

**Supplementary Table 1.** Participants characteristics by age groups

|  | Younger Group<br>(<50 years old)<br>(n. 473) | Older Group<br>(≥50 years old)<br>(n. 589) | p-value |
|--|--|--|---------|
| <b>Demographics Characteristics</b>                          |  |  |         |
| Age, years   | 41 (34-46)                                   | 59 (54-67)                                 | ≤0.001  |
| Females, n (%)   | 273 (57.7)                                   | 318 (53.9)                                 | 0.224   |
| Body Mass Index, kg/m <sup>2</sup>                           | 23.6 (21.5-26.2)                             | 25 (22.7-28.2)                             | ≤0.001  |
| Current smoking, n (%)                                       | 82 (17.5)                                    | 110 (18.7)                                 | 0.610   |
| Waist/Hip, cm  | 0.89 (0.84-0.93)                             | 0.92 (0.88-0.97)                           | ≤0.001  |
| Hypertension, n (%)  | 12 (2.5)                                     | 151 (26.0)                                 | ≤0.001  |
| Diabetes, n (%)  | 1 (0.21)                                     | 21 (3.6)                                   | ≤0.001  |
| Hypercholesterolemia, n (%)                                  | 13 (2.8)                                     | 135 (23.3)                                 | ≤0.001  |
| Hystory of CVD, n (%)  | 1 (0.21)                                     | 31 (5.4)                                   | ≤0.001  |
| Glycemia, mmol/l, n (%)                                      | 5.7 ( 5.4-6)                                 | 6 (5.7-6.5)                                | ≤0.001  |
| Cystatin C, mg/L   | 0.77 (0.70-0.84)                             | 0.85 (0.77-0.95)                           | ≤0.001  |
| Creatinine, μmol/L   | 73 (61-85)                                   | 75 (66-86)                                 | 0.121   |
| Creatinine urine 24 hour, μmol                               | 17.9 (12.2-24.1)                             | 15.2 (10.5-22.8)                           | 0.001   |
| Self-reported duration of nocturnal urine collection (hours) | 8 (7-9)                                      | 7.5 (7.0-8.5)                              | 0.066   |
| Day/night ratio of urinary sodium excretion                  | 1.24 (0.91-1.76)                             | 1.09 (0.81-1.45)                           | ≤0.001  |
| 24-hours Urinary sodium excretion, mmol                      | 165 (116-234)                                | 161 (113-226)                              | 0.578   |
| Daytime Urinary sodium excretion, mmol                       | 72.4 (50.4-99.5)                             | 65.6 (46.4-87.6)                           | 0.002   |
| Nighttime Urinary sodium excretion, mmol                     | 55.8 (39.6-80.1)                             | 60.1 (42.3-84.0)                           | 0.056   |
| <b>24-Hours ABPM</b>   |  |  |         |
| 24-hour SBP, mmHg  | 116 (110 -122)                               | 120 (112 -128)                             | ≤0.001  |
| 24 hour DBP, mmHg  | 72 (67-78)                                   | 75 (69 -81)                                | ≤0.001  |
| Heart Rate 24 hour   | 71 (65-76)                                   | 69 (64-74)                                 | 0.007   |
| 24-MBP, mmHg   | 92 (87-98)                                   | 96 (90-102)                                | ≤0.001  |
| 24-PP, mmHg  | 43 (39-47)                                   | 44 ( 40-50)                                | 0.007   |
| <b>Daytime ABPM</b>  |  |  |         |
| Daytime SBP, mmHg  | 118 ( 112-126)                               | 123 (115-132)                              | ≤0.001  |

