



University of Dundee

New genetic signals for lung function highlight pathways and chronic obstructive pulmonary disease associations across multiple ancestries

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Published in:
Nature Genetics

DOI:
[10.1038/s41588-018-0321-7](https://doi.org/10.1038/s41588-018-0321-7)

Publication date:
2019

Document Version
Peer reviewed version

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):

Understanding Society Scientific Group, Shrine, N., Guyatt, A. L., Erzurumluoglu, A. M., Jackson, V. E., Hobbs, B. D., Melbourne, C. A., Batini, C., Fawcett, K. A., Song, K., Sakornsakolpat, P., Li, X., Boxall, R., Reeve, N. F., Obeidat, M., Zhao, J. H., Wielscher, M., Weiss, S., Kentistou, K. A., ... Wain, L. V. (2019). New genetic signals for lung function highlight pathways and chronic obstructive pulmonary disease associations across multiple ancestries. *Nature Genetics*, 51(3), 481-493. <https://doi.org/10.1038/s41588-018-0321-7>

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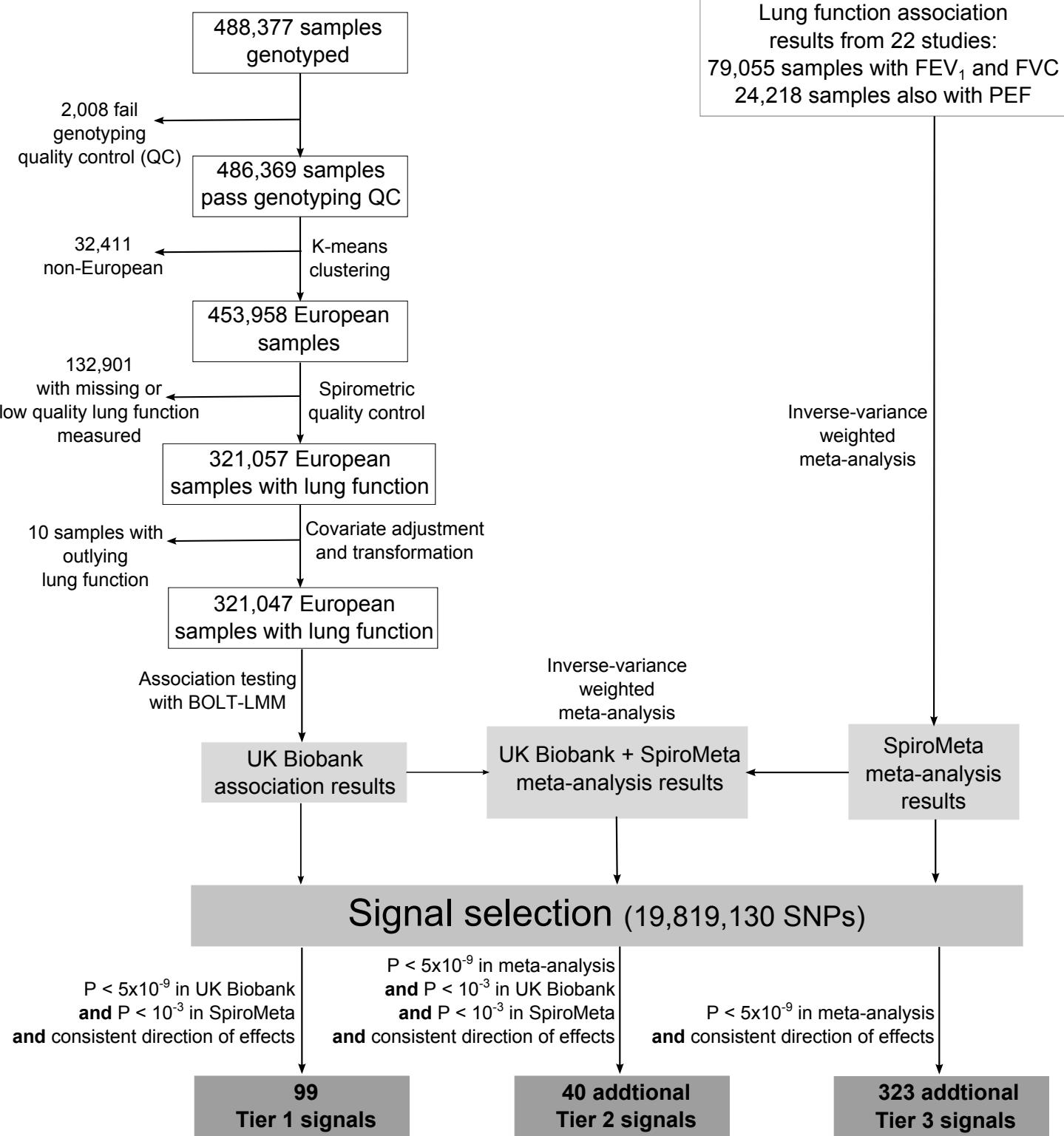
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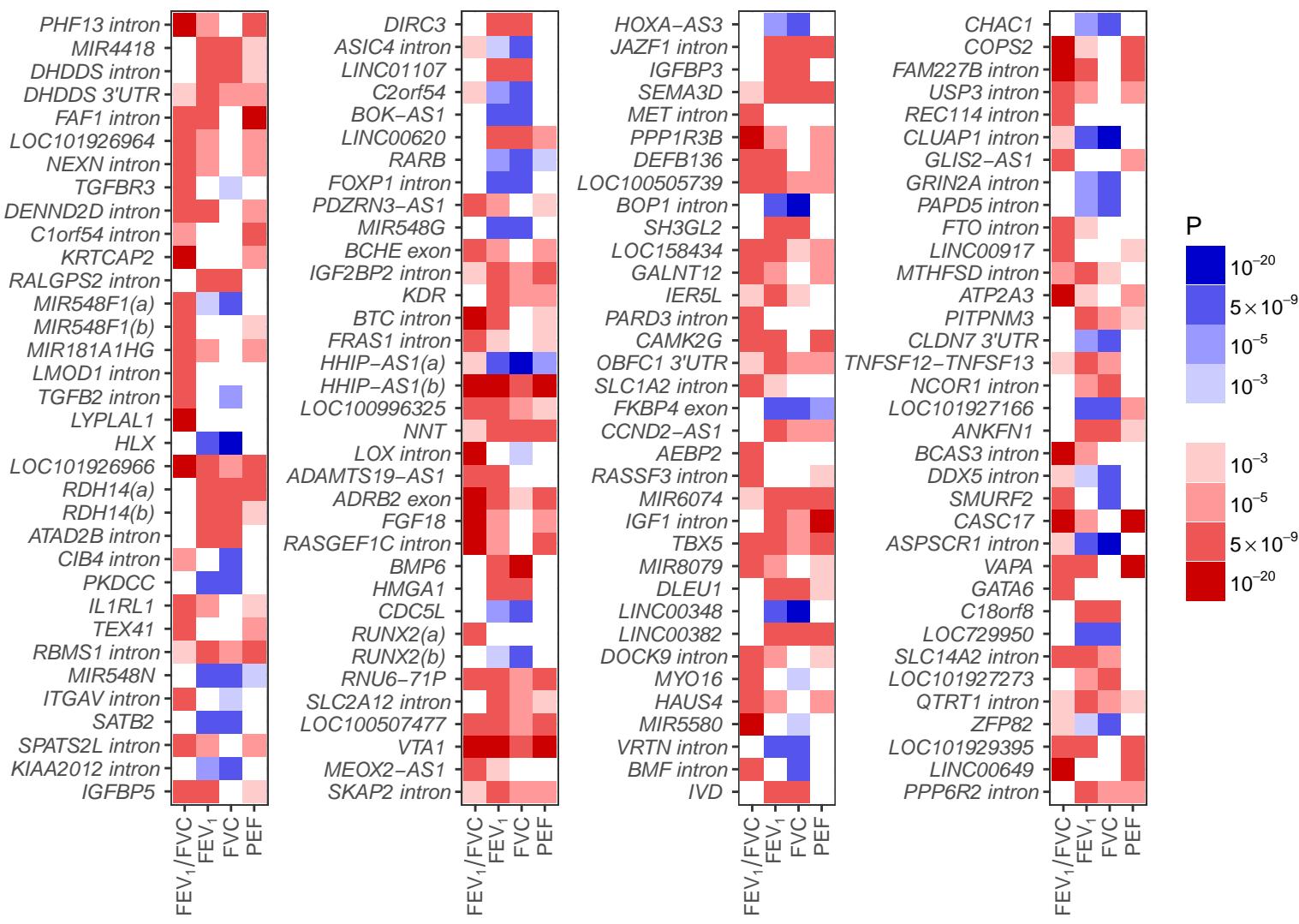
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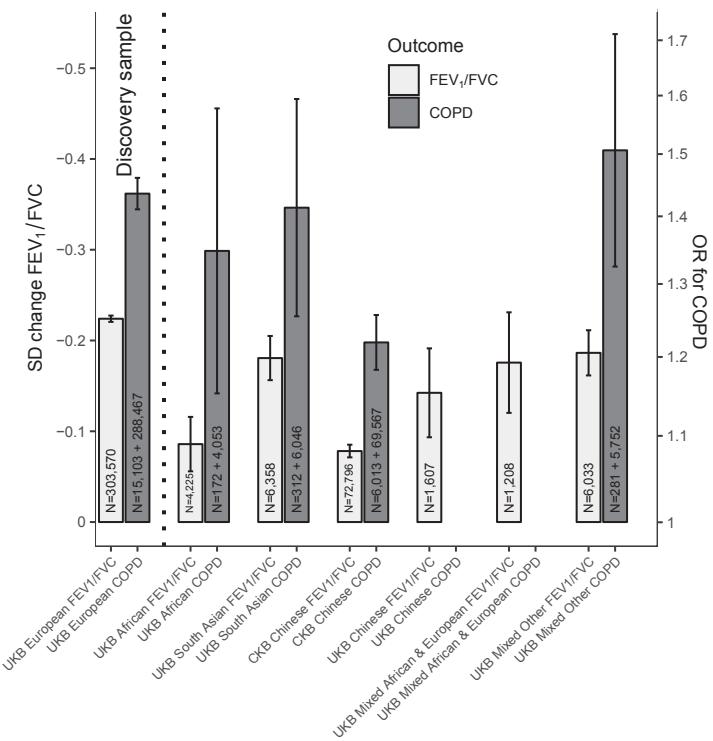
Signal



