

The image shown is a model and not a real patient.

*Results apply to Ozempic® 0.5 mg and 1 mg plus SOC vs placebo plus SOC in adults with T2D who have high CV risk, established ASCVD or both.²

§Based on volume sales data: IQVIA-MIDAS database R3M 05.2022.5

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; GLP-1 RA=glucagon-like peptide-1 receptor agonist; SOC=standard of care; ASCVD=atherosclerotic cardiovascular disease; ER=extended-release; MET=metformin; SU=sulphonylurea.













[†]Results apply to Ozempic® across SUSTAIN trials, which included placebo, sitagliptin, dulaglutide, exenatide ER, insulin glargine, canagliflozin and liraglutide.^{1,3,4} **SUSTAIN 4:** Mean change in HbA_{1c} at Week 30 (+ MET ± SU), baseline 8.2% (N=1089): -1.2% Ozempic® 0.5 mg (n=362), (P<0.0001) and -1.6% Ozempic® 1 mg (n=360), (P<0.0001) vs -0.8% study-titrated insulin glargine (n=360).^{1,6} **SUSTAIN 7:** Mean change in HbA_{1c} at Week 40 (+ MET), baseline 8.2% (N=1201): -1.5% Ozempic® 0.5 mg (n=301) vs -1.1% dulaglutide 0.75 mg (n=299), (P<0.0001); -1.8% Ozempic® 1 mg (n=300) vs -1.4% dulaglutide 1.5 mg (n=299), (P<0.0001).^{1,7} Ozempic® is not indicated for weight loss.¹



GUIDELINES

MACE

STROKE

ADDITIONAL **CVOT RESULTS**

EFFICACY

SAFETY AND TOLERABILITY

DOSING

PATIENT PROFILES

SUMMARY

Many of your patients may have both CVD and T2D



The images shown are models and not real patients.

*CV risk based on 2019 ESC/EASD guidelines.8 Complete patient risk factors are shown for each patient in the Patient Profiles section. MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; T2D=type 2 diabetes; MI=myocardial infarction; CV=cardiovascular; ESC=European Society of Cardiology; EASD=European Association for the Study of Diabetes.











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ADDITIONAL CVOT RESULTS

Why is it important to address MI and stroke risk for patients with T2D?



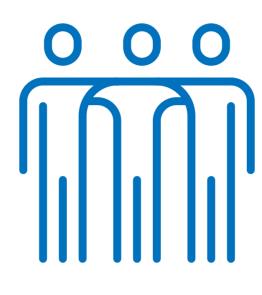
+19 YEARS

LIFE EXPECTANCY WAS REDUCED BY UP TO 19 YEARS IN ADULTS WITH DIABETES, **STROKE AND MI**^{9*}



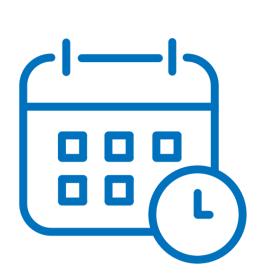
MI AND STROKE

RISK OF STROKE OR MI 2-3 TIMES HIGHER **IN PEOPLE WITH T2D** VS THOSE WITHOUT¹⁰



ASCVD

THE MOST PREVALENT **CV COMPLICATION AMONG PATIENTS** WITH T2D IS ASCVD¹¹



14.6 YEARS

ASCVD OCCURS 14.6 YEARS EARLIER AND WITH A GREATER MORTALITY RISK IN PEOPLE WITH DIABETES VS THOSE WITHOUT^{12,13}

ASCVD is the principal cause of death and disability in T2D, making CV-risk management vital¹²

ASCVD: a closer look

Prevalence of CVD in T2D

*Survival estimates for adults aged 50–54 years.9

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; MI=myocardial infarction; T2D=type 2 diabetes; ASCVD=atherosclerotic cardiovascular disease; CV=cardiovascular; CVD=cardiovascular disease.



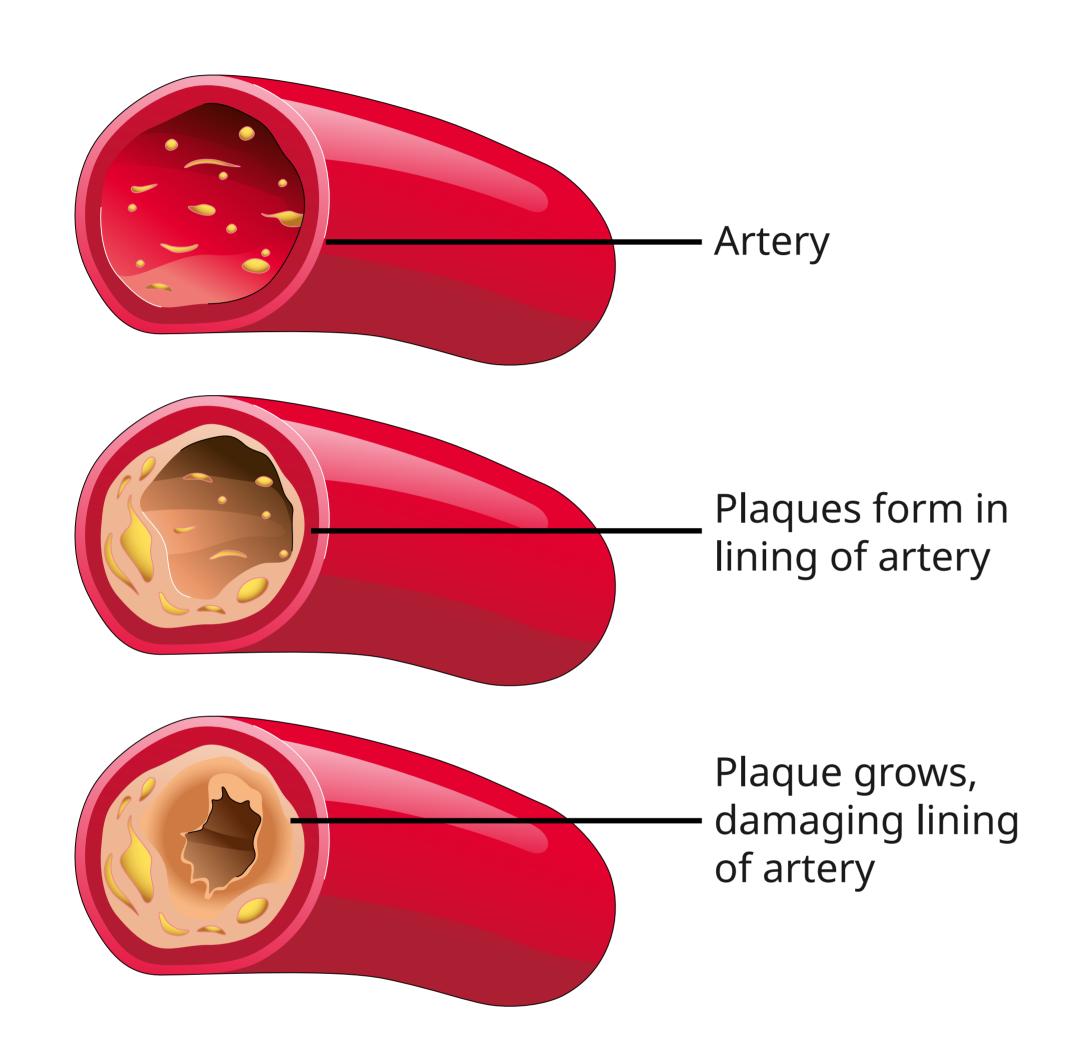






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ASCVD: a closer look



- ASCVD may occur when plaques form in the lining of major conduit arteries, provoking chronic inflammation. Over time, these plaques can build up and ultimately rupture, causing a blood clot^{14,15}
- The extent of ASCVD progression depends on the risk factors and arterial susceptibility¹⁴

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; ASCVD=atherosclerotic cardiovascular disease.













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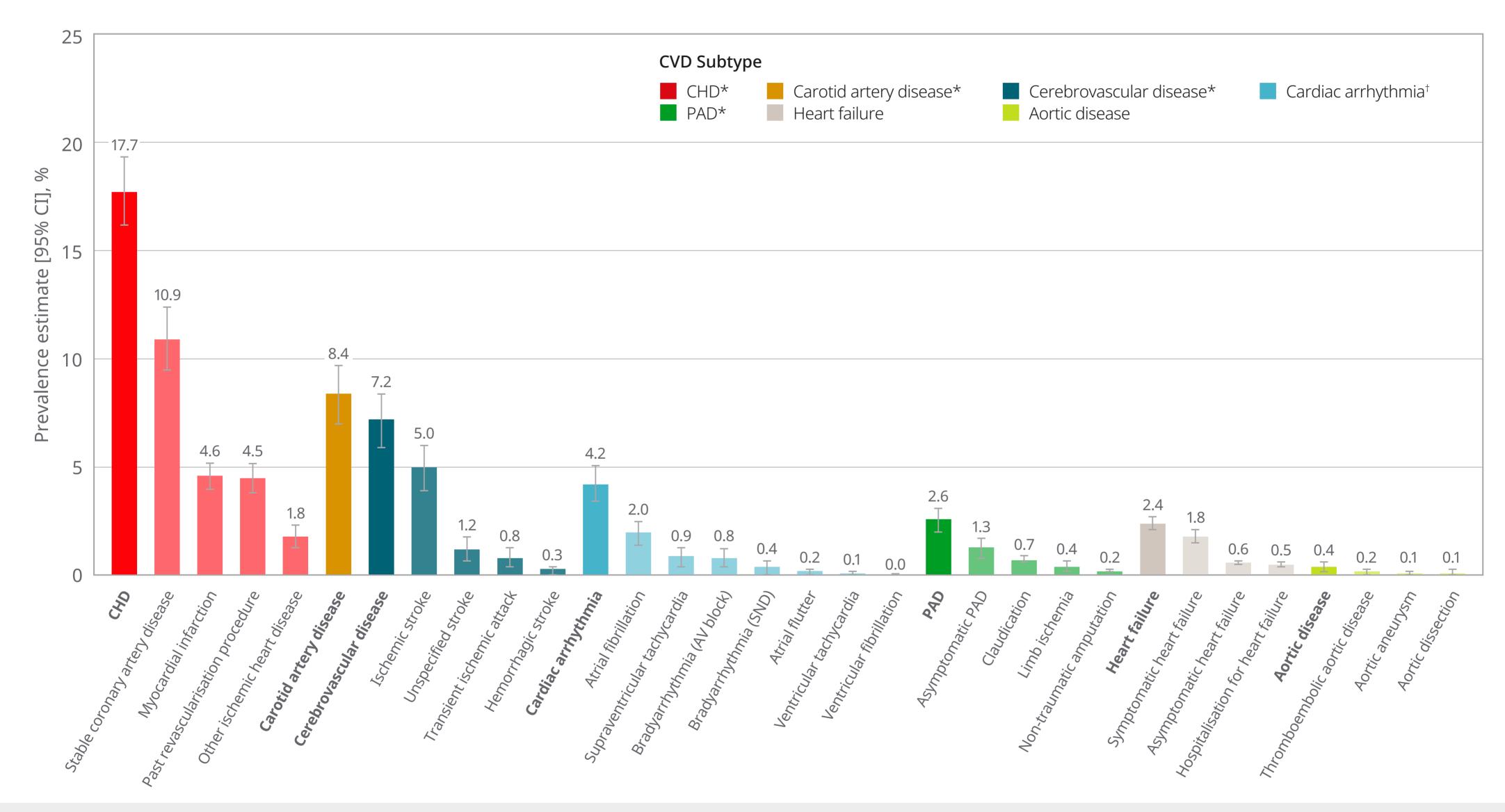
PATIENT PROFILES

SUMMARY



Approximately 9/10 patients with established CVD and T2D have ASCVD¹¹

Overall weighted CVD prevalence in people with T2D by CVD subtype and diagnosis¹¹



Data are overall prevalence estimates (95% CI), which were calculated as weighted estimates to account for the size of the diabetes population of each country and the sampling of participants by healthcare setting, if it was different from as planned. CVD subtypes are in bold font, contributing diagnoses are in plain font. Diagnoses are not mutually exclusive; one participant may have multiple diagnoses.¹¹ *Categorised as ASCVD.¹¹

[†]Included conduction abnormalities.¹¹

MACE=major adverse cardiovascular outcomes; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; T2D=type 2 diabetes; ASCVD=atherosclerotic cardiovascular disease; CI=confidence interval; CHD=coronary heart disease; AV=atrioventricular; SND=sinus node dysfunction; PAD=peripheral artery disease.















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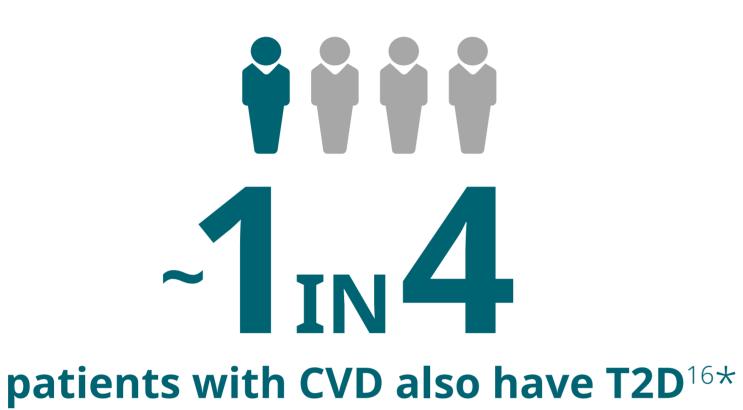
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Patients with CVD and T2D may face complications

Consider the following:



The recent CAPTURE study found patients with established CVD and T2D have ASCVD¹¹



CAPTURE also found that only ~ IN U patients with T2D are prescribed a glucose-lowering treatment with a proven CV benefit 17th

Patients with CVD and T2D not receiving a therapy with proven CV benefit continue to be at higher risk of a CV event

More about CAPTURE

*CVD is defined as heart failure, cerebrovascular accident, coronary heart disease, and/or peripheral arterial disease. 16 [†]Glucose-lowering treatments with proven CVD benefit include certain GLP-1 RAs and SGLT-2is.¹⁷ MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; T2D=type 2 diabetes; ASCVD=atherosclerotic cardiovascular disease; CV= cardiovascular; GLP-1 RA=glucagon-like peptide-1 receptor agonist; SGLT-2i=sodium-glucose co-transporter 2 inhibitor.













