Tailoring Therapy for Dual Glycemic and Cardiovascular Benefit

Wismandari

The 5th Indonesian Symposium on Heart Failure and Cardiometabolic Disease

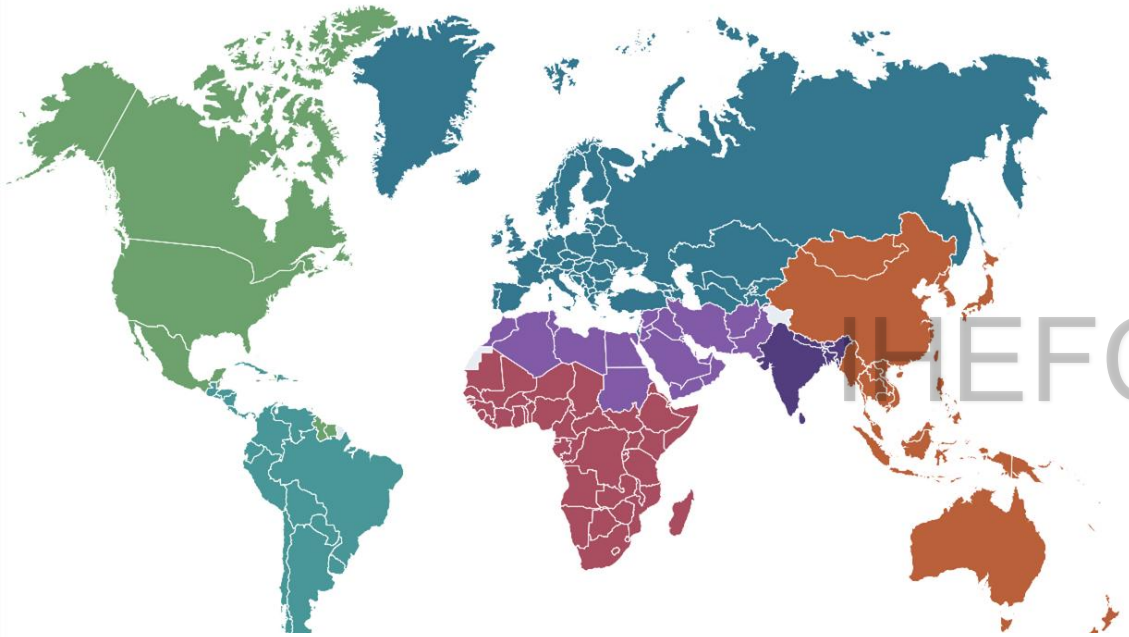
Disclosure

This presentation is meant to offer a medical education, however I have received honorarium as speaker/consultant, support for research/attendance at educational meetings from:

Novo Nordisk, Zuellig Pharma-Boehringer Ingelheim, Kalventis, Merck Serono, MSD, Astra Zeneca, Eli Lilly, Servier, Novartis, Bayer AG, Kalbe Farma, Dexa Medica, Infion, Hetero

Unmet needs in T2D

Number of people with diabetes worldwide and per IDF Region, in 2024–2050 (20–79 years)



Western Pacific (WP)

2050	253.8 Million
2024	215.4 Million

18% increase

World

2050	852.5 Million
2024	588.7 Million

45% increase

Europe (EUR)

2050	72.4 Million
2024	65.6 Million

10% increase

North America and Caribbean (NAC)

2050	68.1 Million
2024	56.2 Million

21% increase

South-East Asia (SEA)

2050	184.5 Million
2024	106.9 Million

73% increase

Africa (AFR)

2050	59.5 Million
2024	24.6 Million

142% increase

Middle-East and North Africa (MENA)

2050	162.6 Million
2024	84.7 Million

92% increase

South and Central America (SACA)

2050	51.5 Million
2024	35.4 Million

45% increase

Western Pacific (WP)

