Drugs & Aging

**Title:** A propensity score matched approach to assess the associations of commonly prescribed medications with fall risk in a large harmonized cohort of older ambulatory persons

**Running heading:** The associations of commonly prescribed medications with fall risk in older ambulatory persons

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Contents
Supplementary Table 1. Corresponding medication classes of each exposure class ............................................. 3
Covariate assessment ................................................................................................................................................. 5
Supplementary Table 2. Details regarding covariate assessment in different cohorts and harmonization algorithms ........................................................................................................................................... 8
Appendix II. Baseline characteristics in prospective dataset ................................................................................. 15
Supplementary Table 3. Baseline characteristics by Ace inhibitor use ................................................................. 15
Supplementary Table 4. Baseline characteristics by Calcium channel blocker use .................................................. 16
Supplementary Table 5. Baseline characteristics by Angiotensin II receptor blocker use .................................... 17
Supplementary Table 6. Baseline characteristics by Low ceiling diuretic use ......................................................... 18
Supplementary Table 7. Baseline characteristics by High ceiling diuretic use ......................................................... 19
Supplementary Table 8. Baseline characteristics by Beta-blocker use ................................................................. 20
Supplementary Table 9. Baseline characteristics by Statin use ............................................................................. 21
Supplementary Table 10. Baseline characteristics by Alpha blocker used for prostate hyperplasia use .............. 22
Supplementary Table 11. Baseline characteristics by Nonsteroidal anti-inflammatory drugs use ..................... 23
Supplementary Table 12. Baseline characteristics by Benzodiazepine and –related drugs use ......................... 24
Supplementary Table 13. Baseline characteristics by Proton pump inhibitor use ................................................ 25
Appendix III. Baseline characteristics in cross-sectional dataset ........................................................................... 26
Supplementary Table 14. Baseline characteristics by Ace inhibitor use ................................................................. 26
Supplementary Table 15. Baseline characteristics by Calcium channel blocker use ........................................... 27
Supplementary Table 16. Baseline characteristics by Angiotensin II receptor blocker use .................................. 28
Supplementary Table 17. Baseline characteristics by Low ceiling diuretic use ................................................... 29
Supplementary Table 18. Baseline characteristics by High ceiling diuretic use .................................................... 30
Supplementary Table 19. Baseline characteristics by Beta-blocker use ............................................................... 31
Supplementary Table 20. Baseline characteristics by Statin use ........................................................................ 32
Supplementary Table 21. Baseline characteristics by Alpha blocker used for prostate hyperplasia use .......... 33
Supplementary Table 22. Baseline characteristics by Benzodiazepine and –related drugs use ...................... 34
Supplementary Table 23. Baseline characteristics by Proton pump inhibitor use ............................................... 35
Appendix I

Supplementary Table 1. Corresponding medication classes of each exposure class

| Medication classes                      | ATC codes belonging to this group |
|-----------------------------------------|-----------------------------------|
| Proton pump inhibitor                   | A02BC                             |
|                                         | A02BD01                           |
|                                         | A02BD02                           |
|                                         | A02BD03                           |
|                                         | A02BD04                           |
|                                         | A02BD05                           |
|                                         | A02BD06                           |
|                                         | A02BD07                           |
|                                         | A02BD09                           |
|                                         | A02BD10                           |
|                                         | A02BD11                           |
|                                         | B01AC54                           |
|                                         | M01AE32                           |
| High-ceiling diuretics                  | C03C                              |
|                                         | C03E                              |
| Low-ceiling diuretics                   | C03A                              |
|                                         | C03B                              |
|                                         | C03EA                             |
|                                         | C07B                              |
|                                         | C07C                              |
|                                         | C07D                              |
|                                         | C08GA                             |
|                                         | C09BA                             |
|                                         | C09DA                             |
|                                         | C09DX01                           |
|                                         | C09DX03                           |
|                                         | C09DX06                           |
|                                         | C09AX54                           |
|                                         | C09AX52                           |
|                                         | C09BX03                           |
|                                         | C09BX01                           |
|                                         | C10BX13                           |
|                                         | C02L                              |
| Ace inhibitors                          | C09A                              |
|                                         | C09B                              |
|                                         | C10BX04                           |
|                                         | C10BX06                           |
|                                         | C10BX07                           |
|                                         | C10BX11                           |
|                                         | C10BX12                           |
|                                         | C10BX13                           |
|                                         | C10BX14                           |
|                                         | C10BX15                           |
| Alpha blocker used for prostate hyperplasia | G04CA                         |
| Calcium channel blockers                | C08                               |
|                                         | C09BB                             |
|                                         | C09DB                             |
|                                         | C07FB                             |
|                                         | C10BX03                           |
|                                         | C10BX07                           |
|                                         | C10BX09                           |
|                                         | C10BX11                           |
|                                         | C10BX14                           |
|                                         | C09BX03                           |
|                                         | C09BX01                           |
|                                         | C09BX02                           |
|                                         | C09DX01                           |
|                                         | C09DX03                           |
|                                         | C09DX06                           |
|                                         | C09AX53                           |
|                                         | C09AX54                           |
| Angiotensin II receptor blockers        | C09C                              |
|                                         | C09D                              |
|                                         | C10BX10                           |
| Drug Class                      | Codes                  |
|--------------------------------|------------------------|
| Nonsteroidal anti-inflammatory drugs | M01AA, M01AB, M01AC, M01AE, M01AG, M01AH, M01AX01, M01AX02, M01AX04, M01AX07, M01AX13, M01AX17, M01AX18, M01AX22, M01AX23, M01AX68, M01BA02, N02AJ08, N02AJ14, N03AJ19 |
| Beta-blockers                   | C07, C09BX02           |
| Statins                         | C10AA, C10BA, C10BX, A10BHS1, A10BHS2 |
| Benzodiazepine and –related drugs | N05BA, N05CD, N05CF    |
**Covariate assessment**

Sociodemographic variables included sex, age, and living status was categorized into community-dwelling and institutionalized. Alcohol use was based on self-reporting in all cohorts, and was harmonized into non-drinkers, drinking less than once month, drinking one to three times a month, drinking one to four days a week and drinking almost daily. In all cohorts, Body Mass Index (BMI) was calculated from measured height and weight and further categorized into variables underweight (BMI below 18.5) and obese (BMI 30 or more).

Several self-reported chronic diseases were assessed. Arthritis variable included self-reported osteoarthritis, rheumatoid arthritis and other arthritis types. In B-PROOF, no data on arthritis was available. Arrhythmia, was based on self-report in TILDA and B-PROOF. In LASA, it was based on possible pacemaker implementation, medication use and general practitioner diagnosis data. In Rotterdam study and ActiFE-Ulm, no data on arrhythmia was available. Heart failure was based on self-report in LASA, B-PROOF, TILDA and ActiFE-Ulm. In Rotterdam study, no data was available on heart failure. In all cohorts, diabetes was based on self-report. In all cohorts, stroke was based on self-report and in B-PROOF it included also transient ischaemic attacks. Urinary incontinence was based on self-report in LASA, ActiFE-Ulm and TILDA. In B-PROOF and Rotterdam study, no data on urinary incontinence was available.

Furthermore, the dichotomous dizziness variable was based on self-report. In Rotterdam study and ActiFE-Ulm, participants reporting dizziness sometimes or more frequent were classified having dizziness and in LASA, participant had to indicate about regular dizziness and if they indicated “yes”, participant were classified having dizziness. In B-PROOF and TILDA, no data on dizziness was available. In LASA, participants were classified to have hearing problem if they could not follow or could follow with much difficulty discussion in a group of three of four persons or if they could not follow with some or more difficulty discussion with one person. In Rotterdam study, participants were indicated to have hearing problem if they often or (almost) never hear what people are saying. In case of TILDA, participants were indicated to have hearing problem if their hearing is fair or poor. In ActiFE-Ulm, hearing problem was measured by interviewers’ impression. In B-PROOF, no data on hearing was available. The vision variable indicated whether participants would rate their vision as bad. In LASA, if the participants reported having much difficulty or could not see well enough, they were classified having bad vision. In ActiFE-Ulm, participants self-reporting bad vision were classified having bad vision. In TILDA, if the participant reported an eyesight to be fair or poorer, they were classified having bad vision. In B-PROOF and Rotterdam study, no data on self-reported vision was available.
Depressive symptoms were measured with the 20-item Center for Epidemiologic Studies Depression Scale (CES-D) in LASA, TILDA and Rotterdam study. In B-PROOF, the Geriatric depression scale was used and in ActiFE-Ulm, the HADS-Depression scale. Due to different questionnaires, z-scores of depressive symptoms were computed. In all cohorts, MMSE was used to measure cognitive functioning. In TILDA, fear of falling was based on self-report and was categorized into three categories; not afraid, somewhat afraid, and very afraid. In LASA C and ActiFE-Ulm, participant was asked to score how concerned participant felt to fall during different activities of daily living. When all activities were rated as not concerned, participants were classified having no fear of falling. When at least one of the activities was rated as a little or fairly concerned, participant was classified being somewhat afraid. When at least one of the activities was rated as very concerned, participant was classified being very afraid. In LASA 3B, B-PROOF and Rotterdam study, no data on fear of falling was available. A cut-off value of ≤120mHg systolic and or ≤ 70mmHg diastolic from the measurements was considered hypotension [1-3]. 25-hydroxyvitamin D3 (25(OH)D) were measured from blood samples and categorized into vitamin deficiency (<50 nmol/l) or no deficiency [4]. In TILDA and Rotterdam study, no data on Vitamin D level was available.

Grip strength was measured by dynamometer in all cohorts, but with different dynamometers (LASA-C and B-PROOF: Takei TKK 5001, Takei Scientific Instruments Co. Ltd., Tokyo, Japan, LASA 3B JAMAR 5030J1 Hydraulic Hand Dynamometer, ActiFE-Ulm: Jamar, TILDA: a Baseline hydraulic hand dynamometer, Rotterdam study: Fabrication Enterprises hydraulic hand dynamometer. Based on maximum grip strength, Z-scores were computed for each cohort individually. Balance was measured using the tandem stance test in and was harmonized into unable or able to balance more than 10 seconds. In TILDA, no tandem stance test was performed.

Co-medication use was determined in each cohort as described above under exposure. Co-medication of our interest were medication classes included in the STOPPFall (Screening Tool of Older Persons Prescriptions in older adults with high fall risk) [5] and possible alternative therapies e.g. other antihypertensives in case of calcium channel blockers were included in the models. In addition, number of used medications were computed for each cohort.

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## Supplementary Table 2. Details regarding covariate assessment in different cohorts and harmonization algorithms

| Variable   | Categories                                                                 | Harmonization algorithm/Details                                                                                                                                                                                                 | Cohorts available |
|------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Sex        | Male/female                                                               |                                                                                              | All cohorts       |
| Age        | N/A                                                                       |                                                                                              | All cohorts       |
| Living status | Community-dwelling/institutionalized                                       | LASA: -living independently categorized as community-dwelling -answer options residential home, nursing home, hospital, psychiatric hospital and monastery categorized as institutionalized ActiFE-Ulm: -only community-dwelling participants TILDA: - only community-dwelling participants B-PROOF: -living independently categorized as community-dwelling -answer options assisted living, service flat and home for the elderly categorized as institutionalized Rotterdam study: -living independently categorized as community-dwelling -answer options service flat, residential care home and nursing home categorized as institutionalized | All cohorts       |
| Alcohol use | -non-drinkers -drinking less than once month -drinking one to three times a month -drinking one to four days a week -drinking almost daily | Based on self-report: LASA: How many days per week do you drink alcohol (past year)? Answer options categorized following ways: -every day and 5-6 days/week categorized as drinking almost daily -1-2 days/wk and 3-4 days/wk categorized as drinking one to four days a week - drinking one to three times a month categorized as drinking one to three times a month - less than once in a month categorized as drinking less than once month -not drinking categorized as non-drinkers ActiFE-Ulm: Answer options categorized following ways: -daily categorized as drinking almost daily -several times a week categorized as drinking one to four days a week -several times a month categorized as drinking one to three times a month - less than once in a month categorized as drinking less than once month -never categorized as non-drinkers TILDA: In the last 6 months, how often have you had drinks containing alcohol? Answer options categorized following ways: -every day and 5-6 days/week | All cohorts       |
| Underweight (BMI below 18.5) | Underweight/no underweight | calculated from measured height and weight | All cohorts |
|-------------------------------|-----------------------------|------------------------------------------|-------------|
| Obese (BMI 30 or more)        | Obese/not obese             | calculated from measured height and weight | All cohorts |
| Arthritis                     | Arthritis/no Arthritis      | Based on self-report:                   | Not available in B-PROOF |
|                               |                             | LASA:                                   |              |
|                               |                             | -If participants answered yes to any of the following two questions they were reported having arthritis |
|                               |                             | -Do you have joint damage or osteoarthritis of the knees, hips or hands? (yes/no) |
|                               |                             | -Do you have joint inflammation meaning chronic rheumatism or rheumatoid arthritis (yes/no) |
|                               |                             | -If participants reported having arthritis at earlier wave, they were noted as having arthritis |
|                               |                             | ActiFE-Ulm:                             |              |
|                               |                             | -arthritis until baseline (yes/no)      |              |
|                               |                             | -rheumatism until baseline (yes/no)     |              |
|                               |                             | TILDA:                                  |              |
|                               |                             | -Has a doctor ever told you that you have any of the following conditions: arthritis (including osteoarthritis or rheumatism) (yes/no) |
|                               |                             | Rotterdam study:                        |              |
- Have you been to your general practitioner or specialist for your joint complaints. Do you know what it is that you have? Did your general practitioner or the specialist tell you what it is?
  - Answer options: arthrose, reumatoid arthritis, gout, Bekhterev's disease and other were categorized as arthritis.

| Condition       | Status          | Description                                                                                          | Notes                                      |
|-----------------|-----------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Arrhythmia      | Arrhythmia/no   | LASA: algorithm based on self-reported pacemaker implementation, medication use and general practitioner diagnosis (yes/no)  
  |                  | TILDA: Has a doctor ever told you that you have any of the following conditions: abnormal heart rhythm (yes/no)  
  |                  | B-PROOF: Does participant has arrhythmia (yes/no)                                                     | Not available in ActiFE-Ulm and Rotterdam study |
| Heart failure   | Heart failure/no| Based on self-report:  
  |                  | LASA: self-reported diagnosis of congestive heart failure (yes/no)  
  |                  | ActiFE-Ulm: heart failure until baseline (yes/no)  
  |                  | TILDA: Has a doctor ever told you that you have any of the following conditions: heart failure (yes/no)  
  |                  | B-PROOF: Does the participant has heart failure (yes/no)                                               | Not available in Rotterdam study |
| Diabetes        | Diabetes/no     | Based on self-report:  
  |                  | LASA: Have you been diagnosed with diabetes (yes/no)  
  |                  | ActiFE-Ulm: Diabetes until baseline (yes/no)  
  |                  | TILDA: Has a doctor ever told you that you have any of the following conditions: diabetes or high blood sugar (yes/no)  
  |                  | B-PROOF: Does the participant has diabetes (yes/no)                                                     | All cohorts |
| Stroke          | Stroke/no Stroke| Based on self-report:  
  |                  | LASA: self-reported CVA (yes/no)  
  |                  | ActiFE-Ulm: stroke until baseline (yes/no)  
  |                  | TILDA: Has a doctor ever told you that you have any of the following conditions: stroke (yes/no)  
  |                  | B-PROOF: Did participant ever had a stroke or TIA? (yes/no)                                             | All cohorts |