STROKE



More about CAPTURE

Primary and secondary analyses within CAPTURE explored the following in patients with T2D:11,17

- The prevalence of different types of CVD
- The clinical management of CVD

CAPTURE studied nearly 10,000 people with T2D in 13 countries across 5 continents:¹¹



Who was the typical CAPTURE patient?¹¹

- Median HbA_{1c}: 7.3%
- Median years living with T2D: 10.7
- Median age: 64 years

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CVD=cardiovascular disease.











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Multiple international organisations address the connection between CVD and T2D

For adults with T2D and established ASCVD, a GLP-1 RA with proven CV benefit should be considered early in the **treatment of T2D**8,12,18-21

ESC/EASD 2019

GLP-1 RAs

WITH PROVEN CVD BENEFIT

are recommended for a risk reduction of CV events in patients on metformin with atherosclerosis or very high/high CV risk, irrespective of HbA_{1C}.8*

ASA/AHA 2021

A GLP-1 RA THERAPY

SHOULD BE ADDED TO METFORMIN independently of baseline HbA_{1C} for the prevention of future vascular events, in patients with established ASCVD, including ischaemic stroke.¹⁸

ACC 2020

A GLP-1 RA THERAPY

WITH PROVEN CV BENEFIT

is recommended for patients with established or who are at very high risk of ASCVD.¹⁹

AACE/ACE 2020

A GLP-1 RA

WITH PROVEN CVD BENEFIT

should be considered independently of glycaemic control, in patients with established or high risk for ASCVD.^{20*}

AACE 2022

A GLP-1 RA

WITH PROVEN BENEFIT

for reduction in the risk of stroke should be used in patients with T2D and established/high risk of ASCVD.^{21†}

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; T2D=type 2 diabetes; ASCVD=atherosclerotic cardiovascular disease; GLP-1 RA=glucagon-like peptide-1 receptor agonist; CV=cardiovascular; ESC=European Society of Cardiology; EASD=European Association for the Study of Diabetes; ASA=American Stroke Association; AHA=American Heart Association; ACC=American College of Cardiology; AACE = American Association of Clinical Endocrinologists; ACE=American College of Endocrinology; SGLT-2i=sodium-glucose co-transporter 2 inhibitor.









^{*}SGLT-2is are also recommended.^{8,20}

[†]In persons with insulin resistance, prediabetes, or T2D and a prior transient ischaemic attack or stroke, pioglitazone should be considered to reduce the risk of recurrent stroke.²¹



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Composite primary endpoint

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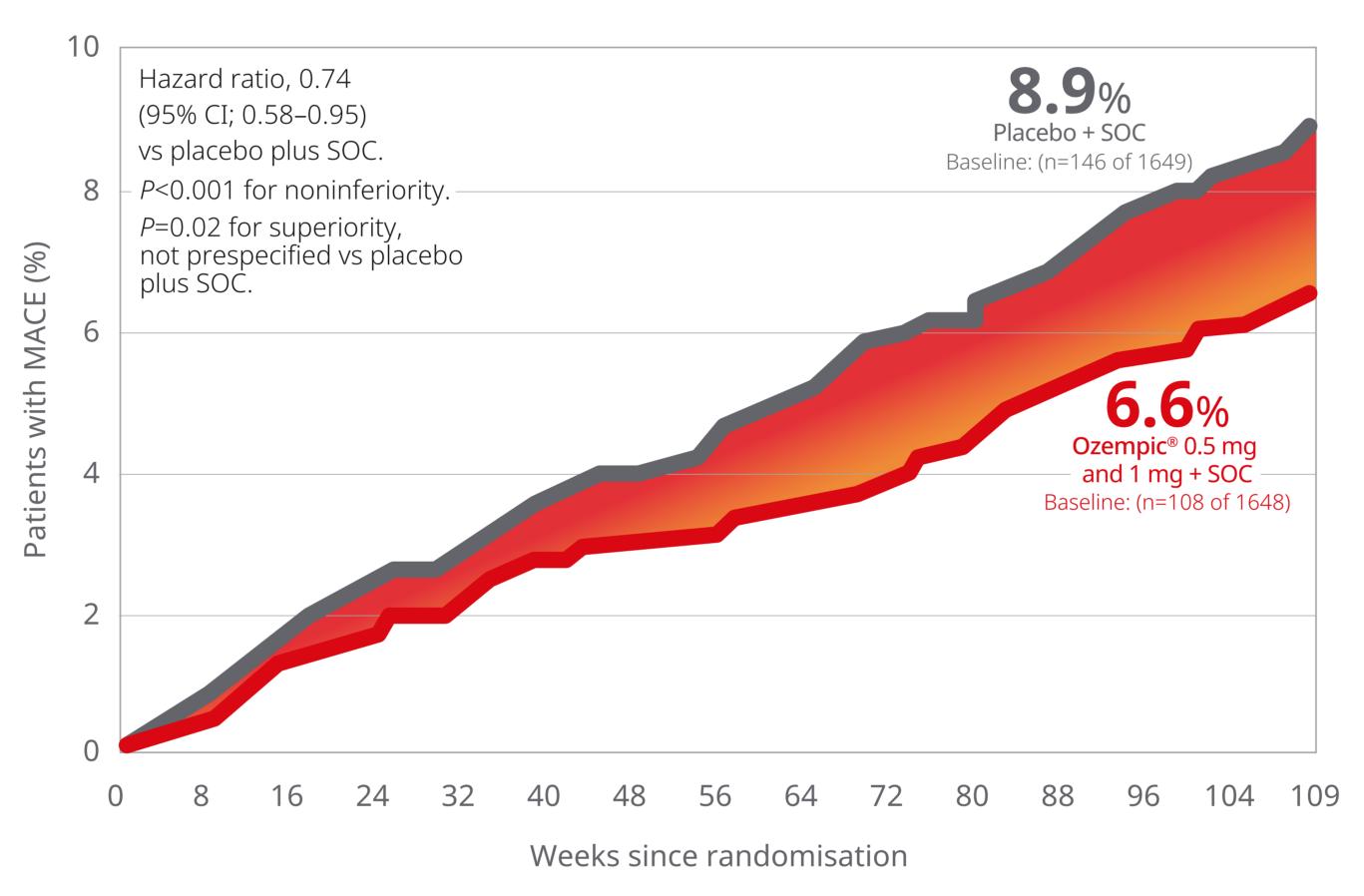
RRR OF MACE when added to SOC1,2*

(2.3% ARR at 109 weeks)²

In adult patients with T2D who have high CV risk, established ASCVD or both²*

After 2 years, Ozempic® significantly reduced the risk of MACE²

Time to first confirmed MACE²



A5

Number needed to treat to prevent 1 MACE (2 Years)^{2,22}



Composite MACE endpoint: CV death, nonfatal MI, or nonfatal stroke.¹

SUSTAIN 6 Study Design

Patient Characteristics

^{*}When added to SOC. SOC included, but was not limited to, oral antidiabetic treatment, insulin, antihypertensives, diuretics and lipid-lowering therapies.²³
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; ASCVD=atherosclerotic cardiovascular disease; RRR=relative risk reduction; SOC=standard of care; ARR=absolute risk reduction; CI=confidence interval; NNT=number needed to treat; MI=myocardial infarction.















SUSTAIN 6 – A 2-year CVOT for Ozempic®1*

3297
patients²

Inclusion criteria: T2D, $HbA_{1c} \ge 7\%$ Age ≥ 60 years with at least 1 CV risk factor[†] (17% of patients) OR Age ≥ 50 years with established

CV disease* (83% of patients)
Ischaemic heart disease: 60.5%
MI: 32.5%

• Ischaemic stroke: 11.6%

1:1:1:1

double-blinded randomisation²

Placebo 1 mg

Placebo 0.5 mg

Treatment duration 2 years^{2‡}

Primary composite outcome¹

Time from randomisation to first occurrence of MACE







Nonfatal MI



Diabetes and CV

standards of care²

Nonfatal stroke

[‡]Trial consisted of 104 weeks of treatment (including 4–8 weeks of dose-escalation period), with a subsequent 5-week follow-up period.²
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; MI=myocardial infarction; LV=left ventricular.









^{*}Established CV disease (previous CV, cerebrovascular or peripheral vascular disease) or chronic heart failure (New York Heart Association class II or III) or chronic kidney disease stage 3 or higher.²

†Defined as persistent microalbuminuria (30–299 mg/g) or proteinuria, hypertension and LV hypertrophy by electrocardiogram or imaging, LV systolic or diastolic dysfunction by imaging or ankle/brachial index <0.9 of those in the trial.²³



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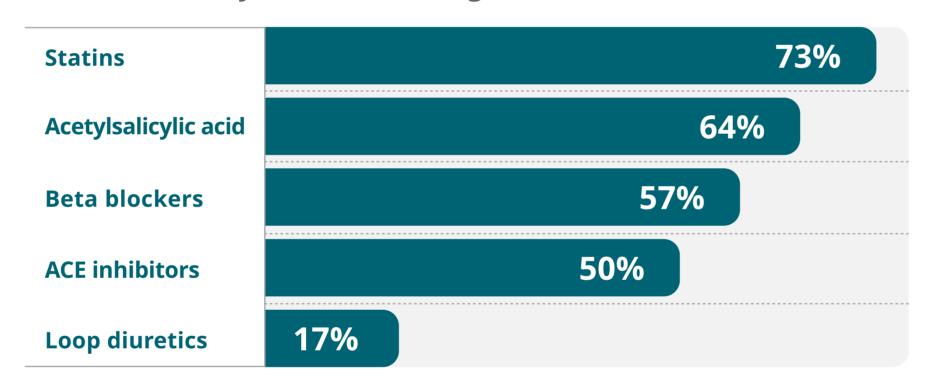
SUMMARY



SUSTAIN 6 – Patient characteristics at baseline^{2,23}

Patients with established CVD*	Gender	Mean age	Mean weight/BMI	Mean HbA _{1c}	Mean diabetes duration
83%	61% male	65 years	92.1 kg/ 32.8 kg/m ²	8.7%	13.9 years

Most commonly used CV SOC agents²³



CV risk factors at baseline^{2,23}

Mean systolic blood pressure:	135.6 mm Hg
Mean diastolic blood pressure:	77.0 mm Hg
Low-density lipoprotein cholesterol:	82.3 mg/dL
Never smoked:	45%

^{*}Age ≥50 years with established CVD (previous CV, cerebrovascular or peripheral vascular disease), chronic heart failure (New York Heart Association class II or class III), or chronic kidney disease of stage 3 or higher.²
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; BMI=body mass index; CV=cardiovascular; SOC=standard of care; ACE=angiotensin-converting enzyme.













CVOTs in T2D: A closer look

SUSTAIN 6² (semaglutide vs placebo)

MACE
2696
RRR
NNT: 4522
P<0.001 for noninferiority
P=0.02 for superiority*

- **CV death=-2%** [HR=0.98 (95% CI, 0.65−1.48; *P*=0.92)]
- Nonfatal stroke=-39% [HR=0.61 (95% CI, 0.38-0.99; P=0.04)]
- **Nonfatal MI=-26%** [HR=0.74 (95% CI, 0.51−1.08; *P*=0.12)]

REWIND²⁴ (dulaglutide vs placebo)

12% RRR NNT: 67²² P=0.026

- **CV death**[†]**=-9%** [HR=0.91 (95% CI, 0.78−1.06; *P*=0.21)]
- Nonfatal stroke=-24% [HR=0.76 (95% CI, 0.61-0.95; P=0.017)]
- **Nonfatal MI=-4%** [HR=0.96 (95% CI, 0.79–1.16; *P*=0.65)]

LEADER²⁵ (liraglutide vs placebo)

MACE
1396
RRR
NNT: 56²²
P=0.01

- **CV death=-22%** [HR=0.78 (95% CI, 0.66-0.93; *P*=0.007)]
- Nonfatal stroke=-11% [HR=0.89 (95% CI, 0.72-1.11; P=0.30)]
- Nonfatal MI=-12% [HR=0.88 (95% CI, 0.75-1.03; P=0.11)]

EMPA-REG²⁶ (empagliflozin vs placebo)

MACE
1490
RRR
NNT: 63²²
P=0.04

- **CV death=-38%**[HR=0.62 (95% CI, 0.49-0.77; *P*<0.001)]
- Nonfatal stroke=24% [HR=1.24 (95% CI, 0.92-1.67; P=0.16)]
- **Nonfatal MI=-13%** [HR=0.87 (95% CI, 0.70−1.09; *P*=0.22)]

Please note that CVOTs differ by trial design.

Therefore, the results cannot be used as a head-to-head comparison.

CVOT Patient Characteristics

The image shown is a model and not a real patient.

*Testing for superiority for primary outcome was not prespecified.²
†Includes deaths of unknown cause.²⁴

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; RRR=relative risk reduction; NNT=number needed to treat; CV=cardiovascular; HR=hazard ratio; CI=confidence interval; MI=myocardial infarction.











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Who were the patients in these CVOTs?