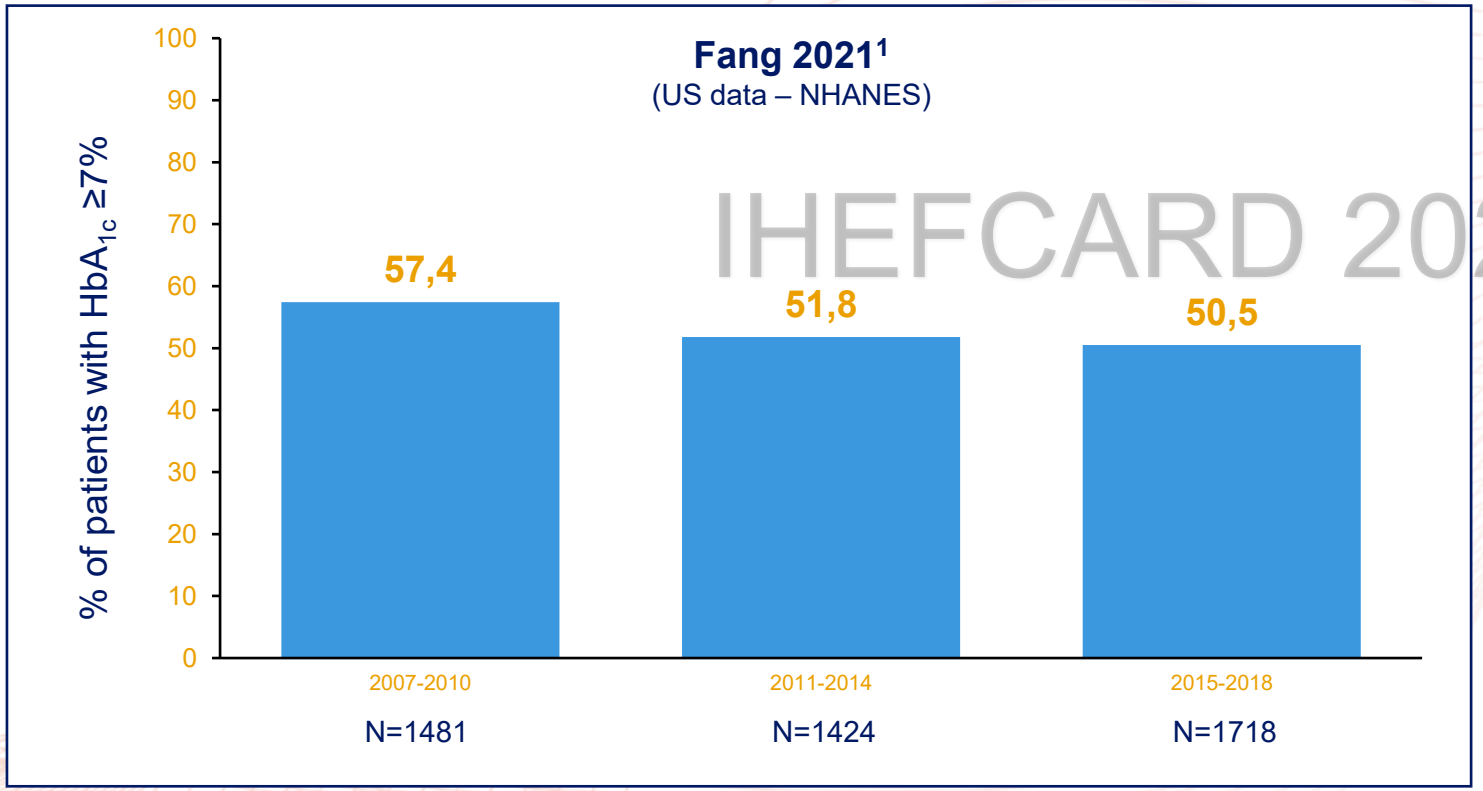
2050	253.8 Million
2024	215.4 Million

18% increase

IDF Diabetes Atlas 11th Edition - 2025

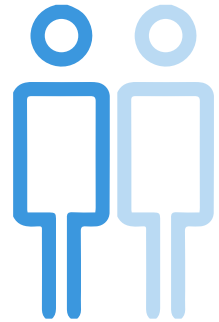
Glycaemic control remains suboptimal in T2D

Despite the benefits of good glycaemic control and several treatment options, target HbA_{1c} levels are often not met



CDC 2022 National Diabetes Statistics Report[2]

~1 in 2 people living with diabetes achieve HbA_{1c} ≤7% and may benefit from further optimisation of glycaemic control

