



Background

The novel myokine myonectin (FAM132B) is predominantly expressed in skeletal muscle and is involved in the regulation of metabolic homeostasis. A putative association between myonectin and type 2 diabetes mellitus (T2DM) has been discussed controversially in current literature. The association between myonectin and T2DM at different ages is still obscure.

Patients & Methods

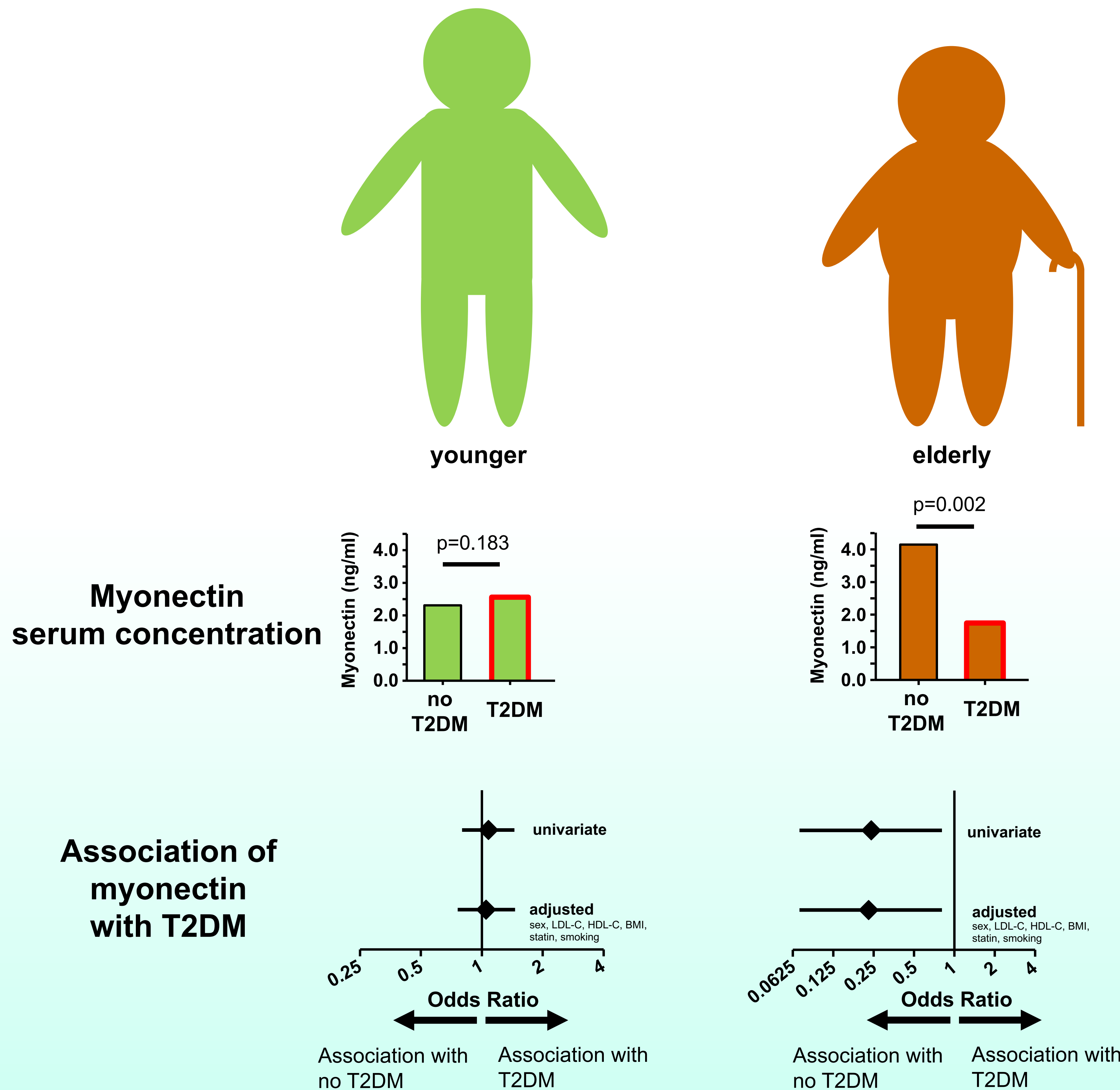
- **Patients:** 410 Austrian patients: 219 elderly (>65 years) and 191 younger (≤65 years); all with cardiovascular disease (CVD)
- **T2DM:** diagnosed in 170 patients (89 elderly, 81 younger) not diagnosed in 240 patients (130 elderly, 110 younger); according to ADA criteria.
- **Myonectin:** determined in serum samples using the „Human FAM132B ELISA Kit“ (#EKH3362; Nordic BioSite AB, Sweden).

Patients ’ Characteristics

	younger ≤65 years; n=191	elderly >65 years; n=219	<i>p-value</i>
Age (years)	57	74	<0.001*
Male sex (%)	73	60	0.008*
BMI (kg/m ²)	28	28	0.386
T2DM (%)	42	41	0.717
LDL-C (mmol/L)	3.2	3.0	0.076
HDL-C (mmol/L)	1.4	1.5	0.003*
Myonektin (ng/ml)	2.4	3.2	0.251
Smoking (%), ever/current	84/37	59/11	<0.001*/<0.001*
Statin intake (%)	59	49	0.048*