	SUSTAIN 6 ^{2,23} (semaglutide vs placebo)	REWIND ^{24,27} (dulaglutide vs placebo)	LEADER ^{25,28} (liraglutide vs placebo)	EMPA-REG ^{26,29} (empagliflozin vs placebo)
CV RISK	83% established CVD	31% established CVD	81% established CVD	>99% established CVD
CV HISTORY				
PRIOR MI	32%	16.2%	31%	47%
HEART FAILURE	24%	8.6%	18%	10%
MEAN DIABETES DURATION	14 years	10 years	13 years	>10 years
MEAN HbA _{1c}	8.7%	7.3%	8.7%	8.1%
INSULIN USE	58%	24%	44.6%	48%
TRIAL DURATION	2 years	5.4 years	3.5–5 years	3.1 years*

Please note that CVOTs differ by trial design. Therefore, the results cannot be used as a head-to-head comparison.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CV=cardiovascular; CVD=cardiovascular disease; MI=myocardial infarction.















^{*}Median observation time.²⁹



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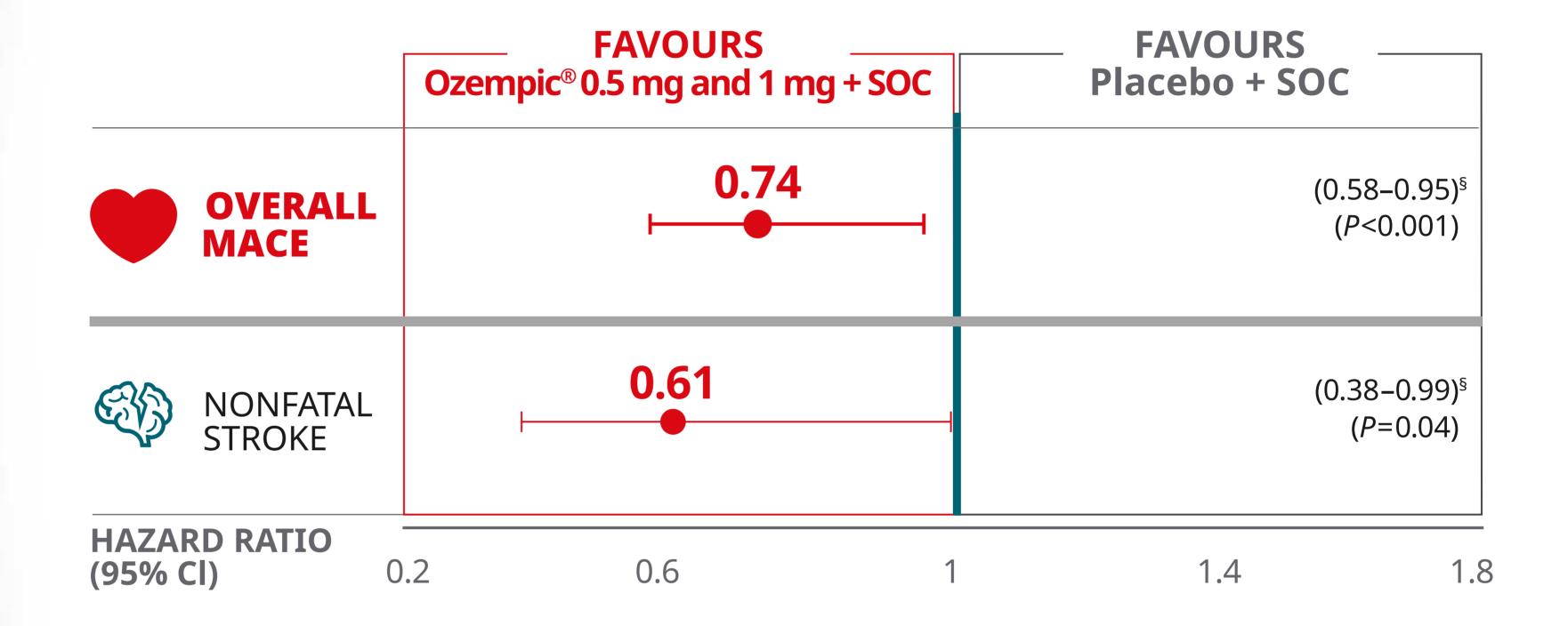


39%
SIGNIFICANT
REDUCTION
IN RATE OF
NONFATAL
STROKE DROVE
THE MACE
REDUCTION^{2‡§}

In adult patients with T2D who have high CV risk, established ASCVD or both^{2*}

Ozempic® significantly reduced the risk of MACE, driven by nonfatal stroke^{1,2}

Composite primary endpoint: 26% RRR of MACE (2.3% ARR at 109 weeks)^{1,2†}



Additional CV-related outcomes

[§]Hazard ratio vs placebo (95% CI). Mean study observation time of 2.1 years. Cox proportional-hazards model with treatment as factor and stratified according to all combinations of stratification factors used in the randomisation.² MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; ASCVD=atherosclerotic cardiovascular disease; RRR=relative risk reduction; ARR=absolute risk reduction; SOC=standard of care; CI=confidence interval; MI=myocardial infarction.













^{*}When added to SOC. SOC included, but was not limited to, oral antidiabetic treatment, insulin, antihypertensives, diuretics and lipid-lowering therapies.²³

†Absolute rates for nonfatal stroke: 2.7% (n=44 of 1649) with placebo vs 1.6% (n=27 of 1648) with Ozempic® (0.5 mg and 1 mg). There was no significant change in the rate of nonfatal MI or CV death.²

†The primary endpoint in the SUSTAIN 6 CVOT was time to first occurrence of a 3-part composite outcome that included CV death, nonfatal MI or nonfatal stroke.^{1,2}



In adult patients with T2D who have high CV risk, established ASCVD or both²*

Ozempic® did more than reduce the risk of MACE²³

Additional CV-related outcomes from the CVOT for Ozempic[®]:²³



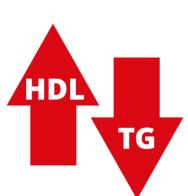
Lower rate of systolic blood pressure

2.6 mm Hg lower with the 1 mg dose vs placebo (*P*<0.001)



Statistically signicant change in LDL cholesterol ratio vs placebo

ETR vs placebo for the 0.5 mg dose was 0.96 mg/dL (P<0.05)



Statistically signicant change in HDL cholesterol and triglycerides ratio vs placebo

HDL: ETR vs placebo for the 1 mg dose was 1.04 mg/dL (*P*<0.0001) Triglycerides: ETR vs placebo for the 1 mg dose was 0.93 mg/dL (*P*<0.001)

^{*}When added to SOC. SOC included, but was not limited to, oral antidiabetic treatment, insulin, antihypertensives, diuretics and lipid-lowering therapies.²³ MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; ASCVD=atherosclerotic cardiovascular disease; LDL=low-density lipoprotein; ETR=estimated treatment ratio; HDL=high-density lipoprotein; TG=triglycerides; SOC=standard of care.









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In stroke patients, diabetes is an independent risk factor for stroke recurrence³⁰

RISK OF STROKE RECURRENCE WAS



IN STROKE PATIENTS
WITH DIABETES VS
THOSE WITHOUT³⁰

DIABETES HAS BEEN ASSOCIATED WITH



FOLLOWING A STROKE VS THE GENERAL POPULATION^{31,32}

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial.











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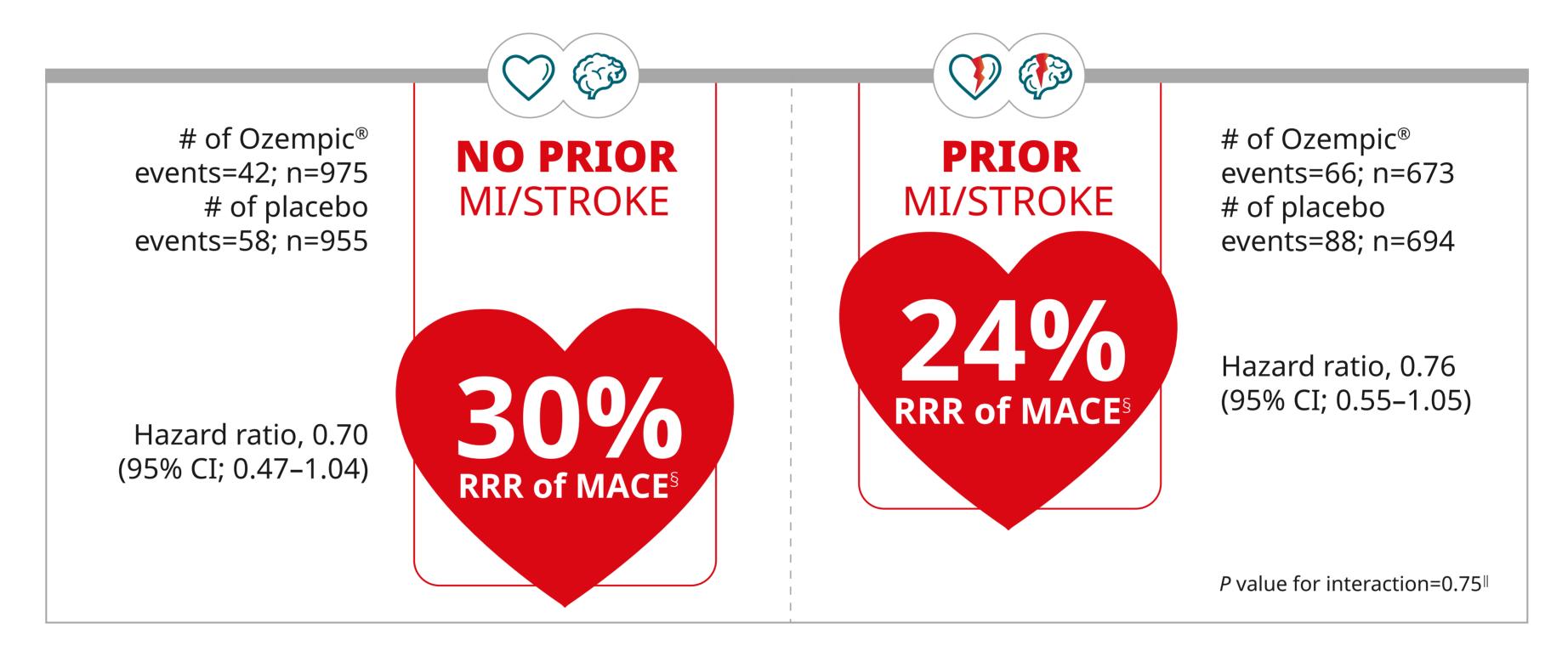
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In adult patients with T2D who have high CV risk, established ASCVD or both^{2*}

Ozempic® delivered consistent effects across patients with and without history of MI/stroke²³

Post-hoc subgroup analysis of the composite primary endpoint^{23†‡}



MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; ASCVD=atherosclerotic cardiovascular disease; MI=myocardial infarction; CI=confidence interval; RRR=relative risk reduction; SOC=standard of care; CVD=cardiovascular disease.













^{*}When added to SOC. SOC included, but was not limited to, oral antidiabetic treatment, insulin, antihypertensives, diuretics and lipid-lowering therapies.²³

^{†#} of MACE: Ozempic® (n=108 of 1648) and placebo (n=146 of 1649). Hazard ratio, 0.74 (95% CI; 0.58–0.95). P<0.001 for noninferiority vs placebo plus SOC; P=0.02 for superiority, not prespecified.²

[‡]The consistency in the treatment effect for the primary outcome was explored in multiple subgroup analyses based on baseline information (eg. age, sex, baseline HbA_{1c} insulin use, history of renal impairment, and CVD status, including prior history of MI or stroke). Included patients who met the inclusion criteria predefined in the study.²³

[§]Composite MACE endpoint included: CV death, nonfatal MI, or nonfatal stroke.¹

^{||}P value was estimated using Cox proportional-hazards models for the test of the interaction effect with no adjustments for multiplicity.²³

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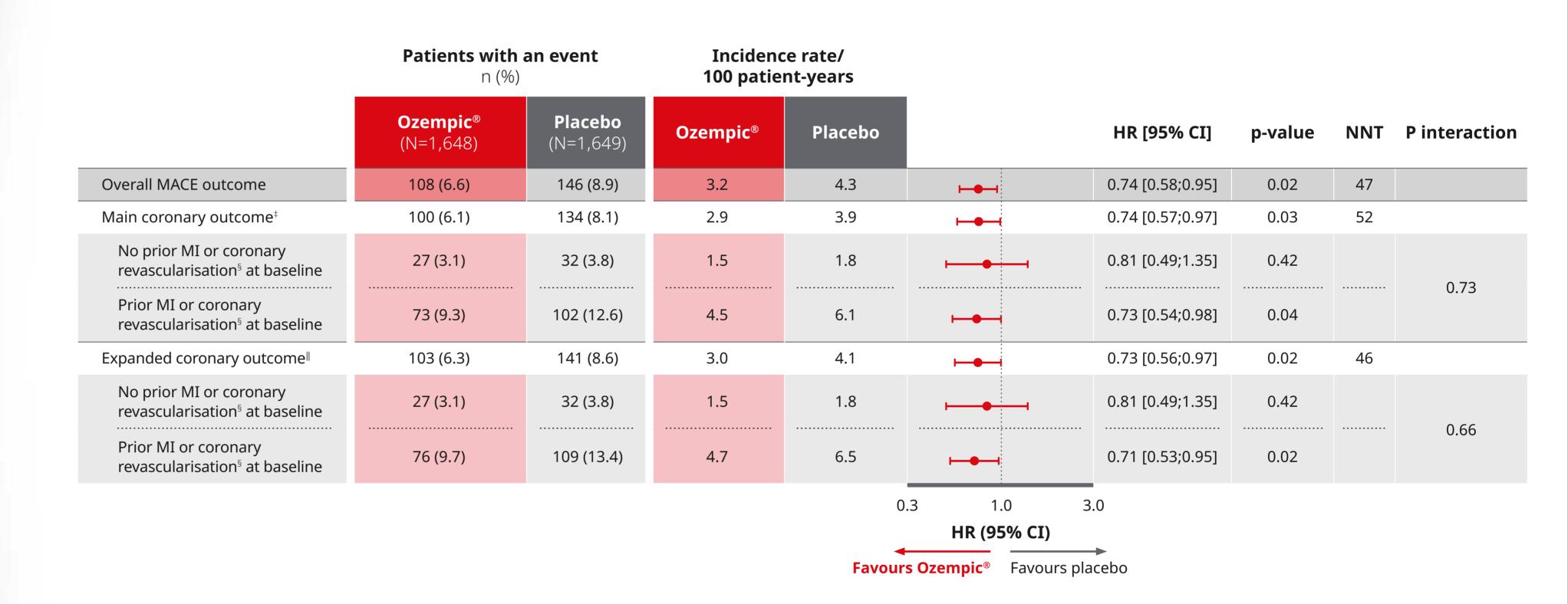
PATIENT PROFILES

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REDUCED RISK OF CORONARY OUTCOMES IN BOTH PRIMARY AND SECONDARY PREVENTION 33**

In adult patients with T2D with or at high risk for CVD

Ozempic® reduced the risk of composite coronary outcomes vs placebo, irrespective of prior MI or revascularisation status³³*†



Results are from an exploratory post-hoc analysis.³³

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CVD=cardiovascular disease; MI=myocardial infarction; HR=hazard ratio; CI=confidence interval; NNT=number needed to treat; SOC=standard of care.