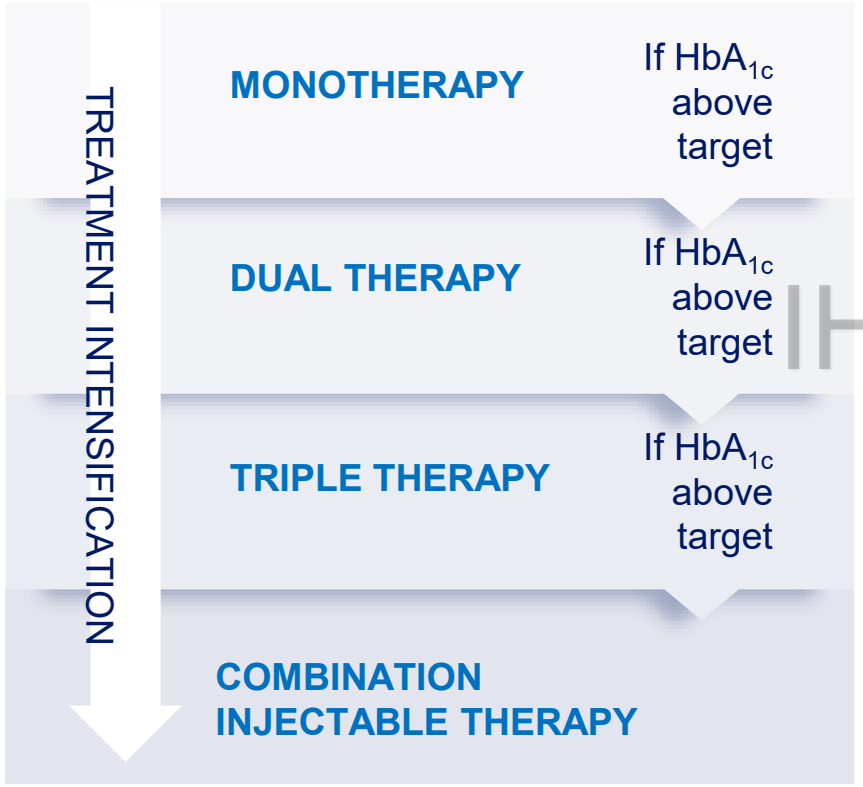


CDC, Centers for Disease Control and Prevention; NHANES, National Health and Nutrition Examination Survey; T2D, type 2 diabetes; US, United States

1. Fang M, et al. N Engl J Med. 2021;384:2219–2228; 2. Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2022. https://www.cdc.gov/diabetes/health-equity/diabetes-by-the-numbers.html. Accessed July 20

The Challenge of Poor Glycaemic Control in Indonesia

Patients progress through a sequence of medications over several years[1*]



Despite clinical guideline recommendations and the benefits of good glycaemic control, target HbA_{1c} levels are **often not met**[2-3]

70%

Patients in Indonesia **fail to achieve HbA_{1c} <7%**[4]

1. Davies et al. Diabetes Care 2018;41(12):2669-2701. **2.** de Pablos-Velasco et al. Clin Endocrinol. 2014 ;80(1):47-56. **3.** Stratton IM et al. *BMJ* 2000 ;321(7258):405-12. Soetedjo et al, Trop Med and Int Health. 2018 (23): 1118-1128 4. Soetedjo et al, Trop Med and Int Health. 2018 (23): 1118-1128

Most people with diabetes have overlapping cardiometabolic risk factors

Multiple comorbidities increase CVD risk[1]

Hyperlipidaemia

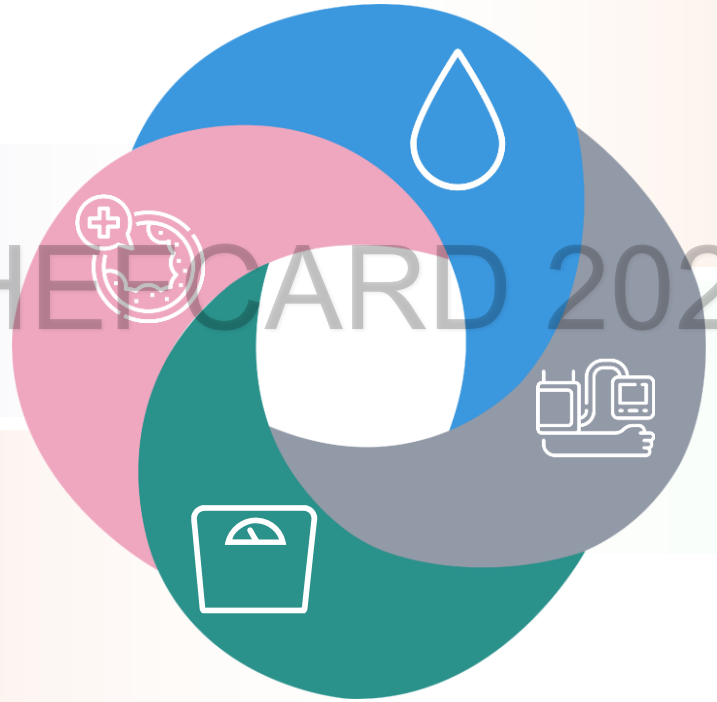
Of people with **hyperlipidaemia:**[3,5†,§]

