

1 Additional Files 1: List of medical conditions associated with vitamin D insufficiency

Variable 1: Being a woman older than 65 years of age				
Variable 2: Having a chronic disease assessed using pharmaceutical cost groups (PCGs). The list of PCGs of the federal office of public health comprises 34 chronic diseases and can be downloaded using the following link: https://www.fedlex.admin.ch/eli/oc/2025/146/de/annexes				
Variable 3: Medical conditions associated with vitamin D insufficiency as specified by Swiss guidelines:				
Chronic condition	DRG	TARMED	ATC	Further conditions
Osteoporosis	I69	39.2140, 39.2150, 39.2160	3+ packages ATC M05BA, M05BB, H05BA, G03XC, M05BX04, H05AA02, M05BX53	
Non-traumatic fracture	I74A, I74C, I75A-B, I68B-E, I66A-E			
Kidney disease		21.09, 21.10, 21.11		
Hyperparathyroidism	K06A, K06B	14.023	3+ packages H05BX01, H05BX02, H05BX04, V03AE02, A02AB01, V03AE07	
Hypercalcaemi			H05	
Gastrointestinal disease	G46A-C G46A-C, G47Z, G48A-C, G64A-C	20.xx	L04AF, A07E, L04AX	≥2 visits by a gastro-enterologist
Malabsorption syndrome	G18A-B, G46A-C, G48A-C, G50Z, G67A-D			
Renal disease	H60Z, H63A, H63C		3+ packages B03XA01, B03XA02, B03XA03, V03AE01, V03AE02, V03AE03, V03AE04	
Intake of corticosteroids			3+ packages H02	
HIV			3+ packages J05AR	
epilepsy			3+ packages N03AA, N03AB, N03AF	
Alcohol abuse	V60A-B		N07BB01	
Esophageal varices	H40Z	19.0160, 19.0260, 19.0270, 19.0280, 19.0290		
Hypo/ hyperthyroidism	K64A, K64D	14.021		
Hypogonadism/ Ovarian insufficiency/ Hormone Suppression	N62A-B		L02B	
Underweight	K62A-B			
Diabetes mellitus with insulin			A10AB, A10AC, A10AD, A10AE	

Abbreviations: **PCG** (Pharmaceutical Cost Group, a classification system that categorizes individuals into chronic conditions based on their pharmaceutical claims); **DRG** (Swiss Diagnosis-Related Groups, based on diagnoses, procedures and other clinical information of the inpatient setting); **TARMED** (Swiss classification system of outpatient procedures and services); **ATC** (Anatomical Therapeutic Chemical Classification System of drug prescriptions)