

	Number of patients	Number of markers
	537	655 216
Step 0. Remove poorly mapped markers and those w/o agreement between v1.0 and v1.1 and Will Rayner and Illumina	537	573 502
Step 1. Removal of individuals/SNPs with low call rate ↓ Keep individuals with call rate $\geq 90\%$ and SNPs $\geq 90\%$	478	549 466
Step 2. Removal of individuals with discordant sex information ↓ Keep individuals with chromosome X homozygosity rate $\leq 20\%$	475	549 466
Step 3. Removal of individuals with excessive heterozygosity rate ↓ Keep individuals with heterozygosity rate $\leq 4 \times \text{S.D.}$	472	549 466
Step 4. Removal of related individuals ↓ Keep individuals with identity-by-descent ≤ 0.25	444	549 466
Step 5. Removal of population outliers ↓ Keep individuals within $4 \times \text{S.D.}$ from the population structure cluster center mean	444	549 466
Step 6. Removal of rare and non-HWE markers Keep SNPs with MAF $\geq 1\%$ and follow Hardy-Weinberg Equilibrium ($p\text{-value} < 5 \times 10^{-6}$)	444	528 461