trait

a

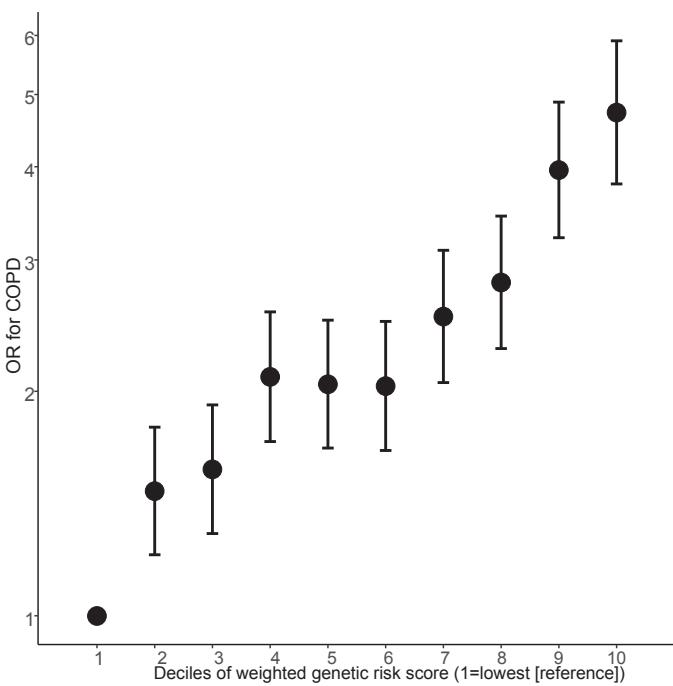
Weighted risk score associations with FEV₁/FVC and COPD in population-based studies



Ancestral group and phenotype studied in UK Biobank or China Kadoorie Biobank

c

Odds ratio of COPD per decile increase in the weighted genetic risk score



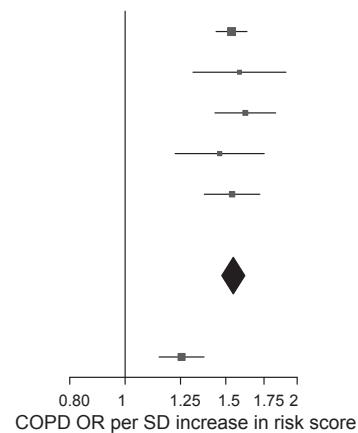
b Weighted risk score associations with COPD susceptibility in COPD case-control studies

