Supplementary Note

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Supplementary Figure 2. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the multi-ancestry sample.

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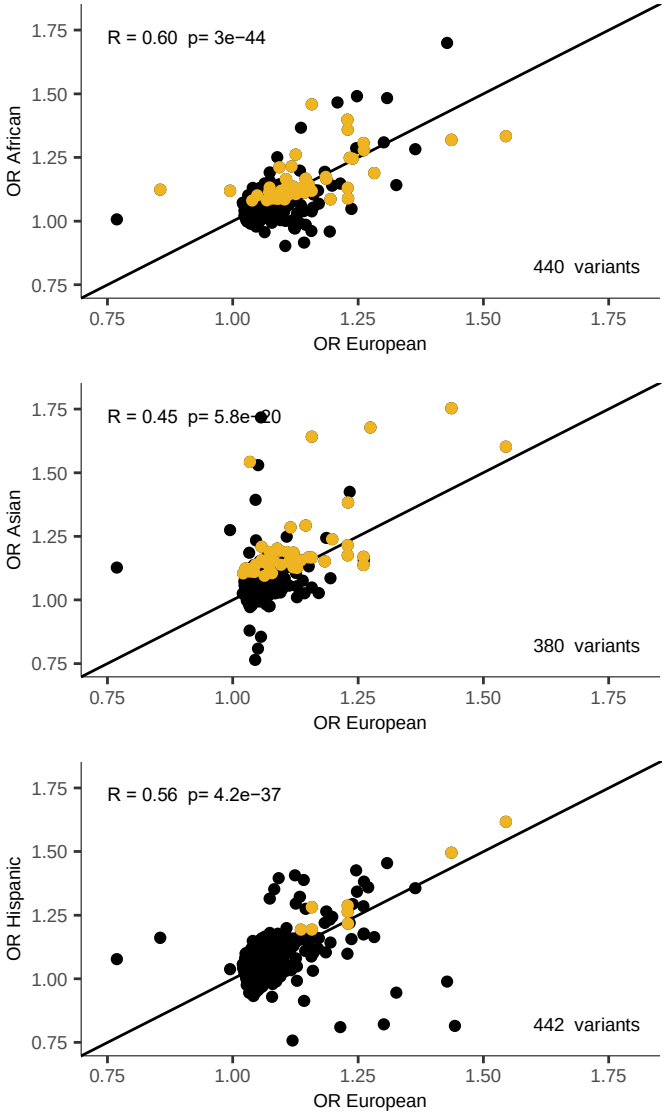
Supplementary Figure 7. Associations of GRS451 with aggressive vs. non-aggressive prostate cancer in the African Ancestry sample.