^{*}Results are from post-hoc analyses of the SUSTAIN-6 CVOT. Post-hoc analyses assessed the effects of once-weekly Ozempic® (0.5 mg and 1 mg doses pooled) plus SOC on composite coronary outcomes in the SUSTAIN-6 trial population (N=3297) vs placebo plus SOC. The median follow-up duration was 2.1 years.³³

[†]When added to SOC. SOC included, but was not limited to, oral antidiabetic treatment, insulin, antihypertensives, diuretics and lipid-lowering therapies.²³

[‡]The main coronary outcome was a composite of MI (both fatal and nonfatal) or coronary revascularisation (defined as coronary artery bypass graft surgery or percutaneous coronary intervention).³³

[§]Defined as coronary artery bypass graft surgery or percutaneous coronary intervention.³³

The expanded coronary outcome was a composite of MI, coronary revascularisation, or unstable angina.33



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Semaglutide's CV effects in patients with T2D may span across the CV risk continuum^{34,35}

SEMAGLUTIDE REDUCED THE RISK OF **MACE** ACROSS A RANGE OF CV RISK^{34,35}

- In a pooled post-hoc analysis of semaglutide CVOTs where patients with T2D and high CV risk were re-categorised into CV risk subgroups using the REWIND CVD criteria, semaglutide reduced the risk of MACE (primary endpoint) relative to placebo in both the established CVD subgroup (HR=0.74 [95% CI, 0.59-0.92]) and the CV risk factor **subgroup** (HR=0.84 [95% CI, 0.55–1.28; *P*=0.60])^{34*}
- In a pooled post-hoc meta-analysis of 18 semaglutide phase 3a trials including a broad T2D population, semaglutide reduced the risk of MACE (primary endpoint) vs several comparators (HR=0.77 [95% CI, 0.64–0.93]) across the continuum of baseline CV risk^{35†}

Results are from post-hoc analyses.^{34,35}

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CV=cardiovascular; T2D=type 2 diabetes; CVD=cardiovascular disease; HR=hazard ratio; CI=confidence interval; SOC=standard of care; s.c.=subcutaneous; CKD=chronic kidney disease; CHF=chronic heart failure; TIA=transient ischaemic attack; MI = myocardial infarction; ER=extended-release.









^{*}Results are from an exploratory post-hoc analysis that assessed the impact of semaglutide plus SOC vs placebo plus SOC on CV outcomes in a pooled population of SUSTAIN 6 (semaglutide s.c. 0.5 mg and 1 mg) and PIONEER 6 (semaglutide oral target dose 14 mg) patients who were re-categorised into CV risk subgroups according to REWIND CVD criteria (N=6480).^{2,34,36} The key criteria differences between the trials were patients with CKD, CHF, prior TIA, or prior haemorrhagic stroke were categorised with established CVD in SUSTAIN 6 and PIONEER 6, but as having CV risk factors only in REWIND. The primary endpoint was a composite of MACE (CV death, nonfatal MI, or nonfatal stroke).34

[†]Results are from a post-hoc meta-analysis of data from 18 phase 3a SUSTAIN and PIONEER trials, with patients distributed across the continuum of baseline CV risk using a CV risk prediction model (N=17645). Data were pooled according to the randomised treatment; semaglutide (0.5 and 1 mg s.c. and 3, 7 and 14 mg oral) or comparator (placebo, sitagliptin, exenatide ER, insulin glargine, dulaglutide, liraglutide and empagliflozin). Primary endpoint was time to first MACE (CV death, nonfatal MI, or nonfatal stroke).35



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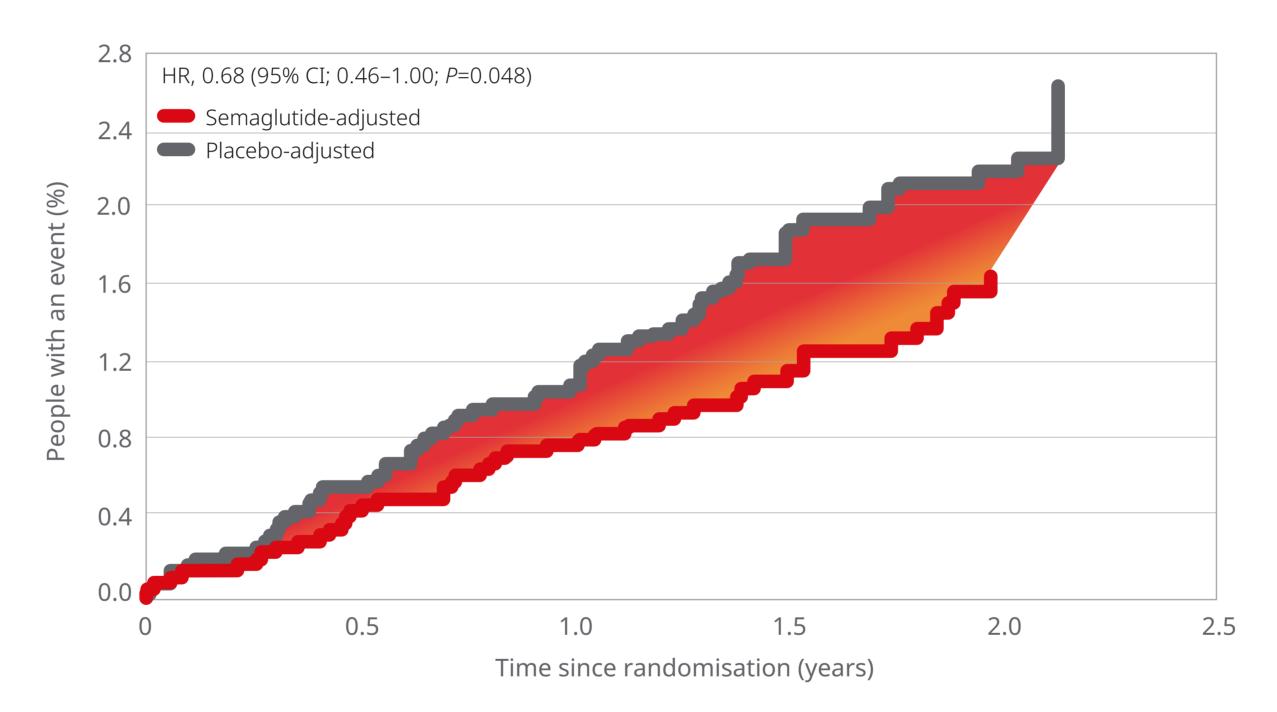
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OZEMPIC® - HIGHEST PROBABILITY TO RANK 1 ST OF THE GLP-1 RAS IN STROKE AND MI REDUCTION38

Reduction in the risk of stroke in primary and secondary prevention with semaglutide³⁷

- In a pooled exploratory post-hoc analysis of semaglutide CVOTs, semaglutide reduced the risk of any first stroke compared with placebo in patients with T2D at high CV risk (HR=0.68 [95% CI, 0.46–1.00; *P*=0.048])^{37*}
 - Also, the risk of stroke was reduced with semaglutide vs placebo irrespective of prior stroke at baseline³⁷*



• A network meta-analysis indirectly comparing GLP-1 RAs showed that Ozempic® had the highest probability to rank first in reducing stroke and MI^{38†}

Results are from an exploratory post-hoc analysis and network meta-analysis, respectively.^{37,38}

[†]Results are from a network meta-analysis that indirectly compared the CV safety and mortality effects among different GLP-1 RAs in patients with T2D. A total of 7 GLP-1 RA CVOTs were included where each compared the CV safety of a GLP-1 RA (lixisenatide, liraglutide, semaglutide, semaglutide, albiglutide, dulaglutide and semaglutide oral) to placebo, both as an added on therapy to the SOC (N=56004).³⁸
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; HR=hazard ratio; CI=confidence interval; GLP-1 RA=glucagon-like peptide-1 receptor agonist; MI=myocardial infarction; SOC=standard of care; s.c.=subcutaneous.











^{*}Results are from an exploratory post-hoc analysis that assessed the effects of semaglutide plus SOC vs placebo plus SOC on stroke and its subtypes in a pooled population of SUSTAIN 6 (semaglutide s.c. 0.5 mg and 1 mg) and PIONEER 6 (semaglutide oral target dose 14 mg) (N=6480).^{2,36,37} Time to first occurrence of any type of stroke (fatal and nonfatal; transient ischaemic attacks were not included) and stroke subtypes, including ischaemic and haemorrhagic strokes, as well as unknown subtypes, were investigated.³⁷



GUIDELINES

MACE

STROKE

ADDITIONAL CVOT RESULTS

EFFICACY

SAFETY AND TOLERABILITY

DOSING

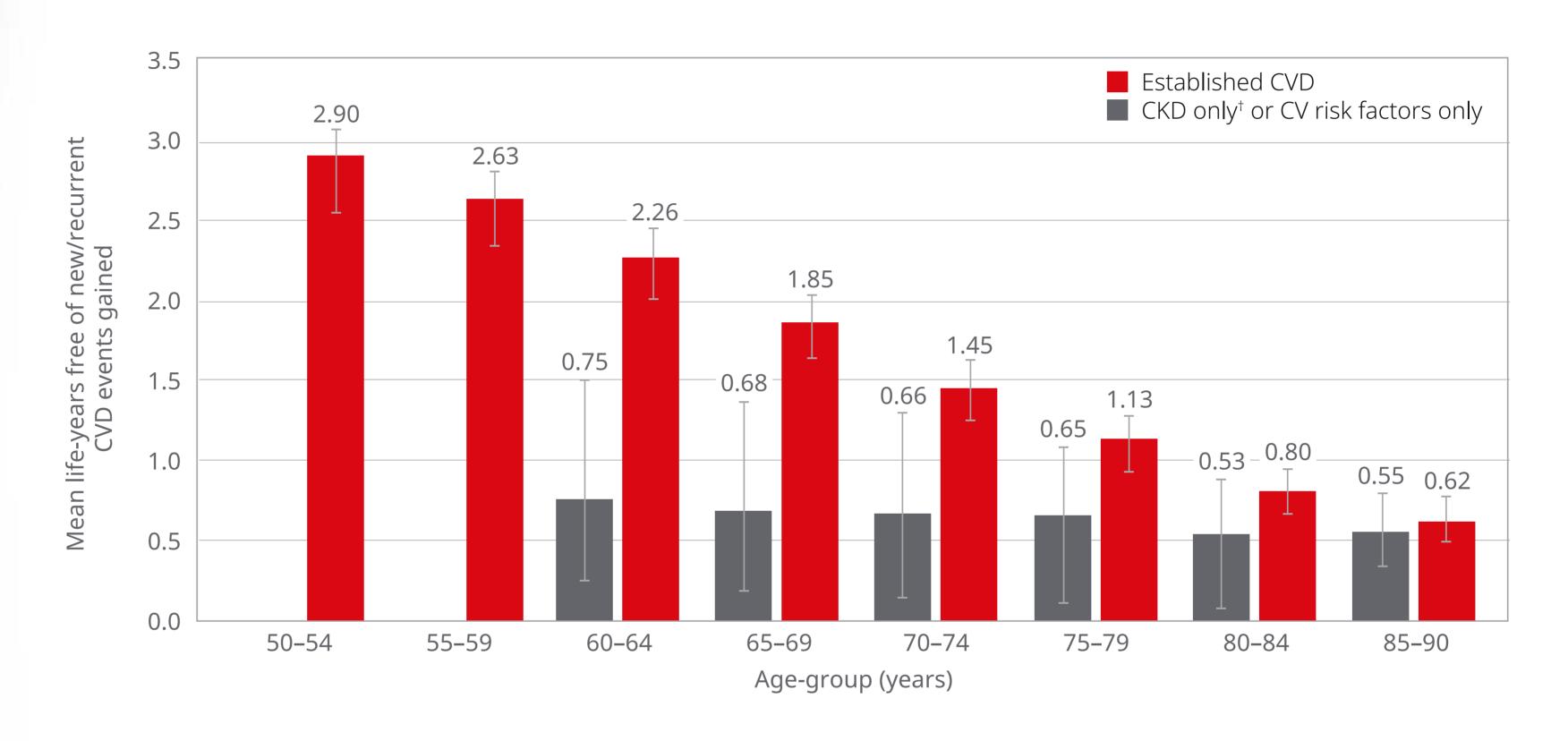
PATIENT PROFILES

SUMMARY

MEAN INCREASE **OF 1.7** LIFE-YEARS FREE OF NEW/ RECURRENT CVD **EVENTS WITH** SEMAGLUTIDE³⁹

In adult patients with T2D and high risk of CVD

Semaglutide was associated with a gain in life-years free of new/recurrent CVD events³⁹*



The greatest absolute benefit was seen in patients with higher baseline risk and who were younger at treatment initiation³⁹

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CVD=cardiovascular disease; CVD=cardiovascular disease; CV=cardiovascular; DIAL= Diabetes Lifetime-perspective prediction; SOC=standard of care; s.c.=subcutaneous; MI=myocardial infarction; eGFR=estimated glomerular filtration rate; CKD-EPI=Chronic Kidney Disease Epidemiology Collaboration.









