

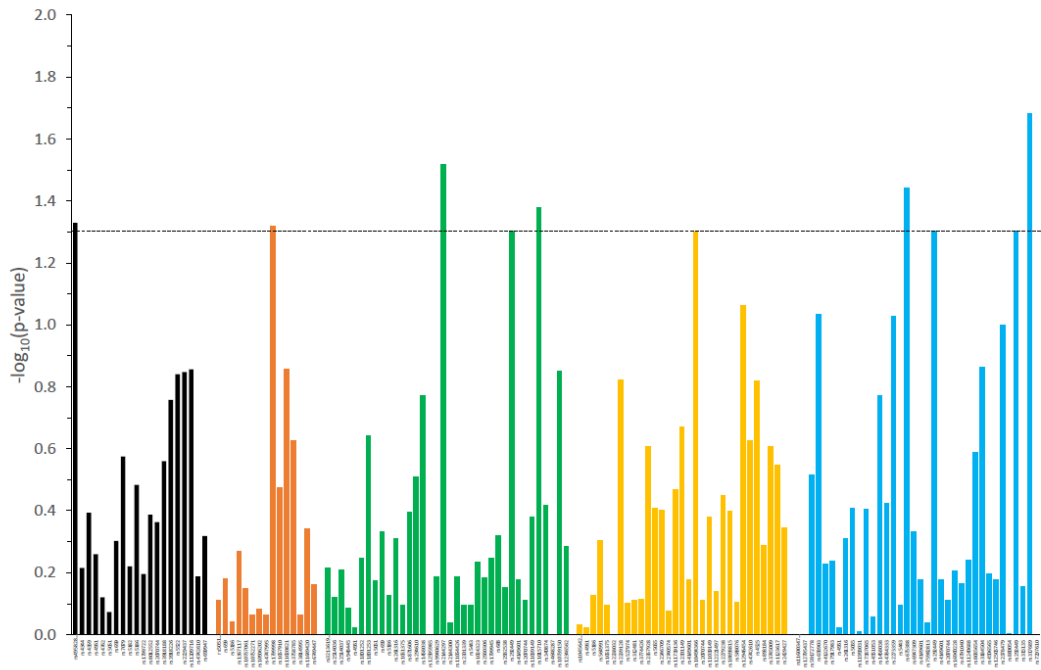
Supplementary figure legends

Supplementary figure 1: Manhattan plots of the associations between drug-specific SNPs and blood pressure control, first (2009-2012) and second (2014-2017) follow-ups of the CoLaus|PsyCoLaus study, Lausanne, Switzerland.

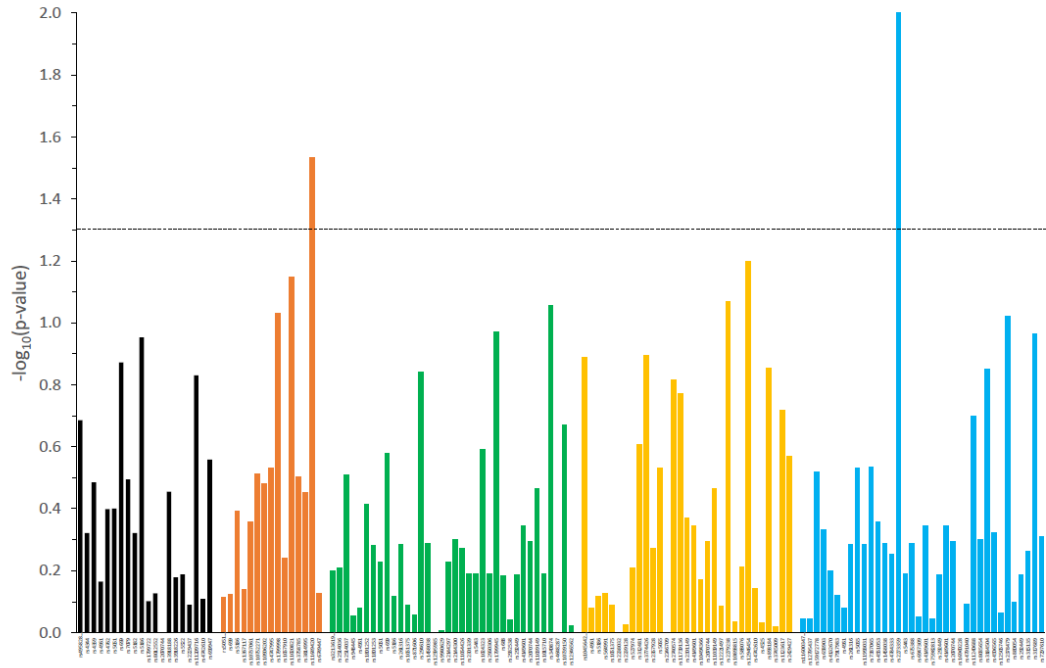
Panels A and B: control defined as a systolic blood pressure <140 mm Hg and a diastolic blood pressure <90 mm Hg. The upper graph (panel A) corresponds to the first follow-up, the lower one (panel B) to the second follow-up. The horizontal dotted line corresponds to a p-value of 0.05. Black, ACE inhibitors; orange, angiotensin-receptor blockers; green, beta-blockers; yellow, calcium channel blockers, and blue, diuretics.

Panels C and D: control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg. The upper graph corresponds to the first follow-up, the lower one to the second follow-up. The horizontal dotted line corresponds to a p-value of 0.05. Black, ACE inhibitors; orange, angiotensin-receptor blockers; green, beta-blockers; yellow, calcium channel blockers, and blue, diuretics.

