

A Shortcut to the Genetic Basis of Neurodegenerative Diseases

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1 Introduction

- Neurodegenerative diseases occur when nerve cells in the brain progressively lose their function and ultimately die.
- We will recalculate a genetic constraint score (pLoF) for different ethnic populations according to their disease status.
- We performed FABRIC, a method that dictate evolution selection on variants associated with early onset of Parkinson's disease.

DATA & RE-calculation gnomad create springstrin distribute Chromosomal VCF files Neuro candidates All-non neuro non neuro non

Constraint distribution

3 RPS4Y1

5 TGIF2LY

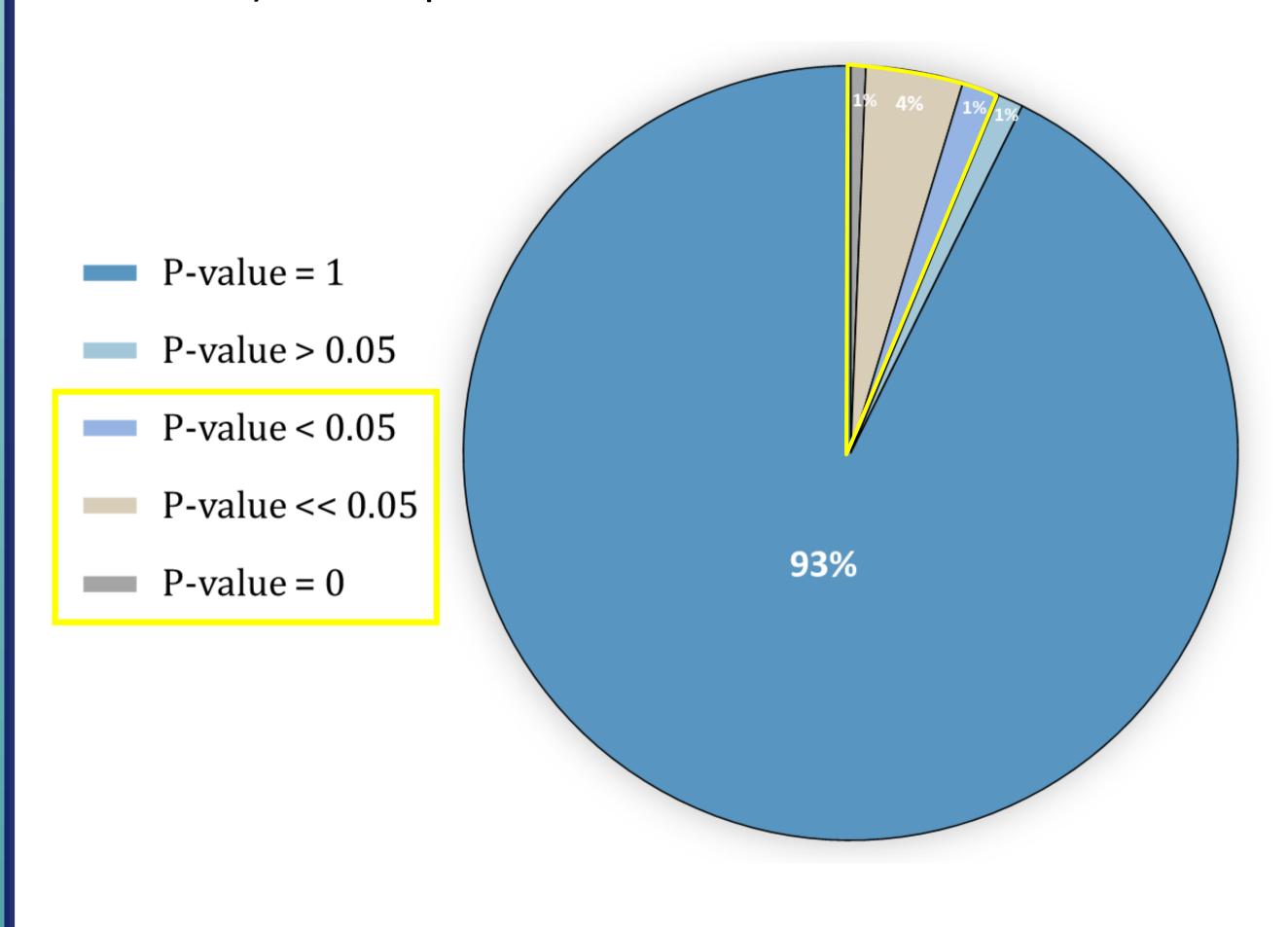
6 PCDH11Y

Pie graph of the fisher exact **P-values** (after Bonferroni correction) in Europeans

