

Publication**Impact of type 2 Diabetes and Metformin use on Vitamin B12 Associated Biomarkers - an Observational Study****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4492893**Author(s)** Metaxas, Corina; Zurwerra, Chantal; Rudofsky, Gottfried; Hersberger, Kurt E.; Walter, Philipp N.**Author(s) at UniBasel** [Hersberger, Kurt](#) ; [Metaxas, Corina](#) ; [Walter, Philipp](#) ;**Year** 2018**Title** Impact of type 2 Diabetes and Metformin use on Vitamin B12 Associated Biomarkers - an Observational Study**Journal** Experimental and clinical endocrinology & diabetes : official journal, German Society of Endocrinology [and] German Diabetes Association**Volume** 126**Number** 6**Pages / Article-Number** 394-400**Mesh terms** Aged; Biomarkers, blood, metabolism; Cross-Sectional Studies; Diabetes Mellitus, Type 2, blood, complications, drug therapy, epidemiology; Female; Humans; Male; Metformin, therapeutic use; Middle Aged; Switzerland, epidemiology; Vitamin B 12, blood, metabolism; Vitamin B 12 Deficiency, blood, complications, epidemiology

Assessment of the impact of type 2 diabetes (T2DM) and metformin use on vitamin B12 (VB12) associated biomarkers and their suitability to represent VB12 supply.; Differences of VB12, holotranscobalamin (HoloTc), the biologically active fraction (%AB12)=HoloTc/VB12*100 and homocystein (Hcy) were analysed i) among diabetic outpatients with (DMMet+) and without metformin use (DMMet-) and ii) in comparison to an external non-diabetic reference group with low VB12 (<200/L).; VB12 associated biomarkers were distributed equally between DMMet+ (n=29, 58%) and DMMet- (n=21, 42%). Significant differences in %AB12 in diabetic patients with low VB12 (n=19) compared to the non-diabetic reference group (n=31) were found. Higher %AB12 was associated with diabetes. Hcy levels were significantly associated with age, folic acid level, renal function and HoloTc but not with VB12.; In T2DM patients with low VB12, %AB12 was confirmed as being higher in comparison to nondiabetic patients. The effect was not clearly attributable to metformin use. HoloTc was unaffected by the lowering of VB12 and significantly associated with the functional marker Hcy. Both findings support the use of HoloTc for the assessment of VB12 supply in diabetic patients.

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