^{*}Results are from a study that used the DIAL model to estimate the effect of adding semaglutide to SOC on life-years free of new/recurrent CVD events in people with T2D and high risk of CVD, using pooled data from SUSTAIN 6 (semaglutide s.c. 0.5 mg and 1 mg) and PIONEER 6 (semaglutide oral target dose 14 mg) (N=6480). The DIAL model is an externally validated, competing risk-adjusted model that is currently the only lifetime risk prediction tool for people with T2D and has been recommended for use by the European Society of Cardiology. Key outcomes were absolute gain in life-years free of new/recurrent CVD events, defined as life-years free of new or current MACE (CV death, nonfatal MI, or nonfatal stroke) and 10-year CVD risk, defined as 10-year risk of new or recurrent MACE.³⁹ [†]eGFR <60 mL/min/1.73 m² (estimated using the CKD-EPI creatinine equation) and no established CVD.³⁹



GUIDELINES

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ADDITIONAL CVOT RESULTS

EFFICACY

SAFETY AND TOLERABILITY

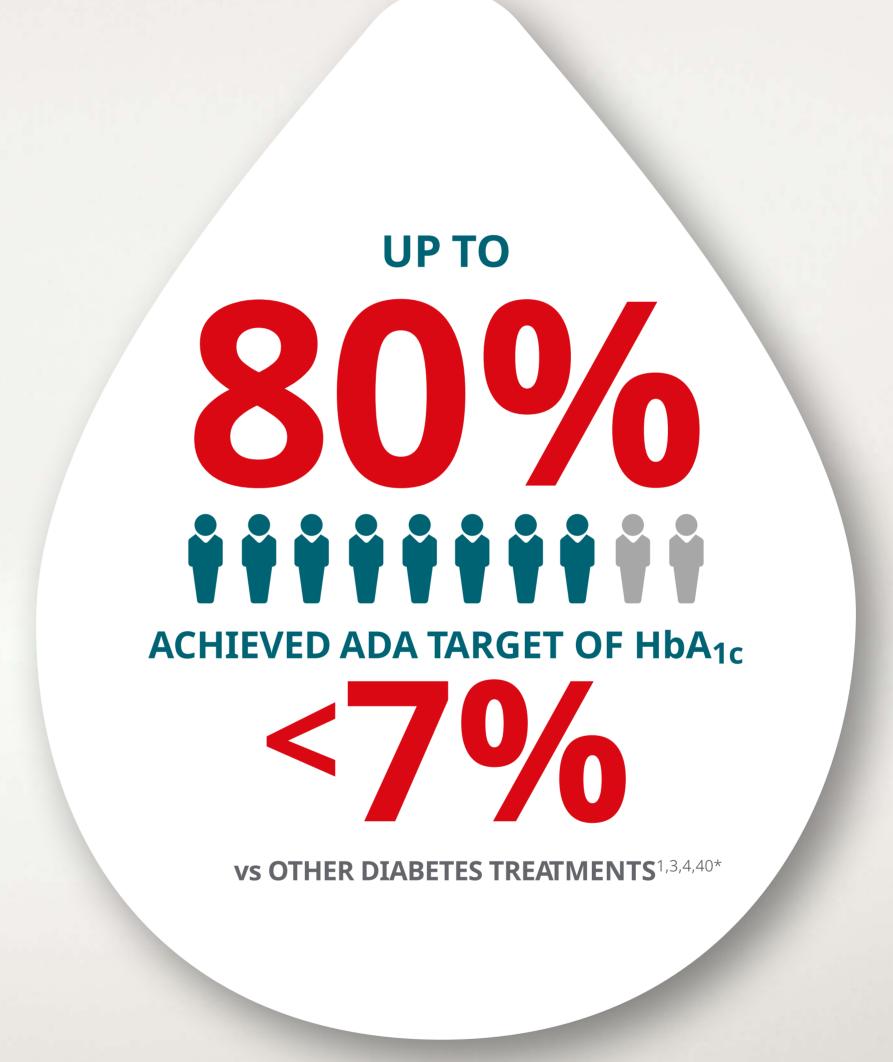
DOSING

PATIENT PROFILES

SUMMARY



Ozempic® can get the majority of patients to the ADA goal of HbA_{1c} < 7%^{1,3,4,40}



The image shown is a model and not a real patient.

*In head-to-head studies vs dulaglutide, insulin glargine, sitagliptin, liraglutide and canagliflozin.^{1,3,4} MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; ADA=American Diabetes Association.















GUIDELINES

MACE

STROKE



SIGNIFICANT DROP IN MEAN

HbA_{1c}
VS DULAGLUTIDE
1.5 mg BY UP TO

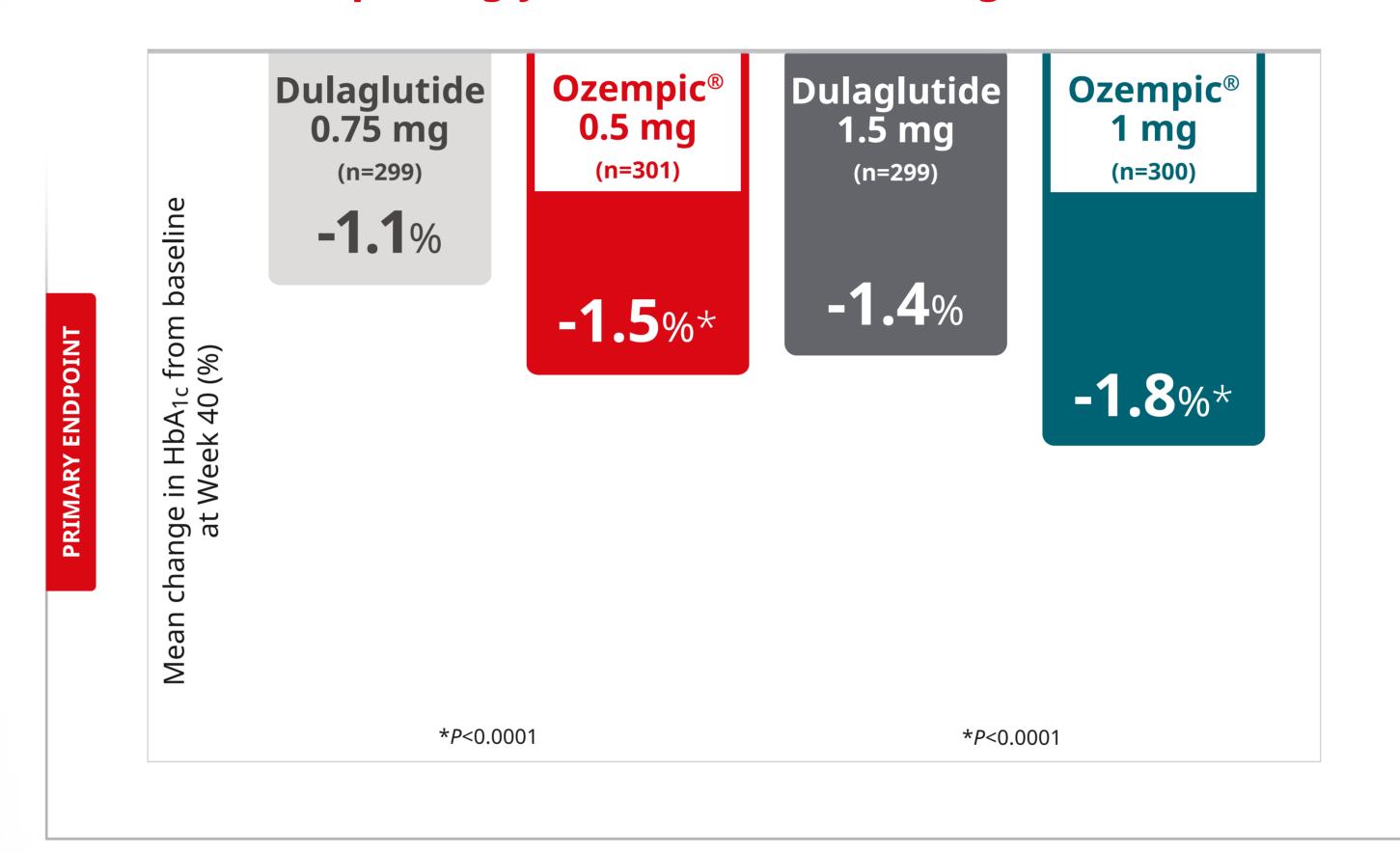
1.8%

WITH OZEMPIC® 1 mg (*P*<0.0001)^{1,7} In adult patients with T2D

Ozempic® demonstrated superior glycaemic control vs dulaglutide^{1,7}

In patients on metformin

Superior glycaemic control vs dulaglutide^{1,7}



SUSTAIN 7: Mean baseline HbA_{1c} 8.2%

SUSTAIN 7: Results are from a 40-week, randomised, open-label, active-controlled trial in 1201 adult patients with T2D comparing Ozempic® 0.5 mg with dulaglutide 0.75 mg and Ozempic® 1 mg with dulaglutide 1.5 mg. MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes.















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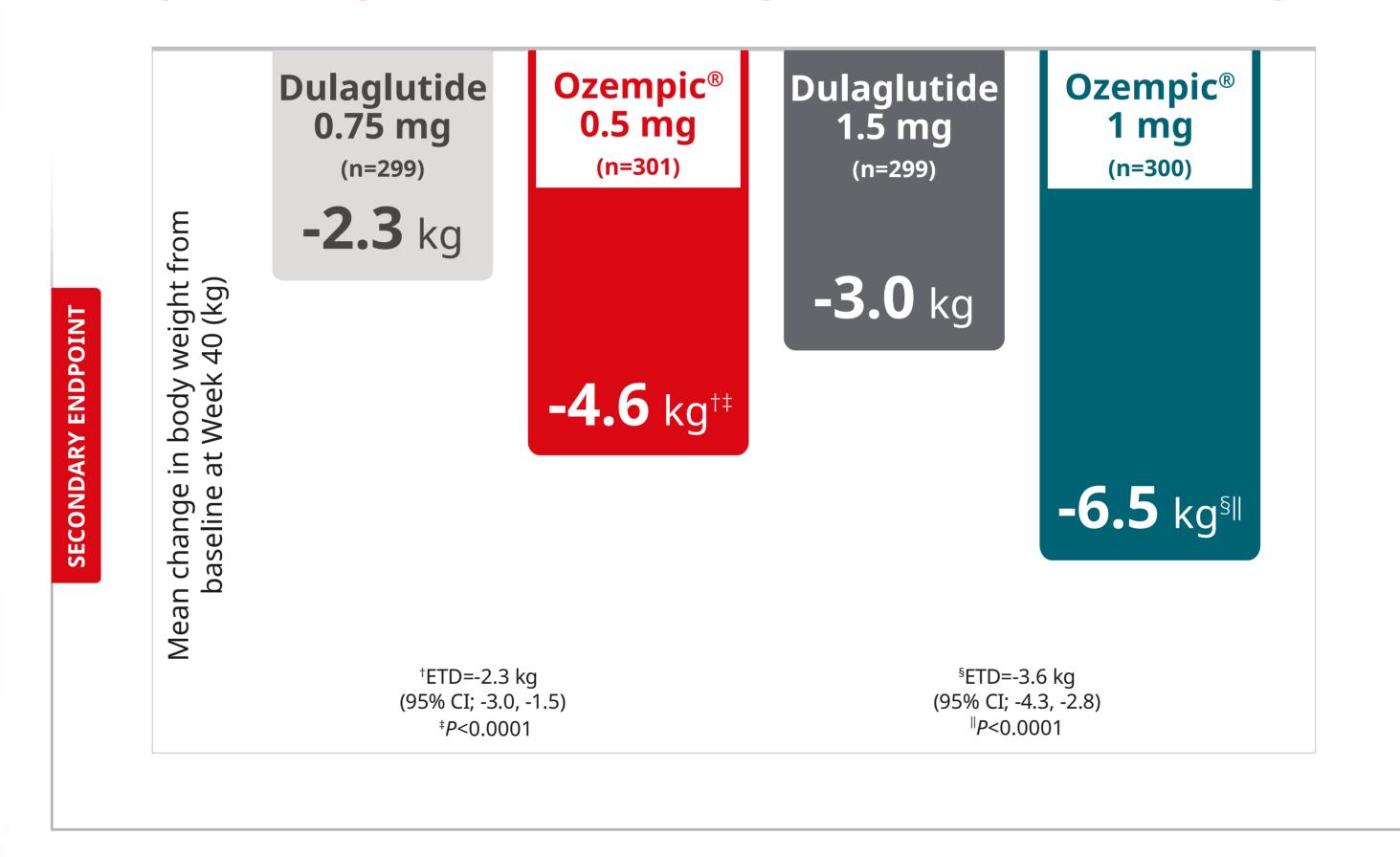


SIGNIFICANT
LOSS IN
MEAN WEIGHT
BY UP TO
6.5 KG
WITH OZEMPIC® 1 mg
VS DULAGLUTIDE 1.5 mg
(P<0.0001)1,7*

Compelling weight loss vs dulaglutide^{1,7*}

In patients on metformin

Superior weight reduction vs dulaglutide across the dose range^{1,7}



SUSTAIN 7: Mean baseline weight 95.2 kg

Ozempic® delivered >2X the weight loss of dulaglutide^{1,7}*

SUSTAIN 7: Results are from a 40-week, randomised, open-label, active-controlled trial in 1201 adult patients with T2D comparing Ozempic® 0.5 mg with dulaglutide 0.75 mg and Ozempic® 1 mg with dulaglutide 1.5 mg.⁷ *Ozempic® is not indicated for weight loss.¹ MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; ETD=estimated treatment difference; CI=confidence interval; T2D=type 2 diabetes.