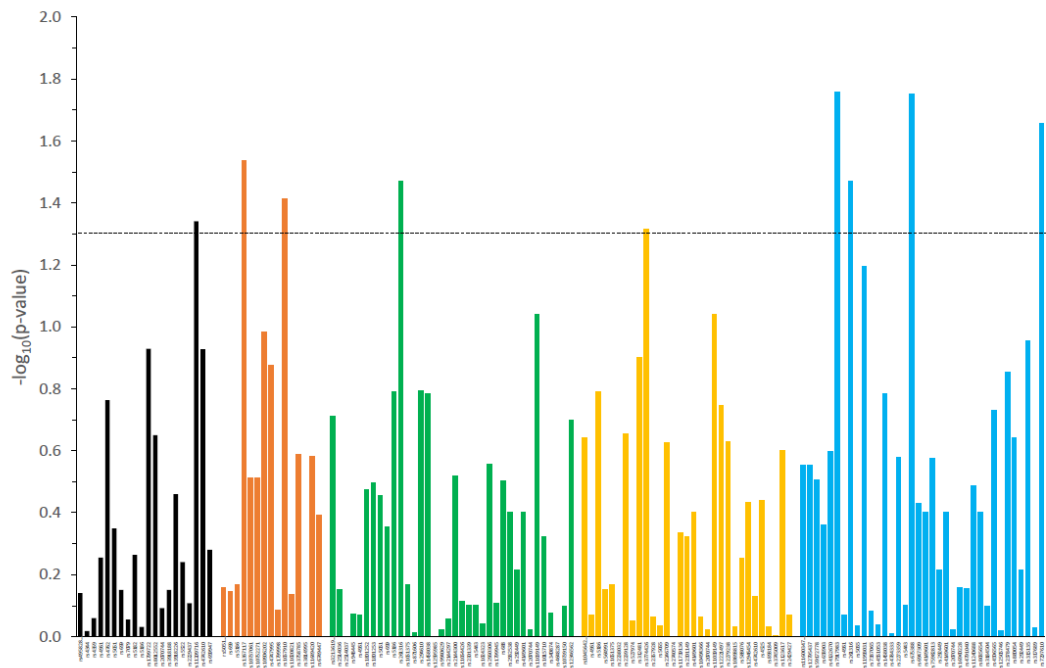
Panel A



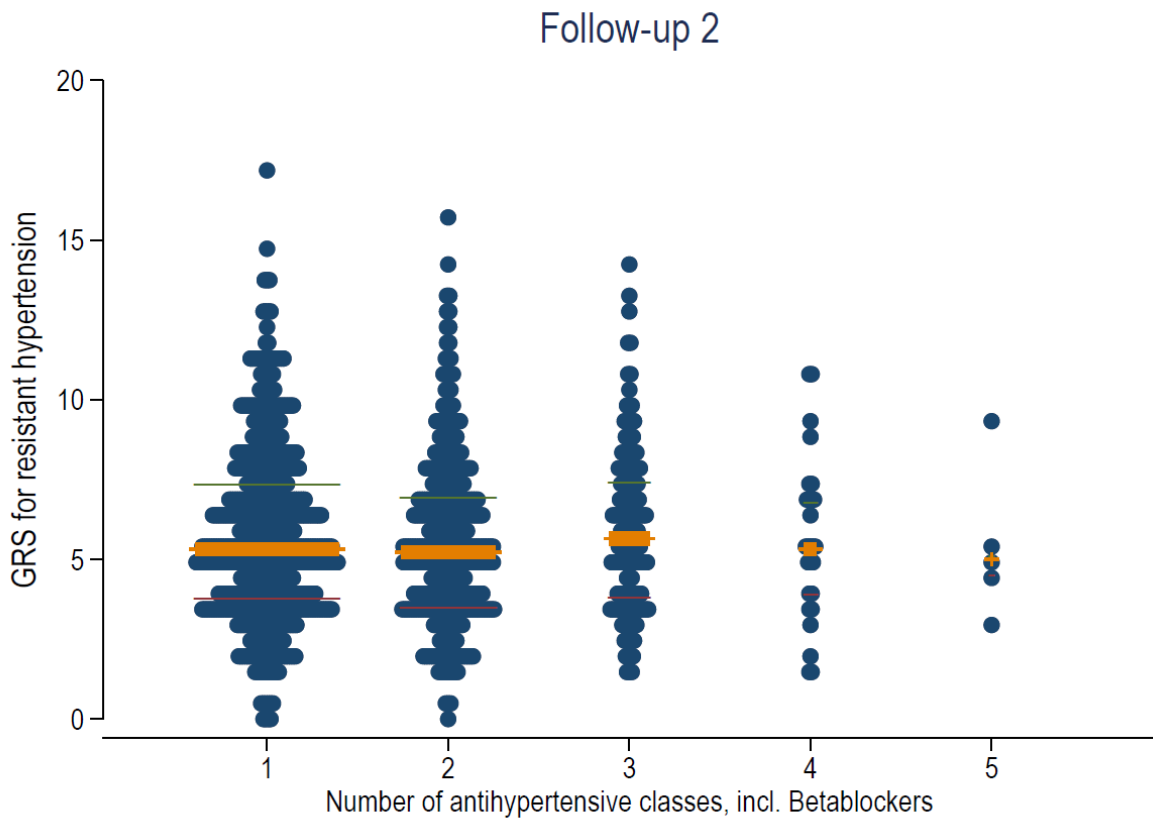
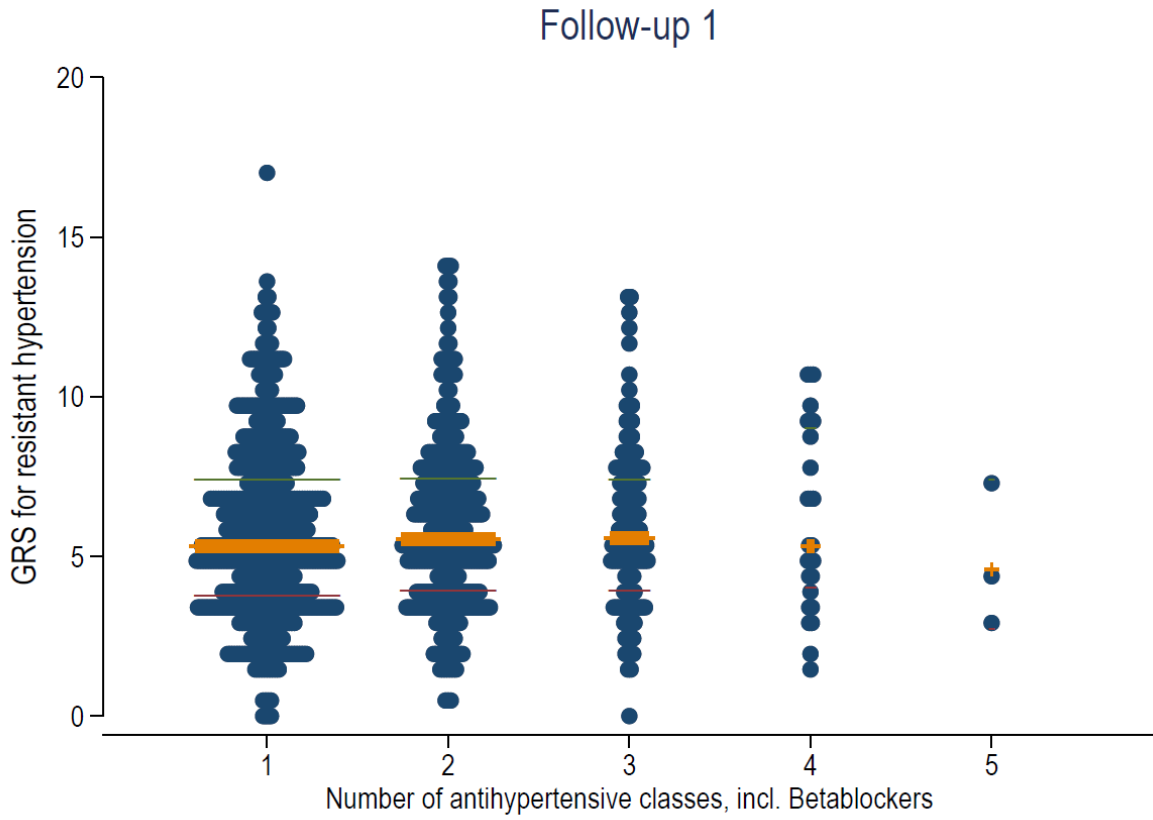
Panel C



