Improving genetic prediction for genetic-testing consumers

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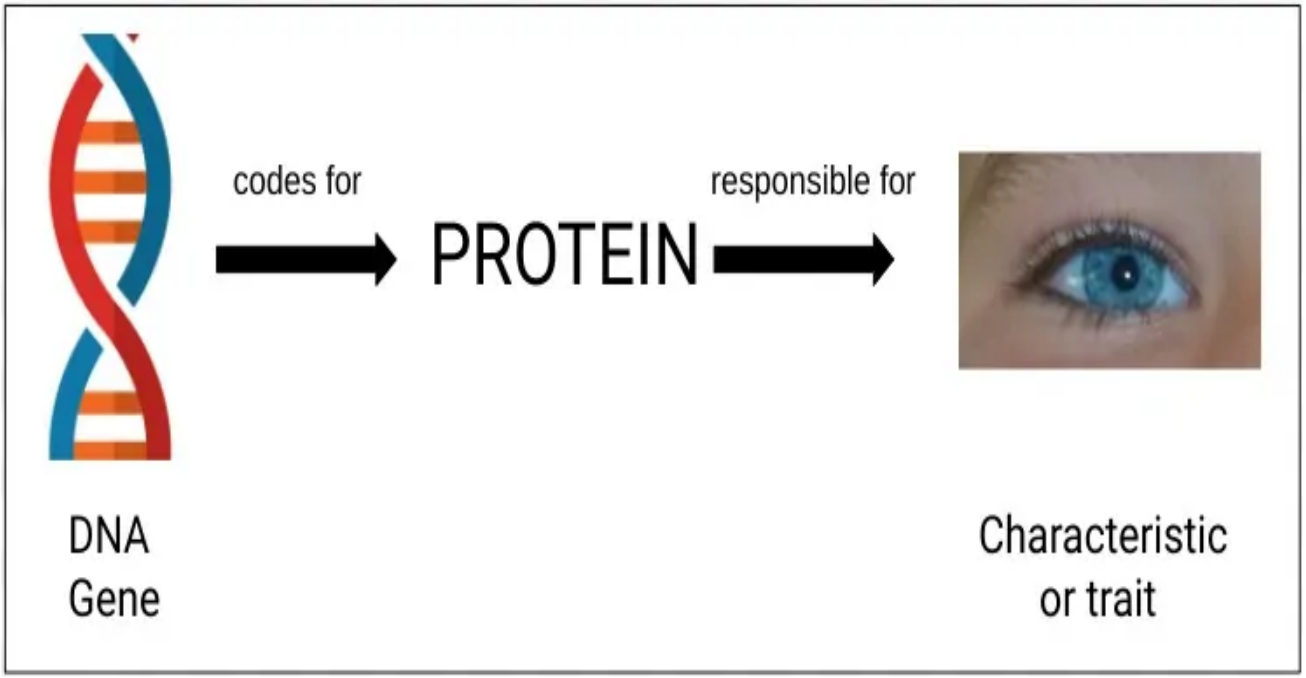
Improving genetic prediction for genetic-testing consumers

Relevance of genetics

- Well known influence for some traits aside the environment
- Gaps in the knowledge of specific genetic determinants
- Limited genetic prediction of traits