Rotterdam study:
- Do you have diabetes (yes/no)
After the previous ERGO interview, have you had a stroke, cerebral hemorrhage, cerebral infarction or CVA? (yes/no)
- Participants are also categorized as having stroke in their medical history if they reported having had stroke during earlier study waves.

| Urinary incontinence | Urinary incontinence/no Urinary incontinence | Based on self-report: LASA:  
Do you have incontinence (yes/no)  
ActiFE-Ulm:  
urinary incontinence (yes/no)  
TILDA:  
During the last 12 months, have you lost any amount of urine beyond your control? (yes/no) | Not available in B-PROOF and Rotterdam study |
|----------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------|
| Dizziness            | Dizziness/no Dizziness                        | Based on self-report  
LASA:  
regularly dizzy (yes/no)  
ActiFE-Ulm:  
dizziness (yes/no)  
Rotterdam study:  
Are you ever dizzy?  
Answer options no and almost never categorized into no dizziness and option sometimes and yes, all the time into dizziness. | Not available in B-PROOF and TILDA |
| Hearing problem      | Hearing problem/no Hearing problem            | Based on questions:  
LASA:  
Can you hear well enough?  
Can you follow a conversation with one person?  
If participants answered yes, without difficulty or with some difficulty to the first question and yes, without difficulty to the second question they were categorized not having a hearing problem  
ActiFE-Ulm:  
Measured by interviewers’ impression (good/bad)  
TILDA:  
Is your hearing with or without a hearing aid?  
Answer options excellent to good were categorized into “no hearing problem” and options fair and poor into “hearing problem”.  
Rotterdam study:  
Do you think you hear less (without any hearing aids)?  
Answer options no, I hear almost everything and yes, sometimes I don’t hear what people are saying were categorized into “no hearing problem” and options yes, I often don’t hear what people are saying and yes, I (almost) never hear what people are saying into “hearing problem”. | Not available in B-PROOF |
| Bad vision           | Bad vision/no Bad vision                      | Based on self-report:  
LASA:  
do you see well enough?  
Answer options: yes without difficulty and yes with some difficulty were categorized as “no bad vision” and options with much difficulty and no I cannot as “bad vision” | Not available in B-PROOF and Rotterdam study |
| Depressive symptoms | N/A | Z-score depressive symptoms was created. Following questionnaires were assessed: | All cohorts |
|---------------------|-----|-----------------------------------------------------------------|----------|
|                     |     | LASA: 20-item Center for Epidemiologic Studies Depression Scale (CES-D) |          |
|                     |     | ActiFE-Ulm: HADS-Depression |          |
|                     |     | TILDA: 20-item Center for Epidemiologic Studies Depression Scale (CES-D) |          |
|                     |     | B-PROOF: Geriatric Depression Scale (GDS) |          |
|                     |     | Rotterdam study: 20-item Center for Epidemiologic Studies Depression Scale (CES-D) |          |
| MMSE | N/A | All cohorts |          |
| Fear of falling | - not afraid | LASA C: modified version of the Falls Efficacy Scale (FES) was used. | Not available in LASA 3B, B-PROOF and Rotterdam study |
|       | - somewhat afraid | | |
|       | - very afraid | | |
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|       | | | |
|       | | | |
| Hypotension (≤120mHg systolic and) | Hypotension/no hypotension | Blood pressure was measured following way: | All cohorts |
| Hypotension | LASA: | | | |
| Parameter                           | Description                                                                                                                                                                                                 | Notes                                                                 |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| or ≤70mmHg diastolic               | - Wave 3B: Blood pressure measured in duplicate in 3B on the upper arm while sitting using an automatic Omron device (left arm, if not possible right)  
- Wave C: blood pressure was measured once in sitting position, in lying position and in standing position.  
- ActiFE-Ulm:  
  - Blood pressure was measured three times, using Blood Pressure Monitor UA-767BT from A&D Medical  
  - TILDA:  
  - Blood pressure measured in duplicate on the upper arm while sitting using an Omron M10-IT, Omron Inc., Kyoto, Japan  
- B-PROOF:  
  - Blood pressure is measured in duplicate using an Omron M1 plus blood pressure device  
- Rotterdam study:  
  - Blood pressure was measured at the right brachial artery with the participant in sitting position.  
  - Mean of two measurements                                                                                                           |                                                                      |
| Vitamin D deficiency (<50 nmol/l)  | Vitamin D deficiency/ no Vitamin D deficiency                                                                                                                                                    | Not available in TILDA and Rotterdam study                             |
| Maximum grip strength              | N/A                                                                                                                                                                                                      | All cohorts                                                           |
|                                    | Z-score of grip strength was created.  
- LASA:  
  - Grip strength dynamometer (wave C: Takei TKK 5001, Takei Scientific Instruments Co. Ltd., Tokyo, Japan. Wave 3B: JAMAR 5030J1 Hydraulic Hand Dynamometer)  
  - Maximum of two attempts with each hand  
- ActiFE-Ulm:  
  - A JAMAR dynamometer  
  - Maximum of two attempts with each hand  
- TILDA:  
  - Baseline hydraulic hand dynamometer.  
  - Maximum of two attempts with each hand  
- B-PROOF:  
  - Strain-gauged dynamometer (Takei, TKK 5401, Takei Scientific Instruments Co. Ltd., Japan)  
  - Maximum of two attempts with each hand  
- Rotterdam study:  
  - Fabrication Enterprises hydraulic hand dynamometer  
  - Maximum of three attempts                                                                                                           |                                                                      |
| Balance                            | Unable/able to balance more than 10 seconds was created based on following tests:  
- LASA:  
  - Tandem stance (up to 10 sec in C and up to 30 sec in 3B)  
- ActiFE-Ulm:  
  - As part of the SPPB, a semitandem stand, side-by-side stand, and a tandem stand were done. | Not available in TILDA                                                  |
**B-PROOF:**
- Tandem stand test
- Rotterdam study:
  - Participants were categorized to the group “able” if they could stand on one feet or on tandem position >10 seconds

| Number of used medications | N/A | - Variable was created using the number of described medication
- Supplements were removed from the number of medications | All cohorts |
|----------------------------|-----|---------------------------------------------------------------------|-------------|
| Co-medications             | Including:   |
|                            | - medication classes included in the STOPPFall (Screening Tool of Older Persons Prescriptions in older adults with high fall risk) |
|                            | - possible alternative therapies e.g. other antihypertensive s in case of calcium channel blockers |
|                            | LASA:       |
|                            | - interviewers asked participants to show containers of prescription medication they had used in the two weeks prior to the interview |
|                            | ActiFE-Ulm: |
|                            | - barcodes of each pharmaceutical available in participants’ homes and taken at baseline visits by the participants were scanned. Products without available code were entered by hand |
|                            | TILDA:      |
|                            | - assessed during the home interview with participants showing or reporting all medications taken on regular basis |
|                            | B-PROOF:    |
|                            | - questionnaire was used to ascertain the self-reported medication use |
|                            | Rotterdam study: |
|                            | - medication use was registered during the home interview by participants presenting all the medication they were using at the day of the interview |
|                            | All cohorts |
### Supplementary Table 3. Baseline characteristics by ACE inhibitor use

| Characteristics                          | Before matching | After matching | SMD  |
|------------------------------------------|-----------------|----------------|------|
| **Non-users** (n=4,845)                  |                 |                |      |
| Age, years                               | 74.50 (6.55)    | 75.14 (6.61)   | 0.098|
| Gender, female                           | 2421 (50.0)     | 364 (41.5)     | 0.171|
| Cohort                                   | 0.213           |                |      |
| LASA C                                   | 1277 (26.4)     | 156 (17.8)     | 1.092|
| ActiFE-ULM                               | 1136 (23.3)     | 246 (28.1)     | 0.078|
| B-PROOF                                  | 2437 (50.3)     | 475 (54.2)     | 0.093|
| Community-dwelling, no                   | 176 (3.6)       | 55 (6.3)       | 0.122|
| History of falls, yes                    | 1650 (34.1)     | 278 (31.7)     | 0.050|
| History of recurrent falls, yes          | 624 (12.9)      | 119 (13.6)     | 0.020|
| Fear of falling                          | 0.113           |                |      |
| Not afraid                               | 2416 (49.9)     | 392 (44.7)     | 0.357|
| Somewhat afraid                          | 1845 (38.1)     | 355 (40.5)     | 0.398|
| Very afraid                              | 584 (12.1)      | 130 (14.8)     | 0.122|
| Obese, yes                               | 977 (20.2)      | 260 (29.6)     | 0.221|
| Underweight, yes                         | 40 (0.8)        | 1 (0.1)        | 0.104|
| Alcohol use                              | 0.070           |                |      |
| Non-drinker                              | 645 (13.3)      | 125 (14.3)     | 0.320|
| drinking <1/month                        | 564 (11.6)      | 98 (11.2)      | 0.111|
| 1-3 times/month                          | 692 (14.3)      | 139 (15.8)     | 0.142|
| 1-4 days/week                            | 1270 (26.2)     | 236 (26.9)     | 0.216|
| Daily                                    | 1674 (34.6)     | 279 (31.8)     | 0.284|
| **Comorbidities and risk factors**       |                 |                |      |
| Diabetes                                 | 433 (8.9)       | 176 (20.1)     | 0.320|
| Arrhythmia                               | 462 (9.5)       | 138 (15.7)     | 0.187|
| Heart failure                            | 292 (6.0)       | 125 (14.3)     | 0.275|
| Stroke                                   | 359 (7.4)       | 115 (13.1)     | 0.189|
| Arthritis                                | 2406 (51.3)     | 412 (47.0)     | 0.091|
| Urinary incontinence                     | 1335 (27.6)     | 301 (34.3)     | 0.147|
| Bad vision, yes                          | 430 (8.9)       | 88 (10.0)      | 0.040|
| Hearing problem, yes                     | 1038 (21.4)     | 246 (28.1)     | 0.154|
| **Physical performance**                 |                 |                |      |
| z-score hand grip strength               | 0.00 (1.00)     | 0.02 (0.97)    | 0.020|
| MMSE (0-30)                              | 27.73 (2.39)    | 27.65 (2.38)   | 0.032|
| Z-score depressive symptoms              | 0.00 (1.01)     | 0.07 (1.00)    | 0.067|
| **Blood measurements**                   |                 |                |      |
| Vitamin D deficiency, yes                | 2249 (46.4)     | 439 (50.1)     | 0.073|
| **Medication**                           |                 |                |      |
| Number of used medication                | 2.64 (2.31)     | 4.89 (2.07)    | 1.026|
| Anticholinergics                         | 208 (4.3)       | 26 (3.0)       | 0.071|
| Opioids                                  | 104 (2.1)       | 39 (4.4)       | 0.129|
| Alpha blocker BPH                        | 240 (5.0)       | 55 (6.3)       | 0.057|
| Alpha blocker AH                         | 63 (1.3)        | 21 (2.4)       | 0.081|
| Antidepressants                          | 218 (4.5)       | 32 (3.6)       | 0.043|
| Antiepileptics                           | 85 (1.8)        | 23 (2.6)       | 0.059|
| Antihistamines                           | 102 (2.1)       | 14 (1.6)       | 0.038|
| Antipsychotic                            | 51 (1.1)        | 4 (0.5)        | 0.069|
| Incontinence medication                  | 65 (1.3)        | 11 (1.3)       | 0.008|
| Cardiac vasodilators                     | 193 (4.0)       | 83 (9.5)       | 0.220|
| Diuretics                                | 904 (18.7)      | 397 (45.3)     | 0.595|
| Benzodiazepines and-related              | 353 (7.3)       | 67 (7.6)       | 0.013|
| AT 2 Blocker                             | 609 (12.6)      | 20 (2.3)       | 0.400|
| Calcium channel blockers                 | 529 (10.9)      | 170 (19.4)     | 0.238|
| Beta-blockers                            | 1030 (21.3)     | 376 (42.9)     | 0.476|

**MMSE:** mini-mental state examination, **SMD:** Standardized mean difference. *unbalanced variable in 5/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 4. Baseline characteristics by Calcium channel blocker use

| Characteristics                      | Before matching | After matching |
|--------------------------------------|-----------------|----------------|
|                                      | Non-users (n=5,023) | Users (n=699) | SMD  | Non-users (n=699) | Users (n=699) | SMD  |
|                                      |                 |               |      |                 |               |      |
| **Comorbidities and risk factors**   |                 |               |      |                 |               |      |
| Diabetes                             | 476 (9.5)       | 133 (19.0)    | 0.276| 123 (17.6)      | 128 (18.3)    | 0.019|
| Arrhythmia                           | 530 (10.6)      | 90 (12.9)     | 0.072| 101 (14.4)      | 79 (11.3)     | 0.094|
| Heart failure                        | 310 (6.2)       | 91 (13.0)     | 0.234| 87 (12.4)       | 91 (13.0)     | 0.017|
| Stroke                               | 355 (7.1)       | 101 (14.4)    | 0.240| 98 (14.0)       | 92 (13.2)     | 0.025|
| Arthritis                            | 2563 (51.0)     | 345 (49.4)    | 0.033| 389 (55.7)      | 369 (52.8)    | 0.057|
| Urinary incontinence                | 1378 (27.4)     | 223 (31.9)    | 0.098| 240 (34.3)      | 225 (32.2)    | 0.046|
| Bad vision                           | 444 (8.8)       | 72 (10.3)     | 0.050| 67 (9.6)        | 72 (10.3)     | 0.024|
| Hearing problem                      | 1083 (21.6)     | 201 (28.8)    | 0.166| 211 (30.2)      | 174 (24.9)    | 0.119*|
| **Physical performance**             |                 |               |      |                 |               |      |
| z-score hand grip strength           | 0.01 (1.00)     | -0.07 (0.98)  | 0.083| -0.08 (0.97)    | -0.06 (0.98)  | 0.012|
| **Cognitive status and depression**  |                 |               |      |                 |               |      |
| MMSE (0-30)                          | 27.71 (2.43)    | 27.73 (2.10)  | 0.008| 27.69 (2.19)    | 27.73 (2.10)  | 0.017|
| Z-score depressive symptoms          | -0.00 (0.99)    | 0.09 (1.03)   | 0.094| 0.09 (1.00)     | 0.08 (1.01)   | 0.019|
| **Blood measurements**               |                 |               |      |                 |               |      |
| Vitamin D deficiency, yes            | 2345 (46.7)     | 343 (49.1)    | 0.048| 365 (52.2)      | 341 (48.8)    | 0.069|
| **Medication**                       |                 |               |      |                 |               |      |
| Number of used medication            | 2.69 (2.31)     | 5.10 (2.07)   | 0.099| 5.19 (2.10)     | 5.10 (2.07)   | 0.043|
| Anticholinergics                     | 203 (4.0)       | 31 (4.4)      | 0.020| 35 (5.0)        | 31 (4.4)      | 0.027|
| Opioids                              | 129 (2.6)       | 14 (2.0)      | 0.038| 16 (2.3)        | 14 (2.0)      | 0.020|
| Alpha blocker BPH                    | 254 (5.1)       | 41 (5.9)      | 0.036| 47 (6.7)        | 41 (5.9)      | 0.035|
| Alpha blocker AH                     | 55 (1.1)        | 29 (4.1)      | 0.192| 19 (2.7)        | 29 (4.1)      | 0.079|
| Antidepressants                      | 215 (4.3)       | 35 (5.0)      | 0.035| 36 (5.2)        | 35 (5.0)      | 0.007|
| Antiepileptics                       | 95 (1.9)        | 13 (1.9)      | 0.002| 16 (2.3)        | 13 (1.9)      | 0.030|
| Antihistamines                       | 99 (2.0)        | 17 (2.4)      | 0.031| 19 (2.7)        | 17 (2.4)      | 0.018|
| Antipsychotic                        | 47 (0.9)        | 8 (1.1)       | 0.021| 7 (1.0)         | 8 (1.1)       | 0.014|
| Incontinence medication              | 65 (1.3)        | 11 (1.6)      | 0.024| 9 (1.3)         | 11 (1.6)      | 0.024|
| Cardiac vasodilators                 | 198 (3.9)       | 78 (11.2)     | 0.276| 78 (11.2)       | 78 (11.2)     | <0.001|
| Diuretics                            | 1032 (20.5)     | 269 (38.5)    | 0.401| 276 (39.5)      | 269 (38.5)    | 0.021|
| Benzodiazepines and-related          | 363 (7.2)       | 57 (8.2)      | 0.035| 59 (8.4)        | 57 (8.2)      | 0.010|
| AT 2 Blocker                         | 463 (9.2)       | 166 (23.7)    | 0.399| 151 (21.6)      | 166 (23.7)    | 0.051|
| Ace inhibitors                       | 707 (14.1)      | 170 (24.3)    | 0.262| 175 (25.0)      | 170 (24.3)    | 0.017|
| Beta-blockers                        | 1088 (21.7)     | 318 (45.5)    | 0.522| 320 (45.8)      | 318 (45.5)    | 0.006|