Panel D



Supplementary figure 2: association between the genetic risk score (GRS) for resistant hypertension and number of antihypertensive drugs, first (2009-2012) and second (2014-2017) follow-ups of the CoLaus|PsyCoLaus study, Lausanne, Switzerland. GRS, genetic risk score.



Supplementary tables

Supplementary table 1: components of the genetic risk scores for treatment-resistant hypertension and hypertension.

Condition / SNPs	Gene	Major or minor allele	Weight
Treatment-resistant HT			
rs138399316	BPHL	NA	
rs12046278	CASZ1	major	0.71
rs17035646	CASZ1	minor	1.36
rs34071855	CASZ1	major	0.72
rs880315	CASZ1	major	0.74
rs114349263	CDH18	minor	0.08
rs185169399	CDH18	major §	11.96
rs74725390	COBL, POM121L12	minor	1.70
rs11674660	DNMT3A, DTNB	minor	1.53
rs12050053	EEF1DP3, FRY-AS1	minor	2.43
rs77270397	EEF1DP3, FRY-AS1	minor	2.09
rs12665245	ENPP3	major	0.36
rs146183009	ICMT	minor	2.49
rs111285947	LINC00670	minor	3.89
rs143255889	LINC01519	minor	3.10
rs1651805	LSM14A, KIAA0355	minor	1.84
rs111281682	MYL10, CUX1	major	0.72
rs76967376	MYO5B	minor	2.65
rs4844662	PLXNA2	minor	1.31
rs114511751	TMCC2	minor	2.44

HT, hypertension; NA, not available; SNP, single nucleotide polymorphism. § not used in calculations as all participants were homozygous. From reference (1)

Supplementary table 2: single nucleotide polymorphisms (SNPs) associated with specific antihypertensive drugs.

Drug/SNPs	Gene	Reference
ACE inhibitors		
rs495828	ABO	(2)
rs1799752	ACE	(2)
rs4344	ACE	(2)
rs4359	ACE	(2)
rs2106809	ACE1	(2)
rs4961	ADD1	(2)
rs4762	AGT	(2)
rs5051	AGT	(2)
rs699	AGT	(2)
rs7079	AGT	(2, 3)
rs1403543	AGTR1	(3)
rs5182	AGTR1	(2)
rs5186	AGTR1	(2)
rs5194	AGTR1	(3)
rs1799722	BDKRB2	(2, 4)
rs8012552	BDKRB3	(2)
rs3025058	MMP3	(2)
rs2070744	NOS3	(2, 4)
rs3918188	NOS3	(5)
rs3918226	NOS3	(5)
rs5522	NR3C2	(2, 3)
rs2229437	PRCP	(2)
rs11209716	PTGER3	(2)
rs4742610	PTPRD	(2)
rs699947	VEGFA	(2)
Angiotensin receptor blockers		
rs5051	AGT	(2)
rs699	AGT	(2)
rs5186	AGTR1	(2)
rs1367117	APOB	(2)
rs10737061	CAMK1D	(6)
rs10752271	CAMK1D	(6, 7)
rs10906202	CAMK1D	(6)
rs4747995	CAMK1D	(6)
rs1799998	CYP11B2	(2, 3)
rs1057910	CYP2C9	(2)
rs11020821	FUT4	(3)
rs3758785	GPR83	(3, 8)
rs3814995	NPHS1	(9, 10)
rs11649420	SCNN1G	(3, 8)
rs6749447	STK39	(2)
Beta-blockers		

