**Mediation analysis for alcohol consumption and Parkinson Disease**

Doing a cutoff with No alcohol consumption at all (“no”) and either amount of alcohol (“yes”). Chao1 alpha diversity showed to be significant.

Causal Mediation Analysis

Nonparametric Bootstrap Confidence Intervals with the Percentile Method

Estimate 95% CI Lower 95% CI Upper p-value

ACME (control) 1.73e-02 2.79e-10 0.05 0.045 \*

ACME (treated) 2.52e-02 5.94e-04 0.06 0.045 \*

ADE (control) 4.12e-02 -6.90e-02 0.15 0.428

ADE (treated) 4.91e-02 -8.40e-02 0.17 0.428

Total Effect 6.64e-02 -4.71e-02 0.17 0.234

Prop. Mediated (control) 2.61e-01 -3.32e+00 4.09 0.269

Prop. Mediated (treated) 3.79e-01 -2.49e+00 3.42 0.269

ACME (average) 2.13e-02 4.52e-04 0.05 0.045 \*

ADE (average) 4.52e-02 -7.62e-02 0.16 0.428

Prop. Mediated (average) 3.20e-01 -2.85e+00 3.79 0.269

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Sample Size Used: 146

Simulations: 5000

The sample was divided into people without Parkinson disease and people with Parkinson disease with less than 5 years of being diagnosed.

No Yes

127 19

It was found previously that alcohol consumption in people with Parkinson disease had no correlation with either diversity.

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| --- | --- | --- | --- | --- |
|  | Observed | Chao1 | Shannon | Simpson |
| p.value | 0.1860148 | 0.3241064 | 0.3632941 | 0.7691126 |

By lowering the Parkinson disease duration then the point is to reduce the time window to when alcohol is still significant and to control for other potential confounders.

* Similar results were obtained with a threshold of 10 years but as expected the results were more consistent and more significant as the Parkinson duration was lowered.
* Results suggest that drinking alcohol contributes to the pathogenesis of the disease but when the disease is set then it no longer has an effect on the microbiome.