MMSE: mini-mental state examination, SMD: Standardized mean difference. *-unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 5. Baseline characteristics by Angiotensin II receptor blocker use

| Characteristics                  | Before matching |   | After matching |   |   |
|----------------------------------|-----------------|---|----------------|---|---|
|                                  | Non-users (n=3,660) | Users (n=629) | SMD | Non-users (n=629) | Users (n=629) | SMD |
| Age, years                       | 74.35 (6.54)     | 74.93 (6.62) | 0.088 | 75.36 (6.70) | 74.93 (6.62) | 0.065 |
| Gender, female                   | 17               | 2470 (47.2) | 0.074 | 320 (50.9) | 320 (50.9) | 0.013 |
| B-PROOF (not ActiFE-Ulm)         | 1245 (65.7)      | 507 (80.6) | 0.341 | 481 (76.5) | 507 (80.6) | 0.101* |
| Community-dwelling, no           | 128 (3.5)        | 47 (7.5) | 0.175 | 32 (5.1) | 21 (3.3) | 0.087 |
| History of falls, yes            | 1257 (34.3)      | 234 (37.2) | 0.060 | 213 (33.9) | 222 (35.3) | 0.030 |
| History of recurrent falls, yes  | 446 (12.2)       | 100 (15.9) | 0.107 | 73 (11.6) | 98 (15.6) | 0.116* |
| MMSE                             | 0.76             | 0.276       | 0.134* |
| Calcium channel blockers         | 1.2              | 0.309       | 0.018 |
| Antiepileptics                   | 1.0              | 0.012       | 0.016 |
| Antidepressants                  | 1.1              | 0.037       | 0.009 |
| Antipsychotic                    | 1.2              | 0.008       | <0.001 |
| Antihistamines                   | 1.2              | 0.100       | 1 (0.2) |
| Incontinence medication          | 1.2              | 0.090       | 1 (0.2) |
| Cardiac vasodilators             | 1.2              | 0.120       | 40 (6.4) |
| Diuretics                        | 1.2              | 0.724       | 266 (42.3) |
| Benzodiazepines and related      | 1.2              | 0.009       | 35 (5.6) |
| Calcium channel blockers         | 1.2              | 0.379       | 160 (25.4) |
| Beta-blockers                    | 1.2              | 0.309       | 243 (38.6) |
| ACE inhibitors                   | 1.2              | 0.524       | 15 (2.4) |

**MMSE:** mini-mental state examination, SMD: Standardized mean difference. *unbalanced variable in 1/5 imputed datasets. **unbalanced variable in 5/5 imputed datasets. ***unbalanced variable in 4/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
## Supplementary Table 6. Baseline characteristics by Low ceiling diuretic use

| Characteristics                        | Before matching | After matching | SMD      |
|----------------------------------------|-----------------|----------------|----------|
|                                        | Non-users (n=831)| Users (n=891)  | Non-users (SMD) |
| Age, years                             | 74.57 (6.56)    | 74.72 (6.57)   | 0.22     |
| Gender, female                         | 2260 (46.8)     | 525 (58.9)     | 0.245    |
| Cohort                                 | 0.480           | 0.079          |          |
| LASA C                                 | 1262 (26.1)     | 171 (19.2)     | 181 (20.3) |
| ActiFE-ULM                             | 1274 (26.4)     | 103 (11.6)     | 123 (13.8) |
| B-PROOF                                | 2295 (47.5)     | 617 (69.2)     | 587 (65.9) |
| Community-dwelling, no                 | 182 (3.8)       | 49 (5.5)       | 58 (6.5)  |
| History of falls, yes                  | 1624 (33.6)     | 287 (32.2)     | 291 (32.7) |
| History of falls, yes                  | 630 (13.0)      | 127 (14.3)     | 129 (14.5) |
| Fear of falling                        | 0.221           | 0.079          |          |
| Not afraid                             | 2406 (49.8)     | 348 (39.1)     | 388 (43.5) |
| Somewhat afraid                        | 1814 (37.5)     | 419 (47.0)     | 364 (40.9) |
| Accepted                               | 611 (12.6)      | 124 (13.9)     | 139 (15.6) |
| Obese, yes                             | 929 (19.2)      | 303 (34.0)     | 299 (33.6) |
| Underweight, yes                       | 40 (0.8)        | 1 (0.1)        | 1 (0.1)   |
| Alcohol use                            | 0.123           | 0.046          |          |
| Non-drinker                            | 633 (13.1)      | 136 (15.3)     | 131 (14.7) |
| drinking <1/month                      | 534 (11.1)      | 123 (13.8)     | 119 (13.4) |
| 1-3 times/month                        | 716 (14.8)      | 119 (13.4)     | 122 (13.7) |
| 1-4 days/week                          | 1272 (26.3)     | 237 (26.6)     | 253 (28.4) |
| Daily                                  | 1676 (34.7)     | 276 (31.0)     | 266 (29.9) |
| Comorbidities and risk factors         |                 |                |          |
| Diabetes                               | 455 (9.4)       | 141 (15.8)     | 140 (15.7) |
| Arrhythmia                             | 509 (10.5)      | 81 (9.1)       | 100 (11.2) |
| Heart failure                          | 348 (7.2)       | 69 (7.7)       | 53 (5.9)  |
| Stroke                                 | 368 (7.6)       | 96 (10.8)      | 94 (10.5) |
| Arthritis                              | 2431 (50.3)     | 534 (59.9)     | 483 (54.2) |
| Urinary incontinence                   | 1418 (29.4)     | 321 (36.0)     | 316 (35.5) |
| Bad vision, yes                        | 486 (10.1)      | 71 (8.0)       | 83 (9.3)  |
| Hearing problem, yes                   | 1128 (23.3)     | 170 (19.1)     | 105 (21.3) |
| Physical performance                   |                 |                |          |
| z-score hand grip strength             | 0.03 (1.00)     | -0.13 (0.98)   | -0.11 (0.97) |
| Cognitive status and depression        |                 |                |          |
| MMSE (0-30)                            | 27.67 (2.44)    | 27.92 (2.06)   | 27.89 (2.21) |
| Z-score depressive symptoms            | 0.02 (1.02)     | -0.01 (0.94)   | 0.02 (0.95) |
| Blood measurements                     |                 |                |          |
| Vitamin D deficiency, yes              | 2238 (46.3)     | 450 (50.5)     | 447 (50.2) |
| Medication                             |                 |                |          |
| Number of used medication              | 2.70 (2.35)     | 4.52 (2.19)    | 4.48 (2.28) |
| Anticholinergics                       | 200 (4.1)       | 34 (3.8)       | 33 (3.7)  |
| Opioids                                | 109 (2.3)       | 34 (3.8)       | 33 (3.7)  |
| Alpha blocker BPH                      | 262 (5.4)       | 33 (3.7)       | 33 (3.7)  |
| Alpha blocker AH                       | 46 (1.0)        | 38 (4.3)       | 32 (3.6)  |
| Antidepressants                        | 221 (4.6)       | 29 (3.3)       | 29 (3.3)  |
| Antiepileptics                         | 90 (1.9)        | 18 (2.0)       | 18 (2.0)  |
| Antistimulants                         | 99 (2.0)        | 17 (1.9)       | 16 (1.8)  |
| Antipsychic                            | 46 (1.0)        | 9 (1.0)        | 15 (1.7)  |
| Incontinence medication                | 59 (1.2)        | 17 (1.9)       | 17 (1.9)  |
| Cardiac vasodilators                   | 236 (4.9)       | 40 (4.5)       | 46 (5.2)  |
| High ceiling diuretics                 | 369 (7.6)       | 25 (2.8)       | 31 (3.5)  |
| Benzodiazepines and- related           | 341 (7.1)       | 79 (8.9)       | 79 (8.9)  |
| AT 2 Blocker                           | 366 (7.6)       | 263 (29.5)     | 219 (24.6) |
| Ace inhibitors                         | 630 (13.0)      | 247 (27.7)     | 278 (31.2) |
| Calcium channel blockers               | 521 (10.8)      | 178 (20.0)     | 180 (20.2) |
| Beta blockers                          | 1041 (21.5)     | 365 (41.0)     | 377 (42.3) |

**Note:** MMSE: mini-state examination, SMD: Standardized mean difference. *unbalanced variable in S5 imputed datasets. **unbalanced variable in S5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 7. Baseline characteristics by High ceiling diuretic use

| Characteristics | Before matching | | | | After matching | | |
|-----------------|----------------|------|------|------|----------------|------|------|
|                 | Non-users (n=5,328) | Users (n=394) | SMD | Non-users (n=394) | Users (n=394) | SMD |
| **Comorbidities and risk factors** | | | | | | | |
| Diabetes        | 511 (9.6) | 85 (21.6) | 0.335 | 86 (21.8) | 79 (20.1) | 0.044 |
| Arrhythmia      | 473 (8.9) | 111 (28.2) | 0.513 | 80 (20.3) | 112 (28.2) | 0.184 |
| Heart failure   | 300 (5.6) | 101 (25.6) | 0.573 | 92 (23.4) | 102 (25.9) | 0.059 |
| Stroke          | 383 (7.2) | 73 (18.5) | 0.344 | 63 (16.0) | 73 (18.5) | 0.067 |
| Arthritis       | 2665 (50.0) | 227 (57.6) | 0.153 | 204 (51.8) | 192 (48.7) | 0.061 |
| Urinary incontinence | 1563 (29.3) | 176 (44.7) | 0.322 | 165 (41.9) | 176 (44.7) | 0.056 |
| Bad vision, yes | 425 (8.0) | 70 (17.8) | 0.296 | 51 (12.9) | 68 (17.3) | 0.121 |
| Hearing problem, yes | 1051 (19.7) | 156 (39.6) | 0.446 | 135 (34.3) | 160 (40.6) | 0.131 |
| **Physical performance** | | | | | | | |
| Hand grip strength (kg) | 0.03 (1.00) | -0.38 (0.95) | 0.422 | -0.32 (0.92) | -0.38 (0.95) | 0.064 |
| **MMSE (0-30)** | 27.80 (2.29) | 26.64 (3.32) | 0.406 | 27.10 (3.12) | 26.64 (3.32) | 0.143 |
| **Z-score depressive symptoms** | -0.02 (0.99) | 0.43 (1.17) | 0.412 | 0.43 (1.20) | 0.41 (1.14) | 0.020 |
| **Blood measurements** | | | | | | | |
| Vitamin D deficiency | 2446 (45.9) | 243 (61.7) | 0.320 | 247 (62.7) | 240 (60.9) | 0.037 |
| **Medication** | | | | | | | |
| Number of used medication | 2.76 (2.30) | 6.01 (1.89) | 1.541 | 5.89 (1.97) | 6.01 (1.89) | 0.058 |
| Anticholinergics | 211 (4.0) | 23 (5.8) | 0.087 | 22 (5.6) | 23 (5.8) | 0.011 |
| Opioids         | 118 (2.2) | 25 (6.3) | 0.205 | 25 (6.3) | 25 (6.3) | <0.001 |
| Alpha blocker BPH | 267 (5.0) | 28 (7.1) | 0.088 | 30 (7.6) | 28 (7.1) | 0.019 |
| Alpha blocker AH | 71 (1.3) | 13 (3.3) | 0.131 | 10 (2.5) | 13 (3.3) | 0.045 |
| Antidepressants | 221 (4.1) | 29 (7.4) | 0.138 | 21 (5.3) | 29 (7.4) | 0.083 |
| Antiepileptics  | 90 (1.7) | 18 (4.6) | 0.166 | 18 (4.6) | 18 (4.6) | <0.001 |
| Antihistamines  | 106 (2.0) | 10 (2.5) | 0.037 | 9 (2.3) | 10 (2.5) | 0.017 |
| Antipsychotic   | 47 (0.9) | 8 (2.0) | 0.096 | 6 (1.5) | 8 (2.0) | 0.038 |
| Incontinence medication | 69 (1.3) | 7 (1.8) | 0.039 | 8 (2.0) | 7 (1.8) | 0.019 |
| Cardiac vasodilators | 193 (3.6) | 83 (21.1) | 0.550 | 70 (17.8) | 83 (21.1) | 0.083 |
| Low ceiling diuretics | 866 (16.3) | 25 (6.3) | 0.317 | 23 (5.8) | 46 (11.7) | 0.021 |
| Benzoaizepines and- related | 374 (7.0) | 46 (11.7) | 0.160 | 41 (10.4) | 46 (11.7) | 0.041 |
| Calcium channel blockers | 608 (11.4) | 91 (23.1) | 0.313 | 93 (23.6) | 91 (23.1) | 0.012 |
| Beta-blockers | 1227 (23.0) | 179 (45.4) | 0.486 | 189 (48.0) | 179 (45.4) | 0.051 |
| Ace inhibitors | 732 (13.7) | 145 (36.8) | 0.550 | 136 (34.5) | 145 (36.8) | 0.048 |
| AT2 blockers | 570 (10.7) | 59 (15.0) | 0.128 | 64 (16.2) | 59 (15.0) | 0.035 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. *unbalanced variable in 5/5 imputed datasets. a unbalanced variable in 1/5 imputed datasets. #unbalanced variable in 3/5 imputed datasets. &unbalanced variable in 4/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 8. Baseline characteristics by Beta-blocker use