rs3213619	ABCB1	(2)
rs1799752	ACE	(2)
rs2106809	ACE1	(2)
rs2514036	ACY3	(6, 11)
rs2514037	ACY3	(6)
rs948445	ACY3	(6)
rs4961	ADD1	(2)
rs1801252	ADRB1	(6, 10, 12, 13)
rs1801253	ADRB1	(2, 6, 10, 12, 14-16)
rs5051	AGT	(2)
rs699	AGT	(2)
rs5186	AGTR1	(2)
rs261316	ALDH1A2	(17)
rs1051375	CACNA1C	(2)
rs871606	CHIC2	(3)
rs294610	FGD5	(18)
rs1458038	FGF5	(3)
rs12595985	FTO	(2)
rs9940629	FTO	(2)
rs2144297	GALNT2	(2)
rs2144300	GALNT2	(2)
rs11064426	GNB3	(3)
rs2301339	GNB3	(3)
rs5443	GNB3	(3)
rs1024323	GRK4	(2, 3, 10, 12, 19)
rs1081058	GRK4	(3, 10, 12)
rs2960306	GRK4	(2, 3, 10, 19)
rs1799945	HFE	(3)
rs688	LDLR	(2)
rs11313667	LRRC15	(2, 10)
rs2932538	MOV10	(3)
rs292449	NEDD4L	(2)
rs4149601	NEDD4L	(2, 6, 20)
rs2070744	NOS3	(2)
rs11039149	NR1H3	(2)
rs1015710	PLA2G4A	(2)
rs340874	PROX1	(2)
rs4648287	PTGS2	(2)
rs10739150	PTPRD	(10)
rs12346562	PTPRD	(2, 10)
rs201279313	SLC25A31	(2, 10, 21)
Calcium channel blockers		
rs1045642	ABCB1	(22)
rs1799752	ACE	(2)
rs2106809	ACE1	(2)
rs4961	ADD1	(2)

rs5186	AGTR1	(2)
rs564991	APCDD1	(3)
rs1051375	CACNA1C	(2, 3, 23)
rs2238032	CACNA1C	(2)
rs2239128	CACNA1C	(2)
rr527974	CACNA1C, CACNA1D	(24)
rs312481	CACNA1C, CACNA1D	(24)
rs3774426	CACNA1C, CACNA1D	(24)
rs2357928	CACNB2	(23)
rs5065	CLCN6	(2)
rs2246709	CYP3A4	(2, 25)
rs2740574	CYP3A4	(2, 25)
rs10364272	CYP3A5	(26)
rs11739136	KCNMB1 and KCNIP1	(2, 10, 27)
rs2301149	KNCMB3	(2, 10, 27)
rs4149601	NEDD4L	(2)
rs10494366	NOS1AP	(2)
rs2070744	NOS3	(2)
rs11039149	NR1H3	(2)
rs12221497	NR1H3	(2)
rs2279238	NR1H3	(2)
rs10898815	NUMA1	(3)
rs588076	PICALM	(3)
rs12946454	PLCD3	(2, 3)
rs4742610	PTPRD	(2)
rs1692743	SIGLEC12, A1BG, F5	(12)
rs4525	SIGLEC12, A1BG, F5	(12)
rs893184	SIGLEC12, A1BG, F5	(12)
rs3745009	SLC14A2	(2)
rs1123617	SLC14A2	(2)
rs2429427	TANC2	(2, 3)
Diuretics		
rs11600347	KCNJ1	(2)
rs12795437	KCNJ1	(2)
rs59172778	KCNJ1	(2)
rs658903	KCNJ1	(2)
rs4132670	TCF7L2	(2)
rs7917983	TCF7L2	(2)
rs1799752	ACE	(2, 28)
rs2106809	ACE1	(2)
rs4961	ADD1	(2, 29)
rs261316	ALDH1A2	(17)
rs5065	CLCN6	(2)
rs11993031	CSMD1	(6)
rs7387065	CSMD1	(6)
rs4551053	EBF1	(3)

rs1458038	FGF5	(3)
rs4784333	FTO	(2)
rs2273359	GNAS-EDN3	(12)
rs5443	GNB3	(30)
rs675388	KCNJ1	(2)
rs6947309	LUC7L2	(2)
rs3025058	MMP3	(2)
rs4149601	NEDD4L	(2, 6, 10, 12, 20, 31)
rs75982813	NEDD4L	(2)
rs292449	NEDD4L	(3)
rs4149601	NEDD4L	(3)
rs2070744	NOS3	(2)
rs16960228	PRKCA	(3, 10, 32)
rs4791040	PRKCA	(2)
rs11240688	REN	(2)
rs8085654	ROCK1	(6)
rs3184504	SH2B3	(3)
rs4506565	TCF7L2	(2)
rs12505746	TET4	(6)
rs2378479	TLE1	(2)
rs880054	WNK1	(2)
rs292449	YEATS4	(6, 31)
rs315135	YEATS4	(3, 6, 12, 33)
rs317689	YEATS4	(3, 6, 12, 33)
rs7297610	YEATS4	(2, 3, 6, 10, 12, 33)

ACE, angiotensin-converting enzyme.

Supplementary table 3: characteristics of included and excluded participants, first (2009-2012) and second (2014-2017) follow-ups of the CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	First			Second		
	Included	Excluded	p	Included	Excluded	p
N	1073	1030		1157	1173	
Age (years)	65.0 ± 9.3	55.0 ± 10.0	<0.001	68.3 ± 9.5	62.0 ± 10.8	<0.001
Women (%)	521 (48.6)	525 (51.0)	0.268	580 (50.1)	631 (53.8)	0.077
Swiss national (%)	767 (71.5)	467 (45.3)	<0.001	804 (69.5)	573 (48.9)	<0.001
Education (%)			<0.001			<0.001
High	134 (12.5)	266 (26.0)		174 (15.0)	275 (23.5)	
Middle	249 (23.2)	277 (27.0)		272 (23.5)	294 (25.2)	
Low	690 (64.3)	482 (47.0)		711 (61.5)	600 (51.3)	
Married/couple (%)	600 (55.9)	598 (58.1)	0.322	647 (55.9)	569 (52.8)	0.143
Body mass index (kg/m ²)	28.4 ± 4.9	26.2 ± 4.6	<0.001	28.0 ± 4.8	26.8 ± 4.7	<0.001
Body mass index categories (%)			<0.001			<0.001
Normal	263 (24.5)	440 (44.3)		312 (27.0)	364 (38.4)	
Overweight	470 (43.8)	392 (39.5)		504 (43.6)	391 (41.2)	
Obese	340 (31.7)	161 (16.2)		341 (29.5)	193 (20.4)	
Smoking categories (%)			<0.001			0.001
Never	402 (37.5)	411 (40.8)		438 (37.9)	430 (44.1)	
Former	491 (45.8)	353 (35.1)		521 (45.0)	360 (36.9)	
Current	180 (16.8)	243 (24.1)		198 (17.1)	186 (19.1)	
Alcohol drinker (%)	783 (73.0)	705 (68.5)	0.023	731 (69.4)	631 (67.7)	0.429
Sedentary (%)	609 (70.4)	467 (58.0)	<0.001	476 (62.1)	335 (54.2)	0.003
Treatment for (%)						
Dyslipidemia	495 (46.1)	183 (17.8)	<0.001	497 (43.0)	291 (24.8)	<0.001
Diabetes	171 (15.9)	53 (5.2)	<0.001	175 (15.1)	114 (9.7)	<0.001
Number of drugs, median [IQR]						