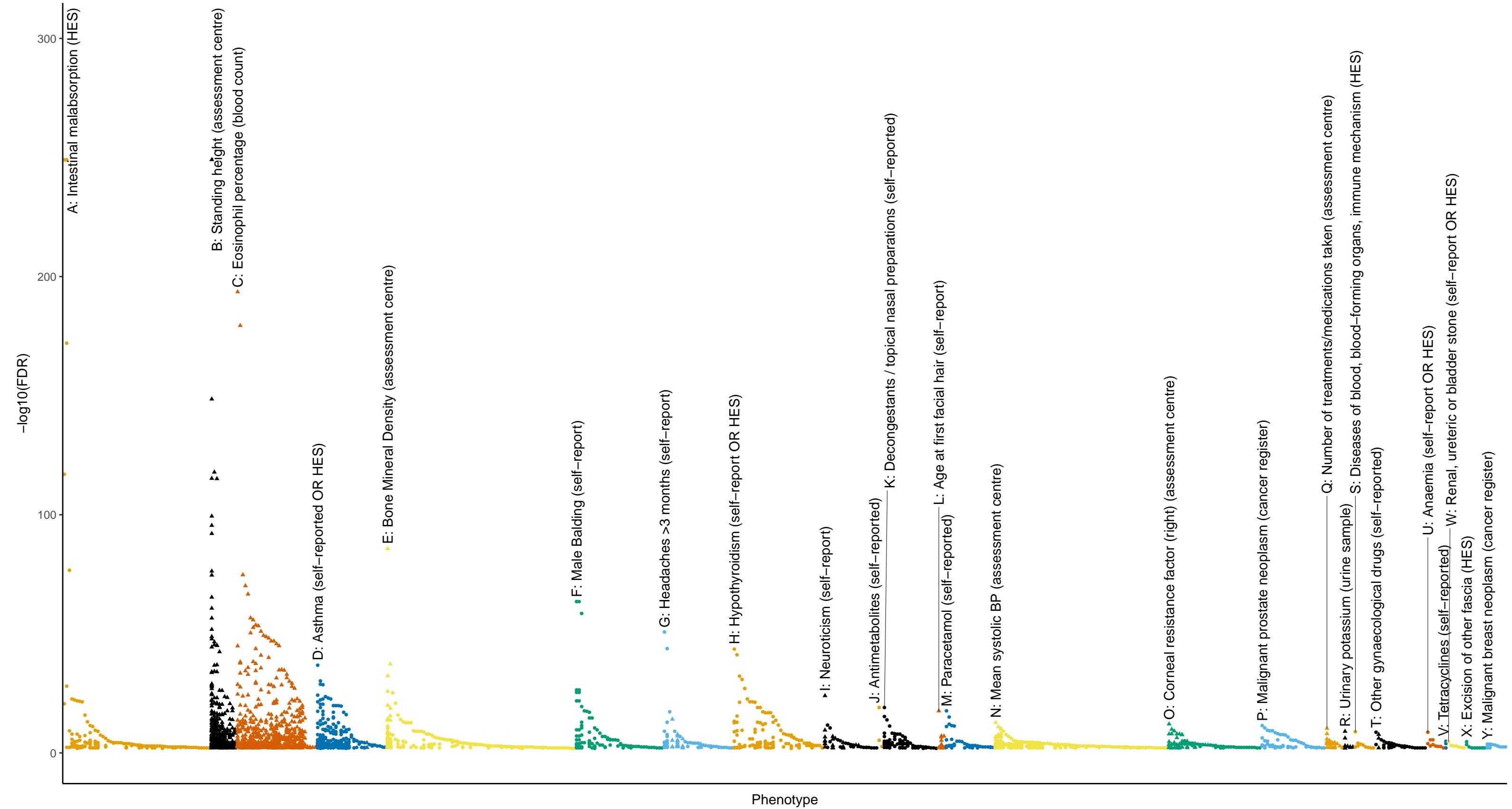
Ancestry	Cohort	OR	95% LCI	95% UCI	P	Cases	Controls
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Ancestry	Cohort	OR	95% LCI	95% UCI	P	Cases	Controls
European	COPDGene (EUR)	1.54	1.44	1.63	1.97×10^{-41}	3068	2110
	ECLIPSE	1.59	1.31	1.91	1.42×10^{-06}	1713	147
	GenKOLS	1.62	1.44	1.83	8.99×10^{-15}	836	692
	NETT-NAS	1.46	1.22	1.75	3.13×10^{-05}	374	429
	SPIROMICS	1.54	1.38	1.72	4.47×10^{-14}	988	537

Meta-analysis **1.55** **1.48** **1.62** **1.48×10^{-75}** **6979** **3915**

African	Cohort	OR	95% LCI	95% UCI	P	Cases	Controls
	COPDGene (AFR)	1.26	1.15	1.37	8.36×10^{-07}	910	1556





- Phenotypic Category**
- A: Gastroenterology, hepatobiliary, colorectal
 - B: Anthropometry
 - C: Biological assays – FBC
 - D: Respiratory
 - E: Musculoskeletal disease (rheumatology and orthopaedics)
 - F: Immuno-inflammation and Skin
 - G: Neurosciences
 - H: Metabolic and endocrine
 - I: Mental health
 - J: Cancer
 - K: ENT and maxillofacial
 - L: Puberty
 - M: Medication
 - N: Cardiovascular
 - O: Eye
 - P: Urology
 - Q: General health, smoking and socioeconomic
 - R: Biological assays – Urine
 - S: Broad symptoms, signs and diseases
 - T: Gynaecology and Obstetrics
 - U: Haematology
 - V: Infectious disease
 - W: Renal
 - X: Operations and Procedures
 - Y: Breast

- Binary/Quantitative trait**
- Binary
 - ▲ Quantitative