Schematic representation of gene-trait relationship

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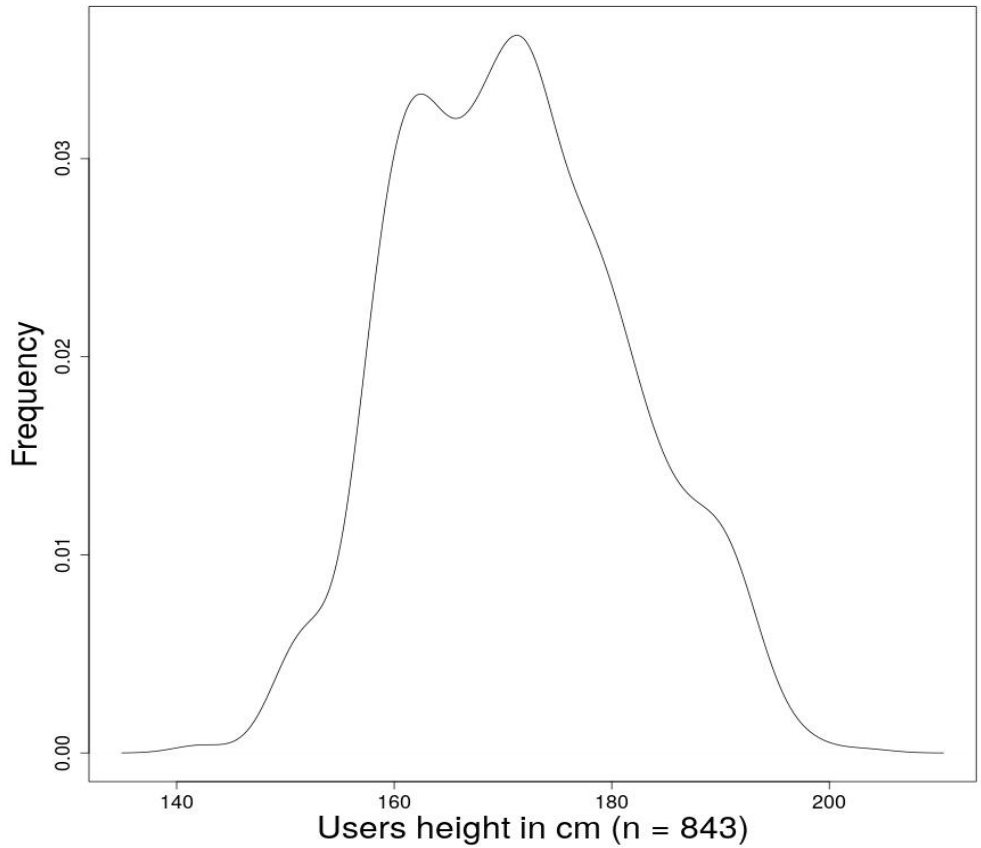
openSNP: genetic prediction of height

- Open-access database with genetic and height data
- 5.7 GB of genetic and height data scrapped with an API
- ≈9 thousand genetic variants associated with height



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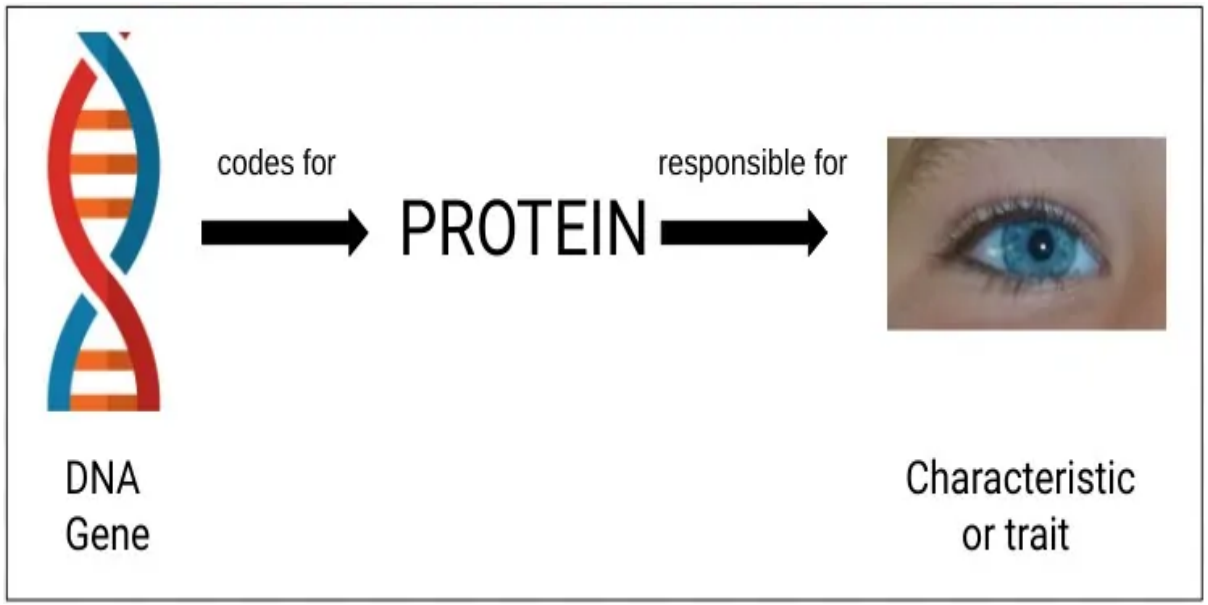
Genetic algorithms to predict height

- Genetic algorithms selecting best genetic variants
  - Filtering by association p-values
  - Considering functional impact on proteins
- Fine tuning of algorithm parameters $\rightarrow$ battery of algorithms
- Influence of algorithm parameters on height prediction



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Proof of concept

- Improvement of algorithms for genetic prediction
- Future test on larger datasets with clinical data
- More robust predictions of disease risk for consumers