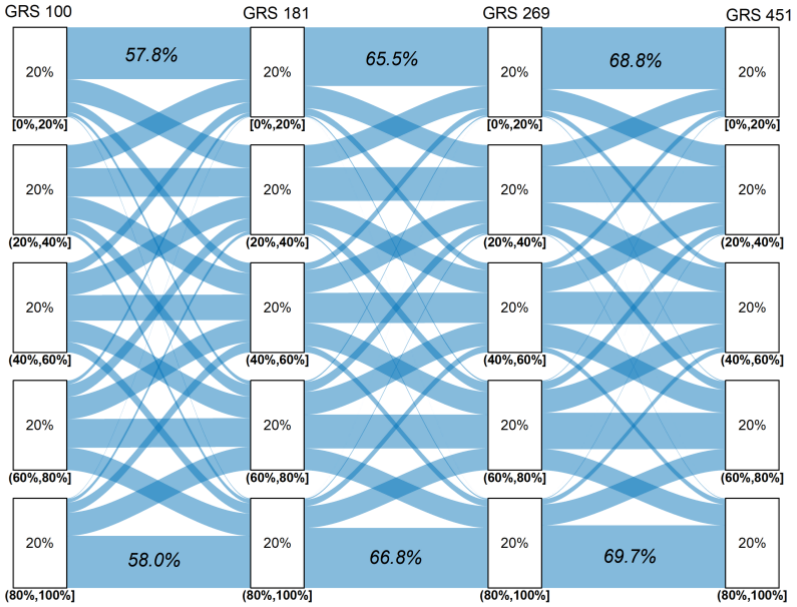
Additional Acknowledgements……..……9

Supplementary Figures

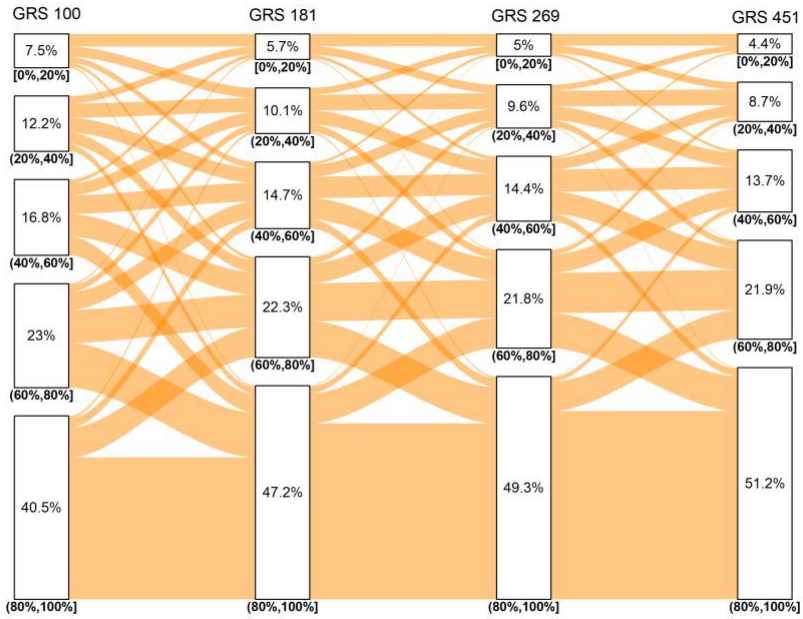


Supplementary Figure 1. Comparison of ancestry-specific ORs between European and African, Asian, and Hispanic populations, respectively. Variants present in both populations are compared; the number of variants is denoted in the lower right corner. Genome-wide significant variants among African, Asian, or Hispanic populations are highlighted in orange. The Pearson's correlation coefficient between effect sizes and corresponding p-value are denoted in the upper left in each sub-panel.

(a)

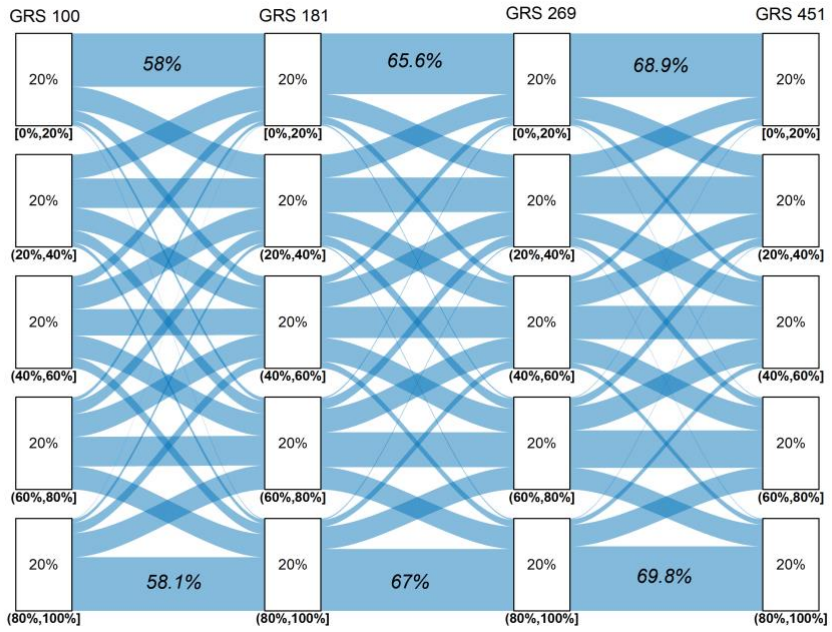


(b)



Supplementary Figure 2. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the multi-ancestry sample. (a) GRS quantiles in all controls; (b) GRS quantiles in all cases. Percentage of individuals in each GRS quantile are labelled in corresponding boxes. Percentage of controls that remain in the lowest quintile [0%, 20%] and highest quintile (80%, 100%] from a previous to a more current GRS are indicated on corresponding flows in (a). In (b), the highest GRS quintile contains 51.2% of the cases.