| Characteristics                                      | Before matching | After matching | SMD  |
|-------------------------------------------------------|-----------------|----------------|------|
|                                                        | Non-users (n=1,316) | Users (n=1,406) | SMD  |
|                                                        |                  |                |      |
| Age, years                                            | 74.42 (6.60)     | 75.13 (6.43)   | 0.110|
| Gender, female                                        | 2097 (48.6)      | 688 (48.9)     | 0.007|
| Cohort                                                | 0.297            |                |      |
| LASA C                                                | 1202 (27.8)      | 231 (16.4)     | 0.256|
| ActiFE-ULM                                            | 953 (22.1)       | 424 (30.2)     | 0.238|
| B-PROOF                                               | 2161 (50.1)      | 751 (53.4)     | 0.145|
| Community-dwelling, no                                | 169 (3.9)        | 46 (3.3)       | 0.035|
| History of falls, yes                                 | 142 (33.0)       | 505 (35.9)     | 0.062|
| History of recurrent falls, yes                       | 562 (13.0)       | 195 (13.9)     | 0.025|
| Fear of falling                                       | 0.172            |                |      |
| Not afraid                                            | 2204 (51.1)      | 618 (44.0)     | 0.289|
| Somewhat afraid                                       | 1598 (37.0)      | 550 (39.1)     | 0.126|
| Very afraid                                           | 514 (11.9)       | 238 (16.9)     | 0.107|
| Obese, yes                                            | 811 (18.8)       | 421 (29.9)     | 0.091|
| Underweight, yes                                      | 38 (0.9)         | 3 (0.2)        | 0.121|
| Alcohol use                                           |                  |                |      |
| Non-drinker                                           | 577 (13.4)       | 193 (13.7)     | 0.192|
| drinking <1/month                                     | 474 (11.0)       | 188 (13.4)     | 0.187|
| 1-3 times/month                                       | 602 (13.9)       | 229 (16.3)     | 0.142|
| 1-4 days/week                                         | 1142 (26.5)      | 364 (25.9)     | 0.128|
| Daily                                                 | 1521 (35.2)      | 432 (30.7)     | 0.123|
| Comorbidities and risk factors                        |                  |                |      |
| Diabetes                                              | 362 (8.4)        | 234 (16.6)     | 0.251|
| Arrhythmia                                            | 357 (8.3)        | 263 (18.7)     | 0.309|
| Heart failure                                         | 216 (5.0)        | 201 (14.3)     | 0.319|
| Stroke                                                | 311 (7.2)        | 163 (11.6)     | 0.151|
| Arthritis                                             | 2195 (50.9)      | 770 (54.8)     | 0.078|
| Urinary incontinence                                  | 1156 (26.8)      | 490 (34.9)     | 0.175|
| Bad vision, yes                                       | 341 (7.9)        | 154 (11.0)     | 0.105|
| Hearing problem, yes                                  | 899 (20.8)       | 369 (26.2)     | 0.128|
| Physical performance                                  |                  |                |      |
| z-score hand grip strength                            | 0.03 (1.01)      | -0.07 (0.97)   | 0.095|
| MMSE (0-30)                                           | 27.69 (2.47)     | 27.80 (2.16)   | 0.051|
| Z-score depressive symptoms                           | -0.03 (0.98)     | 0.12 (1.05)    | 0.142|
| Blood measurements                                    |                  |                |      |
| Vitamin B deficiency, yes                             | 2013 (46.6)      | 677 (48.2)     | 0.030|
| Medication                                            |                  |                |      |
| Number of used medication                             | 2.38 (2.20)      | 4.85 (2.06)    | 1.157|
| Anticholinergics                                      | 170 (3.9)        | 64 (4.6)       | 0.030|
| Opioids                                               | 106 (2.5)        | 37 (2.6)       | 0.011|
| Alpha blocker BPH                                      | 210 (4.9)        | 85 (6.0)       | 0.052|
| Alpha blocker AH                                      | 48 (1.1)         | 36 (2.6)       | 0.108|
| Antidepressants                                       | 181 (4.2)        | 69 (4.9)       | 0.034|
| Antiepileptics                                        | 78 (1.8)         | 30 (2.1)       | 0.023|
| Antihistamines                                        | 90 (2.1)         | 26 (1.8)       | 0.017|
| Antipsychotic                                         | 45 (1.0)         | 10 (0.7)       | 0.036|
| Incontinence medication                               | 51 (1.2)         | 25 (1.8)       | 0.049|
| Cardiac vasodilators                                  | 119 (2.8)        | 157 (11.2)     | 0.335|
| Diuretics                                             | 752 (17.4)       | 549 (39.0)     | 0.495|
| Benzodiazepines and-related                           | 323 (7.5)        | 97 (6.9)       | 0.023|
| AT 2 Blocker                                          | 380 (8.8)        | 249 (17.7)     | 0.265|
| Ache inhibitors                                       | 501 (11.6)       | 376 (26.7)     | 0.392|
| Calcium channel blockers                              | 381 (8.8)        | 318 (22.6)     | 0.386|

**MMSE:** mini-mental state examination, **SMD:** Standardized mean difference. *unbalanced variable in 5/5 imputed datasets. **unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
## Supplementary Table 9. Baseline characteristics by Statin use

| Characteristics                        | Before matching | After matching | SMD  |
|----------------------------------------|-----------------|----------------|------|
|                                        | Non-users (n=1,574) | Users (n=1,148) | SMD  |
| Age, years                             | 74.65 (6.65)     | 74.38 (6.21)   | 0.042|
| Gender, female                         | 2280 (49.8)      | 505 (44.0)     | 0.118|
| Cohort                                 | 0.681           | 0.722          |      |
| LASA C                                 | 1371 (30.0)      | 62 (5.4)       | 0.018|
| ActiFE-ULM                             | 1015 (22.2)      | 362 (31.5)     | 0.085|
| B-PROOF                                | 2188 (47.8)      | 724 (63.1)     | 0.037|
| Community-dwelling, no                 | 174 (3.8)        | 73 (6.4)       | 0.019|
| History of falls, yes                  | 1532 (33.5)      | 402 (35.1)     | 0.083|
| History of recurrent falls, yes        | 605 (13.2)       | 138 (12.0)     | 0.036|
| Fear of falling                        | 0.135           | 0.089          |      |
| Not afraid                             | 2215 (48.4)      | 533 (46.4)     | 0.059|
| Somewhat afraid                        | 1739 (38.0)      | 403 (35.1)     | 0.077|
| Very afraid                            | 620 (13.6)       | 212 (18.5)     | 0.074|
| Obese, yes                            | 900 (19.7)       | 327 (28.5)     | 0.057|
| Underweight, yes                      | 40 (0.9)         | 1 (0.1)        | 0.036|
| Alcohol use                            | 0.077           | 0.368          |      |
| Non-drinker                            | 627 (13.7)       | 142 (12.4)     | 0.072|
| drinking <1/month                     | 532 (11.6)       | 124 (10.8)     | 0.024|
| 1-3 times/month                       | 643 (14.1)       | 187 (16.3)     | 0.025|
| 1-4 days/week                         | 1220 (26.7)      | 295 (25.7)     | 0.074|
| Daily                                 | 1552 (33.9)      | 400 (34.8)     | 0.090|
| Comorbidities and risk factors         |                 |                |      |
| Diabetes                               | 311 (6.8)        | 277 (24.1)     | 0.494|
| Arrhythmia                             | 455 (9.9)        | 145 (12.6)     | 0.085|
| Heart failure                          | 289 (6.3)        | 128 (11.1)     | 0.172|
| Stroke                                | 302 (6.6)        | 172 (15.0)     | 0.273|
| Arthritis                              | 2360 (51.6)      | 548 (47.7)     | 0.077|
| Bad vision, yes                       | 391 (8.5)        | 127 (11.1)     | 0.085|
| Hearing problem, yes                  | 1004 (22.0)      | 280 (24.4)     | 0.058|
| Hypertension                          | 830 (18.1)       | 292 (25.6)     | 0.177|
| Dizziness                             | 840 (18.4)       | 271 (23.6)     | 0.129|
| Incontinence                          | 1223 (26.7)      | 413 (36.0)     | 0.200|
| Cognitive status and depression        |                 |                |      |
| MMSE (0-30)                            | 27.65 (2.47)     | 27.98 (2.05)   | 0.145|
| Z-score depressive symptoms           | -0.00 (1.00)     | 0.05 (1.00)    | 0.050|
| Blood measurements                     |                 |                |      |
| Vitamin D deficiency                  | 2139 (46.8)      | 551 (48.0)     | 0.025|
| Medication                            |                 |                |      |
| Number of used medication             | 2.44 (2.18)      | 5.15 (2.05)    | 1.276|
| Anticholinergics                      | 174 (3.8)        | 60 (5.2)       | 0.069|
| Opioids                               | 105 (2.3)        | 38 (3.3)       | 0.061|
| Alpha blocker BPH                     | 198 (4.3)        | 97 (8.4)       | 0.169|
| Alpha blocker AH                      | 58 (1.3)         | 26 (2.3)       | 0.076|
| Antidepressants                       | 183 (4.0)        | 67 (5.8)       | 0.085|
| Antiepileptics                        | 75 (1.6)         | 33 (2.9)       | 0.083|
| Antihistamines                        | 95 (2.1)         | 21 (1.8)       | 0.018|
| Antipsychotic                         | 46 (1.0)         | 9 (0.8)        | 0.024|
| Incontinence medication               | 54 (1.2)         | 22 (1.9)       | 0.060|
| Cardiac vasodilators                  | 180 (3.9)        | 96 (8.4)       | 0.185|
| Diuretics                             | 906 (19.8)       | 395 (34.4)     | 0.333|

**MMSE:** mini-mental state examination, **SMD:** Standardized mean difference. *Unbalanced variable in 5/5 imputed datasets. †Unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 10. Baseline characteristics by Alpha blocker used for prostate hyperplasia use

| Characteristics                          | Before matching | After matching |
|------------------------------------------|-----------------|---------------|
|                                          | Non-users       | Users         | SMD | Non-users       | Users         | SMD |
|                                          | (n=5,427)       | (n=295)       |     | (n=295)       | (n=295)       |     |
| **Comorbidities and risk factors**       |                 |               |     |                 |               |     |
| Diabetes                                | 544 (10.0)      | 46 (15.6)     | 0.167 | 45 (15.3)     | 43 (14.6)     | 0.019 |
| Arrhythmia                              | 550 (10.1)      | 50 (16.9)     | 0.200 | 37 (12.5)     | 50 (16.9)     | 0.125* |
| Heart failure                           | 379 (7.0)       | 38 (12.9)     | 0.198 | 33 (11.2)     | 32 (10.8)     | 0.011 |
| Stroke                                  | 437 (8.1)       | 37 (12.5)     | 0.148 | 30 (10.2)     | 35 (11.9)     | 0.054 |
| Arthritis                               | 2649 (48.6)     | 110 (37.3)    | 0.234 | 122 (41.4)    | 141 (47.8)    | 0.130* |
| Urinary incontinence                    | 1539 (28.4)     | 62 (21.0)     | 0.171 | 70 (23.7)     | 84 (28.5)     | 0.108* |
| Bad vision, yes                         | 474 (8.7)       | 42 (14.2)     | 0.173 | 30 (10.2)     | 39 (13.2)     | 0.095 |
| Hearing problem, yes                    | 1192 (22.0)     | 92 (31.2)     | 0.210 | 91 (30.8)     | 75 (25.4)     | 0.121* |
| **Physical performance**                |                 |               |     |                 |               |     |
| z-score hand grip strength              | -0.03 (0.99)    | 0.63 (0.82)   | 0.718 | 0.63 (0.87)    | 0.62 (0.82)   | 0.012 |
| **Cognitive status and depression**     |                 |               |     |                 |               |     |
| MMSE (0-30)                             | 27.70 (2.40)    | 27.88 (2.08)  | 0.080 | 27.90 (1.91)  | 27.83 (2.07)  | 0.034 |
| Z-score depressive symptoms             | 0.01 (1.01)     | 0.01 (1.01)   | 0.016 | 0.06 (1.02)    | -0.00 (0.95)  | 0.069 |
| **Blood measurements**                  |                 |               |     |                 |               |     |
| Vitamin D deficiency, yes               | 544 (10.0)      | 46 (15.6)     | 0.167 | 133 (45.1)    | 135 (45.8)    | 0.014 |
| **Medication**                          |                 |               |     |                 |               |     |
| Number of used medication               | 2.90 (2.39)     | 4.61 (2.22)   | 0.742 | 4.60 (2.34)    | 4.61 (2.22)   | 0.003 |
| Anticholinergics                        | 219 (4.0)       | 15 (5.1)      | 0.050 | 9 (3.1)       | 15 (5.1)      | 0.103* |
| Opioids                                 | 135 (2.5)       | 8 (2.7)       | 0.014 | 11 (3.7)      | 8 (2.7)       | 0.058 |
| Alpha blocker AH                        | 81 (1.5)        | 3 (1.0)       | 0.043 | 6 (2.0)       | 3 (1.0)       | 0.083 |
| Antidepressants                         | 238 (4.4)       | 12 (4.1)      | 0.016 | 7 (2.4)       | 12 (4.1)      | 0.096 |
| Antiepileptics                          | 96 (1.8)        | 12 (4.1)      | 0.137 | 13 (4.4)      | 12 (4.1)      | 0.017 |
| Antihistamines                          | 111 (2.0)       | 5 (1.7)       | 0.026 | 4 (1.4)       | 5 (1.7)       | 0.028 |
| Antipsychotic                           | 49 (0.9)        | 6 (2.0)       | 0.094 | 6 (2.0)       | 6 (2.0)       | <0.001 |
| Incontinence medication                 | 66 (1.2)        | 10 (3.4)      | 0.145 | 6 (2.0)       | 10 (3.4)      | 0.084 |
| Cardiac vasodilators                    | 265 (4.9)       | 11 (3.7)      | 0.057 | 12 (4.1)      | 11 (3.7)      | 0.018 |
| Diuretics                               | 1238 (22.8)     | 63 (21.4)     | 0.035 | 59 (20.0)     | 63 (21.4)     | 0.033 |
| Benzodiazepines and-related             | 409 (7.5)       | 11 (3.7)      | 0.166 | 10 (3.4)      | 11 (3.7)      | 0.018 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. *unbalanced variable in 5/5 imputed datasets. ≥unbalanced variable in 1/5 imputed datasets. ≥unbalanced variable in 2/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 11. Baseline characteristics by Nonsteroidal anti-inflammatory drugs use