The safety of Ozempic® was evaluated across multiple clinical trials and across all dose levels¹

No dose adjustments required with Ozempic® in the following special populations¹

PATIENTS WITH RENAL IMPAIRMENT

- Patients reporting severe adverse gastrointestinal reactions when initiating or escalating doses of Ozempic® should be monitored for renal function
- Ozempic® is not recommended for patients with end-stage renal disease
- Experience with the use of Ozempic® in patients with severe renal impairment is limited

PATIENTS WITH HEPATIC IMPAIRMENT

- Use caution in patients with severe hepatic impairment
- Limited clinical trial experience in patients with severe hepatic impairment

PATIENTS ≥65 YEARS

 No overall differences in safety or efficacy were detected between these patients and younger patients, but therapeutic experience in patients ≥75 years is limited

Patients taking oral contraceptives¹

- When co-administered, Ozempic® did not change the overall exposure of oral contraceptive 0.03 mg ethinyl estradiol/0.15 mg levonorgestrel, so is not expected to decrease the clinical effectiveness of oral contraceptives
- No treatment break for oral contraceptives is required when initiating or escalating doses of Ozempic[®]

Overall low incidence of severe hypoglycaemia^{1,3,4,41}*

Incidence of severe hypoglycaemia was
 ≤1.5% when Ozempic® was used with insulin¹

GI events^{4,7,42}

• GI tolerability comparable with other GLP-1 RAs

Pancreatitis^{1,4,7,42}

 Low frequency of acute pancreatitis in clinical studies

Diabetic retinopathy complications¹

- Caution should be exercised when using Ozempic® in patients with diabetic retinopathy treated with insulin
- These patients should be monitored and treated according to clinical guidelines

^{*}Data comprises patients in SUSTAIN studies 1–5 and 7–10 but excludes patients on concomitant sulphonylurea, insulin or both.^{1,3,4,41}
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; GI=gastrointestinal; GLP-1 RA= glucagon-like peptide-1 receptor agonist.















GUIDELINES

MACE

HbA_{1c} control within your control: Ozempic[®] once-weekly dose options for a range of patients¹

Gradual dose escalation designed to help patients adjust to therapy¹



O.5 mg
for at least
4 weeks



MAINTAIN

1 mg
for at least 4 weeks
for additional
glycaemic control



Administer Ozempic® once weekly on the same day each week, at any time of the day, with or without meals¹



The image shown is a model and not a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial.









GUIDELINES

MACE

STROKE

ADDITIONAL CVOT RESULTS

EFFICACY

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DOSING



Do you have T2D patients who would benefit from once-weekly Ozempic®, a GLP-1 RA with proven CV benefit?^{1,8}

Learn more about how you can help your patients manage CVD and T2D

Assess CV risk

The images shown are models and not real patients.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; GLP-1 RA= glucagon-like peptide-1 receptor agonist; CV=cardiovascular; CVD=cardiovascular disease.







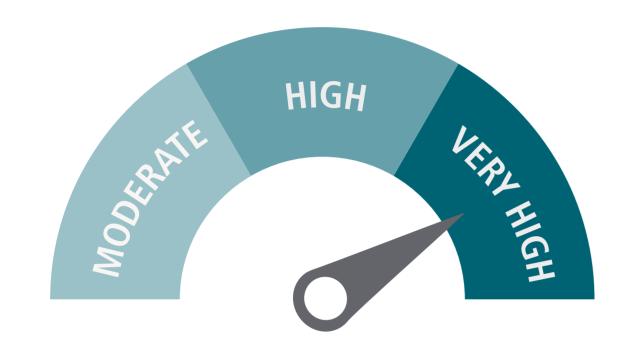




Estimation of CV risk is a key component of the 2019 ESC/EASD Guidelines⁸

How to identify patients who can benefit most from treatment of CV risk factors

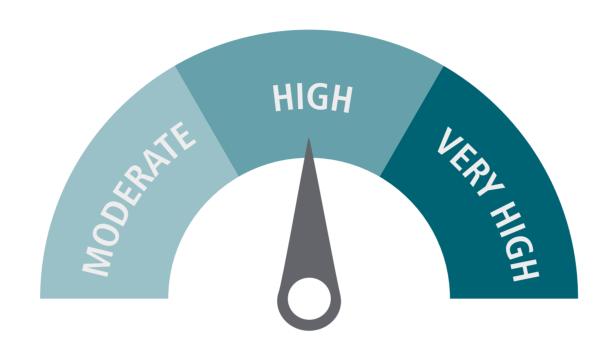
STROKE



Very High Risk⁸

Patients with diabetes and established CVD, or any of the following:

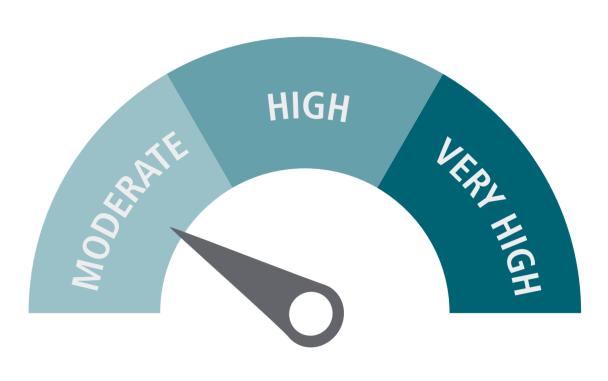
- ✓ Other target organ damage*
- ✓ ≥3 major risk factors (eg, age, hypertension, dyslipidaemia, smoking or obesity)
- ✓ Early onset T1D of long duration (>20 years)



High Risk⁸

Patients with a diabetes duration of ≥10 years

- ✓ Without target organ damage
- Any additional risk factor (patient may have hypertension, dyslipidaemia, be obese or be a smoker)



Moderate Risk⁸

Young patients (T1D aged <35 years or T2D aged <50 years)

✓ With a diabetes duration of <10 years without other risk factors</p>



The 2019 ESC/EASD Guidelines recommend

the use of a GLP-1 RA or SGLT-2i with a proven CV benefit for patients with CVD and T2D, or who are at very high or high CV risk, to reduce the risk of CV events⁸

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^{*}Proteinuria, renal impairment defined as eGFR <30 mL/min/1.73 m², left ventricular hypertrophy or retinopathy.⁸
MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CV=cardiovascular; ESC=European Society of Cardiology; EASD=European Association for the Study of Diabetes; CVD=cardiovascular disease; T1D=type 1 diabetes; T2D=type 2 diabetes; GLP-1 RA=glucagon-like peptide-1 receptor agonist; SGLT-2i=sodium-glucose co-transporter 2 inhibitor; eGFR=estimated glomerular filtration rate.





STROKE



A long-time patient with T2D and established ASCVD



Rebecca is a 62-year-old woman presenting with chest pain after years of dealing with T2D and trying to balance her cholesterol levels and blood pressure. She takes multiple medications, but she is still not meeting her treatment goals – she is obese, her cholesterol and HbA_{1c} levels are too high, and she's exhausted all the time. Around 10 years ago, Rebecca suffered a heart attack, and she is increasingly concerned she may have another CV event.



Had an MI; stents inserted 10 years ago



History of hypertension and dyslipidaemia



Chronic fatique



Obese



Diagnosed with T2D 12 years ago; HbA_{1c} not controlled; currently experiencing mild background diabetic neuropathy

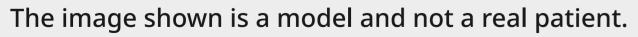
Lab results and medical history

Do you have patients like Rebecca who may benefit from additional CV risk management?









^{*}The character and accompanying description are for representation purposes only and do not reflect a real patient. MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; ASCVD=atherosclerotic cardiovascular disease; CV=cardiovascular; MI=myocardial infarction.







STROKE



semaglutide injection

Lab results*		
Blood pressure	134/85 mm Hg	↑ HIGH ⁴³
Total cholesterol	290 mg/dL	↑ HIGH ⁴⁴
– LDL-C	182 mg/dL	↑ HIGH ⁴⁴
– HDL-C	35 mg/dL	↓ LOW ⁴⁴
Triglycerides	400 mg/dL	↑ HIGH ⁴⁴
eGFR	76 mL/min/1.73 m ²	✓ NORMAL ⁴⁵
BMI	31 kg/m ²	↑ Obese ⁴⁶
HbA _{1c}	7.6%	↑ HIGH ⁴⁷

Current medication:*				
Atorvastatin	80 mg/day	Pioglitazone	30 mg/day	
Enalapril	10 mg/day	Sitagliptin	100 mg/day	
Metformin	1000 mg 2x/day	Pregabalin	150 mg/day	

^{*}The lab results and prescriptions are based on a patient example and not a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; LDL-C=low-density lipoprotein cholesterol; HDL-C=high-density lipoprotein cholesterol; eGFR=estimated glomerular filtration rate;

BMI=body mass index.





心



A patient with high CVD risk, uncontrolled T2D and obesity



Peter is a 52-year-old man recently referred to you by his GP for ongoing chest pain. Peter has anxiety and is concerned about his heart health due to a history of CVD in his family – he lost his father to stroke. While he has been working hard to manage his T2D, Peter has also had difficulty adhering to his recommended diet and exercise regimens during the COVID-19 lockdown and has gained substantial weight. He has been taking oral medication for his T2D but remains worried about life-changing CV events like stroke and MI. Recently, Peter has been experiencing erectile dysfunction.[†] He is unsure if this is a physical symptom or stress related. Peter worries he won't be able to lose the weight, regain his health and gain back his confidence.



Family history of CVD



Recent history of erectile dysfunction



Diagnosed with T2D 10 years ago



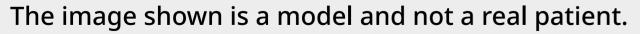
Obese: gained 10 kg over the course of 1 year during the COVID-19 lockdown

Lab results and medical history

Do you have patients like Peter who may benefit from additional CV risk management?







^{*}The character and accompanying description are for representation purposes only and do not reflect a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; CVD=cardiovascular disease; T2D=type 2 diabetes; CV=cardiovascular; GP=general practitioner; MI=myocardial infarction; ED=erectile dysfunction.







[†]ED can influence CVD risk, and CVD risk assessment may be needed in men presenting with ED.⁴⁸



MET NEED GUIDELINES

MACE

STROKE

ADDITIONAL CVOT RESULTS

EFFICACY

SAFETY AND TOLERABILITY



Lab results*		
Blood pressure	130/85 mm Hg	↑ HIGH ⁴³
Total cholesterol	150 mg/dL	✓ NORMAL ⁴⁴
- LDL-C	93 mg/dL	✓ NORMAL ⁴⁴
– HDL-C	45 mg/dL	✓ NORMAL ⁴⁴
Triglycerides	600 mg/dL	↑ HIGH ⁴⁴
eGFR	78 mL/min/1.73 m ²	✓ NORMAL ⁴⁵
BMI	31 kg/m ²	↑ Obese ⁴⁶
HbA _{1c}	8.2%	↑ HIGH ⁴⁷

Current medication:*	
Metformin 1000 mg 2x/day	Glipizide 5 mg 2x/day

^{*}The lab results and prescriptions are based on a patient example and not a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; LDL-C=low-density lipoprotein cholesterol; HDL-C=high-density lipoprotein cholesterol; eGFR=estimated glomerular filtration rate;

BMI=body mass index.









心

Meet Anna*

A middle-aged patient with a recent T2D diagnosis and a history of obesity



Anna is a 48-year-old receptionist referred to you for a heart check-up before she starts an exercise program. Anna is also obese and has trouble getting her weight under control due to her sedentary lifestyle and difficulties managing her T2D. She was recently diagnosed with sleep apnoea and is even more concerned about her health now. Anna has been taking medications for her T2D but remains worried about CV events like MI and stroke. She is aware of her CV risk and is motivated to make a change to improve her health and quality of life.



Family history of CVD



Long history of obesity and lack of exercise since her 20s



Diagnosed with T2D 5 years ago

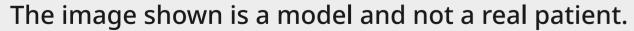
Lab results and medical history

Do you have patients like Anna who may benefit from additional CV risk management?









^{*}The character and accompanying description are for representation purposes only and do not reflect a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; MI=myocardial infarction; CVD=cardiovascular disease.











GUIDELINES

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ADDITIONAL CVOT RESULTS

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DOSING



Lab results*		
Blood pressure	132/86 mm Hg	↑ HIGH ⁴³
Total cholesterol	221 mg/dL	↑ HIGH ⁴⁴
– LDL-C	130 mg/dL	↑ HIGH ⁴⁴
– HDL-C	35 mg/dL	↓ LOW ⁴⁴
Triglycerides	256 mg/dL	↑ HIGH ⁴⁴
eGFR	68 mL/min/1.73 m ²	✓ NORMAL ⁴⁵
BMI	35 kg/m ²	↑ Obese ⁴⁶
HbA _{1c}	7.8%	↑ HIGH ⁴⁷

Current med	dication:*		
Metformin	1000 mg 2x/day		

^{*}The lab results and prescriptions are based on a patient example and not a real patient.