- **9–16% have diabetes**
- 24–54% have hypertension

Obesity

Of people with **obesity:**[4,‡]

- **17% have diabetes**
- 39% have hypertension
- 60% have hyperlipidaemia



Diabetes

Of people with **diabetes:**[2,*]

- **81% have hypertension**
- **40% have hyperlipidaemia**
- **90% live with overweight/obesity**

Hypertension

Of people with **hypertension:**[3,†]

- **19% have diabetes**
- 71% have hyperlipidaemia

CDC, Centers for Disease Control and Prevention; CVD, cardiovascular disease; NHANES, National Health and Nutrition Examination Survey; T2D, type 2 diabetes; US, United States.
*Among US adults aged 18 years or older with diagnosed diabetes, crude estimates for 2017–2020.[2] †Among Taiwanese adults aged 20–79 years, using data from the MJ Health Check-up Database (2002–2017), linked with the National Health Insurance Research Database (2000–2017).[3] ‡Among US adults in a non-institutionalized population aged 20 years or older, using NHANES data (2011–2020); patients with abdominal obesity (defined as having a waist circumference >102 cm in men and >88 cm in women) were assessed.[4] §Among US adults aged ≥21–79 years with diagnosed hyperlipidaemia using NHANES data.[5]

1. Kendir C et al. Eur J Gen Pract 2017 Nov 23;24(1):45–50; 2. CDC. National Diabetes Statistics Report. https://www.cdc.gov/diabetes/php/data-research/appendix.html#cdc_report_pub_study_section_8-table-8. Accessed 13 February 2025; 3. Chung P-C et al. BMC Cardiovasc Disord 2025;25(1):27; 4. Wang S et al. Public Health 2024;227:154–162; 5. Zhang Y & Yao Y. Lipids Health Dis 2025;24(1):20.

Poorly controlled diabetes leads to increased risk of developing diabetes-related complications

Microvascular

Diabetic retinopathy[1]

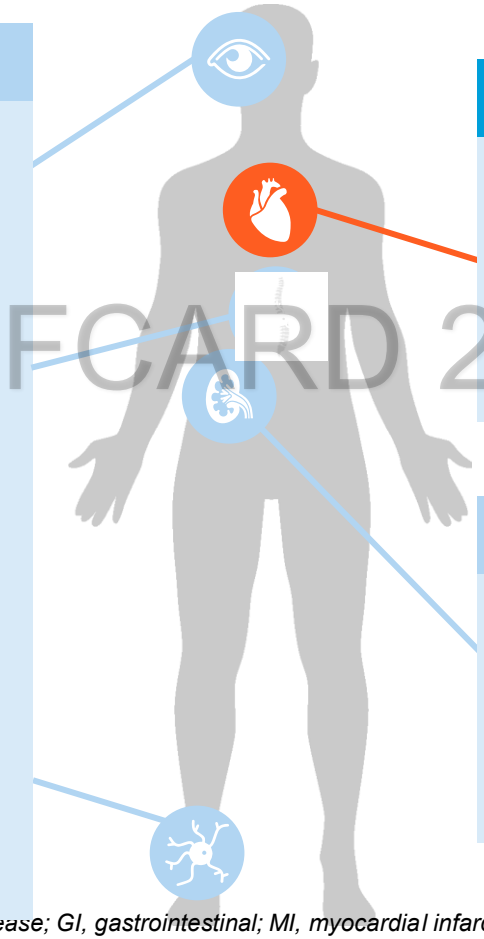
- Estimated to affect **35%** of all people with diabetes and is **one of the leading** causes of vision loss in the working age population

