Endotoxins result in increased inflammation in the human body with inflammation linking to higher reported levels of depression. From data collected through Dr. Michael Irwin’s ongoing Sleep Health Aging Research in Depression (SHARE-D) study, a comparative analysis between male and female subjects was made measuring the effect of an endotoxin on each subject’s reported levels of depression, using the Profile of Mood States (POMS) depression scale as a quantifying factor. Subjects were either given an endotoxin injection or a placebo injection after time point 1. Based on both female and male subjects, those injected with the endotoxin reported higher levels of depression when compared to their respective controls. This study implicates that higher inflammation rates are tied to an increase in depressive mood, with males exhibiting more profound differences and higher variance.

For average POMS at each time point:
- Female subjects in the placebo and experimental groups had a SEM of +/- 0.302 and a p-value of 0.0694.
- Male subjects in the placebo and experimental groups had a SEM of +/- 0.474 and a p-value < 0.001.

The data presented shows a definite trend of those in the experimental (endotoxin) group reporting stronger levels of depression associated symptoms, with the male experimental group showing the most robust response and the most fluctuating of the 4 groups.

Our original hypothesis proposed females would exhibit greater variance, but it is actually the males with the stronger response to the endotoxin.

In a future analysis, it would be interesting to see if this trend continues in males younger than age 60.

**References & Acknowledgments**


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