - N=8, Female (n=6), Male (n=2)
  - Eastern Connecticut State University students, psychology majors
  - Class standing: Freshman (n=1), Sophomore (n=4), Junior (n=3)
  - Caucasian (n=6), Hispanic (n=2)

- **Materials**
  - Blood pressure machine
  - Laptop or Computer
  - Balloon Analogue Risk Test on Inquinsit Lab
  - Cold Presser

- **Procedure**
  - Inquinsit Lab was downloaded onto the experimenters computer for the Balloon Analogue Risk Task to be done
  - Participants filled out a demographic form that included age, ethnicity, grade, and gender
  - Many psychological tests, including the BART by reading the instructions on the screen, and then did 30 trials of the BART while doing mental arithmetic, counting down from 4097 by 16's
  - The number of balloon pumps was recorded after each trial
  - After 15 trials, blood pressure was recorded while the participant was in the middle of the mental arithmetic task
  - After the mental arithmetic and 30 trials of the BART were done, the participant placed their hand in a cold presser
  - The participant repeated the 30 trial BART while their hand was in the cold presser with no mental arithmetic
  - The number of balloon pumps after each trial were recorded
  - Blood pressure was taken after 15 trials
  - The average of the 30 BART trials were taken for the mental arithmetic task and the cold presser task

- **Results**

  **Descriptive Statistics**
  - Baseline systolic (M=118.875, SD=10.23)
  - Baseline Diastolic (M=73.625, SD=9.74)
  - Math Systolic (M=122.5, SD=16.36)
  - Math Diastolic (M=82.75, SD=17.77)
  - Cold Presser Systolic (M=149.375, SD=30.52)
  - Cold Presser Diastolic (M=22.65, SD=12.08)
  - Math BART (M=25.93, SD=12.08)
  - Cold Presser BART (M=22.64, SD=13.63)

  **Inferential Statistics**
  - A Wilcoxin test was run to look at the difference between variables
  - The difference between cold systolic (M=149.375, SD=30.52) and baseline systolic (M=118.875, SD=10.23) is significant (z=-2.383, p=0.017). The cold presser increased systolic blood pressure significantly.
  - There was no significant difference between mental arithmetic while taking the BART (M=25.9, SD=12.08) and physical stress with the cold presser (M=22.64, SD=13.63) (z=-0.560, p=0.575).

- **Discussion**

  Based on the small sample size, the power, or ability to make a good decision based on the significance is limited. It is also hard to generalize for the population based on an eight person sample size. Based on the results and the little significance between mental and physical stress, future researchers should focus on personality attributes like neuroticism or extraversion, where there tends to be significant differences between every condition.

- **References**