RPS4Y1

TGIF2LY PCDH11Y

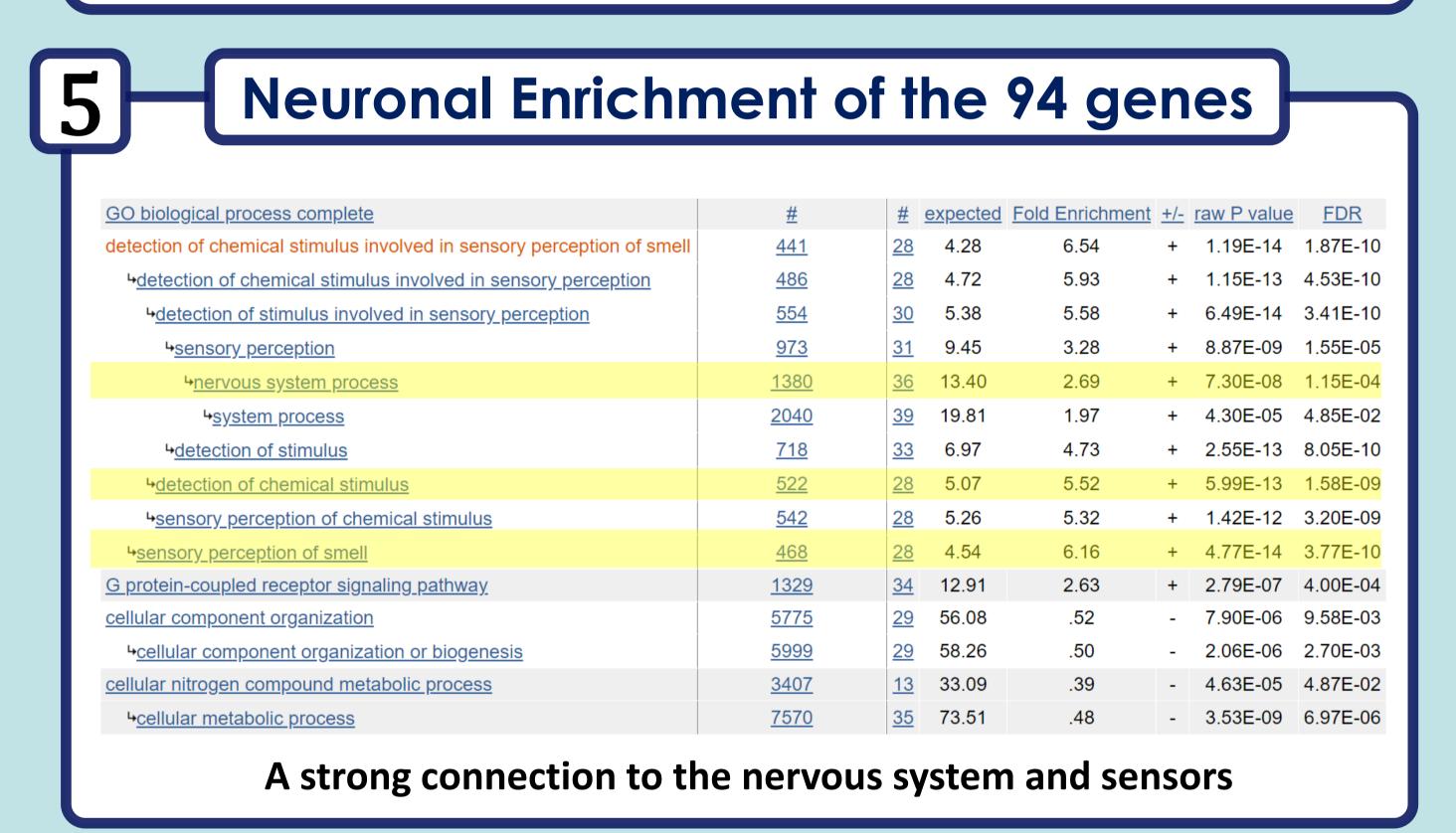
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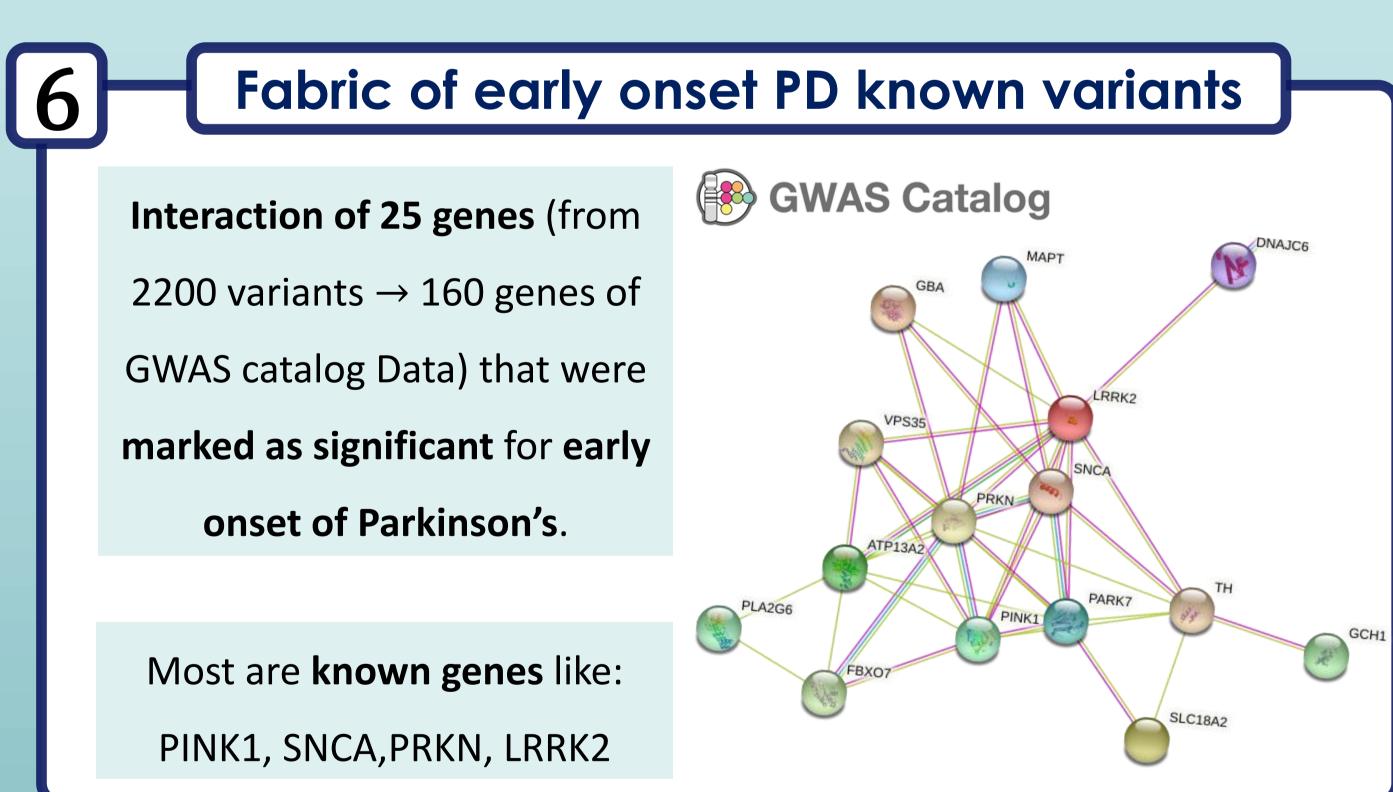


1249 genes with P-value < 0.05

Population Venn diagram European Ashkenazi jewish 1249 94 110 Asian

94 overlap genes





7 Summary & future steps

- We discovered that even when looking throw a healthy
 population, we can find genes that are most likely related to
 Neurodegenerative diseases.
- In order to be **more accurate**, we would like to reduce the number of suspected genes since there is **still too much genes** (94).
- We will run the pipeline on **UK-biobank** data in **biobank** order to **create PRS for individuals.**

8 Acknowledgment

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