

**Table 1.** Main cardiovascular effects of antidiabetic drugs

Drug	Weight	SBP	DBP	LDL-c	HDL-c	TG	Blood vessels	Heart	Inflammation	Overall CV effect
Insulin	Gain	Neutral	Neutral	Decrease	Mixed results	Decrease	May have anti-atherosclerotic effects	Risk of hypoglycemia induced CV effects	May inhibit platelet aggregation	Uncertain, studies aiming CV safety are needed
Metformin	Loss or neutral	Decrease or neutral	Decrease or neutral	Decrease	Increase	Decrease	Endothelial protection	May have cardioprotective effects (attenuation of MI size and improved LVF)	May have anti-inflammatory and anti-thrombotic effects	Appears to be beneficial
SU	Gain	Neutral	Neutral	Neutral or decrease	Decrease	Neutral or increase		May increase risk of CV events (gliclazide and glimepiride appear to be the safest); May prevent ischemic cardiac preconditioning after MI (except glimepiride); Risk of hypoglycemia induced CV effects	May inhibit platelet aggregation (gliclazide)	May increase CV risk, studies aiming CV safety are needed
TZD	Gain (fat redistribution, may decrease visceral adipose tissue)	Decrease or neutral	Decrease or neutral	Rosiglitazone – increases; Pioglitazone – neutral	Increase	Decrease	May have anti-atherosclerotic effects	Fluid retention and edema; Rosiglitazone - may increase risk of MI and HF; Pioglitazone - may increase risk of HF	May have anti-inflammatory effect	Pioglitazone appears to have a safer profile than rosiglitazone; caution in patients with heart disease
DPP-4i	Neutral	Neutral or modest decrease	Neutral or modest decrease	Neutral or decrease	Neutral or increase	Decrease	May have anti-atherosclerotic effects; Vasodilation	May have cardioprotective effects; Hospitalization for HF (saxagliptin, results not confirmed with sitagliptin)	May have anti-inflammatory effect May improve fibrinolysis	No additional CV risk; clinical trials ongoing
GLP-1 RA	Loss	Decrease	Decrease or neutral	Decrease	No significant improvements	Decrease	Vasodilation; May improve endothelial function	May have cardioprotective effect; May improve LVF and reduce arrhythmias; Increase in heart rate (small increases of uncertain significance)	Anti-inflammatory and antithrombotic properties	Appears to be beneficial; clinical trials ongoing
SGLT2i	Loss	Decrease	Decrease or neutral	Increase	Increase	Decrease	May improve endothelial function; Reduce arterial stiffness	No effect on heart rate; Risk of volume depletion	May decrease CV risk markers (ex: albuminuria, uric acid)	Appears to be beneficial; clinical trials ongoing

SU: sulfonylureas, TZD: thiazolidinediones; DPP-4i: dipeptidyl peptidase 4 inhibitors; GLP-1 RA: glucagon-like peptide-1 receptor agonists; SGLT2-i: sodium-glucose transporter-2 inhibitors; SBP: systolic blood pressure; DBP: diastolic blood pressure; LDL-c: Low density lipoprotein cholesterol; HDL-c: high density lipoprotein cholesterol; TG: triglycerides; CV: cardiovascular; MI: myocardial infarction; LVF: left ventricular function, HF: Heart failure.