Autonomic neuropathy[2]

- Cardiovascular impairment affects **20%** of all people with diabetes and can lead to tachycardia and high blood pressure
- Other manifestations include GI disturbances and genitourinary dysfunction

Diabetic neuropathy[1]

- Nerve damage can lead to ulceration and lower-limb amputations
- **60%** of lower-limb amputations in adults are caused by type 2 diabetes



Macrovascular

Cardiovascular disease[1]

- Includes angina, CAD, MI, stroke, PAD and CHF
- People with diabetes are **two to three times** more likely to have CVD

Microvascular

Diabetic nephropathy[1]

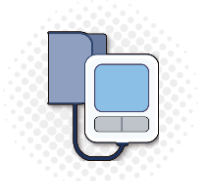
- Diabetes is a **leading** cause of chronic kidney disease and both conditions are interlinked

CAD, coronary artery disease; CHF, congestive heart failure; CVD, cardiovascular disease; GI, gastrointestinal; MI, myocardial infarction; PAD, peripheral artery disease.

1. IDF Diabetes Atlas (9th edition). International Diabetes Federation. 2019. http://www.diabetesatlas.org/. Accessed 23 May 2022; 2. Verrotti A, et al. Front Endocrinol (Lausanne). 2014;5:205.

T2D in the context of the cardio-kidney-metabolic disease spectrum

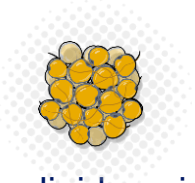
Chronic cardiometabolic diseases share underlying risk factors[1-3]