(a)



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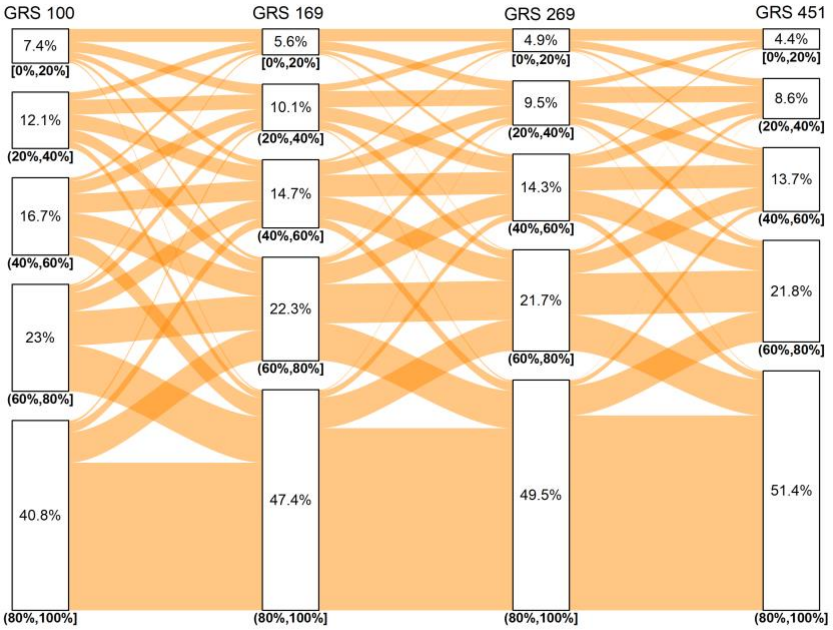
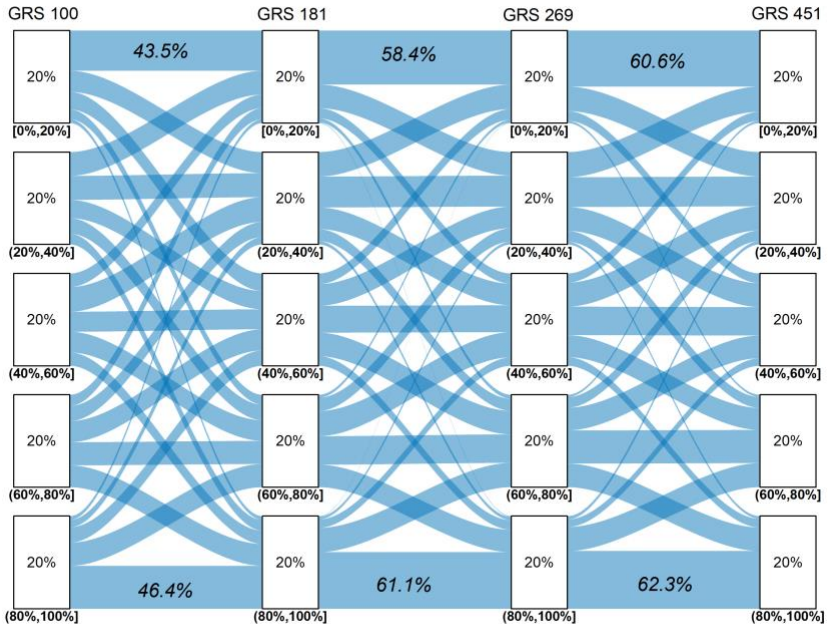
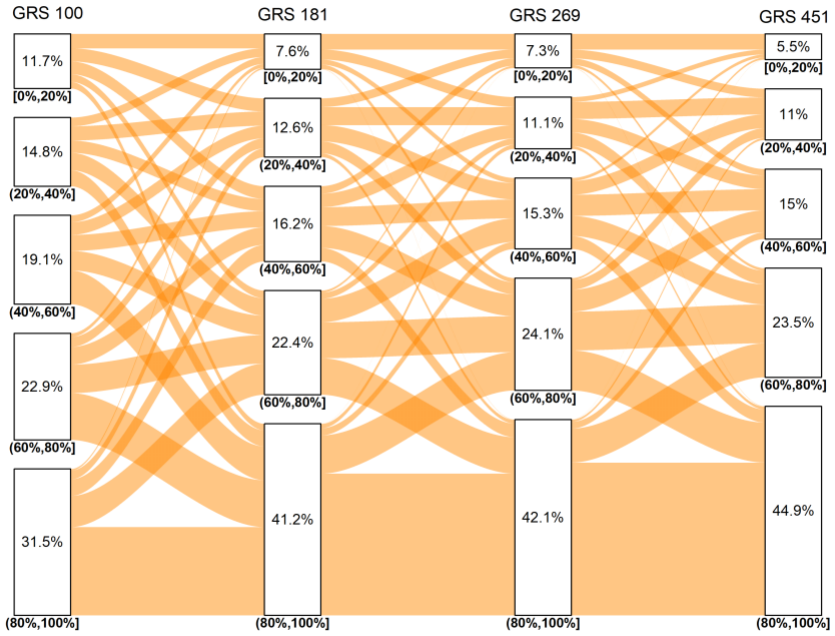