|                                |                 |                 |        |
|--------------------------------|-----------------|-----------------|--------|
| Daytime DBP, mmHg              | 75 (70 – 81)    | 78 (71-84)      | ≤0.001 |
| Heart Rate day-time            | 74 (68 -80)     | 72 ( 67-78)     | 0.014  |
| Daytime MBP, mmHg              | 95 ( 89-101)    | 98 (92-105)     | ≤0.001 |
| Daytime PP, mmHg               | 43 (39 -48)     | 45 (40-51)      | ≤0.001 |
| <b>Nighttime ABPM</b>          |                 |                 |        |
| Nighttime SBP, mmHg            | 108 (101.5-115) | 112 (105-121.5) | ≤0.001 |
| Nighttime DBP, mmHg            | 65 (59.5-70.5)  | 68 (62-75)      | ≤0.001 |
| Heart Rate night-time          | 62 (56-68)      | 62 (57-67)      | 0.215  |
| Nighttime MBP, mmHg            | 84 (79-91)      | 88 ( 82 -96)    | ≤0.001 |
| Nighttime PP, mmHg             | 43 (39 -47)     | 43 (39-50)      | 0.677  |
| <b>Nocturnal BP Change</b>     |                 |                 |        |
| Difference SBP day-night, mmHg | 10 (5.5-15)     | 11 ( 4-16)      | 0.552  |
| Difference DBP day-night, mmHg | 10 (7-14)       | 9 (5-14)        | 0.118  |
| Difference PP day-night, mmHg  | 0 (3-4)         | 1 (2.5- 5)      | 0.300  |
| Difference MBP day-night, mmHg | 10 (7-14)       | 9 ( 5-15)       | 0.075  |

Supplementary Table 2

| Overall Population             |                   |         |                    |         |
|--------------------------------|-------------------|---------|--------------------|---------|
| Urinary Sodium Excretion Ratio | MBP MmHg (95%CI)  | p-value | PP MmHg (95%CI)    | P-value |
| <b>24 Hours ABPM</b>           |                   |         |                    |         |
| Q1                             | 88.1 (73.1-103.1) | 0.306   | 47.3 (33.7-60.9)   | 0.214   |
| Q2                             | 87.2 (73.9-100.5) | 0.597   | 46.3 (34.3-58.4)   | 0.549   |
| Q3                             | 86.8 (75.1-98.4)  | 0.890   | 45.9 (35.3-56.5)   | 0.882   |
| Q4                             | Reference         |         | Reference          |         |
| <b>Daytime ABPM</b>            |                   |         |                    |         |
| Q1                             | 91.2 (75.3-106.7) | 0.822   | 48.3 (33.6-62.9)   | 0.322   |
| Q2                             | 91.4 (77.3-105.2) | 0.762   | 74.4 (34.5-60.4)   | 0.562   |
| Q3                             | 91.7 (79.3-103.)  | 0.984   | 46.9 (36.6-58.3)   | 0.873   |
| Q4                             | Reference         |         | Reference          |         |
| <b>Nighttime ABPM</b>          |                   |         |                    |         |
| Q1                             | 82.5 (66.8-98.2)  | ≤0.001  | 42.8 (29.6-56.8)   | 0.040   |
| Q2                             | 78.9 (65.1-92.9)  | 0.013   | 41.1 (28.8-53.4)   | 0.405   |
| Q3                             | 76.8 (64.6-88.9)  | 0.775   | 40.5 (29.7-51.2)   | 0.297   |
| Q4                             | Reference         |         | Reference          |         |
| <b>Nocturnal BP change</b>     |                   |         |                    |         |
| Q1                             | 4.3 (-9.1,-17.7)  | ≤0.001  | 0.68 (-10.7 -11.9) | 0.176   |
| Q2                             | 8.1 (-3.8, -19.9) | ≤0.001  | 1.6 (-8.6-11.6)    | 0.996   |
| Q3                             | 10.4 (-0.01-20.8) | 0.858   | 1.57 (-7.33 -10.3) | 0.168   |
| Q4                             | Reference         |         | Reference          |         |

