Meeting Notes – Feb 5, 2024

Research Question: what are the effects of dopamine agonists pramipexole and amantadine, and monoamine oxidase-B inhibitor rasagiline on PD patients

Idea: Look to see if treatments brings microbiome back to what normal person would have. Some microbes associated with health vs disease.

Parkinsons Disease dataset:

* Look at the microbiota difference between the patients receiving treatment vs normal ppl microbiota.
* Look at the different PD patients who consume alcohol, eat meat, and compare their response to different drugs and look at their microbiota
* Not a lot of patients are taking the dopamine agonists, **We need at least 10 patients (Chris)**
* We have a good sample size.
* **Efficiency of recovery of the microbiome to a healthy human after treatment with dopamine agonists.**
* For the patients that are taking combination drugs, that could be considered as a separate group, can be removed (suggested), can also be discussed as a limitation (could be supplementary figure).
* Probably won’t be a multi-variable analysis.

STEPS:

Aim 1: cleaning and filtering data, new metadata column for multiple treatment patients. Stratifying by treatment/multi-drug treatment

Aim 2: Basic α β diversity on the different drugs: heathy control, PD untreated, 4 PD treated, PD combo

Aim 3, 4, 5: core microbiome, indicator taxa, differential abundance. All taxonomic analysis

Aim 6: exploring other variables that affect the effectiveness of the treatment?

End presentation “we looked at how diff treatment plans” → found only 1 was interesting → went deeper to see what bacteria are actually changing.

TO DO:

Data needs to be processed before proposal → aka complete aim 1

* Add 1 column: treatment = healthy, PD\_untreated, drug1, drug2, drug3, drug4, drug5(combo)