All data are give an mean, *denotes statistical significant difference

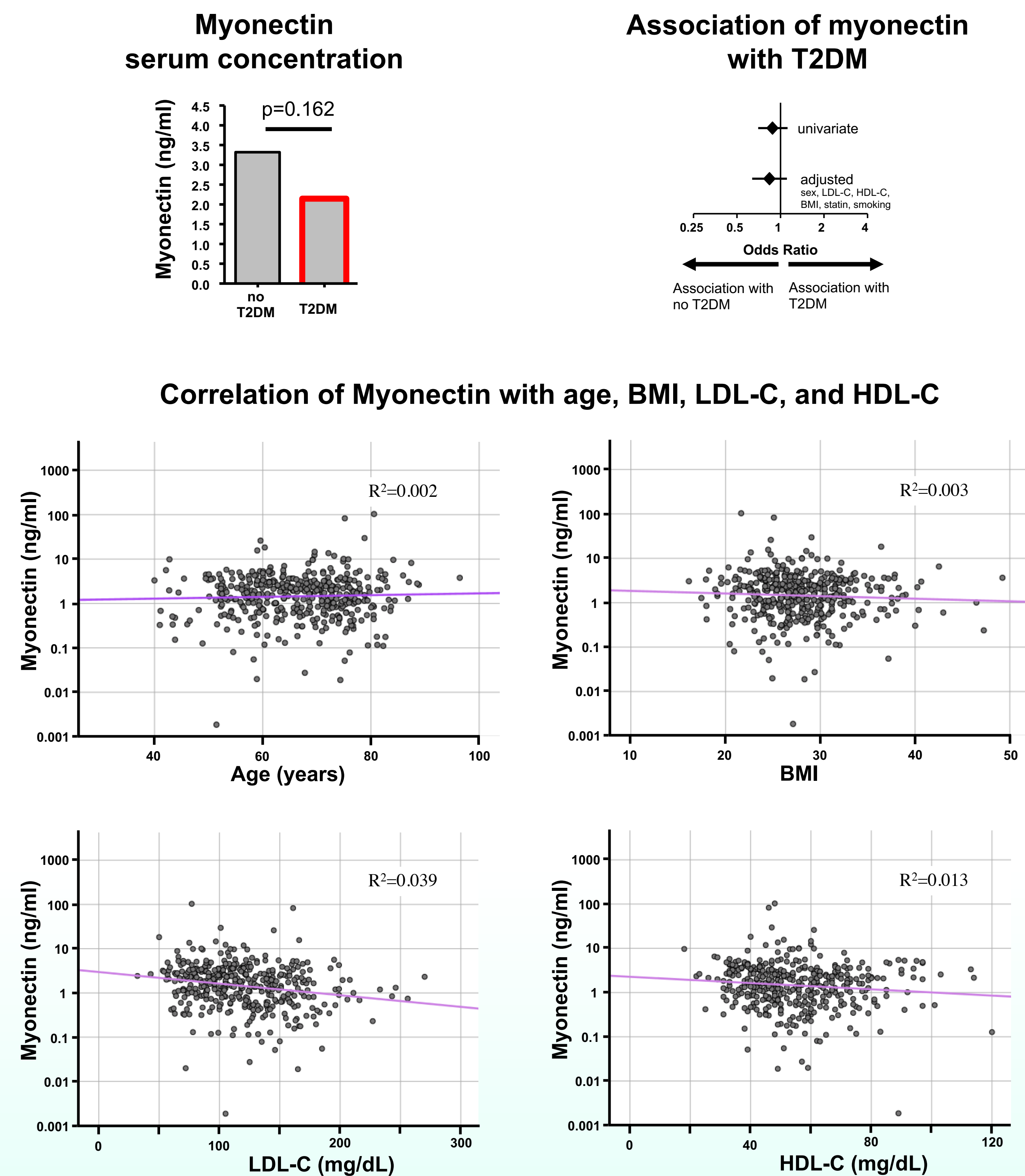
The new myokine myonectin is significantly associated with type 2 diabetes in elderly patients



Conclusion

We conclude that plasma myonectin levels are significantly associated with T2DM in elderly patients with cardiovascular disease.

Results



Abstract

The novel myokine myonectin is predominantly expressed in skeletal muscle and is involved in the regulation of metabolic homeostasis. A putative association between myonectin and type 2 diabetes mellitus (T2DM) has been discussed controversially in current literature. The association between myonectin and T2DM at different ages is still obscure and thus is addressed in the present study. We measured myonectin in 410 vascular risk patients with a mean age of 66 years. Myonectin did not correlate with age ($r=-0.19$; $p=0.697$). Half of our patients (53%) were elderly (≥65 years; $n=219$) with a mean age of 74 years. The younger ones (≤65 years; $n=191$) had a mean age of 57 years. 40.6% ($n=89$) of elderly patients had T2DM and 42.4% ($n=81$) of the younger ones. Myonectin concentrations were significantly decreased in elderly patients with T2DM compared to non-diabetic ones (1.8 vs. 4.2 ng/ml; $p=0.002$), whereas no significant difference was seen in younger patients (2.6 vs. 2.3 ng/ml; $p=0.183$). Regression analysis revealed an unadjusted odds ratio (OR) of 0.24 [0.07-0.81] ($p=0.021$) for the association between myonectin and T2DM in elderly patients but not in younger patients (OR=1.08 [0.80-1.45]; $p=0.609$). This association remained significant after adjusting for sex, body mass index, LDL-cholesterol, HDL-cholesterol, current smoking, as well as statin intake in elderly but not in younger patients (OR=0.23 [0.07-0.81]; $p=0.021$ vs. OR=1.05 [0.76-1.46]; $p=0.769$). We conclude that plasma myonectin levels are significantly associated with T2DM particularly in elderly vascular risk patients.