Title:  Nutrional Impact on HD Progression

<https://www.cardiff.ac.uk/centre-for-trials-research/research/studies-and-trials/view/domino-hd>

Aims:

We would like to use the dataset to:

1) Learn to what extent nutrition 'profiles' of people with Huntington's disease differ between countries.

2) Calculate commonly used nutrition indices such as a Mediterranean diet index (e.g. [https://e-nrp.org/DOIx.php?id=10.4162/nrp.2019.13.4.333](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fe-nrp.org%2FDOIx.php%3Fid%3D10.4162%2Fnrp.2019.13.4.333&data=04%7C01%7CLockSK%40cardiff.ac.uk%7Cf28740e5f38740158d3408d99e2e4939%7Cbdb74b3095684856bdbf06759778fcbc%7C1%7C0%7C637714743915347227%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=aa0Edj1oKplCKs9RQOQxKE6T9VVmd0ULhc1a6Fkt9W8%3D&reserved=0)) and other indicators of a healthy lifestyle and assess how they differ and whether one could derive a 'super-index' capturing all important aspects of a healthy nutrition.

* Clusters and correlations between nutritional intake and location

Planned analyses / potential methods:

Agreed meeting time: Thursdays 1-5pm, location tbd

Possible meeting time with Phillip Pallmann: 2pm Thursday??

Self-Study

* <https://www.datacamp.com/community/tutorials/pca-analysis-r>
* <https://www.statmethods.net/advstats/cluster.html>
* <https://dietassessmentprimer.cancer.gov/profiles/questionnaire/>

Complete Research Integrity Training

* Siobhan
* Lizzy
* Tessa

Approach

* Cluster analysis
* Principal component analysis
* Read previous literature

Reading:

* Food Group differences in Studied Countries --> Lizzy
* HD and Examples of disease progression & lifestyle interventions and nutrients (any Ndeg disease) --> Tessa & Siobhan
* Clustering & PCA in R --> ALEX 😊
* Chapters 1-3 and 6 of [https://link.springer.com/book/10.1007/978-1-4419-9650-3](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Flink.springer.com%2Fbook%2F10.1007%2F978-1-4419-9650-3&data=04%7C01%7CLockSK%40cardiff.ac.uk%7Cf28740e5f38740158d3408d99e2e4939%7Cbdb74b3095684856bdbf06759778fcbc%7C1%7C0%7C637714743915357223%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=MKaqUqvtQmfulAwHMKNxZrMznQlfCXuGiUnNTv1E0pM%3D&reserved=0)
* [https://www.datacamp.com/community/tutorials/pca-analysis-r](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.datacamp.com%2Fcommunity%2Ftutorials%2Fpca-analysis-r&data=04%7C01%7CLockSK%40cardiff.ac.uk%7Cf28740e5f38740158d3408d99e2e4939%7Cbdb74b3095684856bdbf06759778fcbc%7C1%7C0%7C637714743915367218%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=Zv21V9LrJe5U5sJr%2BdKR5YxB3YQmpDKW7cNTFaA%2BDjA%3D&reserved=0)
* [https://uc-r.github.io/kmeans\_clustering](https://eur03.safelinks.protection.outlook.com/?url=https%3A%2F%2Fuc-r.github.io%2Fkmeans_clustering&data=04%7C01%7CLockSK%40cardiff.ac.uk%7Cf28740e5f38740158d3408d99e2e4939%7Cbdb74b3095684856bdbf06759778fcbc%7C1%7C0%7C637714743915367218%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=IWrzz7hZ5HqILeBBcUhWIONRG4gk3VRbwLOP2y64UqE%3D&reserved=0)

Project location

* <https://drive.google.com/drive/folders/11plOPfV9I4SNjHtEkFwXaeY5bxHmBG3x?usp=sharing>