| Characteristics                                      | Before matching | After matching |
|------------------------------------------------------|----------------|---------------|
|                                                      | Non-users (n)  | Users (n) | Non-users (n=449) | Users (n=449) |
|                                                      |                |            |                |               |
| Age, years                                           | 74.56 (6.56)   | 75.07 (6.63) | 75.33 (6.56)   | 75.07 (6.63) |
| Gender, female                                       | 2478 (47.0)    | 307 (68.4)  | 299 (66.6)     | 307 (68.4)    |
| Cohort                                               | 0.318          |            | 0.078          | 0.038         |
| LASA C                                               | 1291 (24.5)    | 142 (31.6)  | 155 (34.5)     | 142 (31.6)    |
| ActiFE-ULM                                           | 1234 (23.4)    | 143 (31.8)  | 129 (28.7)     | 143 (31.8)    |
| B-PROOF                                              | 2748 (52.1)    | 164 (36.5)  | 165 (36.7)     | 164 (36.5)    |
| Community-dwelling, yes                              | 193 (3.7)      | 21 (4.7)    | 0.051          | 21 (4.7)      |
| History of falls, yes                                | 1722 (32.8)    | 174 (38.8)  | 187 (41.6)     | 194 (39.1)    |
| History of recurrent falls, yes                      | 655 (12.4)     | 188 (40.6)  | 0.197          | 96 (21.4)     |
| Fear of falling                                      | 0.336          |            | 0.181          |               |
| Not afraid                                           | 2650 (50.3)    | 158 (35.2)  | 150 (33.4)     | 179 (39.9)    |
| Somewhat afraid                                      | 2001 (37.9)    | 199 (44.3)  | 221 (49.2)     | 181 (40.3)    |
| Very afraid                                          | 622 (11.8)     | 92 (20.5)   | 78 (17.4)      | 89 (19.8)     |
| Obese, yes                                           | 1070 (20.3)    | 162 (36.1)  | 0.356          | 155 (34.5)    |
| Underweight, yes                                     | 38 (0.7)       | 3 (0.7)     | 0.006          | 3 (0.7)       |
| Alcohol use                                          | 0.248          |            | 0.036          |               |
| Non-drinker                                          | 689 (13.1)     | 80 (17.8)   | 79 (17.6)      | 81 (18.0)     |
| drinking <1/month                                    | 589 (11.2)     | 68 (15.1)   | 70 (15.6)      | 67 (14.9)     |
| 1-3 times/month                                      | 752 (14.3)     | 79 (17.6)   | 79 (17.6)      | 79 (17.6)     |
| 1-4 days/week                                        | 1418 (26.9)    | 93 (20.7)   | 88 (19.6)      | 93 (20.7)     |
| Daily                                                | 1825 (34.6)    | 129 (28.7)  | 133 (29.6)     | 129 (28.7)    |
| Comorbidities and risk factors                       |                |            |                |               |
| Diabetes                                             | 540 (10.2)     | 50 (11.1)   | 0.029          | 45 (10.0)     |
| Arrhythmia                                           | 564 (10.7)     | 56 (12.5)   | 0.056          | 55 (12.2)     |
| Heart failure                                        | 367 (7.0)      | 34 (7.6)    | 0.024          | 30 (6.7)      |
| Stroke                                               | 424 (8.0)      | 32 (7.1)    | 0.035          | 38 (8.5)      |
| Arthritis                                            | 2404 (45.6)    | 355 (79.1)  | 0.736          | 330 (73.5)    |
| Urinary incontinence                                 | 1416 (26.9)    | 185 (41.2)  | 0.306          | 168 (37.4)    |
| Bad vision, yes                                      | 500 (9.5)      | 57 (12.7)   | 0.102          | 56 (12.5)     |
| Hearing problem, yes                                 | 1167 (22.1)    | 121 (26.9)  | 0.114          | 114 (25.4)    |
| Pain                                                 | 2309 (43.8)    | 348 (77.5)  | 0.735          | 353 (78.6)    |
| Physical performance                                 |                |            |                |               |
| Balance, able                                        | 3801 (72.1)    | 289 (64.4)  | 0.166          | 287 (63.9)    |
| Cognitive status and depression                      |                |            |                |               |
| MMSE (0-30)                                          | 27.73 (2.38)   | 27.47 (2.49) | 0.109          | 27.55 (2.43)  |
| Z-score depressive symptoms                          | -0.01 (0.99)   | 0.24 (1.08) | 0.248          | 0.19 (1.04)   |
| Blood measurements                                   |                |            |                |               |
| Vitamin D deficiency                                 | 2445 (46.4)    | 245 (54.6)  | 0.165          | 238 (53.0)    |
| Medication                                           |                |            |                |               |
| Number of used medication                            | 2.86 (2.38)    | 4.53 (2.28) | 0.717          | 4.56 (2.51)   |
| Anticholinergics                                     | 202 (3.8)      | 32 (7.1)    | 0.145          | 30 (6.7)      |
| Opioids                                              | 108 (2.0)      | 35 (7.8)    | 0.268          | 39 (8.7)      |
| Alpha blocker BPH                                    | 274 (5.2)      | 21 (4.7)    | 0.024          | 20 (4.5)      |
| Alpha blocker AH                                     | 73 (1.4)       | 11 (2.4)    | 0.078          | 11 (2.4)      |
| Antidepressants                                      | 221 (4.2)      | 29 (6.5)    | 0.101          | 32 (7.1)      |
| Antiepileptics                                       | 92 (1.7)       | 16 (3.6)    | 0.113          | 21 (4.7)      |
| Antihistamines                                       | 97 (1.8)       | 19 (4.2)    | 0.140          | 14 (3.1)      |
| Antipsychotic                                        | 52 (1.0)       | 3 (0.7)     | 0.035          | 3 (0.7)       |
| Incontinence medication                              | 63 (1.2)       | 13 (2.9)    | 0.120          | 11 (2.4)      |
| Cardiac vasodilators                                 | 258 (4.9)      | 18 (4.0)    | 0.043          | 17 (3.8)      |
| Diuretics                                            | 1180 (22.4)    | 121 (26.9)  | 0.106          | 112 (24.9)    |
| Benzodiazepines and- related                         | 352 (6.7)      | 29 (6.5)    | 0.276          | 70 (15.6)     |

MMSE: mini-mental state examination, SMD: Standardized mean difference. * unbalanced variable in 1/5 datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 12. Baseline characteristics by Benzodiazepine and –related drugs use

| Characteristics                          | Before matching | After matching |
|-----------------------------------------|----------------|---------------|
|                                        | Non-users (n=5,302) | Users (n=420) | SMD | Non-users (n=420) | Users (n=420) | SMD |
| **Comorbidities and risk factors**      |                |               |     |                  |                |     |
| Diabetes                               | 550 (10.4)     | 47 (11.2)     | 0.026 | 39 (9.3)          | 47 (11.2)     | 0.063 |
| Arrhythmia                             | 553 (10.4)     | 62 (14.8)     | 0.131 | 59 (14.0)         | 52 (12.4)     | 0.049 |
| Heart failure                          | 360 (6.8)      | 41 (9.8)      | 0.108 | 33 (7.9)          | 41 (9.8)      | 0.067 |
| Stroke                                 | 410 (7.7)      | 49 (11.7)     | 0.133 | 41 (9.8)          | 48 (11.4)     | 0.054 |
| Arthritis                              | 2594 (48.9)    | 288 (68.6)    | 0.407 | 268 (63.8)        | 288 (68.6)    | 0.101* |
| Urinary incontinence                   | 1578 (29.8)    | 161 (38.3)    | 0.182 | 176 (41.9)        | 151 (36.0)    | 0.122* |
| Bad vision, yes                        | 461 (8.7)      | 57 (13.6)     | 0.156 | 64 (15.2)         | 49 (11.7)     | 0.105* |
| Hearing problem, yes                   | 1199 (22.6)    | 130 (31.0)    | 0.189 | 108 (25.7)        | 130 (31.0)    | 0.116* |
| Cognitive status and depression        | -0.04 (0.95)   | 0.67 (1.35)   | 0.614 | 0.61 (1.31)       | 0.67 (1.35)   | 0.051 |
| Z-score depressive symptoms            |                |               |     |                  |                |     |
| Blood measurements                     | 2441 (46.0)    | 252 (60.0)    | 0.283 | 242 (57.6)        | 250 (59.5)    | 0.039 |
| Vitamin D deficiency                   |                |               |     |                  |                |     |
| Medication                             | 2.85 (2.38)    | 4.66 (2.21)   | 0.785 | 4.61 (2.47)       | 4.66 (2.21)   | 0.019 |
| Anticholinergics                       | 189 (3.6)      | 45 (10.7)     | 0.280 | 48 (11.4)         | 45 (10.7)     | 0.023 |
| Opioids                                | 107 (2.0)      | 36 (8.6)      | 0.296 | 41 (9.8)          | 36 (8.6)      | 0.041 |
| Alpha blocker BPH                      | 284 (5.4)      | 11 (2.6)      | 0.140 | 8 (1.9)           | 11 (2.6)      | 0.048 |
| Alpha blocker AH                       | 78 (1.5)       | 6 (1.4)       | 0.004 | 7 (1.7)           | 6 (1.4)       | 0.019 |
| Antidepressants                        | 197 (3.7)      | 53 (12.6)     | 0.329 | 48 (11.4)         | 53 (12.6)     | 0.037 |
| Antiepileptics                         | 95 (1.8)       | 13 (3.1)      | 0.084 | 16 (3.8)          | 13 (3.1)      | 0.039 |
| Antihistamines                         | 99 (1.9)       | 17 (4.0)      | 0.129 | 17 (4.0)          | 17 (4.0)      | <0.001 |
| Antipsychotic                          | 40 (0.8)       | 15 (3.6)      | 0.195 | 16 (3.8)          | 15 (3.6)      | 0.013 |
| Incontinence medication                | 67 (1.3)       | 9 (2.1)       | 0.068 | 13 (3.1)          | 9 (2.1)       | 0.060 |
| Cardiac vasodilators                   | 235 (4.4)      | 41 (9.8)      | 0.209 | 45 (10.7)         | 41 (9.8)      | 0.031 |

**MMSE**: mini-mental state examination, **SMD**: Standardized mean difference. * unbalanced variable in 5/5 imputed datasets. ** unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
| Characteristics                          | Before matching | After matching | SMD  | Before matching | After matching | SMD  |
|-----------------------------------------|----------------|---------------|------|----------------|---------------|------|
|                                         | Non-users (n=4,890) | Users (n=832) | SMD  | Non-users (n=832) | Users (n=832) | SMD  |
| Age, years                              | 74.49 (6.53)     | 75.23 (6.72)  | 0.113| 75.32 (6.81)     | 75.23 (6.72)  | 0.013|
| Gender, female                          | 2305 (47.1)      | 480 (57.7)   | 0.213| 456 (54.8)       | 480 (57.7)    | 0.058|
| Cohort                                  | 0.731           |               |      | 0.731           |               |      |
| Cardiac vasodilators                    | 1396 (28.5)      | 37 (4.4)      | 0.37 | 37 (4.4)        |               |      |
| Incontinence medication                 | 1194 (24.4)      | 183 (22.0)    | 0.201| 183 (22.0)      |               |      |
| Alpha blocker AH                       | 2300 (47.0)      | 612 (73.6)    | 0.599| 612 (73.6)      |               |      |
| ActiFE-ULM                              | 176 (3.6)        | 71 (8.5)      | 0.208| 68 (8.2)        |               | 0.131b|
| B-PROOF                                 | 1623 (33.2)      | 329 (39.5)    | 0.132| 329 (39.5)      |               | 0.043|
| Community-dwelling, no                  | 631 (12.9)       | 134 (16.1)    | 0.091| 116 (13.9)      |               | 0.041|
| History of falls, yes                   | 0.418           |               |      | 0.418           |               | 0.093|
| Fear of falling                         | 2471 (50.5)      | 277 (33.3)    | 1.07 | 288 (34.6)      |               |      |
| Not afraid                              | 1803 (36.9)      | 353 (42.4)    | 0.077| 370 (44.5)      |               |      |
| Somewhat afraid                         | 616 (12.6)       | 155 (18.6)    | 0.202| 174 (20.9)      |               |      |
| Obese, yes                              | 987 (20.2)       | 247 (29.6)    | 0.218| 243 (29.2)      |               | 0.011|
| Underweight, yes                        | 39 (0.8)         | 2 (0.2)       | 0.078| 2 (0.2)         |               | <0.001|
| Alcohol use                             | 0.124           |               |      | 0.049           |               |      |
| Non-drinker                             | 649 (13.3)       | 111 (13.3)    | 1.11 | 121 (14.5)      |               |      |
| drinking <1/month                       | 537 (11.0)       | 122 (14.7)    | 0.077| 120 (14.4)      |               |      |
| 1-3 times/month                         | 717 (14.7)       | 127 (15.3)    | 0.235| 119 (14.3)      |               |      |
| 1-4 days/week                           | 1314 (26.9)      | 202 (24.3)    | 0.263| 194 (23.3)      |               |      |
| Daily                                   | 1673 (34.2)      | 270 (32.5)    | 0.163| 278 (33.4)      |               |      |
| Comorbidities and risk factors          |                |               |      |                |               |      |
| Diabetes                                | 472 (9.7)        | 125 (15.0)    | 0.164| 123 (14.8)      |               | 0.056|
| Arrhythmia                              | 482 (9.9)        | 102 (12.3)    | 0.077| 102 (12.3)      |               | 0.041|
| Heart failure                           | 312 (6.4)        | 89 (10.7)     | 0.155| 81 (9.7)        |               | 0.055|
| Stroke                                  | 356 (7.3)        | 121 (14.5)    | 0.235| 121 (14.5)      |               | 0.038|
| Arthritis                               | 2426 (49.6)      | 505 (60.7)    | 0.310| 539 (64.8)      |               | 0.085|
| Bad vision, yes                         | 425 (8.7)        | 90 (10.8)     | 0.220| 132 (15.9)      |               | 0.149a|
| Hearing problem, yes                    | 1086 (22.2)      | 225 (27.0)    | 0.161| 202 (24.3)      |               | 0.063|
| Hypotension                             | 927 (19.0)       | 214 (25.7)    | 0.138| 204 (24.5)      |               | 0.028|
| Dizziness                               | 827 (16.9)       | 180 (21.6)    | 0.263| 164 (19.7)      |               | 0.048|
| Incontinence                            | 1315 (26.9)      | 304 (36.5)    | 0.163| 270 (32.5)      |               | 0.086|
| Physical performance                    | 3573 (73.1)      | 519 (62.4)    | 0.220| 529 (63.6)      |               | 0.025|
| Balance, able                           | 27.68 (2.44)     | 27.92 (2.06)  | 0.098| 27.87 (2.12)    |               | 0.021|
| Cognitive status and depression         | -0.03 (0.96)     | 0.19 (1.09)   | 0.263| 0.25 (1.18)     |               | 0.046|
| MMSE (0-30)                             | 2.63 (2.25)      | 5.10 (2.28)   | 1.093| 5.10 (2.28)     |               | 0.026|
| Z-score depressive symptoms             | 172 (3.5)        | 62 (7.5)      | 0.173| 62 (7.5)        |               | 0.068|
| Anticholinergics                        | 82 (1.7)         | 61 (7.3)      | 0.275| 61 (7.3)        |               | 0.079|
| Alpha blocker BPH                       | 233 (4.8)        | 62 (7.5)      | 0.112| 62 (7.5)        |               | 0.009|
| Alpha blocker AH                        | 71 (1.5)         | 13 (1.6)      | 0.009| 13 (1.6)        |               | <0.001|
| Antidepressants                         | 182 (3.7)        | 68 (8.2)      | 0.189| 68 (8.2)        |               | 0.055|
| Antiepileptics                          | 76 (1.6)         | 32 (3.8)      | 0.142| 32 (3.8)        |               | 0.033|
| Antihistamines                          | 87 (1.8)         | 29 (3.5)      | 0.107| 29 (3.5)        |               | 0.013|
| Antipsychotic                           | 48 (1.0)         | 7 (0.8)       | 0.015| 7 (0.8)         |               | 0.013|
| Incontinence medication                 | 51 (1.0)         | 25 (3.0)      | 0.140| 25 (3.0)        |               | 0.029|
| Cardiac vasodilators                    | 203 (4.2)        | 61 (7.3)      | 0.189| 73 (8.8)        |               | 0.053|
| Diuretics                               | 1040 (21.3)      | 261 (31.4)    | 0.231| 261 (31.4)      |               | 0.026|
| Benzodiazepines and-related             | 345 (7.1)        | 75 (9.0)      | 0.072| 75 (9.0)        |               | 0.013|

MMSE: mini-mental state examination, SMD: Standardized mean difference. * Unbalanced variable in 2/5 imputed datasets. ** Unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
## Appendix III. Baseline characteristics in cross-sectional dataset