Supplementary Figure 3. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the European ancestry sample. (a) GRS quantiles in all controls; (b) GRS quantiles in all cases.

(a)

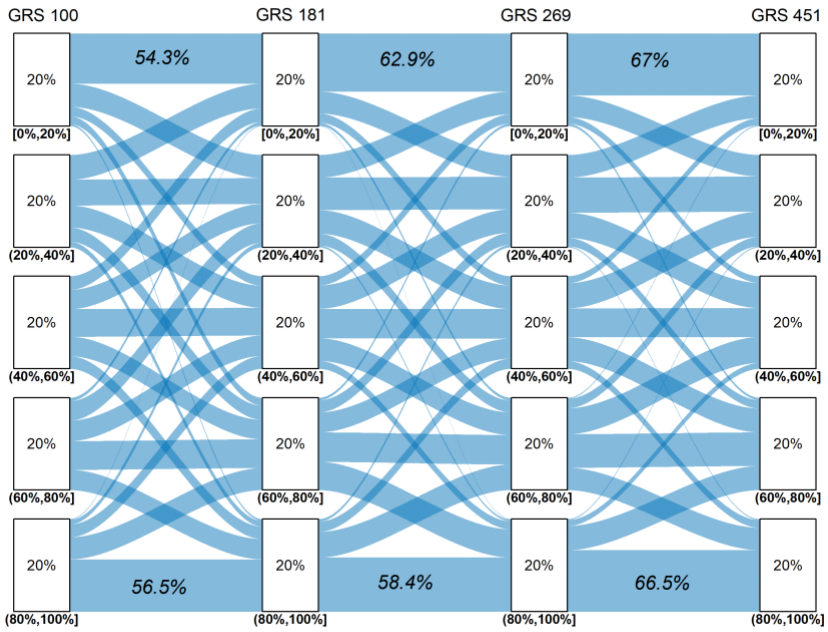


(b)



Supplementary Figure 4. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the African ancestry sample. (a) GRS quantiles in all controls; (b) GRS quantiles in all cases.

(a)



