## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Estimated genetic effect sizes on rank transformed 25(OH)D concentration for each of the 78 SNP instrument. Association estimates derived directly from UK Biobank white British participants using BOLT-LMM.

File Name: Supplementary Data 2

Description: Estimated genetic effect sizes on natural log transformed 25(OH)D concentration for each of the 78 SNP instrument. Association estimates derived directly from UK Biobank white British participants using BOLT-LMM.

File Name: Supplementary Data 3

Description: Association estimate for each of the 25(OH)D SNP instruments on cancer risk for each cancer type evaluated. Cancer traits obtained from the online MR-Base platform were excluded.

File Name: Supplementary Data 4

Description: Functional annotation for each of the 78 25(OH)D SNP instrument derived directly from PLINK v1.9b. The target gene was determined via location proximity (in kb). P-values refer to the SNP association p-value with rank-transformed 25(OH)D concentration.