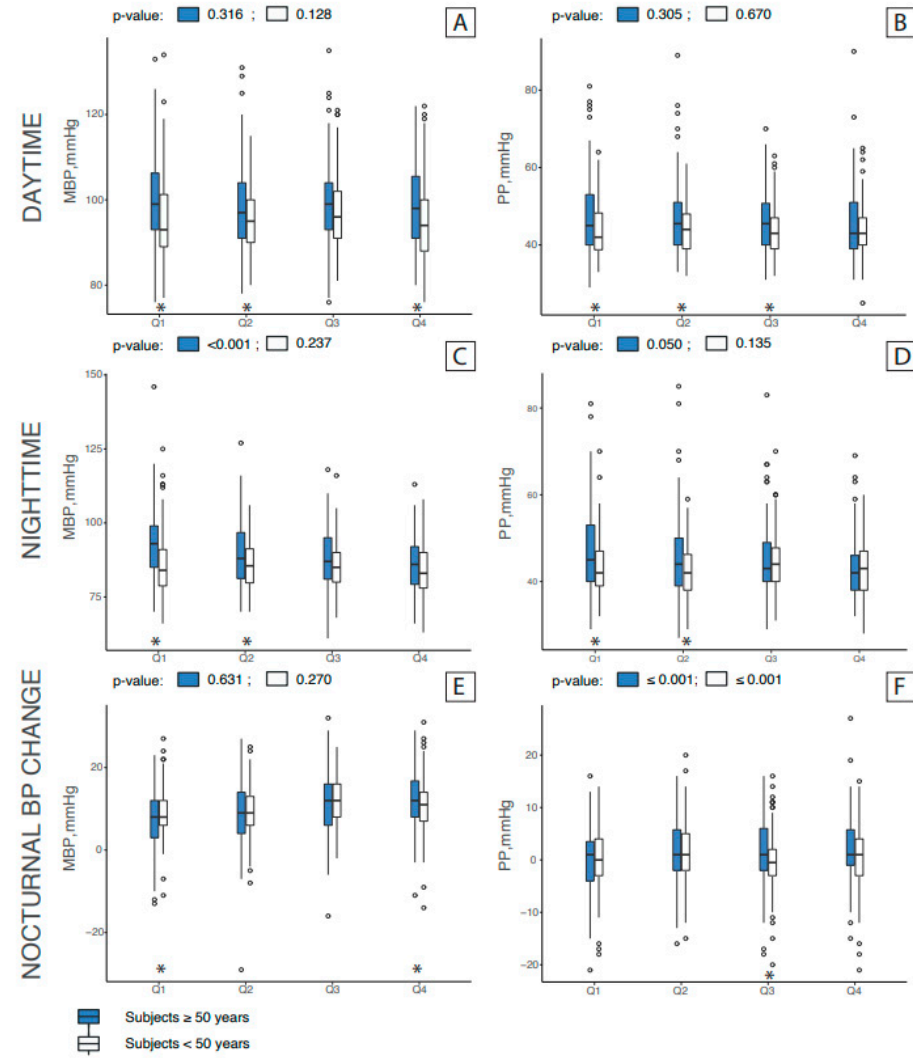
All Models adjusted for: age, gender, body mass index, smoking, use of antihypertensive medications, previous cardiovascular diseases, dietary salt consumption, magnesium, hypercholesterolemia, diabetes and heart rate.

**Supplementary Table 3.** Multiple Regression models exploring the association between daytime/nighttime urinary sodium excretion ratio and 24-hour blood pressure parameters and nocturnal BP changes in the overall population and by age groups.