All, including OTC	4 [2 - 6]	1 [0 - 3]	<0.001 §	4 [3 - 6]	2 [1 - 5]	<0.001 §
All, excluding OTC	4 [2 - 5]	1 [0 - 3]	<0.001 §	4 [2 - 6]	2 [0 - 4]	<0.001 §

OTC, over the counter; SD, standard deviation. Results are expressed as number of participants (column %) for categorical variables and as average \pm standard deviation or as median [interquartile range] for continuous variables. Between-groups comparisons performed using chi-square for categorical variables and student's t-test or Kruskal-Wallis nonparametric test (§) for continuous variables.

Supplementary table 4: bivariate comparison between controlled and uncontrolled participants, first (2009-2012) and second (2014-2017) follow-ups of the CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg.

	First			Second		
	Uncontrolled	Controlled	p	Uncontrolled	Controlled	p
N	736	337		764	393	
Age (years)	66.0 ± 9.1	62.9 ± 9.4	<0.001	68.6 ± 9.4	67.7 ± 9.6	0.137
Women (%)	356 (48.4)	165 (49.0)	0.857	367 (48.0)	213 (54.2)	0.047
Swiss national (%)	528 (71.7)	239 (70.9)	0.783	527 (69.0)	277 (70.5)	0.599
Education (%)			0.239			0.665
High	84 (11.4)	50 (14.8)		110 (14.4)	64 (16.3)	
Middle	169 (23.0)	80 (23.7)		183 (24.0)	89 (22.7)	
Low	483 (65.6)	207 (61.4)		471 (61.7)	240 (61.1)	
Married/couple (%)	419 (56.9)	181 (53.7)	0.324	435 (56.9)	212 (53.9)	0.331
Body mass index (kg/m ²)	28.7 ± 4.8	27.7 ± 5.2	0.004	28.2 ± 4.7	27.6 ± 5.0	0.029
Body mass index categories (%)			0.002			0.066
Normal	161 (21.9)	102 (30.3)		190 (24.9)	122 (31.0)	
Overweight	322 (43.8)	148 (43.9)		338 (44.2)	166 (42.2)	
Obese	253 (34.4)	87 (25.8)		236 (30.9)	105 (26.7)	
Smoking categories (%)			<0.001			0.117
Never	280 (38.0)	122 (36.2)		300 (39.3)	138 (35.1)	
Former	356 (48.4)	135 (40.1)		345 (45.2)	176 (44.8)	
Current	100 (13.6)	80 (23.7)		119 (15.6)	79 (20.1)	
Alcohol drinker (%)	561 (76.2)	222 (65.9)	<0.001	485 (70.8)	246 (66.7)	0.165
Sedentary (%)	430 (71.0)	179 (69.1)	0.586	313 (61.6)	163 (62.9)	0.722
Treatment for (%)						
Dyslipidemia	325 (44.2)	170 (50.5)	0.055	318 (41.6)	179 (45.6)	0.202
Diabetes	106 (14.4)	65 (19.3)	0.042	106 (13.9)	69 (17.6)	0.098
Number of drugs, median [IQR]						

All, including OTC	4 [2 - 6]	4 [3 - 7]	<0.001 §	4 [2 - 6]	5 [3 - 7]	<0.001 §
All, excluding OTC	3 [2 - 5]	4 [2 - 6]	0.001 §	4 [2 - 6]	4 [3 - 7]	<0.001 §
Antihypertensive drugs	1 [1 - 2]	1 [1 - 2]	0.652 §	1 [1 - 2]	2 [1 - 2]	0.061 §
Parental history of HT (%)	314 (42.7)	129 (38.3)	0.176	355 (46.5)	157 (40.0)	0.035
Genetic risk scores						
Resistant hypertension	6.0 ± 2.5	6.0 ± 2.6	0.946	5.8 ± 2.5	6.0 ± 2.6	0.303
Resistant hypertension, short	5.1 ± 2.1	5.0 ± 2.1	0.627	5.0 ± 2.2	4.9 ± 2.0	0.944
Hypertension	5.8 ± 2.6	5.9 ± 2.7	0.820	5.7 ± 2.7	5.7 ± 2.5	0.886

OTC, over the counter; SD, standard deviation. Results are expressed as number of participants (column %) for categorical variables and as average ± standard deviation or as median [interquartile range] for continuous variables. Between-groups comparisons performed using chi-square for categorical variables and student's t-test or Kruskal-Wallis nonparametric test (§) for continuous variables.

Supplementary table 5: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, first follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg.

