

## Description of Additional Supplementary Files

**File name:** Supplementary Data 1

**Description:** Source data for Figure 2 panels b-f

**File name:** Supplementary Data 2

**Description:** Source data for Figure 3 panels a-h

**File name:** Supplementary Data 3

**Description:** Sensitivity and specificity of calling BRCA1 and BRCA2 copy number variants

**File name:** Supplementary Data 4

**Description:** Copy number variants identified by whole-genome sequencing

**File name:** Supplementary Data 5

**Description:** Proportion of copy number variant called by PennCNV that were supported by whole-genome sequencing

**File name:** Supplementary Data 6

**Description:** Proportion of copy number variants that were not supported by whole-genome sequencing that were supported by the CNV map

**File name:** Supplementary Data 7

**Description:** Associations (unadjusted  $p < 0.01$ ) with breast cancer risk for deletions overlapping gene regions for BRCA1 pathogenic variant carriers

**File name:** Supplementary Data 8

**Description:** Associations (unadjusted  $p < 0.01$ ) with breast cancer risk for deletions overlapping gene regions for BRCA2 pathogenic variant carriers

**File name:** Supplementary Data 9

**Description:** Associations (unadjusted  $p < 0.01$ ) with breast cancer risk for duplications overlapping gene regions for BRCA1 pathogenic variant carriers

**File name:** Supplementary Data 10

**Description:** Associations (unadjusted  $p < 0.01$ ) with breast cancer risk for duplications overlapping gene regions for BRCA2 pathogenic variant carriers

**File name:** Supplementary Data 11

**Description:** Breast cancer hazard ratio estimates for deletions and duplications in BRCA1 or BRCA2 using the score test

**File name:** Supplementary Data 12

**Description:** Participating CIMBA studies

**File name:** Supplementary Data 13

**Description:** List of BRCA1/2 pathogenic variants in study participants (provided as a separate file)

**File name:** Supplementary Data 14

**Description:** Study cohort characteristics for 15,342 BRCA1 and 10,740 BRCA2 pathogenic variant carriers.

**File name:** Supplementary Data 15

**Description:** Assay primer and probe sequences, or proprietary design

**File name:** Supplementary Data 16

**Description:** Whole-genome sequencing metrics

**File name:** Supplementary Data 17

**Description:** RT-qPCR assays