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; LDL-C=low-density lipoprotein cholesterol; HDL-C=high-density lipoprotein cholesterol; eGFR=estimated glomerular filtration rate;

BMI=body mass index.











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GUIDELINES

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EFFICACY

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DOSING

PATIENT PROFILES

SUMMARY



In adult patients with T2D

Choose Ozempic® as your first injectable

Get adult patients with T2D into the Ozempic® Zone¹

PROVEN CV RISK REDUCTION1,2*

26% RRR of MACE vs placebo (2.3% ARR at 109 weeks) in patients with T2D and high CV risk

POWERFUL GLYCAEMIC CONTROL^{1,3,4†}

Up to 80% achieved ADA target of HbA_{1c} < 7% vs other diabetes treatments 1,3,4,40‡

COMPELLING WEIGHT LOSS^{1,7§}

Greater weight reduction (vs dulaglutide) was seen as dosage increased, with a mean weight loss of up to -6.5 kg with Ozempic® 1 mg

The image shown is a model and not a real patient.

*Results apply to Ozempic® 0.5 mg and 1 mg plus SOC vs placebo plus SOC in adults with T2D who have high CV risk, established ASCVD or both.²

[†]Results apply to Ozempic® across SUSTAIN trials, which included placebo, sitagliptin, dulaglutide, exenatide ER, insulin glargine, canagliflozin and liraglutide. ^{1,3,4} **SUSTAIN 4:** Mean change in HbA_{1c} at Week 30 (+ MET ± SU), baseline 8.2% (N=1089): -1.2% Ozempic® 0.5 mg (n=362), (P<0.0001) and -1.6% Ozempic® 1 mg (n=360), (P<0.0001) vs -0.8% study-titrated insulin glargine (n=360). ^{1,6} **SUSTAIN 7:** Mean change in HbA_{1c} at Week 40 (+ MET), baseline 8.2% (N=1201): -1.5% Ozempic® 0.5 mg (n=301) vs -1.1% dulaglutide 0.75 mg (n=299), (P<0.0001); -1.8% Ozempic® 1 mg (n=300) vs -1.4% dulaglutide 1.5 mg (n=299), (P<0.0001). ^{1,7} [‡]In head-to-head studies vs dulaglutide, insulin glargine, sitagliptin, liraglutide and canagliflozin. ^{1,3,4}

[§]Ozempic[®] is not indicated for weight loss. ¹ **SUSTAIN 4:** Mean change in body weight at Week 30 (+ MET ± SU), baseline 93.5 kg (N=1089): -3.5 kg Ozempic[®] 0.5 mg (n=362), (*P*<0.0001) and -5.2 kg Ozempic[®] 1 mg (n=360), (*P*<0.0001) vs +1.15 kg study-titrated insulin glargine (n=360). ^{1,6} **SUSTAIN 7:** Mean change in body weight at Week 40 (+ MET), baseline 95.2 kg (N=1201): -4.6 kg Ozempic[®] 0.5 mg (n=301) vs -2.3 kg dulaglutide 0.75 mg (n=299), (*P*<0.0001); -6.5 kg Ozempic[®] 1 mg (n=300) vs -3.0 kg dulaglutide 1.5 mg (n=299), (*P*<0.0001). ^{1,7}

MACE=major adverse cardiovascular events; CVOT=cardiovascular outcomes trial; T2D=type 2 diabetes; CV=cardiovascular; RRR=relative risk reduction; ARR=absolute risk reduction; ADA=American Diabetes Association; SOC=standard of care; ASCVD=atherosclerotic cardiovascular disease; ER=extended-release; MET=metformin; SU=sulphonylurea.











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SUMMARY





SUMMARY OF PRODUCT CHARACTERISTICS







心

semaglutide injection

REFERENCES

Ozempic® [summary of product characteristics]. Bagsværd, Denmark: Novo Nordisk A/S; April 2022.

MACE

- Marso SP, Bain SC, Consoli A, et al; SUSTAIN-6 Investigators. Semaglutide and cardiovascular outcomes in patients with type 2 diabetes. N Engl J Med. 2016;375(19):1834–1844. doi:10.1056/NEJMoa1607141.
- 3. Lingvay I, Catarig AM, Frias JP, et al. Efficacy and safety of once-weekly semaglutide versus daily canagliflozin as add-on to metformin in patients with type 2 diabetes (SUSTAIN 8): a double-blind, phase 3b, randomised controlled trial. *Lancet Diabetes Endocrinol*. 2019;7(11):834–844. doi: 10.1016/S2213-8587(19)30311-0.
- Capehorn MS, Catarig AM, Furberg JK, et al. Efficacy and safety of once-weekly semaglutide 1.0mg vs once-daily liraglutide 1.2mg as add-on to 1–3 oral antidiabetic drugs in subjects with type 2 diabetes (SUSTAIN 10). *Diabetes Metab.* 2020;46(2):100–109. doi:10.1016/j.diabet.2019.101117.
- Data on file, IQVIA-MIDAS claim letter August 2022.
- Aroda VR, Bain SC, Cariou B, et al. Efficacy and safety of once-weekly semaglutide versus once-daily insulin glargine as add-on to metformin (with or without sulfonylureas) in insulin-naive patients with type 2 diabetes (SUSTAIN 4): a randomised, open-label, parallel-group, multicentre, multinational, phase 3a trial. Lancet Diabetes Endocrinol. 2017;5(5):355–366. doi:10.1016/S2213-8587(17)30085-2.
- Pratley RE, Aroda VR, Lingvay I, et al; SUSTAIN 7 Investigators. Semaglutide versus dulaglutide once weekly in patients with type 2 diabetes (SUSTAIN 7): a randomised, open-label, phase 3b trial. *Lancet Diabetes Endocrinol*. 2018;6(4):275–286. doi:10.1016/S2213-8587(18)30024-X.
- Consentino F, Grant PJ, Abyoyans V, et al; ESC Scientific Document Group. 2019 ESC guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD. *Eur Heart J.* 2020;41(2):255–323. doi:10.1093/eurheartj/ehz486.
- **9.** Di Angelantonio E, Kaptoge S, Wormser D, et al; Emerging Risk Factors Collaboration. Association of cardiometabolic multimorbidity with mortality. *JAMA*. 2015;314(1):52–60. doi:10.1001/jama.2015.7008.
- 10. Almdal T, Scharling H, Jensen JS, et al. The independent effect of type 2 diabetes mellitus on ischemic heart disease, stroke, and death: a population-based study of 13,000 men and women with 20 years of follow-up. Arch Intern Med. 2004;164(13):1422–1426. doi:10.1001/archinte.164.13.1422.
- 11. Mosenzon O, Alguwaihes A, Leon JLA, et al. CAPTURE: a multinational, cross-sectional study of cardiovascular disease prevalence in adults with type 2 diabetes across 13 countries. Cardiovasc Diabetol. 2021;20(1):154. doi:10.1186/s12933-021-01344-0.
- 12. Low Wang CC, Hess CN, Hiatt WR, et al. Athersclerotic cardiovascular disease and heart failure in type 2 diabetes mellitus mechanisms, management, and clinical considerations. Circulation. 2016;133(24):2459–2502. doi:10.1161/CIRCULATIONAHA.116.022194.
- 13. Booth GL, Kapral MK, Fung K, et al. Relation between age and cardiovascular disease in men and women with diabetes compared with non-diabetic people: a population-based retrospective cohort study. Lancet. 2006;368(9529):29-36. doi:10.1016/S0140-6736(06)68967-8.
- 14. Insull W. The pathology of atherosclerosis: plaque development and plaque responses to medical treatment. Am J Med. 2009;122(1 Suppl):S3–S14. doi:10.1016/j.amjmed.2008.10.013.
- 15. Mayo Clinic. Development of atherosclerosis. Accessed October 3, 2022. https://www.mayoclinic.org/diseases-conditions/arteriosclerosis-atherosclerosis/multimedia/development-ofatherosclerosis/img-20005848#:~:text=If%20there's%20too%20much%20cholesterol,a%20blood%20clot%20can%20form.
- **16.** Buddeke J, Bots ML, van Dis I, et al. Comorbidity in patients with cardiovascular disease in primary care: a cohort study with routine healthcare data. Br J Gen Pract. 2019;69(683):e398–e406. doi:10.3399/bjgp19X702725.
- 17. Vencio S, Alguwaihes A, Arenas Leon JL, et al. Contemporary use of diabetes medications with a cardiovascular indication in adults with type 2 diabetes: a secondary analysis of the multinational CAPTURE study. Presented at the 56th Annual Meeting of the European Association of the Study of Diabetes, Cardiovascular complications in humans through and through. January 18, 2021. Abstract 945.
- 18. Kleindorfer DO, Towfighi A, Chaturvedi S, et al. 2021 guideline for the prevention of stroke in patients with stroke and transient ischemic attack: a guideline from the American Heart Association/ American Stroke Association. *Stroke*. 2021;52(7):e364–e467. doi:10.1161/STR.00000000000375.
- 19. Das SR, Everett BM, Birtcher KK, et al. 2020 expert consensus decision pathway on novel therapies for cardiovascular risk reduction in patients with type 2 diabetes. *J Am Coll Cardiol*. 2020;76(9):1117–1145. doi:10.1016/j.jacc.2020.05.037.
- 20. Garber AJ, Handelsman Y, Grunberger G, et al. Consensus statement by the American Association of Clinical Endocrinologists and American College of Endocrinology on the comprehensive type 2 diabetes management algorithm – 2020 executive summary. *Endocr Pract*. 2020;26(1):107–139. doi:10.4158/CS-2019-0472.
- 21. Blonde L, Umpierrez GE, Reddy SS, et al. American Association of Clinical Endocrinology Clinical Practice Guideline: Developing a Diabetes Mellitus Comprehensive Care Plan 2022 Update. Endocr Pract. 2022;28(10):923–1049. doi:10.1016/j.eprac.2022.08.002.
- 22. Ludwig L, Darmon P, Guerci B. Computing and interpreting the number needed to treat for cardiovascular outcomes trials: perspective on GLP-1 RA and SGLT-2i therapies. Cardiovasc Diabetol. 2020;19(1):65. doi:10.1186/s12933-020-01034-3.
- **23.** Marso SP, Bain SC, Consoli A, et al; SUSTAIN-6 Investigators. Semaglutide and cardiovascular outcomes in patients with type 2 diabetes. *N Engl J Med*. 2016;375(suppl 1):S1–S109.
- 24. Gerstein HC, Colhoun HM, Dagenais GR, et al; REWIND Investigators. Dulaglutide and cardiovascular outcomes in type 2 diabetes (REWIND): a double-blind randomised placebo-controlled trial. *Lancet*. 2019;394(10193):121–130. doi:10.1016/S0140-6736(19)31149-3.
- 25. Marso SP, Daniels GH, Brown-Frandsen K, et al; Leader Steering Committee; LEADER Trial Investigators. Liraglutide and cardiovascular outcomes in type 2 diabetes. N Engl J Med. 2016;375(4):311–322. doi:10.1056/NEJMoa1603827.