	Model 1	p	Model 2	p
Age (per 10 years)	0.57 (0.48 - 0.68)	<0.001	0.57 (0.48 - 0.69)	<0.001
Men vs. women	1.04 (0.73 - 1.48)	0.824	1.05 (0.73 - 1.49)	0.800
Swiss national vs. other	0.86 (0.61 - 1.23)	0.414	0.87 (0.61 - 1.24)	0.438
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.65 (0.38 - 1.10)	0.110	0.65 (0.39 - 1.11)	0.115
Low	0.68 (0.43 - 1.09)	0.108	0.68 (0.43 - 1.09)	0.110
<i>P-value for trend</i>	0.108		0.110	
Married/couple vs. alone	0.78 (0.56 - 1.07)	0.126	0.78 (0.57 - 1.08)	0.141
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.63 (0.43 - 0.93)	0.019	0.63 (0.43 - 0.93)	0.019
Obese	0.37 (0.24 - 0.57)	<0.001	0.37 (0.24 - 0.58)	<0.001
<i>P-value for trend</i>	<0.001		<0.001	
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.87 (0.61 - 1.23)	0.422	0.86 (0.61 - 1.23)	0.411
Current	1.35 (0.86 - 2.11)	0.192	1.34 (0.86 - 2.09)	0.198
<i>P-value for trend</i>	0.192		0.198	
Alcohol drinker (yes vs. no)	0.61 (0.42 - 0.87)	0.007	0.60 (0.42 - 0.86)	0.006
Sedentary (yes vs. no)	0.97 (0.68 - 1.38)	0.870	0.97 (0.68 - 1.38)	0.867
Treatment for				
Dyslipidemia (yes vs. no)	1.16 (0.82 - 1.65)	0.406	1.16 (0.81 - 1.64)	0.418
Diabetes (yes vs. no)	1.83 (1.14 - 2.91)	0.011	1.82 (1.14 - 2.90)	0.012
Number of drugs, including OTC	1.14 (1.06 - 1.23)	0.001	1.14 (1.06 - 1.23)	0.001
Parental history of HT (yes vs. no)	0.74 (0.53 - 1.03)	0.077	0.75 (0.53 - 1.04)	0.082
Genetic risk scores				
Resistant hypertension, cont.	-		1.02 (0.96 - 1.08)	0.534
Resistant hypertension, quartiles				
First	1 (ref.)		-	
Second	0.97 (0.63 - 1.50)	0.883	-	
Third	1.03 (0.66 - 1.61)	0.885	-	
Fourth	1.23 (0.79 - 1.90)	0.360	-	
<i>P-value for trend</i>	0.338			

HT, hypertension; OTC, over the counter; tt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

Supplementary table 6: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, second follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg.

	Model 1	p	Model 2	p
Age (per 10 years)	0.77 (0.64 - 0.94)	0.011	0.77 (0.64 - 0.94)	0.011
Men vs. women	0.64 (0.45 - 0.91)	0.012	0.63 (0.44 - 0.90)	0.010
Swiss national vs. other	0.98 (0.69 - 1.41)	0.932	1.00 (0.70 - 1.43)	0.988
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.73 (0.44 - 1.19)	0.204	0.73 (0.45 - 1.19)	0.204
Low	0.90 (0.57 - 1.40)	0.630	0.90 (0.57 - 1.40)	0.627
<i>P-value for trend</i>	0.630		0.627	
Married/couple vs. alone	1.00 (0.71 - 1.40)	0.997	0.99 (0.70 - 1.38)	0.936
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.65 (0.44 - 0.95)	0.028	0.66 (0.45 - 0.96)	0.030
Obese	0.54 (0.34 - 0.84)	0.006	0.54 (0.35 - 0.85)	0.008
<i>P-value for trend</i>	0.006		0.008	
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.96 (0.67 - 1.37)	0.819	0.96 (0.67 - 1.37)	0.809
Current	1.09 (0.69 - 1.74)	0.703	1.11 (0.69 - 1.76)	0.673
<i>P-value for trend</i>	0.703		0.673	
Alcohol drinker (yes vs. no)	1.15 (0.79 - 1.67)	0.474	1.16 (0.80 - 1.69)	0.432
Sedentary (yes vs. no)	1.06 (0.75 - 1.48)	0.744	1.05 (0.75 - 1.47)	0.775
Treatment for				
Dyslipidemia (yes vs. no)	1.04 (0.73 - 1.49)	0.809	1.04 (0.73 - 1.49)	0.809
Diabetes (yes vs. no)	1.31 (0.78 - 2.19)	0.304	1.32 (0.79 - 2.19)	0.294
Number of drugs, including OTC	1.12 (1.04 - 1.19)	0.001	1.12 (1.04 - 1.19)	0.001
Parental history of HT (yes vs. no)	0.82 (0.58 - 1.14)	0.240	0.82 (0.58 - 1.14)	0.240
Genetic risk scores				
Resistant hypertension, contin.	-		0.99 (0.93 - 1.06)	0.834
Resistant hypertension, quart.				
First	1 (ref.)		-	
Second	1.27 (0.82 - 1.97)	0.291	-	
Third	1.32 (0.84 - 2.07)	0.230	-	
Fourth	1.09 (0.69 - 1.73)	0.717	-	
<i>P-value for trend</i>	0.690			

HT, hypertension; OTC, over the counter; ttt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

Supplementary table 7: linkage disequilibrium analysis of the SNPs included in the genetic risk score for resistant hypertension.

Gene	Variant 1	Variant 2	R ²	Population
CASZ1	rs17035646	rs880315	1.000	CEU
CASZ1	rs17035646	rs34071855	0.979	CEU
CASZ1	rs17035646	rs12046278	0.938	CEU
CASZ1	rs34071855	rs12046278	0.958	CEU
CASZ1	rs880315	rs34071855	0.979	CEU
CASZ1	rs880315	rs12046278	0.938	CEU
EEF1DP3, FRY-AS1	rs77270397	rs12050053	0.884	CEU
CASZ1	rs17035646	rs880315	0.940	FIN
CASZ1	rs17035646	rs34071855	1.000	FIN
CASZ1	rs17035646	rs12046278	0.843	FIN
CASZ1	rs34071855	rs12046278	0.843	FIN
CASZ1	rs880315	rs12046278	0.900	FIN
CASZ1	rs880315	rs34071855	0.940	FIN
EEF1DP3, FRY-AS1	rs77270397	rs12050053	0.568	FIN
CASZ1	rs17035646	rs880315	1.000	GBR
CASZ1	rs17035646	rs34071855	1.000	GBR
CASZ1	rs17035646	rs12046278	0.900	GBR
CASZ1	rs34071855	rs12046278	0.900	GBR
CASZ1	rs880315	rs34071855	1.000	GBR
CASZ1	rs880315	rs12046278	0.900	GBR
EEF1DP3, FRY-AS1	rs77270397	rs12050053	1.000	GBR
CASZ1	rs17035646	rs880315	1.000	IBS
CASZ1	rs17035646	rs34071855	0.981	IBS
CASZ1	rs17035646	rs12046278	0.941	IBS
CASZ1	rs34071855	rs12046278	0.961	IBS
CASZ1	rs880315	rs34071855	0.981	IBS
CASZ1	rs880315	rs12046278	0.941	IBS
EEF1DP3, FRY-AS1	rs77270397	rs12050053	0.707	IBS

CEU, Northern and Western European Ancestry in Utah, US; FIN, Finnish in Finland; GBR, British from England and Scotland; IBS, Iberian Populations in Spain. Calculations performed using 1000 genomes phase 3 data and the Linkage Disequilibrium calculator, available at https://www.ensembl.org/Homo_sapiens/Tools/LD.