| ABPM Parameters            | Overall Population                       |                  | Younger Group (≤50 years old)            |         | Older Group (≥50 years old)              |                  |
|----------------------------|--|------------------|--|---------|--|------------------|
|                            | β-coefficient (95%, confidence interval) | P-value          | β-coefficient (95%, confidence interval) | P-value | β-coefficient (95%, confidence interval) | P-value          |
| <b>24-Hour SBP</b>         | -0.710 (-1.773-0.352)                    | 0.190            | -0.753 (-1.998-0.492)                    | 0.235   | -0.812 (-2.525-0.902)                    | 0.352            |
| <b>24-Hour DBP</b>         | -0.570 (-1.340-0.199)                    | 0.146            | -0.965 (-1.945-0.015)                    | 0.054   | -0.281 (-1.484-0.923)                    | 0.647            |
| <b>24-Hour MBP</b>         | -0.627 (-1.461-0.206)                    | 0.140            | -0.839 (-1.877-0.198)                    | 0.113   | -0.546 (-1.871-0.779)                    | 0.418            |
| <b>24-Hour PP</b>          | -0.123 (-0.879-0.634)                    | 0.750            | 0.227 (-0.558-1.013)                     | 0.569   | -0.516 (-1.738-0.707)                    | 0.408            |
| <b>Daytime SBP</b>         | -0.125 (-1.246-0.995)                    | 0.826            | -0.653 (-1.953-0.648)                    | 0.324   | 0.265 (-1.552-2.082)                     | 0.774            |
| <b>Daytime DBP</b>         | -0.076 (-0.899-0.747)                    | 0.855            | -0.825 (-1.851-0.201)                    | 0.115   | 0.585 (-0.708-1.878)                     | 0.374            |
| <b>Daytime MBP</b>         | -0.109 (-0.990-0.771)                    | 0.807            | -0.736 (-1.809-0.337)                    | 0.178   | 0.409 (-0.999-1.817)                     | 0.569            |
| <b>Daytime PP</b>          | 0.027 (-0.841-0.786)                     | 0.947            | 0.170 (-0.709-1.049)                     | 0.704   | -0.280 (-1.594-1.034)                    | 0.675            |
| <b>Nighttime SBP</b>       | -2.078 (-3.197- -0.958)                  | <b>&lt;0.001</b> | -1.011 (-2.323-0.300)                    | 0.130   | -3.346 (-5.118,-1.574)                   | <b>&lt;0.001</b> |
| <b>Nighttime DBP</b>       | -1.521 (-2.344,-0.696)                   | <b>&lt;0.001</b> | -1.040 (-2.093-0.012)                    | 0.053   | -2.122 (-3.417,-0.827)                   | <b>0.001</b>     |
| <b>Nighttime MBP</b>       | -1.783 (-2.670,-0.896)                   | <b>&lt;0.001</b> | -1.008 (-2.106-0.090)                    | 0.072   | -2.732 (-4.134,-1.329)                   | <b>&lt;0.001</b> |
| <b>Nighttime PP</b>        | -0.569 (-1.362-0.223)                    | 0.159            | 0.078 (-0.805-0.962)                     | 0.861   | -1.303(-2.521,-0.086)                    | <b>0.036</b>     |
| <b>Nocturnal BP change</b> |  |                  |  |         |  |                  |
| <b>SBP</b>                 | 2.152 (1.270-3.034)                      | <b>&lt;0.001</b> | 0.436 (-0.647-1.520)                     | 0.429   | 4.100 (2.720-4.480)                      | <b>&lt;0.001</b> |
| <b>DBP</b>                 | 1.610 (0.874 -2.346)                     | <b>&lt;0.001</b> | 0.328 (-0.579-1.235)                     | 0.477   | 2.992 (1.828-4.157)                      | <b>&lt;0.001</b> |
| <b>MBP</b>                 | 1.851 ( 1.111-2.590)                     | <b>&lt;0.001</b> | 0.363 (-0.532-1.259)                     | 0.426   | 3.520 (2.353-4.688)                      | <b>&lt;0.001</b> |
| <b>PP</b>                  | 0.577 ( 0.049-1.204)                     | 0.071            | 0.053 (-0.795-0.902)                     | 0.902   | 1.232 (0.287-2.177)                      | <b>0.011</b>     |