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- 26. Zinman B, Wanner C, Lachin JM, et al; EMPA-REG OUTCOME Investigators. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. N Engl J Med. 2015;373(22):2117–2128. doi:10.1056/NEJMoa1504720.
- 27. Gerstein HC, Colhoun HM, Dagenais GR, et al; REWIND Trial Investigators. Design and baseline characteristics of participants in the Researching cardiovascular Events with a Weekly INcretin in Diabetes (REWIND) trial on the cardiovascular effects of dulaglutide. Diabetes Obes Metab. 2018;20(1):42–49. doi:10.1111/dom.13028.
- 28. Marso SP, Daniels GH, Brown-Frandsen K, et al; LEADER Steering Committee; LEADER Trial Investigators. Liraglutide and cardiovascular outcomes in type 2 diabetes. N Engl J Med. 2016;375(suppl 1):S1-S68.
- 29. Zinman B, Wanner C, Lachin JM, et al; EMPA-REG OUTCOME Investigators. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. N Engl J Med. 2015;373(suppl 1):S1–S66.
- 30. Shou J, Zhou L, Zhu S, et al. Diabetes is an independent risk factor for stroke recurrence in stroke patients: a meta-analysis. J Stroke Cerebrovasc Dis. 2015;24(9):1961–1968. doi:10.1016/j.jstrokecerebrovasdis.2015.04.004.
- 31. Lau L-K, Lew J, Borschmann K, et al. Prevalence of diabetes and its effects on stroke outcomes: A meta-analysis and literature review. J Diabetes Investig. 2019;10:780–792. doi:10.1111/jdi.12932.
- **32.** Kaarisalo MM, Räihä I, Sivenius J, et al. Diabetes worsens the outcome of acute ischemic stroke. *Diabetes Res Clin Pract.* 2005;69(3):293–298. doi:10.1016/j.diabres.2005.02.001.
- 33. Kolkailah A, Aharonovich A, Lingvay I, et al. Effects of once-weekly semaglutide on coronary outcomes in patients with type 2 diabetes mellitus with or at high risk for cardiovascular disease: insights from the SUSTAIN-6 trial. Eur J Prev Cardiol. 2022;29:Suppl 1. doi:10.1093/eurjpc/zwac056.042.
- 34. Verma S, Fainberg U, Husain M, et al. Applying REWIND cardiovascular disease criteria to SUSTAIN 6 and PIONEER 6: An exploratory analysis of cardiovascular outcomes with semaglutide. Diabetes Obes Metab. 2021;23(7):1677–1680. doi:10.1111/dom.14360.
- 35. Husain M, Bain SC, Holst AG, et al. Effects of semaglutide on risk of cardiovascular events across a continuum of cardiovascular risk: combined post hoc analysis of the SUSTAIN and PIONEER trials. *Cardiovasc Diabetol*. 2020;19(1):156. doi:10.1186/s12933-020-01106-4.
- **36.** Husain M, Birkenfeld AL, Donsmark M, et al. Oral semaglutide and cardiovascular outcomes in patients with type 2 diabetes. N Engl J Med. 2019;381(9):841–851. doi:10.1056/NEJMoa1901118.
- 37. Strain WD, Frenkel O, James MA, et al. Effects of Semaglutide on stroke subtypes in type 2 diabetes: post hoc analysis of the randomized SUSTAIN 6 and PIONEER 6. Stroke. 2022;53(9):2749–2757. doi:10.1161/STROKEAHA.121.037775.
- 38. Alfayez OM, Almohammed OA, Alkhezi OS, et al. Indirect comparison of glucagon like peptide-1 receptor agonists regarding cardiovascular safety and mortality in patients with type 2 diabetes mellitus: network meta-analysis. *Cardiovasc Diabetol*. 2020;19(1):96. doi:10.1186/s12933-020-01070-z.
- 39. Westerink J, Matthiessen KS, Nuhoho S, et al. Estimated life-years gained free of new or recurrent major cardiovascular events with the addition of semaglutide to standard of care in people with type 2 diabetes and high cardiovascular risk. Diabetes Care. 2022;45(5):1211–1218. doi:10.2337/dc21-1138.
- 40. American Diabetes Association. Cardiovascular disease and risk management: standards of medical care in diabetes 2022. Diabetes Care. 2022;45(suppl 1):S92–S173. doi:10.2337/dc22-S010.
- 41. Zinman B, Bhosekar V, Busch R, et al. Semaglutide once weekly as add-on to SGLT-2 inhibitor therapy in type 2 diabetes (SUSTAIN 9): a randomised, placebo-controlled trial. Lancet Diabetes Endocrinol. 2019;7(5):356-367. doi:10.1016/\$2213-8587(19)30066-X.
- 42. Ahmann AJ, Capehorn M, Charpentier G, et al. Efficacy and safety of once-weekly semaglutide versus exenatide ER in subjects with type 2 diabetes (SUSTAIN 3): a 56-week, open-label, randomized clinical trial. Diabetes Care. 2018;41(2):258–266. doi:10.2337/dc17-0417.
- **43.** Unger T, Borghi C, Charchar F, et al. 2020 International Society of Hypertension global hypertension practice guidelines. *Hypertension*. 2020;75(6):1334–1357. doi:10.1161/ HYPERTENSIONAHA.120.15026.
- **44.** Centers for Disease Control and Prevention. How and when to have your cholesterol checked. Updated July 12, 2022. Accessed October 3, 2022. https://www.cdc.gov/cholesterol/checked.htm.
- 45. National Institutes of Health. National Institute of Diabetes and Digestive and Kidney Diseases. Chronic kidney disease tests & diagnosis. Updated October, 2016. Accessed October 3, 2022. https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/tests-diagnosis.
- **46.** Hendren NS, de Lemos JA, Ayers C, et al. Association of body mass index and age with morbidity and mortality in patients hospitalized with COVID-19: results from the American Heart Association COVID-19 Cardiovascular Disease Registry. *Circulation*. 2021;143(2):135–144. doi:10.1161/CIRCULATIONAHA.120.051936.
- 47. Mongraw-Chaffin M, Bertoni AG, Golden SH, et al. Association of low fasting glucose and HbA_{1c} with cardiovascular disease and mortality: the MESA Study. *J Endocr Soc*. 2019;3(5):892–901. doi:10.1210/js.2019-00033.
- **48.** Defeudis G, Mazzilli R, Tenuta M, et al. Erectile dysfunction and diabetes: a melting pot of circumstances and treatments. *Diabetes Metab Res Rev.* 2022;38(2):e3494. doi:10.1002/dmrr.3494.
- 49. Sorli C, Harashima SI, Tsoukas GM, et al. Efficacy and safety of once-weekly semaglutide monotherapy versus placebo in patients with type 2 diabetes (SUSTAIN 1): a double-blind, randomised, placebo-controlled, parallel-group, multinational, multicentre phase 3a trial. Lancet Diabetes Endocrinol. 2017;5(4):251–260. doi:10.1016/S2213-8587(17)30013-X.
- 50. Ahrén B, Masmiquel L, Kumar H, et al. Efficacy and safety of once-weekly semaglutide versus once-daily sitagliptin as an add-on to metformin, thiazolidinediones, or both, in patients with type 2 diabetes (SUSTAIN 2): a 56-week, double-blind, phase 3a, randomised trial. Lancet Diabetes Endocrinol. 2017;5(5):341–354. doi:10.1016/S2213-8587(17)30092-X.
- **51.** Rodbard HW, Lingvay I, Reed J, et al. Semaglutide added to basal insulin in type 2 diabetes (SUSTAIN 5): a randomized, controlled trial. J Clin Endocrinol Metab. 2018;103(6):2291–2301. doi:10.1210/jc.2018-00070.
- 52. Frías JP, Auerbach P, Bajaj HS, et al. Efficacy and safety of once-weekly semaglutide 2.0 mg versus 1.0 mg in patients with type 2 diabetes (SUSTAIN FORTE): a double-blind, randomised, phase 3B trial. Lancet Diabetes Endocrinol. 2021;9(9):563-574. doi:10.1016/S2213-8587(21)00174-1.











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GUIDELINES

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STUDY DESIGNS

SUSTAIN 1: Monotherapy vs placebo⁴⁹

A 30-week, randomised, double-blind, placebo-controlled, parallel-group, multicentre trial to evaluate the efficacy and safety of Ozempic® vs placebo. A total of 388 patients with type 2 diabetes inadequately controlled with diet and exercise were randomised to receive once-weekly Ozempic® 0.5 mg (n=128), Ozempic® 1 mg (n=130) or placebo (n=129). The primary endpoint was change in mean HbA_{1C} at week 30, and the confirmatory secondary endpoint was change in mean body weight at Week 30.

SUSTAIN 2: Head-to-head vs sitagliptin^{1,50}

A 56-week, randomised, double-blind, double-dummy, active-controlled, parallel-group, multicentre trial to compare the efficacy and safety of Ozempic® vs sitagliptin. A total of 1231 patients with type 2 diabetes inadequately controlled on metformin and/or thiazolidinediones were randomised to receive once-weekly Ozempic® 0.5 mg (n=409), once-weekly Ozempic® 1 mg (n=409) or once-daily sitagliptin 100 mg (n=407). The primary endpoint was change in HbA_{1C} at Week 56, and the confirmatory secondary endpoint was change in body weight at Week 56.

SUSTAIN 3: Head-to-head vs exenatide ER^{1,42}

A 56-week, randomised, open-label, active-controlled, parallel-group, multicentre trial to compare the efficacy and safety of Ozempic® vs exenatide ER. A total of 813 patients with type 2 diabetes inadequately controlled on oral antidiabetic drugs (metformin, and/or thiazolidinediones, and/or sulphonylureas) were randomised to receive once-weekly Ozempic® 1 mg (n=404) or once-weekly exenatide ER 2 mg (n=405). The primary endpoint was change in HbA_{1C} at Week 56, and the confirmatory secondary endpoint was change in body weight at Week 56.

SUSTAIN 4: Head-to-head vs insulin glargine^{1,6}

A 30-week, randomised, open-label, parallel-group, multicentre trial to compare the efficacy and safety of Ozempic® vs insulin glargine. A total of 1089 insulin-naïve patients with type 2 diabetes inadequately controlled on metformin alone or in combination with sulphonylurea were randomised to receive once-weekly Ozempic® 0.5 mg (n=362), once-weekly Ozempic® 1 mg (n=360) or once-daily insulin glargine with a starting dose of 10 IU (n=360). The primary endpoint was change in mean HbA_{1C} at Week 30, and the confirmatory secondary endpoint was change in mean body weight at Week 30.

SUSTAIN 5: As add-on to basal insulin vs placebo^{1,51}

A 30-week, randomised, double-blind, placebo-controlled, parallel-group, multicentre trial to demonstrate the superiority of Ozempic® in combination with basal insulin vs placebo. A total of 397 patients inadequately controlled on basal insulin with or without metformin were randomised to once-weekly Ozempic® 0.5 mg (n=132), Ozempic® 1 mg (n=131) or placebo (n=133). Randomisation was stratified according to HbA_{1C} at screening and use of metformin. Patients with HbA_{1C} ≤8% at screening reduced the insulin dose by 20% at start of trial to reduce the risk of hypoglycaemia. The primary endpoint was change in HbA_{1C} at Week 30, and the confirmatory secondary endpoint was change in body weight at Week 30.

SUSTAIN 6: CV outcomes^{1,2,23}

A 104-week, randomised, double-blind, placebo-controlled, parallel-group trial to evaluate CV safety of Ozempic®. A total of 3297 patients with type 2 diabetes and high risk of CV events were randomised based on evidence of CV disease, insulin treatment and renal impairment to once-weekly Ozempic® 0.5 mg (n=826), Ozempic® 1 mg (n=822) or placebo (n=1649) in addition to standard of care treatments such as oral antidiabetic treatments, insulin, antihypertensives, diuretics and lipid-lowering therapies at investigator discretion. The primary endpoint was time from randomisation to first occurrence of a major adverse cardiovascular event: cardiovascular death, nonfatal myocardial infarction or nonfatal stroke.

















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SUSTAIN 6: CV outcomes^{1,2,23}

A 104-week, randomised, double-blind, placebo-controlled, parallel-group trial to evaluate CV safety of Ozempic®. A total of 3297 patients with type 2 diabetes and high risk of CV events were randomised based on evidence of CV disease, insulin treatment and renal impairment to once-weekly Ozempic® 0.5 mg (n=826), Ozempic® 1 mg (n=822) or placebo (n=1649) in addition to standard of care treatments such as oral antidiabetic treatments, insulin, antihypertensives, diuretics and lipid-lowering therapies at investigator discretion. The primary endpoint was time from randomisation to first occurrence of a major adverse cardiovascular event: cardiovascular death, nonfatal myocardial infarction or nonfatal stroke.

Inclusion criteria were HbA_{1C} ≥7%; previously on 0–2 oral antidiabetic drugs (OADs), basal or pre-mix insulin +/- 0–2 OADs; ≥50 years with established CV disease (≥1 coexisting condition); ≥60 years with at least 1 CV risk factor as determined by the investigator. Exclusion criteria were treatment with a dipeptidyl peptidase-4 inhibitor within 30 days before screening or with a GLP-1 receptor agonist or insulin other than basal or pre-mixed within 90 days before screening; a history of an acute coronary or cerebrovascular event within 90 days before randomisation; planned revascularisation of a coronary, carotid or peripheral artery; or long-term dialysis.

SUSTAIN 7: Head-to-head vs dulaglutide⁷

A 40-week, randomised, open-label, active-controlled, parallel-group, multicentre, multinational, 4-armed trial to compare the efficacy and safety of Ozempic® vs dulaglutide. A total of 1201 patients with type 2 diabetes inadequately controlled on metformin were randomised to receive Ozempic® 0.5 mg (n=301), Ozempic® 1 mg (n=300), dulaglutide 0.75 mg (n=299) or dulaglutide 1.5 mg (n=299) once weekly. The primary endpoint was change in HbA_{1C} at Week 40, and the confirmatory secondary endpoint was change in body weight at Week 40.

SUSTAIN 8: Head-to-head vs canagliflozin³

A 52-week, confirmatory, randomised (1:1), double-blind, double-dummy, active-comparator, parallel-group trial to compare the efficacy and safety of once-weekly Ozempic® 1 mg vs once-daily oral canagliflozin 300 mg, both in combination with metformin. 788 adults with type 2 diabetes inadequately controlled with metformin were randomised. The primary endpoint was change in HbA_{1C} at Week 52, and the confirmatory secondary endpoint was change in body weight at Week 52.

SUSTAIN 9: As add-on to SGLT-2i vs placebo⁴¹

A randomised, double-blind, parallel-group trial to compare the efficacy and safety of Ozempic® as add-on to SGLT-2i monotherapy or in combination with either metformin or sulphonylurea vs placebo. 302 patients with type 2 diabetes and inadequate glycaemic control, despite >90 days of treatment with an SGLT-2i, were randomly assigned (1:1) to receive Ozempic® 1 mg or volume-matched placebo once weekly for 30 weeks. Existing antidiabetic medications, including SGLT-2i treatment, were continued during the trial. The primary outcome was change in HbA_{1C} from baseline at Week 30, with confirmatory secondary outcome of change in body weight over the same period.

SUSTAIN 10: Head-to-head vs liraglutide⁴

An open-label, parallel-group, multicentre trial conducted in 11 European countries to compare the efficacy and safety of Ozempic® vs liraglutide in 577 adults with type 2 diabetes, on 1 to 3 oral antidiabetic drugs. Patients were randomised 1:1 to Ozempic® 1 mg once weekly or liraglutide 1.2 mg once daily. Randomisation was stratified by background medication of sulphonylureas +/- metformin, SGLT-2i +/- metformin, SU and SGLT-2i +/- metformin or metformin monotherapy. Primary endpoint was change in HbA_{1C} from baseline to Week 30 and the confirmatory secondary endpoint was change in body weight from baseline to Week 30.

SUSTAIN FORTE: Ozempic® 1 mg vs 2 mg⁵²

Study design: 40-week, randomised, active-controlled, parallel-group, double-blind, phase 3B efficacy and safety trial of Ozempic® 2 mg vs Ozempic® 1 mg in patients with type 2 diabetes in need of treatment intensification. Patients: A total of 961 adult patients with inadequately controlled type 2 diabetes (HbA_{1C} 8.0%–10.0%) on metformin with or without a sulphonylurea were randomised 1:1 to 2 mg (n=480) or 1 mg (n=481) of once-weekly Ozempic[®]. Primary endpoint: Change in HbA_{1C} from baseline at Week 40. Confirmatory secondary endpoint: Change in body weight from baseline at Week 40.