Supplementary table 8: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, first follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <140 mm Hg and a diastolic blood pressure <90 mm Hg. Using the short version of the genetic risk score for resistant hypertension

	Model 1	p	Model 2	p
Age (per 10 years)	0.59 (0.50 - 0.70)	<0.001	0.60 (0.50 - 0.71)	<0.001
Men vs. women	0.86 (0.63 - 1.19)	0.372	0.86 (0.63 - 1.19)	0.369
Swiss national vs. other	1.02 (0.73 - 1.41)	0.918	1.03 (0.74 - 1.42)	0.881
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.96 (0.58 - 1.58)	0.861	0.96 (0.58 - 1.59)	0.88
Low	0.96 (0.61 - 1.50)	0.846	0.96 (0.61 - 1.50)	0.856
<i>P-value for trend</i>	0.846		0.856	
Married/couple vs. alone	0.73 (0.54 - 0.98)	0.035	0.74 (0.55 - 0.99)	0.042
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.77 (0.54 - 1.10)	0.154	0.77 (0.54 - 1.10)	0.147
Obese	0.66 (0.44 - 0.98)	0.038	0.66 (0.44 - 0.98)	0.038
<i>P-value for trend</i>	0.038		0.038	
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.89 (0.65 - 1.22)	0.478	0.89 (0.65 - 1.22)	0.481
Current	1.31 (0.84 - 2.04)	0.235	1.32 (0.85 - 2.06)	0.219
<i>P-value for trend</i>	0.235		0.219	
Alcohol drinker (yes vs. no)	0.74 (0.52 - 1.04)	0.083	0.74 (0.53 - 1.04)	0.086
Sedentary (yes vs. no)	0.94 (0.69 - 1.30)	0.728	0.94 (0.68 - 1.29)	0.689
Treatment for				
Dyslipidemia (yes vs. no)	1.36 (0.99 - 1.87)	0.059	1.34 (0.98 - 1.84)	0.071
Diabetes (yes vs. no)	1.19 (0.76 - 1.86)	0.449	1.18 (0.76 - 1.85)	0.462
Number of drugs, including OTC	1.07 (1.01 - 1.15)	0.047	1.07 (1.01 - 1.15)	0.045
Parental history of HT (yes vs. no)	1.03 (0.76 - 1.39)	0.849	1.04 (0.77 - 1.40)	0.818
Genetic risk scores				
Resistant hypertension, cont.	-		1.00 (0.93 - 1.07)	0.981
Resistant hypertension, quartiles				
First	1 (ref)		-	
Second	1.00 (0.67 - 1.48)	0.990	-	
Third	0.98 (0.66 - 1.45)	0.912	-	
Fourth	1.20 (0.81 - 1.79)	0.363	-	
<i>P-value for trend</i>	0.407			

HT, hypertension; OTC, over the counter; ttt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

Supplementary table 9: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, second follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <140 mm Hg and a diastolic blood pressure <90 mm Hg. Using the short version of the genetic risk score for resistant hypertension.

	Model 1	p	Model 2	p
Age (per 10 years)	0.61 (0.50 - 0.74)	<0.001	0.61 (0.50 - 0.75)	<0.001
Men vs. women	0.69 (0.48 - 0.97)	0.035	0.68 (0.48 - 0.97)	0.032
Swiss national vs. other	1.12 (0.78 - 1.60)	0.542	1.11 (0.78 - 1.58)	0.569
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.81 (0.50 - 1.33)	0.415	0.80 (0.49 - 1.32)	0.386
Low	0.61 (0.39 - 0.96)	0.034	0.61 (0.39 - 0.96)	0.034
<i>P-value for trend</i>	0.034		0.034	
Married/couple vs. alone	0.99 (0.71 - 1.38)	0.941	1.00 (0.71 - 1.39)	0.984
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.94 (0.64 - 1.37)	0.737	0.93 (0.63 - 1.36)	0.703
Obese	1.09 (0.70 - 1.71)	0.694	1.08 (0.70 - 1.69)	0.723
<i>P-value for trend</i>	0.694		0.723	
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.91 (0.64 - 1.29)	0.589	0.91 (0.64 - 1.30)	0.617
Current	1.10 (0.69 - 1.77)	0.687	1.07 (0.67 - 1.72)	0.773
<i>P-value for trend</i>	0.687		0.773	
Alcohol drinker (yes vs. no)	1.05 (0.72 - 1.52)	0.802	1.04 (0.72 - 1.50)	0.851
Sedentary (yes vs. no)	1.09 (0.78 - 1.52)	0.612	1.08 (0.78 - 1.51)	0.646
Treatment for				
Dyslipidemia (yes vs. no)	1.39 (0.98 - 1.97)	0.063	1.39 (0.98 - 1.97)	0.063
Diabetes (yes vs. no)	0.97 (0.57 - 1.63)	0.898	0.96 (0.57 - 1.63)	0.893
Number of drugs, including OTC	1.05 (0.98 - 1.12)	0.194	1.05 (0.98 - 1.12)	0.201
Parental history of HT (yes vs. no)	0.90 (0.65 - 1.26)	0.550	0.91 (0.66 - 1.27)	0.595
Genetic risk scores				
Resistant hypertension, contin.	-		1.02 (0.95 - 1.10)	0.551
Resistant hypertension, quart.				
First	1 (ref)		-	
Second	1.18 (0.75 - 1.84)	0.475	-	
Third	0.87 (0.57 - 1.33)	0.527	-	
Fourth	1.30 (0.85 - 2.00)	0.230	-	
<i>P-value for trend</i>	0.482			