### Supplementary Table 14. Baseline characteristics by ACE inhibitor use

| Characteristics                                      | Before matching | After matching |
|-------------------------------------------------------|-----------------|----------------|
|                                                       | Non-users (n=18,244) | Users (n=3,038) | SMD | Non-users (n=18,244) | Users (n=3,038) | SMD |
| Age, years                                            | 67.64 (9.80)    | 71.06 (9.18)   | 0.361 | 71.44 (9.52) | 71.06 (9.18) | 0.041 |
| Gender, female                                        | 1013.2 (55.5)   | 1335.4 (43.9)  | 0.233 | 1402.46 (46.1) | 1335.4 (43.9) | 0.044 |
| Cohort                                                | 0.150           |                |      | 0.108           |                | 0.023 |
| LASA C                                                | 1339 (7.3)      | 164 (5.4)      | 0.194 | 164 (5.4)      |                | 0.076 |
| LASA 3B                                               | 800 (4.4)       | 86 (2.8)       | 0.92  | 86 (2.8)       |                |      |
| ActiFE-ULM                                            | 1183 (6.5)      | 256 (8.4)      | 290  | 256 (8.4)      |                |      |
| TILDA                                                 | 6980 (38.3)     | 1099 (36.2)    | 1021 | 1099 (36.2)    |                |      |
| B-PROOF                                               | 1895 (10.4)     | 364 (12.0)     | 343  | 364 (12.0)     |                |      |
| ERGO-S                                                | 6047 (31.1)     | 1069 (35.2)    | 1098 | 1069 (35.2)    |                |      |
| Obese, yes                                            | 4732 (25.9)     | 1181 (38.9)    | 0.279 | 1075 (35.4)    | 1179 (38.8)    | 0.071 |
| Underweight, yes                                      | 108 (0.6)       | 9 (0.3)        | 0.044 | 12 (0.4)       | 9 (0.3)        | 0.017 |
| Alcohol use                                           |                | 0.108          |      |                |                |      |
| Non-drinker                                           | 3568 (19.6)     | 692 (22.8)     | 695  | 676 (22.3)     |                |      |
| drinking <1/month                                     | 2173 (11.9)     | 363 (11.9)     | 380  | 370 (12.2)     |                |      |
| 1-3 times/month                                       | 2353 (12.9)     | 397 (13.1)     | 395  | 396 (13.0)     |                |      |
| 1-4 days/week                                         | 5323 (29.2)     | 759 (25.0)     | 736  | 760 (25.0)     |                |      |
| Daily                                                 | 4827 (26.5)     | 827 (27.2)     | 832  | 836 (27.5)     |                |      |
| **Comorbidities and risk factors**                    |                |                |      |                |                |      |
| Diabetes                                              | 1428 (7.8)      | 678 (22.3)     | 0.414 | 678 (22.3)     |                | 0.082 |
| Arrhythmia                                            | 1497 (8.2)      | 509 (16.8)     | 0.261 | 500 (16.5)     |                | 0.022 |
| Heart failure                                         | 872 (4.8)       | 378 (12.4)     | 0.276 | 378 (12.4)     |                | 0.027 |
| Stroke                                                | 489 (2.7)       | 178 (5.9)      | 0.158 | 167 (5.5)      |                | 0.011 |
| Arthritis                                             | 7021 (38.5)     | 1349 (44.4)    | 0.120 | 1324 (43.6)    |                | 0.058 |
| Urinary incontinence                                  | 3880 (21.3)     | 796 (26.2)     | 0.116 | 740 (24.4)     |                | 0.039 |
| Bad vision, yes                                       | 1500 (8.2)      | 344 (11.3)     | 0.105 | 285 (9.4)      |                | 0.049 |
| Hearing problem, yes                                  | 3014 (16.5)     | 662 (21.8)     | 0.134 | 668 (22.0)     |                | 0.020 |
| **Physical performance**                              |                |                |      |                |                |      |
| z-score hand grip strength                            | -0.03 (1.00)    | -0.04 (1.00)   | 0.011 | -0.09 (1.01)   | -0.04 (1.01)   | 0.056 |
| **Cognitive status and depression**                   |                |                |      |                |                |      |
| MMSE (0-30)                                           | 27.36 (2.85)    | 26.84 (3.16)   | 0.172 | 26.91 (3.10)   |                | 0.032 |
| Z-score depressive symptoms                           | -0.00 (1.00)    | 0.08 (1.04)    | 0.082 | 0.07 (1.02)    |                | 0.044 |
| **Blood measurements**                                |                |                |      |                |                |      |
| Vitamin D deficiency, yes                             | 7966 (43.7)     | 1593 (52.4)    | 0.176 | 1516 (49.9)    |                | 0.019 |
| Number of used medication                             | 2.34 (2.31)     | 4.93 (2.15)    | 1.158 | 4.93 (2.15)    |                | 0.042 |
| Anticholinergics                                      | 833 (4.6)       | 145 (4.8)      | 0.010 | 145 (4.8)      |                | 0.031 |
| Alpha blocker BPH                                     | 574 (3.1)       | 133 (4.4)      | 0.065 | 133 (4.4)      |                | 0.024 |
| Alpha blocker AH                                      | 198 (1.1)       | 87 (2.9)       | 0.128 | 87 (2.9)       |                | 0.033 |
| Antidepressants                                       | 1125 (6.2)      | 208 (6.8)      | 0.028 | 208 (6.8)      |                | 0.018 |
| Antiepileptics                                        | 420 (2.3)       | 87 (2.9)       | 0.035 | 87 (2.9)       |                | 0.014 |
| Antihistamines                                        | 408 (2.2)       | 73 (2.4)       | 0.011 | 73 (2.4)       |                | 0.046 |
| Antipsychotic                                         | 194 (1.1)       | 25 (0.8)       | 0.025 | 25 (0.8)       |                | 0.004 |
| Incontinence medication                               | 214 (1.2)       | 46 (1.5)       | 0.030 | 46 (1.5)       |                | 0.035 |
| Cardiac vasodilators                                  | 508 (2.8)       | 275 (9.1)      | 0.268 | 275 (9.1)      |                | 0.027 |
| Diuretics                                             | 2837 (15.6)     | 1191 (39.2)    | 0.350 | 1191 (39.2)    |                | 0.094 |
| Benzodiazepines and-related                          | 1324 (7.3)      | 255 (8.4)      | 0.042 | 255 (8.4)      |                | 0.031 |
| AT 2 Blocker                                          | 2452 (13.4)     | 92 (3.0)       | 0.386 | 92 (3.0)       |                | 0.004 |
| Calcium channel blockers                              | 1529 (8.4)      | 657 (21.6)     | 0.377 | 657 (21.6)     |                | 0.035 |
| Beta-blockers                                         | 3130 (17.2)     | 1213 (39.9)    | 0.521 | 1213 (39.9)    |                | 0.041 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 15. Baseline characteristics by Calcium channel blocker use

| Characteristics                                      | Before matching | After matching | SMD   |
|------------------------------------------------------|-----------------|----------------|-------|
|                                                       | Non-users (n=19,096) | Users (n=2,186) |       |
| Age, years                                           | 67.70 (9.78)    | 71.85 (9.00)   | 0.441 |
| Gender, female                                       | 10395 (54.4)    | 1072 (49.0)    | 0.108 |
| Cohort                                               | 0.221           | 0.221          | 0.003 |
| • LASA C                                             | 1393 (7.3)      | 110 (5.0)      | 0.111 |
| • LASA 3B                                            | 820 (4.3)       | 66 (3.0)       | 0.056 |
| • ActiFE-ULM                                         | 1207 (6.3)      | 232 (10.6)     | 0.220 |
| • TILDA                                              | 7216 (37.8)     | 863 (39.5)     | 0.847 |
| • B-PROOF                                            | 1978 (10.4)     | 281 (12.9)     | 0.294 |
| • ERGO-S                                             | 6482 (33.9)     | 634 (29.0)     | 0.658 |
| • Obese, yes                                         | 5068 (26.5)     | 845 (38.7)     | 0.261 |
| • Underweight, yes                                   | 113 (0.6)       | 6 (0.3)        | 0.048 |
| Alcohol use                                          | 0.139           | 0.139          | 0.004 |
| • Non-drinker                                        | 3738 (19.6)     | 519 (23.7)     | 0.308 |
| • drinking <1/month                                  | 2253 (11.8)     | 274 (12.5)     | 0.283 |
| • 1-3 times/month                                    | 2461 (12.9)     | 284 (13.0)     | 0.281 |
| • 1-4 days/week                                      | 5563 (29.1)     | 521 (23.8)     | 0.557 |
| • Daily                                              | 5081 (26.6)     | 588 (26.9)     | 0.550 |
| Comorbidities and risk factors                       |                 |                |       |
| • Diabetes                                           | 1682 (8.8)      | 424 (19.4)     | 0.308 |
| • Arrhythmia                                         | 1745 (9.1)      | 334 (15.3)     | 0.188 |
| • Heart failure                                      | 1001 (5.2)      | 249 (11.4)     | 0.224 |
| • Stroke                                             | 520 (2.7)       | 131 (6.0)      | 0.161 |
| • Arthritis                                          | 7361 (38.5)     | 1009 (46.2)    | 0.154 |
| • Urinary incontinence                               | 4080 (21.4)     | 564 (25.8)     | 0.105 |
| • Bad vision, yes                                    | 1607 (8.4)      | 237 (10.8)     | 0.082 |
| • Hearing problem, yes                               | 3167 (16.6)     | 509 (23.3)     | 0.168 |
| Physical performance                                 |                 |                |       |
| • z-score hand grip strength                         | -0.02 (1.00)    | -0.13 (0.99)   | 0.120 |
| Cognitive status and depression                      |                 |                |       |
| • MMSE (0-30)                                        | 27.39 (2.80)    | 26.96 (3.05)   | 0.145 |
| • Z-score depressive symptoms                        | -0.00 (1.00)    | 0.10 (1.04)    | 0.098 |
| Blood measurements                                   |                 |                |       |
| • Vitamin D deficiency, yes                          | 8413 (44.1)     | 1146 (52.4)    | 0.168 |
| Medication                                           |                 |                |       |
| • Number of used medication                          | 2.44 (2.34)     | 5.11 (2.17)    | 1.184 |
| • Anticholinergics                                   | 849 (4.4)       | 129 (5.9)      | 0.066 |
| • Alpha blocker BPH                                  | 613 (3.2)       | 94 (4.3)       | 0.057 |
| • Alpha blocker AH                                   | 197 (1.0)       | 88 (4.0)       | 0.192 |
| • Antidepressants                                    | 1165 (6.1)      | 168 (7.7)      | 0.063 |
| • Antiepileptics                                     | 445 (2.3)       | 62 (2.8)       | 0.032 |
| • Antihistamines                                     | 432 (2.3)       | 49 (2.2)       | 0.001 |
| • Antipsychotic                                      | 195 (1.0)       | 24 (1.1)       | 0.007 |
| • Incontinence medication                            | 225 (1.2)       | 35 (1.6)       | 0.036 |
| • Cardiac vasodilators                               | 562 (2.9)       | 221 (10.1)     | 0.293 |
| • Diuretics                                          | 3216 (16.8)     | 812 (37.1)     | 0.470 |
| • Benzdiazepines and-related                         | 1366 (7.2)      | 213 (9.7)      | 0.093 |
| • ACE Inhibitors                                     | 1969 (10.3)     | 575 (26.3)     | 0.423 |
| • Beta-blockers                                      | 3500 (18.3)     | 843 (38.6)     | 0.460 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 16. Baseline characteristics by Angiotensin II receptor blocker use

| Characteristics                              | Before matching | After matching | SMD |
|----------------------------------------------|-----------------|----------------|-----|
|                                             | Non-users (n=17,235) | Users (n=5,444) | SMD | Non-users (n=2,544) | Users (n=2,544) | SMD |
| Age, years                                  | 67.18 (9.84)    | 70.27 (8.80)   | 0.331 | 70.66 (9.59) | 70.27 (8.80) | 0.042 |
| Gender, female                               | 9296 (53.9)     | 1394 (54.8)    | 0.017 | 1435 (56.4) | 1394 (54.8) | 0.032 |
| Cohort                                       | 0.212           | 0.212          | 0.068 |

|                         | SMD           |
|------------------------|---------------|
| LASA 3B                | 0.075         |
| ActiWE-ULM             | 0.033         |
| TILD                     | 0.005         |
| B-PROOF                | 0.010         |
| Obese, yes             | 0.061         |
| Underweight, yes       | 0.045         |
| Alcohol use            | 0.051         |
| Non-drinker drinking <1/month | 0.048  |
| 1-3 times/month        | 0.059         |
| 1-4 days/week          | 0.027         |
| Daily                  | 0.027         |

| Comorbidities and risk factors                  | SMD           |
|------------------------------------------------|---------------|
| Diabetes                                        | 0.047         |
| Arrhythmia                                      | 0.028         |
| Heart failure                                   | 0.052         |
| Stroke                                          | 0.021         |
| Arthritis                                       | 0.045         |
| Urinary incontinence                            | 0.059         |
| Bad vision, yes                                 | 0.027         |
| Hearing problem, yes                            | 0.027         |
| Physical performance                            | 0.043         |
| z-score hand grip strength                      | 0.044         |
| Cognitive status and depression                 | 0.042         |
| MMSE (0-30)                                     | 0.009         |
| Z-score depressive symptoms                     | 0.009         |
| Blood measurements                              | 0.043         |
| Vitamin D deficiency, yes                       | 0.012         |

| Medication                                      | SMD           |
|------------------------------------------------|---------------|
| Number of used medication                        | 0.012         |
| Anticholinergics                                | 0.039         |
| Alpha blocker BPH                               | 0.010         |
| Alpha blocker AH                                | 0.022         |
| Antidepressants                                 | 0.017         |
| Antiepileptics                                  | 0.002         |
| Antihistamines                                  | 0.005         |
| Antipsychotic                                   | 0.005         |
| Incontinence medication                         | 0.033         |
| Cardiac vasodilators                            | 0.025         |
| Diuretics                                       | 0.075         |
| Benzodiazipines and- related                     | 0.024         |
| Calcium channel blockers                        | 0.033         |
| Beta-blockers                                    | 0.038         |
| ACE inhibitors                                   | 0.021         |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 17. Baseline characteristics by Low ceiling diuretic use

