

Appendix 1 (as supplied by the authors): Definitions of variables included in the propensity score			
Variable	Data source	Measurement point	Coding
Age	Prescription register	At the index date	<65, 65-<75, 75-<85, ≥85
Gender	Prescription register	At the index date	
Occupational socioeconomic position	Statistics Finland	Highest position recorded in population census at middle age, i.e. when persons were aged 45-55 years old	High (entrepreneurs and higher clerical workers), medium (lower clerical workers and employees), low (unemployed, retired and students), unknown (unknown position and those with missing data at Statistics Finland)
Antipsychotic use ever	Prescription register	Use since 1995 until the index date	Antipsychotics N05A excluding lithium N05AN01
Benzodiazepine and related drug use ever	Prescription register	Use since 1995 until the index date	Benzodiazepines N05BA, N05CD and/or Z-drugs N05CF
Antidepressant use ever	Prescription register	Use since 1995 until the index date	Antidepressants N06A
Epilepsy	Reimbursement register	Diagnosed since 1972 until the index date	C71, G40, G41 (special reimbursement code 111)
Cardiovascular disease	Reimbursement register	Diagnosed since 1972 until the index date	Chronic heart failure (I11.0, I13, I50, I97.1, P29.0), coronary artery disease (I20–I22, I24.0, I25), hypertension (I10–I13, I15, I27.0) and/ or cardiac arrhythmia (I47–I49) (special reimbursement codes 201, 206, 205, and 207, respectively)
Stroke	Hospital discharge register	Diagnosed since 1972 until the index date	I60-64
Asthma/ COPD	Reimbursement register	Diagnosed since 1972 until the index date	E84.0, J41–J45, P27.1, only moderate and severe cases (special reimbursement code 203)
Diabetes	Reimbursement register	Diagnosed since 1972 until the index date	E10-E14, E89.1 (special reimbursement code 103)
Schizophrenia	Hospital discharge register	Diagnosed since 1972 until 5 years	Schizophrenia, schizotypal or delusional disorders F20-29

Appendix to: Taipale H, Tolppanen A-M, Koponen M, et al. Risk of pneumonia associated with incident benzodiazepine use among community-dwelling adults with Alzheimer disease. *CMAJ* 2017. doi: 10.1503/cmaj.160126. Copyright © 2017 Joule Inc. or its licensors

		before the index date	
Depression or bipolar disorder	Hospital discharge register	Diagnosed since 1972 until 5 years before the index date	F30-34, F38-39 with corresponding ICD-8 and -9 codes
Antineoplastic drug use at the index date	Prescription register	Use during a 2 week period preceding the index date	ATC group L (antineoplastic and immunomodulating agents)
Previous pneumonia	Hospital discharge register	Pneumonia during a one year period before AD diagnoses	J100, J110, J12, J13, J14, J15, J16, J18, J690
Substance abuse	Hospital discharge register	Diagnosed since 1972 until the index date	Alcohol-induced chronic pancreatitis (K860), mental and behavioral disorders due to psychoactive substance abuse (F10-19) and/or substance abuse as reason for admission
Opioid use at the index date	Prescription register	Use during a 2 week period preceding the index date	Opioids N02A
Antipsychotic use at start of follow-up	Prescription register	Use during a 2 week period preceding the index date	Antipsychotics N05A excluding lithium N05AN01
Antidepressant use at the index date	Prescription register	Use during a 2 week period preceding the index date	Antidepressants N06A
Proton pump inhibitor use at the index date	Prescription register	Use during a 2 week period preceding the index date	Proton pump inhibitors A02BC
Previous hospital-treated fracture	Hospital discharge register	Diagnosed since 1972 until the index date	S*2 or T02* with corresponding ICD-8 and -9 codes
Chronic heart failure ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: I110, I50, I42, I43 ICD-9: 40201,40211,40291,4293,425, 428
Any tumor ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: C00-C97 (excluding C43-44), Z85 ICD-9: 140-171, 174-195, 2730, 2733, V1046, 200-208
Cardiac arrhythmia ^{a)}	Hospital discharge	Diagnosed since 1987	ICD-10: Z95 Z45, I44-I46 ICD-9:42610, 42611, 42613, 4262-4264, 42650-

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	register	until the index date	42653,4266-4268,4270, 4272, 42731, 42760, 4279, 7850, V450, V533
Any pulmonary disease ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: I26, I272, I278, I279, J41, J42, J44, J439, J45, J47 ICD-9:4150, 4168, 4169, 491, 492, 493, 494, 496
Complicated diabetes ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: E10,E11 ICD-9: 25040-25073, 25090-25093
Anaemia ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: D50-D53, D64 ICD-9: 2801-2819, 2859
Fluid and electrolyte disorders ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: E86-E87 ICD-9: 760-276
Peripheral vascular disease ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: I70, I712, I714, I716, I719, I73, I77, I79, K551, K559 , Z958 ICD-9: 4400-4409, 4412, 4414, 4417, 4419, 4431-4439, 4471, 5571, 5579, V434
Psychosis ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: F2, F302, F312, F315, F323, F333, F39, F348 ICD-9: 29500-29899, 29910, 29911
Hypertension ^{a)}	Hospital discharge register	Diagnosed since 1987 until the index date	ICD-10: I10, I11, I130, I150, I158 ICD-9: 4011, 4019, 40210, 40290, 40410, 40490, 40511, 40519, 40591, 40599
Any mental hospitalization	Hospital discharge register	Any mental hospitalization during one year period preceding the index date	Mental or behavioral disorders F*
Recent psychiatric hospitalization	Hospital discharge register	Hospitalization during one year period preceding the AD diagnoses	Psychiatric hospitalization
Recent asthma/ COPD exacerbation	Hospital discharge register	Hospitalization due to asthma/ COPD during one year period preceding the index date	J44-J46
Recent antibiotic or	Prescription register	Antibiotic or oral corticoid	Antiinfectives for systemic use J* and/or H02AB

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oral corticoid use		use during 30 days before the index date	
Recent theophylline use	Prescription register	Use during 180 days preceding the index date	Theophylline R03DA04
Recent beta agonist use	Prescription register	Use during 180 days preceding the index date	Selective beta-2-adrenoreceptor agonists R03AC
Recent inhaled anticholinergic use	Prescription register	Use during 180 days preceding the index date	Anticholinergics (inhaled) R03BB
Recent inhaled corticoid use 180 days before	Prescription register	Use during 180 days preceding the index date	Glucocorticoids (inhaled) R03BA
Recent inhaled combination use	Prescription register	Use during 180 days preceding the index date	Adrenergics in combination with corticosteroids or other drugs, excl. anticholinergics (inhaled) R03AK
Antiepileptic use at the start of follow-up	Prescription register	Use during a 2 week period preceding the index date	Antiepileptics N03A
Cardiovascular drug use at the baseline	Prescription register	Use during a 2 week period preceding the index date	Cardiovascular drugs C*

^{a)}According to Romano implementation of the Charlson index or Elixhauser system as described by Gagne and colleagues.¹

Reference

1. Gagne JJ, Glynn RJ, Avorn J, et al. A combined comorbidity score predicted mortality in elderly patients better than existing scores. *J Clin Epidemiol* 2011; 64: 749-759.