

Supplementary materials

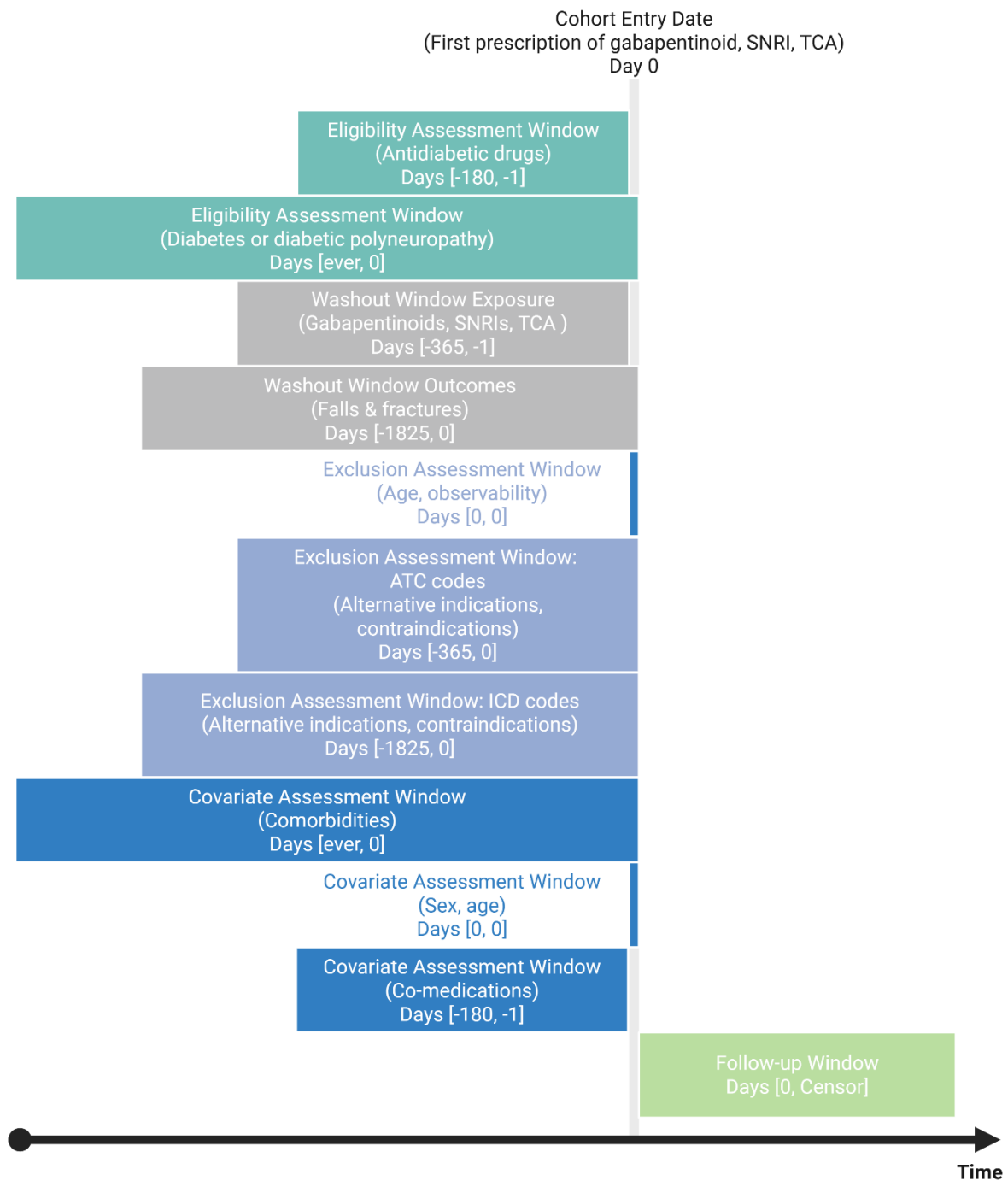


Figure 1. Schneeweiss diagram¹ of the different variables and their assessment variables.

SNRI: Serotonin noradrenalin reuptake inhibitors

TCA: Tricyclic antidepressants

ATC: Anatomic therapeutic chemical classification

ICD: International classification of diseases

Censoring: Earliest outcome of interest, death, emigration, exclusion criteria, six months of follow-up or end of study period.

Supplementary Table 1. Primary (fractures and falls) and secondary (fragility fractures) outcomes of the emulated trial adapted from Wang, et al. ² and Jørgensen, et al. ³.

Variable	Code	Time window
Fall-related injuries ²		
Head/Face Injuries	S01, S02, S03, S05, S06, S07, S08, S09, S15	1 year follow-up with a 5 year washout.
Neck/Trunk Injuries	M99.1, S10, S11, S12, S13, S14, S16, S17, S19, S20, S21, S22, S23, S24, S27, S28, S29, S30, S31, S32, S32.2, S32.3, S32.4, S32.5, S33, S34, S36, S37, S38, S39	
Upper extremity injuries	S40, S41, S42, S43, S44, S46, S47, S49, S50, S51, S52, S53, S54, S56, S57, S59, S60, S61, S62, S63, S64, S66, S67, S69	
Lower extremity injuries	S70, S71, S72, S73, S74, S76, S77, S79, S80, S81, S82, S83, S84, S86, S87, S89, S90, S91, S92, S93, S94, S96, S97, S99	
(Fragility) Fracture ⁴	S321, S322, S323, S324, S325, S42, S52, S62, S72	1 year follow-up with a 5 year washout.