| Characteristics                  | Before matching | After matching | SMD  |
|----------------------------------|-----------------|----------------|------|
|                                  | Non-users       | Users          |      |
|                                  | (n=18,383)      | (n=8,899)      |      |
|                                  | SMD             | Non-users      | Users |
|                                  | (n=2,899)       | (n=2,899)      |      |
|                                  |                 | SMD            |      |
| **Comorbidities and risk factors** |                 |                |      |
| Diabetes                         | 1638 (8.9)      | 468 (16.1)     | 0.220| 469 (16.2) | 467 (16.1) | 0.002 |
| Arrhythmia                       | 1750 (9.5)      | 329 (11.3)     | 0.060| 400 (13.8) | 329 (11.3) | 0.074 |
| Heart failure                    | 978 (5.3)       | 272 (9.4)      | 0.156| 193 (6.7)  | 160 (5.5)  | 0.048 |
| Stroke                           | 527 (2.9)       | 124 (4.3)      | 0.076| 128 (4.4)  | 119 (4.1)  | 0.015 |
| Arthritis                        | 6982 (38.0)     | 1349 (46.5)    | 0.174| 1392 (48.0) | 1319 (45.5) | 0.050 |
| Urinary incontinence             | 4008 (21.8)     | 827 (28.5)     | 0.155| 775 (26.7) | 726 (25.0) | 0.039 |
| Bad vision                       | 1638 (8.9)      | 241 (8.3)      | 0.021| 271 (9.3)  | 241 (8.3)  | 0.036 |
| Hearing problem, yes             | 3142 (17.1)     | 534 (18.4)     | 0.035| 570 (19.7) | 535 (18.5) | 0.031 |
| **Physical performance**         |                 |                |      |
| z-score hand grip strength       | 0.00 (1.00)     | -0.21 (0.96)   | 0.209| -0.20 (0.95) | -0.19 (0.97) | 0.011 |
| **Cognitive status and depression** |                 |                   |      |
| MMSE (0-30)                      | 27.33 (2.88)    | 26.97 (3.02)   | 0.122| 26.99 (3.00) | 27.14 (2.82) | 0.050 |
| Z-score depressive symptoms      | 0.03 (1.01)     | 0.02 (0.97)    | 0.016| 0.03 (0.99) | 0.01 (0.96) | 0.021 |
| **Blood measurements**           |                 |                |      |
| Vitamin D deficiency, yes        | 8438 (45.9)     | 1541 (53.2)    | 0.145| 1487 (51.3) | 1435 (49.5) | 0.036 |
| **Medication**                   |                 |                |      |
| Number of used medication        | 2.45 (2.40)     | 4.36 (2.16)    | 0.838| 4.45 (2.35) | 4.36 (2.16) | 0.041 |
| Anticholinergics                 | 834 (4.5)       | 144 (5.0)      | 0.020| 148 (5.1)  | 144 (5.0)  | 0.006 |
| Alpha blocker BPH                | 619 (3.4)       | 88 (3.0)       | 0.019| 94 (3.2)   | 88 (3.0)   | 0.012 |
| Alpha blocker AH                 | 186 (1.0)       | 99 (3.4)       | 0.164| 84 (2.9)   | 99 (3.4)   | 0.030 |
| Antidepressants                  | 1143 (6.2)      | 190 (6.6)      | 0.014| 205 (7.1)  | 190 (6.6)  | 0.021 |
| Antiepileptics                   | 435 (2.4)       | 72 (2.5)       | 0.008| 82 (2.8)   | 72 (2.5)   | 0.021 |
| Antihistamines                   | 390 (2.1)       | 91 (3.1)       | 0.064| 93 (3.2)   | 91 (3.1)   | 0.004 |
| Antipsychotic                    | 197 (1.1)       | 22 (0.8)       | 0.033| 20 (0.7)   | 22 (0.8)   | 0.008 |
| Incontinence medication          | 220 (1.2)       | 40 (1.4)       | 0.016| 33 (1.1)   | 40 (1.4)   | 0.022 |
| Cardiac vasodilators             | 658 (3.6)       | 125 (4.3)      | 0.038| 575 (19.8) | 125 (4.3)  | 0.014 |
| High ceiling diuretics           | 1041 (5.7)      | 73 (2.5)       | 0.159| 94 (3.2)   | 73 (2.5)   | 0.043 |
| Benzodiazepines and- related     | 1311 (7.1)      | 268 (9.2)      | 0.077| 285 (9.8)  | 268 (9.2)  | 0.020 |
| AT 2 Blocker                     | 1552 (8.4)      | 992 (34.2)     | 0.663| 911 (31.4) | 992 (34.2) | 0.060 |
| Ace inhibitors                   | 2269 (12.3)     | 769 (26.5)     | 0.364| 854 (29.5) | 769 (26.5) | 0.065 |
| Calcium channel blockers         | 1627 (8.9)      | 559 (19.3)     | 0.303| 575 (19.8) | 559 (19.3) | 0.014 |
| Beta blockers                    | 3217 (17.5)     | 1126 (38.8)    | 0.488| 1149 (39.6) | 1126 (38.8) | 0.016 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
## Supplementary Table 18. Baseline characteristics by High ceiling diuretic use

| Characteristics | Non-users (n=20,168) | Users (n=1,114) | SMD | Non-users (n=1,114) | Users (n=1,114) | SMD |
|-----------------|---------------------|----------------|-----|---------------------|----------------|-----|
| **Comorbidities and risk factors** | | | | | | |
| Diabetes | 1864 (9.2) | 243 (21.8) | 0.352 | 261 (23.4) | 242 (21.7) | 0.041 |
| Arrhythmia | 1737 (8.6) | 351 (31.5) | 0.597 | 281 (25.2) | 339 (30.4) | 0.116 |
| Heart failure | 713 (3.5) | 269 (24.1) | 0.625 | 195 (17.5) | 269 (24.1) | 0.164 |
| Stroke | 549 (2.7) | 101 (9.1) | 0.272 | 84 (7.5) | 101 (9.1) | 0.055 |
| Arthritis | 7774 (38.5) | 596 (53.5) | 0.303 | 611 (54.8) | 583 (52.3) | 0.050 |
| Urinary incontinence | 4270 (21.2) | 406 (36.4) | 0.342 | 428 (38.4) | 399 (35.8) | 0.054 |
| Bad vision, yes | 1635 (8.1) | 209 (18.8) | 0.316 | 152 (13.6) | 193 (17.3) | 0.102 |
| Hearing problem, yes | 3267 (16.2) | 409 (36.7) | 0.478 | 359 (32.2) | 409 (36.7) | 0.095 |
| **Physical performance** | | | | | | |
| Hand grip strength (kg) | -0.00 (1.00) | -0.50 (0.92) | 0.522 | -0.44 (0.89) | -0.49 (0.90) | 0.061 |
| **Cognitive status and depression** | | | | | | |
| MMSE (0-30) | 27.41 (2.75) | 25.61 (3.84) | 0.541 | 26.24 (3.52) | 25.61 (3.84) | 0.172 |
| Z-score depressive symptoms | -0.01 (0.99) | 0.41 (1.20) | 0.386 | 0.35 (1.11) | 0.41 (1.20) | 0.058 |
| **Blood measurements** | | | | | | |
| Vitamin D deficiency | 8828 (43.8) | 731 (65.6) | 0.450 | 659 (59.2) | 708 (63.6) | 0.090 |
| **Medication** | | | | | | |
| Number of used medication | 2.51 (2.33) | 6.30 (1.89) | 1.785 | 6.31 (1.83) | 6.30 (1.89) | 0.003 |
| Anticholinergics | 886 (4.4) | 92 (8.3) | 0.159 | 88 (7.9) | 92 (8.3) | 0.013 |
| Alpha blocker BPH | 622 (3.1) | 85 (7.6) | 0.203 | 81 (7.3) | 85 (7.6) | 0.014 |
| Alpha blocker AH | 246 (1.2) | 39 (3.5) | 0.151 | 44 (3.9) | 39 (3.5) | 0.024 |
| Antidepressants | 1215 (6.0) | 118 (10.6) | 0.166 | 104 (9.3) | 118 (10.6) | 0.042 |
| Antiepileptics | 436 (2.2) | 71 (6.4) | 0.210 | 72 (6.5) | 71 (6.4) | 0.004 |
| Antihistamines | 441 (2.2) | 40 (3.6) | 0.084 | 41 (3.7) | 40 (3.6) | 0.005 |
| Antipsychotic | 204 (1.0) | 15 (1.3) | 0.031 | 12 (1.1) | 15 (1.3) | 0.025 |
| Incontinence medication | 234 (1.2) | 26 (2.3) | 0.090 | 28 (2.5) | 26 (2.3) | 0.012 |
| Cardiac vasodilators | 561 (2.8) | 222 (19.9) | 0.561 | 192 (17.2) | 222 (19.9) | 0.069 |
| Low ceiling diuretics | 2826 (14.0) | 73 (6.6) | 0.247 | 88 (7.9) | 73 (6.6) | 0.052 |
| Benzoalazine and related | 1427 (7.1) | 152 (13.6) | 0.217 | 150 (13.5) | 152 (13.6) | 0.005 |
| Calcium channel blockers | 1938 (9.6) | 248 (22.3) | 0.351 | 273 (24.5) | 248 (22.3) | 0.053 |
| Beta-blockers | 3787 (18.8) | 556 (49.9) | 0.694 | 555 (49.8) | 556 (49.9) | 0.002 |
| ACE inhibitors | 2620 (13.0) | 418 (37.5) | 0.589 | 402 (36.1) | 418 (37.5) | 0.030 |
| AT2 blockers | 2317 (11.5) | 227 (20.4) | 0.245 | 239 (21.5) | 227 (20.4) | 0.026 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. a unbalanced variable in 5/5 imputed datasets. b unbalanced variable in 4/5 imputed datasets. c unbalanced variable in 2/5 datasets. d unbalanced variable in 1/5 datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 19. Baseline characteristics by Beta-blocker use

| Characteristics                              | Before matching | After matching |
|----------------------------------------------|-----------------|----------------|
|                                             | Non-users (n=16,939) | Users (n=4,343) | Non-users (n=4,343) | Users (n=4,343) | SMD |
| Age, years                                   | 67.16 (9.80)    | 71.91 (8.78)   | 0.511               | 71.96 (9.15)   | 71.91 (8.78) | 0.006 |
| Gender, female                               | 9248 (54.6)     | 2219 (51.1)    | 0.070               | 2289 (52.7)    | 2219 (51.1)  | 0.032 |
| Cohort                                       | 0.365           | 0.422          | 0.004               | 0.365          | 0.383        | 0.059 |
|                                              |                 |                |                     |                |              |
| Laboratory measurements                      |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
|                                             |                 |                |                     |                |              |
| Comorbidities and risk factors               |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
|                                             |                 |                |                     |                |              |
| Physical performance                         |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
| Comorbidities and risk factors               |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
|                                              |                 |                |                     |                |              |
| Medication                                   |                 |                |                     |                |              |
| Number of used medication                    | 2.14 (2.20)     | 4.93 (2.13)    | 1.291               | 4.75 (2.07)    | 4.93 (2.13)  | 0.088 |
| Anticholinergics                             | 735 (4.3)       | 243 (3.6)      | 0.058               | 263 (6.1)      | 243 (5.6)    | 0.020 |
| Alpha blocker BPH                            | 492 (2.9)       | 215 (5.0)      | 0.105               | 211 (4.9)      | 215 (5.0)    | 0.004 |
| Alpha blocker AH                             | 181 (1.1)       | 104 (2.4)      | 0.102               | 111 (2.6)      | 104 (2.4)    | 0.010 |
| Antidepressants                              | 1004 (5.9)      | 329 (7.6)      | 0.066               | 376 (8.7)      | 329 (7.6)    | 0.040 |
| Antiepileptics                               | 373 (2.2)       | 134 (3.1)      | 0.055               | 147 (3.4)      | 134 (3.1)    | 0.017 |
| Antihistamines                               | 372 (2.2)       | 109 (2.5)      | 0.021               | 134 (3.1)      | 109 (2.5)    | 0.035 |
| Antipsychotic                                | 180 (1.1)       | 39 (0.9)       | 0.017               | 43 (1.0)       | 39 (0.9)     | 0.010 |
| Incontinence medication                      | 187 (1.1)       | 73 (1.7)       | 0.049               | 79 (1.8)       | 73 (1.7)     | 0.011 |
| Cardiac vasodilators                         | 285 (1.7)       | 498 (11.5)     | 0.403               | 265 (6.1)      | 498 (11.5)   | 0.190 |
| Diuretics                                    | 2336 (13.8)     | 1692 (39.0)    | 0.596               | 1539 (39.4)    | 1692 (39.0)  | 0.073 |
| Benzodiazepines and- related                 | 1152 (6.8)      | 427 (9.8)      | 0.110               | 483 (11.1)     | 427 (9.8)    | 0.042 |
| AT 2 Blocker                                 | 1684 (9.9)      | 860 (19.8)     | 0.280               | 864 (19.9)     | 860 (19.8)   | 0.002 |
| Ace inhibitors                               | 1825 (10.8)     | 1213 (27.9)    | 0.445               | 1140 (26.2)    | 1213 (27.9)  | 0.038 |
| Calcium channel blockers                     | 1343 (7.9)      | 843 (19.4)     | 0.339               | 808 (18.6)     | 843 (19.4)   | 0.021 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. *Unbalanced variable in 5/5 datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 20. Baseline characteristics by Statin use

| Characteristics                  | Before matching | After matching |
|----------------------------------|-----------------|---------------|
|                                  | Non-users (n=15,727) | Users (n=5,555) | Non-users (n=5,555) | Users (n=5,555) | SMD |
| **Comorbidities and risk factors** |                 |               |                 |               |     |
| Diabetes                         | 900 (5.7)       | 1207 (21.7)   | 0.478           | 715 (12.9)    | 1207 (21.7) | 0.236a |
| Arrhythmia                       | 1303 (8.3)      | 828 (14.9)    | 0.208           | 727 (13.1)    | 828 (14.9) | 0.052  |
| Heart failure                    | 674 (4.3)       | 576 (10.4)    | 0.235           | 413 (7.4)     | 576 (10.4) | 0.103b |
| Stroke                           | 371 (2.4)       | 291 (5.2)     | 0.151           | 205 (3.7)     | 287 (5.2) | 0.072  |
| Arthritis                        | 6011 (38.2)     | 2316 (41.7)   | 0.071           | 2371 (42.7)   | 2285 (41.1) | 0.031  |
| Bad vision, yes                  | 1265 (8.0)      | 579 (10.4)    | 0.082           | 519 (9.3)     | 579 (10.4) | 0.036  |
| Hearing problem, yes             | 2559 (16.3)     | 1117 (20.1)   | 0.100           | 1150 (20.7)   | 1269 (22.8) | 0.052  |
| Hypotension                      | 3509 (22.3)     | 1269 (22.8)   | 0.013           | 1150 (20.7)   | 1269 (22.8) | 0.052  |
| Dizziness                        | 2747 (17.5)     | 1218 (21.9)   | 0.112           | 1174 (21.1)   | 1200 (21.6) | 0.011  |
| Incontinence                     | 3355 (21.3)     | 1321 (23.8)   | 0.059           | 1269 (22.8)   | 1214 (21.9) | 0.024  |
| **Cognitive status and depression** |                 |               |                 |               |     |
| MMSE (0-30)                      | 27.40 (2.79)    | 27.19 (2.95)  | 0.072           | 27.25 (2.86)  | 27.19 (2.95) | 0.022  |
| Z-score depressive symptoms      | -0.00 (1.00)    | 0.06 (1.03)   | 0.060           | 0.07 (1.04)   | 0.06 (1.03) | 0.013  |
| **Blood measurements**           |                 |               |                 |               |     |
| Vitamin D deficiency             | 6990 (44.4)     | 2791 (50.2)   | 0.116           | 2698 (48.6)   | 2791 (50.2) | 0.033  |
| **Medication**                   |                 |               |                 |               |     |
| Number of used medication        | 2.02 (2.16)     | 4.67 (2.18)   | 1.223           | 3.93 (2.17)   | 4.67 (2.18) | 0.340a |
| Anticholinergics                 | 672 (4.3)       | 306 (5.5)     | 0.057           | 326 (5.9)     | 306 (5.5) | 0.016  |
| Alpha blocker BPH                | 430 (2.7)       | 277 (5.0)     | 0.117           | 247 (4.4)     | 277 (5.0) | 0.025  |
| Alpha blocker AH                 | 151 (1.0)       | 134 (2.4)     | 0.113           | 103 (1.9)     | 134 (2.4) | 0.039  |
| Antidepressants                  | 870 (5.5)       | 463 (8.3)     | 0.111           | 442 (8.0)     | 463 (8.3) | 0.014  |
| Antiepileptics                   | 317 (2.0)       | 190 (3.4)     | 0.086           | 179 (3.2)     | 190 (3.4) | 0.011  |
| Antihistamines                   | 358 (2.3)       | 123 (2.2)     | 0.004           | 149 (2.7)     | 123 (2.2) | 0.013  |
| Antipsychotic                    | 170 (1.1)       | 49 (0.9)      | 0.020           | 56 (1.0)      | 49 (0.9) | 0.013  |
| Incontinence medication          | 165 (1.0)       | 95 (1.7)      | 0.057           | 103 (1.9)     | 95 (1.7) | 0.011  |
| Cardiac vasodilators             | 341 (2.2)       | 442 (8.0)     | 0.266           | 233 (4.2)     | 442 (8.0) | 0.158a |
| Diuretics                        | 2429 (15.4)     | 1599 (28.8)   | 0.326           | 1448 (26.1)   | 1599 (28.8) | 0.061  |
| Benzodiazepines and- related     | 1101 (7.0)      | 478 (8.6)     | 0.060           | 515 (9.3)     | 478 (8.6) | 0.023  |