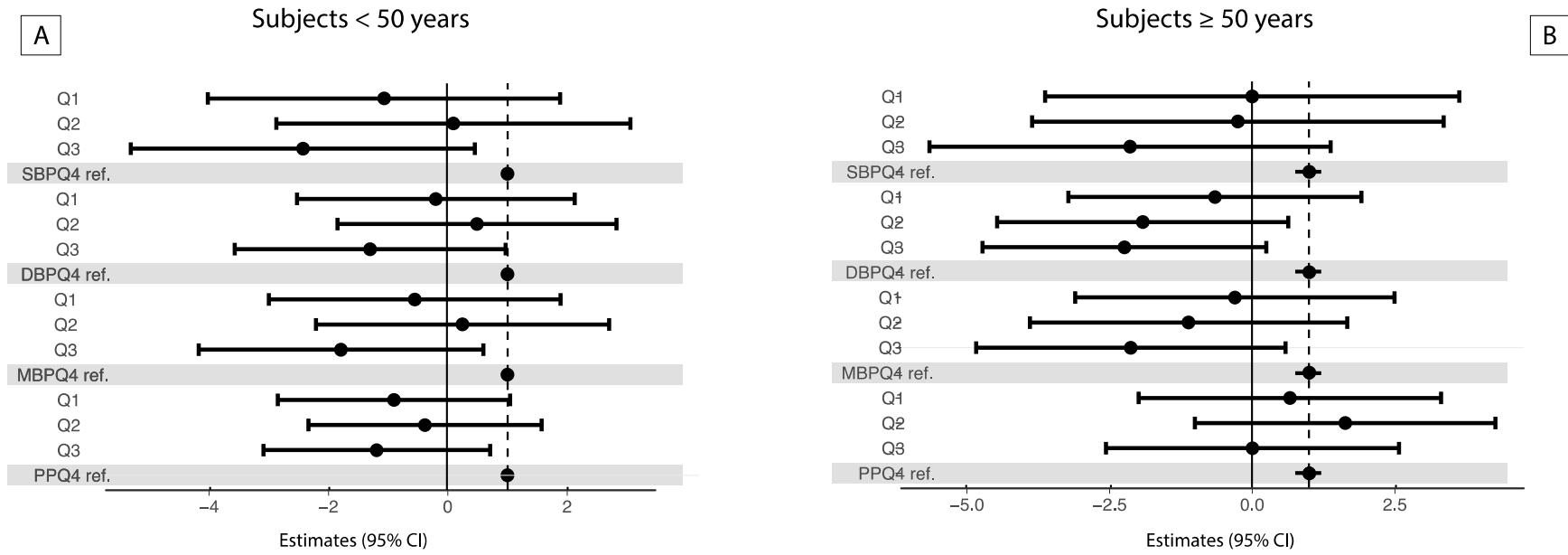
All Models adjusted for: age, gender, body mass index, smoking, use of antihypertensive medications, previous cardiovascular diseases, dietary salt consumption, magnesium, hypercholesterolemia, diabetes and heart rate.

Supplementary Figure 1



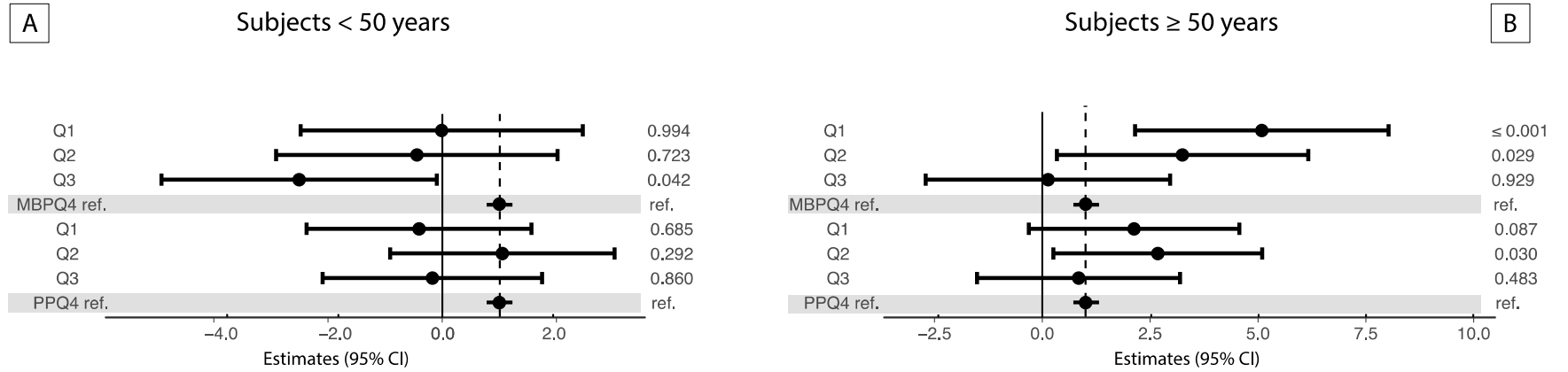
Supplementary Figure 2

Daytime ABPM



Supplementary Figure 3

### Nighttime ABPM



### Nocturnal BP change