Supplementary Table 2. Medications either increasing fall or fracture risk with their respective ATC codes. Used for propensity score weighting adapted from Wang, et al. ².

Variable	Code	Time window
Fall-inducing co-medications		
Anxiolytics	N05B	6 months
Opioids	N02A	6 months
Antipsychotics	N05A (excluding N05AN01 (Lithium)), N05C	6 months
Hypnotics	N05C	6 months
Vasodilators	C01D, C04	6 months
Antihypertensive drugs	C02, C03, C07, C08, C09	6 months
Dopaminergic agents	N04B	6 months
Alpha-adrenoreceptor antagonists	G04CA	6 months
Drugs for urinary frequency and incontinence	G04BD-11	6 months
Antihistamines 1 st generation	R06AA02 (diphenhydramine) R06AA04 (clemastine) R06AB R06AD R06AE05 (meclozine) R06AX02 (cyproheptadine)	6 months
Bone-loss inducing co-medications		
Glucocorticoids	H02A & H02B	Ever
Hormone antagonists	L02BG (aromatase inhibitors) L02BB (anti-androgens)	Ever

	L02BX (other antagonists)	
Gonadotropin releasing hormones	L02AE	Ever
Proton pump inhibitors	A02BC	Ever
Medications against bone-loss		
Bisphosphonates	M05BA, M05BB	6 months
Selective oestrogen receptor modulators	G03XC	6 months
Menopausal hormone therapy	G03F	6 months
Vitamin D +/- Calcium	A11CC05, A12AX	6 months
Biologicals	M05BX04 (denosumab), M05BX06 (romosozumab)	6 months
Teriparatide	H05AA02	6 months
Diabetes medication		
Insulins	A10A	6 months
Metformin and combinations	A10BA02, A10BD02, A10BD03 A10BD05, A10BD07, A10BD08 A10BD10, A10BD11, A10BD13 A10BD14, A10BD15, A10BD16 A10BD17, A10BD18, A10BD20 A10BD22, A10BD23, A10BD25 A10BD26, A10BD27, A10BD28	6 months
Sulfonylureas	A10BB	6 months
DPP4-inhibitors and combinations	A10BH, A10BD09, A10BD12 A10BD19, A10BD21, A10BD24 A10BD29, A10BD30	6 months
SGLT2-inhibitors	A10BK	6 months
GLP1-inhibitors	A10BJ	6 months
Glitazones	A10BG	6 months
α -Glucosidase inhibitors	A10BF	6 months
Sulfonamides	A10BC	6 months

Supplementary Table 3. List of diagnoses by ICD-10 codes either increasing fall or fracture risk adapted from Wang, et al. ².

Variable	Code	Time window
Anxiety	F064, F40, F41, F43 N05B	Ever 1 year washout
HIV	B20	Ever
Vitamin D deficiency	E55	Ever
Malnutrition	E40-46, E64	Ever
Obesity	E65 – 68	Ever
Hyperlipidaemia	E78	Ever
Alcohol or drug abuse	F10, F11	Ever
Schizophrenia	F20	
Extrapyramidal movement disorders	G20-26	Ever
Alzheimer's/Dementia	G30, F01,F02 N06D	Ever
Visual disturbances/blindness	H31, H35, H40, H42, H49, H50, H51, H52, H54, Q12, Q13, Q15	Ever

Disorders of vestibular function, dizziness	H80, H81, A88.1, R42, T75.2	Ever
Deafness	H90, H91	Ever
Ischemic heart disease	I20, I21, I24, I25	Ever
Congestive heart failure	I50	Ever
Stroke or cerebrovascular accident	I61, I62, I63, I64, G45, G46	
Hypertension	I10, I11, I12, I13, I15	Ever
Hypotension	I95	Ever
(Obstructive) Pulmonary diseases	J43, J44, J45, J46, J47	Ever
Osteoporosis	M80, M81, M82, M84, M85	Ever
Chronic kidney disease	N18 GFR	Ever Median GFR of the last 6 months
Syncope	R55, T67.1	Ever
Urinary incontinence	R32	Ever
Back pain	M40, M41, M43, M45, M46	Ever
Gout & crystallopathies	M10, M11	
Osteoarthritis	M00, M02, M12, M13, M14, M15, M16, M17, M18, M19, M47, M48, M65, M86, M87, M88, M89, M90	Ever
Rheumatoid arthritis	M05, M06, M07, M08	Ever
Diabetes severity	HbA1c	Median HbA1c of the last 6 months

1. Schneeweiss S, Rassen JA, Brown JS, et al. Graphical Depiction of Longitudinal Study Designs in Health Care Databases. *Annals of Internal Medicine* 2019;170(6):398-406. doi: 10.7326/M18-3079
2. Wang GH-M, Lai EC-C, Goodin AJ, et al. Injurious Fall Risk Differences Among Older Adults With First-Line Depression Treatments. *JAMA Network Open* 2024;7(8):e2435535-e35. doi: 10.1001/jamanetworkopen.2024.35535
3. Jørgensen EB, Overgaard LK, Folkestad L, et al. The risk of fragility fractures following initiation of gabapentin and pregabalin—A Danish, nationwide, high-dimensional propensity score-matched cohort study. *Basic & Clinical Pharmacology & Toxicology* 2023;132(5):384-91. doi: <https://doi.org/10.1111/bcpt.13825>
4. Torstensson M, Hansen AH, Leth-Møller K, et al. Danish register-based study on the association between specific cardiovascular drugs and fragility fractures. *BMJ Open* 2015;5(12):e009522. doi: 10.1136/bmjopen-2015-009522 [published Online First: 2015/12/31]

Due to the same sample size considerations