HT, hypertension; OTC, over the counter; ttt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

Supplementary table 10: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, first follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg. Using the short version of the genetic risk score for resistant hypertension

	Model 1	p	Model 2	p
Age (per 10 years)	0.57 (0.48 - 0.69)	<0.001	0.58 (0.48 - 0.69)	<0.001
Men vs. women	1.05 (0.73 - 1.49)	0.805	1.04 (0.73 - 1.48)	0.834
Swiss national vs. other	0.88 (0.62 - 1.24)	0.459	0.89 (0.63 - 1.26)	0.514
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.65 (0.38 - 1.10)	0.107	0.66 (0.39 - 1.12)	0.125
Low	0.67 (0.42 - 1.08)	0.099	0.68 (0.43 - 1.08)	0.105
<i>P-value for trend</i>	0.099			
Married/couple vs. alone	0.79 (0.57 - 1.09)	0.146	0.80 (0.58 - 1.10)	0.165
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.64 (0.43 - 0.93)	0.020	0.64 (0.43 - 0.93)	0.020
Obese	0.37 (0.24 - 0.58)	<0.001	0.38 (0.24 - 0.58)	<0.001
<i>P-value for trend</i>	<0.001			
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.86 (0.61 - 1.23)	0.407	0.86 (0.60 - 1.22)	0.400
Current	1.34 (0.85 - 2.09)	0.204	1.36 (0.87 - 2.12)	0.18
<i>P-value for trend</i>	0.204			
Alcohol drinker (yes vs. no)	0.60 (0.42 - 0.86)	0.006	0.61 (0.43 - 0.88)	0.007
Sedentary (yes vs. no)	0.97 (0.68 - 1.38)	0.869	0.97 (0.68 - 1.37)	0.843
Treatment for				
Dyslipidemia (yes vs. no)	1.15 (0.81 - 1.63)	0.428	1.14 (0.81 - 1.62)	0.448
Diabetes (yes vs. no)	1.81 (1.14 - 2.90)	0.013	1.81 (1.13 - 2.88)	0.013
Number of drugs, including OTC	1.14 (1.06 - 1.23)	0.001	1.14 (1.06 - 1.23)	0.001
Parental history of HT (yes vs. no)	0.74 (0.53 - 1.04)	0.082	0.75 (0.54 - 1.04)	0.087
Genetic risk scores				
Resistant hypertension, cont.	-		0.98 (0.91 - 1.06)	0.622
Resistant hypertension, quartiles				
First	1 (ref)		-	
Second	1.08 (0.70 - 1.67)	0.728	-	
Third	1.07 (0.70 - 1.65)	0.748	-	
Fourth	1.11 (0.72 - 1.72)	0.631	-	
<i>P-value for trend</i>	0.657			

HT, hypertension; OTC, over the counter; ttt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

Supplementary table 11: multivariable analysis of the associations between clinical and genetic factors with blood pressure control, second follow-up, CoLaus|PsyCoLaus study, Lausanne, Switzerland. Control defined as a systolic blood pressure <130 mm Hg and a diastolic blood pressure <80 mm Hg. Using the short version of the genetic risk score for resistant hypertension.

	Model 1	p	Model 2	p
Age (per 10 years)	0.77 (0.64 - 0.94)	0.010	0.78 (0.64 - 0.94)	0.011
Men vs. women	0.63 (0.44 - 0.90)	0.010	0.62 (0.44 - 0.89)	0.009
Swiss national vs. other	1.00 (0.69 - 1.43)	0.982	1.00 (0.70 - 1.43)	0.988
Education				
High	1 (ref.)		1 (ref.)	
Middle	0.73 (0.45 - 1.19)	0.208	0.73 (0.45 - 1.20)	0.217
Low	0.90 (0.57 - 1.40)	0.632	0.90 (0.57 - 1.40)	0.632
<i>P-value for trend</i>	0.632			
Married/couple vs. alone	0.98 (0.70 - 1.38)	0.923	0.99 (0.71 - 1.39)	0.969
Body mass index categories				
Normal	1 (ref.)		1 (ref.)	
Overweight	0.65 (0.45 - 0.96)	0.029	0.65 (0.45 - 0.96)	0.028
Obese	0.54 (0.35 - 0.85)	0.008	0.54 (0.35 - 0.85)	0.007
<i>P-value for trend</i>	0.008			
Smoking				
Never	1 (ref.)		1 (ref.)	
Former	0.96 (0.67 - 1.37)	0.809	0.95 (0.67 - 1.37)	0.801
Current	1.11 (0.69 - 1.76)	0.672	1.11 (0.69 - 1.76)	0.673
<i>P-value for trend</i>	0.672			
Alcohol drinker (yes vs. no)	1.16 (0.80 - 1.69)	0.430	1.16 (0.80 - 1.69)	0.423
Sedentary (yes vs. no)	1.05 (0.75 - 1.47)	0.772	1.05 (0.75 - 1.47)	0.797
Treatment for				
Dyslipidemia (yes vs. no)	1.04 (0.73 - 1.49)	0.811	1.04 (0.73 - 1.48)	0.821
Diabetes (yes vs. no)	1.32 (0.79 - 2.20)	0.292	1.32 (0.79 - 2.20)	0.292
Number of drugs, including OTC	1.12 (1.04 - 1.19)	0.001	1.12 (1.04 - 1.19)	0.001
Parental history of HT (yes vs. no)	0.82 (0.58 - 1.14)	0.235	0.82 (0.58 - 1.14)	0.241
Genetic risk scores				
Resistant hypertension, contin.	-		0.97 (0.90 - 1.04)	0.361
Resistant hypertension, quart.				
First	1 (ref)		-	
Second	1.02 (0.65 - 1.59)	0.943	-	
Third	0.97 (0.63 - 1.49)	0.883	-	
Fourth	0.97 (0.63 - 1.50)	0.899	-	
<i>P-value for trend</i>	0.850			

HT, hypertension; OTC, over the counter; ttt, treatment; -, not included in the model. Results are expressed as odds ratio (95% confidence interval). Statistical analyses performed using logistic regression.

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