MMSE: mini-mental state examination, SMD: Standardized mean difference. a Unbalanced variable in 5/5 imputed datasets. b Unbalanced variable in 1/5 imputed datasets. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
### Supplementary Table 21. Baseline characteristics by Alpha blocker used for prostate hyperplasia use

| Characteristics                          | Before matching | After matching |
|------------------------------------------|-----------------|----------------|
|                                          | Non-users (n=20,575) | Users (n=707) | SMD | Non-users (n=707) | Users (n=707) | SMD |
|                                          |                  |                |     |                  |                |     |
| **Comorbidities and risk factors**       |                  |                |     |                  |                |     |
| Diabetes                                 | 2001 (9.7)       | 106 (15.0)     | 0.161 | 104 (14.7)       | 106 (15.0)     | 0.008 |
| Arrhythmia                               | 1999 (9.7)       | 132 (18.7)     | 0.259 | 103 (14.6)       | 125 (17.7)     | 0.085 |
| Heart failure                            | 1149 (5.6)       | 101 (14.3)     | 0.294 | 94 (13.3)        | 76 (10.7)      | 0.078 |
| Stroke                                   | 606 (2.9)        | 44 (6.2)       | 0.157 | 35 (5.0)         | 44 (6.2)       | 0.055 |
| Arthritis                                | 7994 (38.9)      | 300 (42.4)     | 0.073 | 282 (39.9)       | 300 (42.4)     | 0.052 |
| Urinary incontinence                     | 4506 (21.9)      | 170 (24.0)     | 0.051 | 138 (19.5)       | 151 (21.4)     | 0.046 |
| Bad vision                               | 1762 (8.6)       | 82 (11.6)      | 0.101 | 80 (11.3)        | 64 (9.1)       | 0.075 |
| Hearing problem, yes                     | 3517 (17.1)      | 185 (26.2)     | 0.222 | 211 (29.8)       | 182 (25.7)     | 0.092 |
| **Physical performance**                 |                  |                |     |                  |                |     |
| z-score hand grip strength               | -0.05 (1.00)     | 0.49 (0.81)    | 0.588 | 0.45 (0.80)      | 0.49 (0.81)    | 0.046 |
| Cognitive status and depression**        |                  |                |     |                  |                |     |
| MMSE (0-30)                              | 27.30 (2.89)     | 26.73 (3.07)   | 0.191 | 26.72 (3.22)     | 26.96 (2.74)   | 0.082 |
| Z-score depressive symptoms              | 0.03 (1.01)      | 0.02 (0.92)    | 0.013 | -0.00 (0.96)     | 0.02 (0.92)    | 0.028 |
| **Blood measurements**                   |                  |                |     |                  |                |     |
| Vitamin D deficiency, yes                | 9189 (44.7)      | 370 (52.3)     | 0.154 | 346 (48.9)       | 327 (46.3)     | 0.054 |
| **Medication**                           |                  |                |     |                  |                |     |
| Number of used medication                | 2.64 (2.43)      | 4.85 (2.33)    | 0.932 | 4.84 (2.43)      | 4.85 (2.33)    | 0.007 |
| Anticholinergics                         | 939 (4.6)        | 39 (5.5)       | 0.044 | 42 (5.9)         | 39 (5.5)       | 0.018 |
| Alpha blocker AH                         | 279 (1.4)        | 6 (0.8)        | 0.049 | 6 (0.8)          | 6 (0.8)        | <0.001 |
| Antidepressants                          | 1289 (6.3)       | 44 (6.2)       | 0.002 | 43 (6.1)         | 44 (6.2)       | 0.006 |
| Antiepileptics                           | 478 (2.3)        | 29 (4.1)       | 0.101 | 27 (4.8)         | 29 (4.1)       | 0.015 |
| Antihistamines                           | 464 (2.3)        | 17 (2.4)       | 0.010 | 10 (1.4)         | 17 (2.4)       | 0.072 |
| Antipsychotic                            | 213 (1.0)        | 6 (0.8)        | 0.019 | 3 (0.4)          | 6 (0.8)        | 0.053 |
| Incontinence medication                  | 239 (1.2)        | 21 (3.0)       | 0.127 | 25 (3.5)         | 21 (3.0)       | 0.032 |
| Cardiac vasodilators                     | 724 (3.5)        | 59 (8.3)       | 0.205 | 62 (8.8)         | 59 (8.3)       | 0.015 |
| Diuretics                                | 3857 (18.7)      | 171 (24.2)     | 0.133 | 178 (25.2)       | 173 (24.2)     | 0.023 |
| Benzodiazepines and- related             | 1531 (7.4)       | 48 (6.8)       | 0.025 | 49 (6.9)         | 48 (6.8)       | 0.096 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
Supplementary Table 22. Baseline characteristics by Benzodiazepine and –related drugs use

| Characteristics                  | Before matching | After matching |
|----------------------------------|-----------------|----------------|
|                                  | Non-users  (n= 19,703) | Users (n=1,579) | SMD  | Non-users  (n=1,579) | Users (n=1,579) | SMD  |
| Age, years                       | 67.85 (9.74)    | 71.57 (9.69)   | 0.383 | 71.62 (9.87) | 71.57 (9.69) | 0.005 |
| Gender, female                   | 10292 (52.2)    | 1175 (74.4)    | 0.473 | 1201 (76.1)  | 1175 (74.4)  | 0.038 |
| **Cohort**                       |                 |                |      |               |               |      |
| LASA C                           | 1281 (6.5)      | 222 (14.1)     | 201 (12.7) | 222 (14.1)    |               | 0.055 |
| LASA 3B                          | 846 (4.3)       | 40 (2.5)       | 42 (2.7) | 40 (2.5)      |               |      |
| ActiFE-ULM                       | 1411 (7.2)      | 28 (1.8)       | 36 (2.3) | 28 (1.8)      |               |      |
| TILDA                            | 7600 (38.6)     | 479 (30.3)     | 473 (30.0) | 479 (30.3)    |               |      |
| B-PROOF                          | 2117 (10.7)     | 142 (9.0)      | 140 (8.9) | 142 (9.0)     |               |      |
| ERGO-S                           | 6448 (32.7)     | 668 (42.3)     | 687 (43.5) | 668 (42.3)    |               |      |
| Obese, yes                       | 5426 (27.5)     | 482 (30.5)     | 0.066 | 497 (31.5)    | 471 (29.8)    | 0.036 |
| Underweight, yes                 | 104 (0.5)       | 13 (0.8)       | 0.036 | 11 (0.7)      | 13 (0.8)      | 0.015 |
| Alcohol use                      |                 |                | 0.363 |               |               | 0.045 |
| Non-drinker                      | 3773 (19.1)     | 487 (30.8)     | 471 (29.8) | 479 (30.3)    |               |      |
| drinking <1/month                | 2308 (11.7)     | 228 (14.4)     | 234 (14.8) | 223 (14.1)    |               |      |
| 1-3 times/month                  | 2573 (13.1)     | 177 (11.2)     | 165 (10.4) | 183 (11.6)    |               |      |
| 1-4 days/week                    | 5810 (29.5)     | 272 (17.2)     | 289 (18.3) | 276 (17.5)    |               |      |
| Daily                            | 5239 (26.6)     | 415 (26.3)     | 420 (26.6) | 418 (26.3)    |               |      |
| **Comorbidities and risk factors**|                 |                |      |               |               |      |
| Diabetes                         | 1922 (9.8)      | 185 (11.7)     | 0.063 | 192 (12.2)    | 184 (11.7)    | 0.016 |
| Arrhythmia                       | 1752 (8.9)      | 254 (16.1)     | 0.219 | 267 (16.9)    | 244 (15.5)    | 0.040 |
| Heart failure                    | 1026 (5.2)      | 176 (11.1)     | 0.218 | 187 (11.8)    | 168 (10.6)    | 0.038 |
| Stroke                           | 578 (2.9)       | 84 (5.3)       | 0.120 | 84 (5.3)      | 81 (5.1)      | 0.009 |
| Arthritis                        | 7418 (37.6)     | 884 (56.0)     | 0.374 | 901 (57.1)    | 882 (55.9)    | 0.024 |
| Urinary incontinence             | 4019 (20.4)     | 596 (37.7)     | 0.389 | 633 (40.1)    | 597 (37.8)    | 0.047 |
| Bad vision, yes                  | 1608 (8.2)      | 236 (14.9)     | 0.213 | 215 (13.6)    | 234 (14.8)    | 0.034 |
| Hearing problem, yes             | 3379 (17.1)     | 369 (23.4)     | 0.155 | 385 (24.4)    | 353 (22.4)    | 0.048 |
| **Cognitive status and depression**| -0.06 (0.93)     | 0.83 (1.43)    | 0.738 | 0.78 (1.42)   | 0.83 (1.43)   | 0.037 |
| Z-score depressive symptoms      |                 |                |      |               |               |      |
| **Blood measurements**           |                 |                |      |               |               |      |
| Vitamin D deficiency             | 8672 (44.0)     | 869 (55.0)     | 0.222 | 845 (53.5)    | 869 (55.0)    | 0.031 |
| **Medication**                   |                 |                |      |               |               |      |
| Number of used medication        | 2.53 (2.39)     | 4.95 (2.26)    | 1.041 | 5.01 (2.41)   | 4.95 (2.26)   | 0.027 |
| Anticholinergics                 | 741 (3.8)       | 237 (15.0)     | 0.393 | 224 (14.2)    | 237 (15.0)    | 0.023 |
| Alpha blocker BPH                | 659 (3.3)       | 48 (3.0)       | 0.017 | 48 (3.0)      | 48 (3.0)      | <0.001 |
| Alpha blocker AH                 | 262 (1.3)       | 23 (1.5)       | 0.011 | 27 (1.7)      | 23 (1.5)      | 0.020 |
| Antidepressants                  | 990 (5.0)       | 343 (21.7)     | 0.506 | 318 (20.1)    | 343 (21.7)    | 0.039 |
| Antiepileptics                   | 410 (2.1)       | 97 (6.1)       | 0.026 | 99 (6.3)      | 97 (6.1)      | 0.005 |
| Antihistamines                   | 418 (2.1)       | 63 (4.0)       | 0.109 | 67 (4.2)      | 63 (4.0)      | 0.013 |
| Antipsychotic                    | 149 (0.8)       | 70 (4.4)       | 0.233 | 59 (3.7)      | 70 (4.4)      | 0.035 |
| Incontinence medication          | 216 (1.1)       | 44 (2.8)       | 0.123 | 41 (2.6)      | 44 (2.8)      | 0.012 |
| Cardiac vasodilators             | 650 (3.3)       | 133 (8.4)      | 0.219 | 128 (8.1)     | 133 (8.4)     | 0.012 |
| Diuretics                        | 3602 (18.3)     | 426 (27.0)     | 0.209 | 424 (26.9)    | 426 (27.0)    | 0.003 |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.
#### Supplementary Table 23. Baseline characteristics by Proton pump inhibitor use

| Characteristics                  | Before matching |               |               | After matching |               |               |
|----------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
|                                  | Non-users (n=17,681) | Users (n=3,601) | SMD           | Non-users (n=3,601) | Users (n=3,601) | SMD           |
| **Comorbidities and risk factors** |                 |               |               |               |               |               |
| Diabetes                         | 1567 (8.9)      | 540 (15.0)    | 0.190         | 583 (16.2)    | 539 (15.0)    | 0.034         |
| Arrhythmia                       | 1522 (8.6)      | 566 (15.7)    | 0.219         | 571 (15.9)    | 517 (14.4)    | 0.042         |
| Heart failure                     | 765 (4.3)       | 437 (12.1)    | 0.287         | 369 (10.2)    | 437 (12.1)    | 0.060         |
| Stroke                           | 491 (2.8)       | 171 (4.7)     | 0.104         | 175 (4.9)     | 168 (4.7)     | 0.009         |
| Arthritis                        | 6304 (35.7)     | 1998 (55.5)   | 0.406         | 1891 (52.5)   | 1990 (55.3)   | 0.055         |
| Bad vision, yes                  | 1289 (7.3)      | 455 (12.6)    | 0.179         | 373 (10.4)    | 426 (11.8)    | 0.047         |
| Hearing problem, yes             | 2856 (16.2)     | 820 (22.8)    | 0.168         | 805 (22.4)    | 834 (23.2)    | 0.019         |
| Hypotension                      | 3938 (22.3)     | 856 (23.8)    | 0.036         | 802 (22.3)    | 856 (23.8)    | 0.036         |
| Dizziness                        | 2903 (16.4)     | 1032 (28.7)   | 0.296         | 897 (24.9)    | 1032 (28.7)   | 0.085         |
| Incontinence                     | 3533(20.0)      | 1143 (31.7)   | 0.271         | 1060 (29.4)   | 1143 (31.7)   | 0.050         |
| **Cognitive status and depression** |                 |               |               |               |               |               |
| MMSE (0-30)                      | 27.42 (2.75)    | 26.74 (3.22)  | 0.229         | 26.85 (3.08)  | 26.76 (3.21)  | 0.029         |
| Z-score depressive symptoms      | -0.05 (0.95)    | 0.30 (1.19)   | 0.318         | 0.22 (1.13)   | 0.30 (1.19)   | 0.069         |
| **Blood measurements**           |                 |               |               |               |               |               |
| Vitamin D deficiency             | 7692 (43.5)     | 1867 (51.8)   | 0.168         | 1843 (51.2)   | 1877 (52.1)   | 0.019         |
| **Medication**                   |                 |               |               |               |               |               |
| Number of used medication        | 2.23 (2.20)     | 5.08 (2.27)   | 1.279         | 4.89 (2.11)   | 5.08 (2.27)   | 0.087         |
| Anticholinergics                 | 653 (3.7)       | 325 (9.0)     | 0.220         | 284 (7.9)     | 325 (9.0)     | 0.041         |
| Alpha blocker BPH                | 526 (3.0)       | 181 (5.0)     | 0.105         | 196 (5.4)     | 181 (5.0)     | 0.019         |
| Alpha blocker AH                 | 218 (1.2)       | 67 (1.9)      | 0.051         | 74 (2.1)      | 67 (1.9)      | 0.014         |
| Antidepressants                  | 900 (5.1)       | 433 (12.0)    | 0.250         | 389 (10.8)    | 433 (12.0)    | 0.038         |
| Antiepileptics                   | 333 (1.9)       | 174 (4.8)     | 0.164         | 153 (4.2)     | 174 (4.8)     | 0.028         |
| Antihistamines                   | 330 (1.9)       | 151 (4.2)     | 0.136         | 125 (3.5)     | 151 (4.2)     | 0.038         |
| Antispsychotic                   | 173 (1.0)       | 46 (1.3)      | 0.028         | 43 (1.2)      | 46 (1.3)      | 0.008         |
| Incontinence medication          | 165 (0.9)       | 95 (2.6)      | 0.129         | 84 (2.3)      | 95 (2.6)      | 0.020         |
| Cardiac vasodilators             | 485 (2.7)       | 296 (8.3)     | 0.244         | 265 (7.4)     | 296 (8.3)     | 0.034         |
| Diuretics                        | 3018 (17.1)     | 1010 (28.0)   | 0.265         | 1045 (29.0)   | 1010 (28.0)   | 0.022         |
| Benzodiazepines and- related     | 1093 (6.2)      | 486 (13.5)    | 0.247         | 425 (11.8)    | 486 (13.5)    | 0.051         |

MMSE: mini-mental state examination, SMD: Standardized mean difference. The values are given either as total n (percentage) for categorical variables and as mean (standard deviation) for continuous variables.