

**Supplementary Table 3. Associations between polygenic risk scores and intraocular pressure across five cross-validation runs**

(A)

Weighted PRS Model	PRS built using SNPs with $P < 5 \times 10^{-5}$		PRS built using SNPs with $P < 5 \times 10^{-8}$	
	Number of SNPs selected	$P$	Number of SNPs selected	$P$
Iteration 1	1,253	$1.0 \times 10^{-190}$	220	$8.4 \times 10^{-121}$
Iteration 2	1,262	$5.2 \times 10^{-201}$	228	$4.9 \times 10^{-138}$
Iteration 3	1,242	$3.2 \times 10^{-202}$	223	$3.6 \times 10^{-144}$
Iteration 4	1,274	$5.1 \times 10^{-205}$	234	$4.7 \times 10^{-141}$
Iteration 5	1,250	$3.5 \times 10^{-209}$	219	$2.1 \times 10^{-150}$

(B)

Unweighted PRS Model	PRS built using SNPs with $P < 5 \times 10^{-5}$		PRS built using SNPs with $P < 5 \times 10^{-8}$	
	Number of SNPs selected	$P$	Number of SNPs selected	$P$
Iteration 1	1,253	$2.9 \times 10^{-194}$	220	$3.7 \times 10^{-117}$
Iteration 2	1,262	$2.6 \times 10^{-189}$	228	$5.2 \times 10^{-129}$
Iteration 3	1,242	$1.2 \times 10^{-194}$	223	$1.4 \times 10^{-142}$
Iteration 4	1,274	$3.0 \times 10^{-208}$	234	$2.5 \times 10^{-136}$
Iteration 5	1,250	$1.5 \times 10^{-206}$	219	$8.1 \times 10^{-143}$

(A) The association results between IOP and weighted PRSs using SNPs with  $P < 5 \times 10^{-5}$  and  $5 \times 10^{-8}$ ; (B) The association results between IOP and unweighted PRSs. The association results of all runs in the  $5 \times 10^{-5}$  threshold category are more significant than those in the  $5 \times 10^{-8}$  category.

Abbreviations: SNP = single nucleotide polymorphism; IOP = intraocular pressure; PRS = polygenic risk score.