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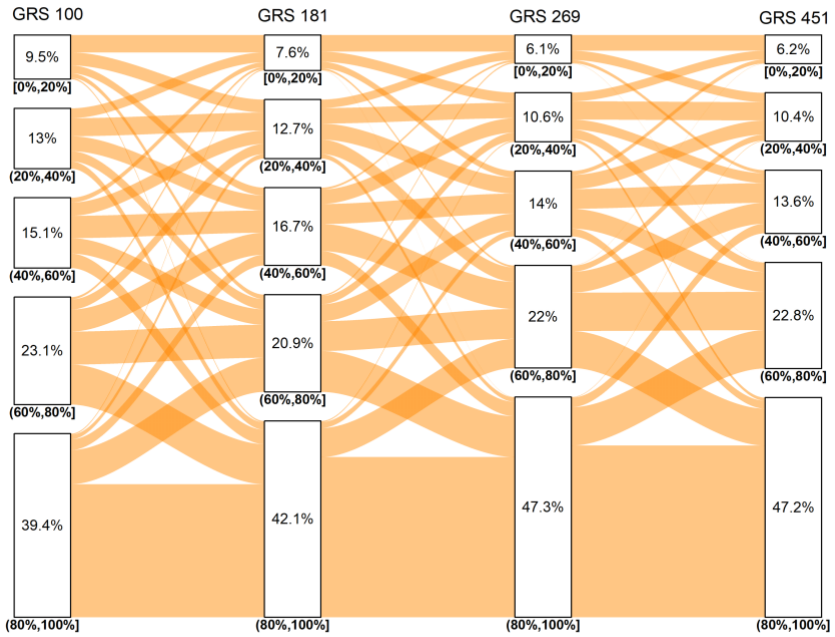
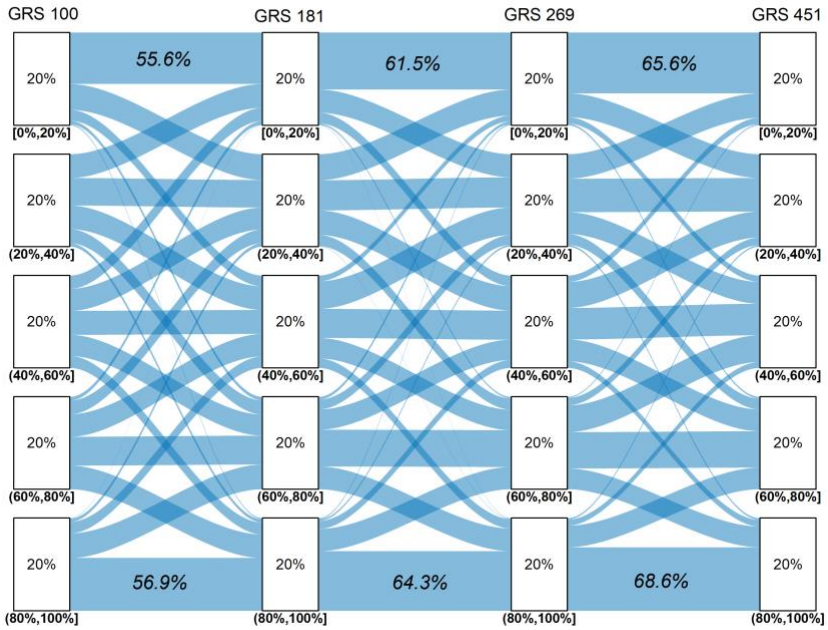


Supplementary Figure 5. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the Asian ancestry sample. (a) GRS quantiles in all controls; (b) GRS quantiles in all cases.

(a)



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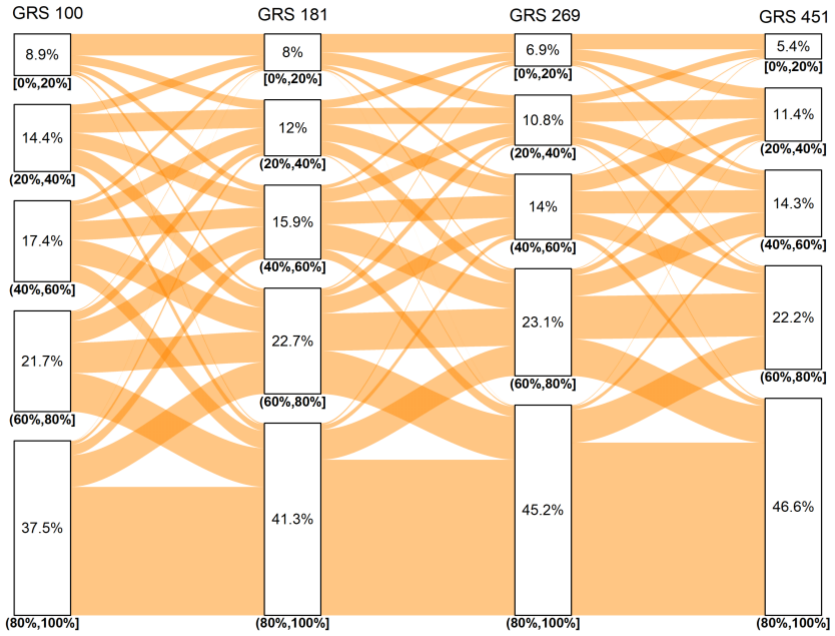
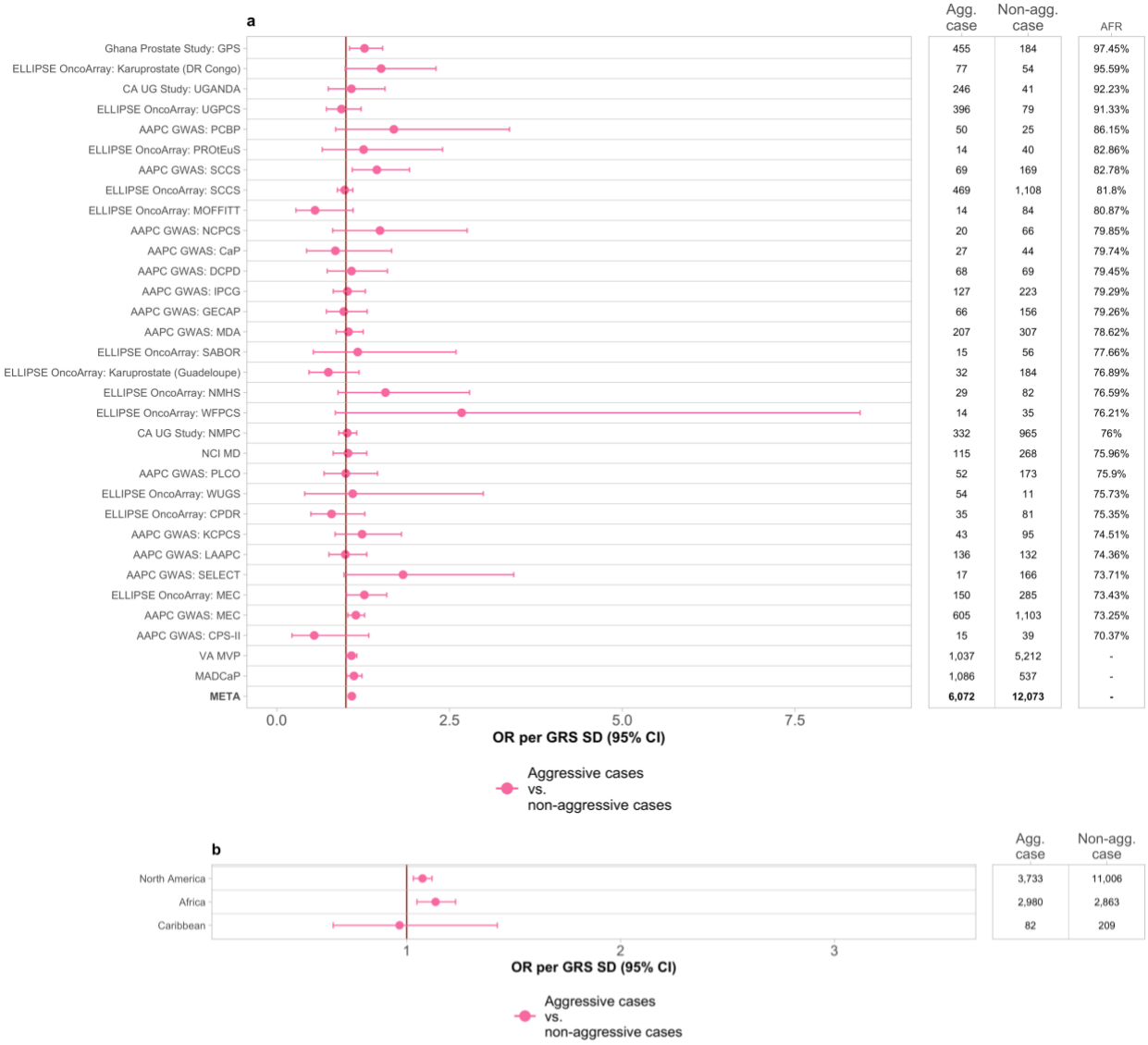


Supplementary Figure 6. Sankey diagram of GRS risk categorization based on GRS_{100}, GRS_{181}, GRS_{269}, and GRS_{451} in the Hispanic sample. (a) GRS quantiles in all controls; (b) GRS quantiles in all cases.



Supplementary Figure 7. Associations of GRS451 with aggressive vs. non-aggressive prostate cancer (a) by sub-study in African ancestry, ranked by percentage of African ancestry in the controls in each study; (b) by continent in African ancestry.

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