Hypertension

Hyperglycaemia

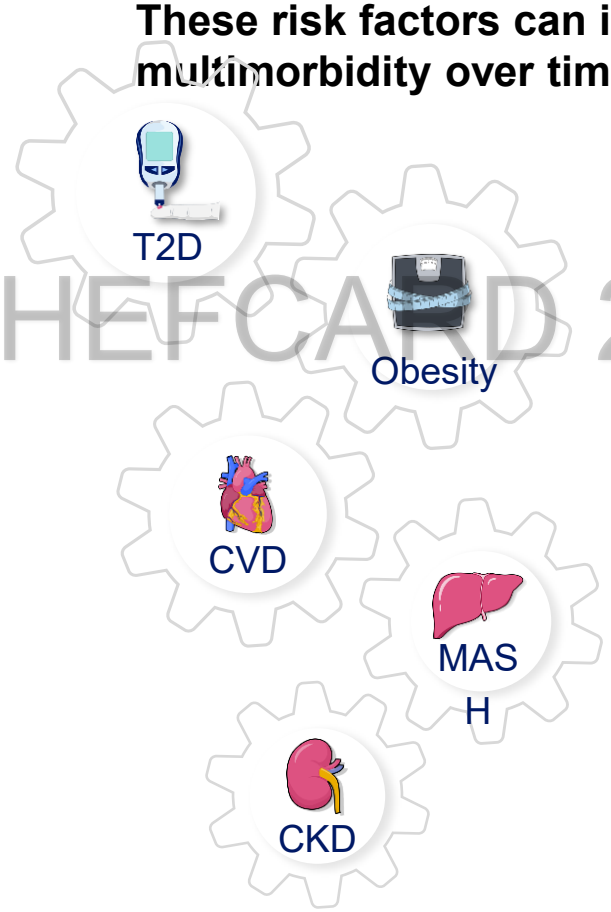
Pro-inflammatory state



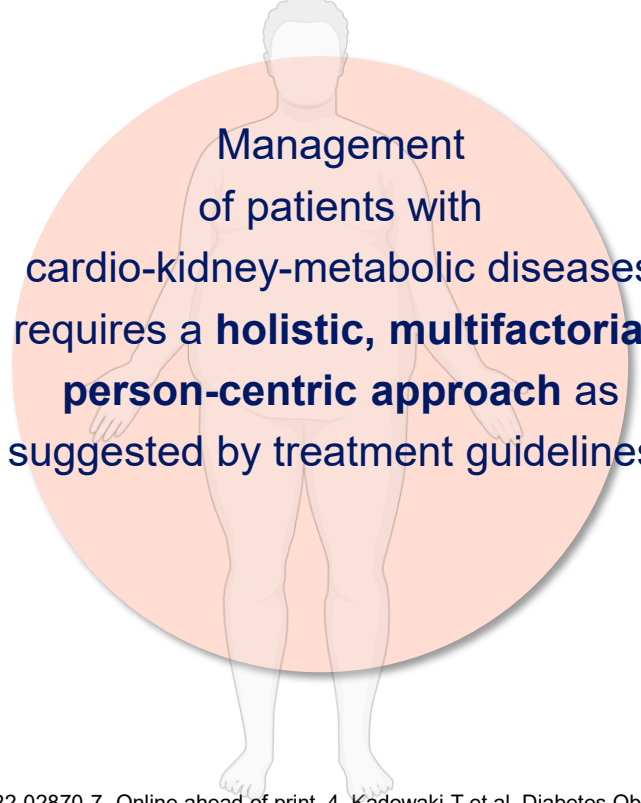
Dyslipidaemia

Abdominal adiposity

These risk factors can increase multimorbidity over time…



…leading to severe outcomes such as *heart attack* and *stroke*[4-6]



Management of patients with cardio-kidney-metabolic diseases requires a **holistic, multifactorial, person-centric approach** as suggested by treatment guidelines[7]

CKD, chronic kidney disease; CVD, cardiovascular disease; MASH, metabolic dysfunction-associated steatohepatitis; T2D, type 2 diabetes.

1. Mendrick DL, et al. Toxicol Sci. 2018;162(1):36–42. 2. Musunuru K. Lipids. 2010;45(10):907–14. 3. Schönknecht YB, et al. Eur J Nutr. 2022; doi: 10.1007/s00394-022-02870-7. Online ahead of print. 4. Kadowaki T et al. Diabetes Obes Metab. 2022;24:2283-96. 5. Targher G, et al. Lancet Gastroenterol Hepatol. 2021;6:578-88. 6. Lingvay I, et al. Lancet. 2022;399:394-405; 7. American Diabetes Association Professional Practice Committee. Diabetes Care 2024;48(suppl1):S181–S206.

Importance of holistic and person-centered management of T2D

Decision cycle for person-centered glycaemic management in T2D

Assess key person characteristics

- The individual's priorities
- Current lifestyle and health behaviours
- Comorbidities, i.e., CVD, CKD, HF
- Clinical characteristics, i.e., age, HbA_{1c}, weight
- Issues such as motivation, cognition, and depression
- Social determinants of health

Consider specific factors that impact choice of treatment

- Individualised glycaemic and weight goals
- Impact on weight, hypoglycemia and cardiovascular and kidney protection
- Underlying physiological factors
- Side effect profile of medication
- Complexity of treatment plan (i.e., frequency, mode of administration)
- Treatment choice to optimize medication use and reduce treatment discontinuation
- Access, cost, availability of medication and lifestyle choices

Use shared decision making to create a management plan

- Ensures access to DSMES
- Involves an educated and informed person (and the individual's family/caregiver)
- Explore personal preferences
- Language matters (include person-first, strengths based, empowering language)
- Includes motivational interviewing, goal setting, and shared decision making

Agree on management plan

Specify SMART goals:

- **S**pecific
- **M**easurable
- **A**chievable
- **R**ealistic
- **T**ime limited

Implement management plan

- Ensure there is regular review: more frequent contact initially is often desirable for DSMES

Provide ongoing monitoring and support of

- Emotional well-being
- Lifestyle and health behaviours
- Tolerability of medication
- Biofeedback including BGM/CGM, weight, step count, HbA_{1c}, blood pressure, and lipids

Review and agree on management plan

- Review management plan
- Mutually agree on changes
- Ensure agreed modification of therapy is implemented in a timely fashion to avoid therapeutic inertia
- Decision cycle undertaken regularly (at least once/twice a year)
- Operate in an integrated system of care

BGM, blood glucose monitoring; CGM, continuous glucose monitoring; CKD, chronic kidney disease; CVD, cardiovascular disease; DSMES, Diabetes Self-Management Education and Support; HbA_{1c}, glycated haemoglobin; HF, heart failure; T2D, type 2 diabetes.

American Diabetes Association Professional Practice Committee. Diabetes Care 2024;48(suppl1):S59–S85; ***Figure 4.1****.*

ADA Standard of Care 2025

Use of glucose-lowering medications in the management of T2D

To avoid therapeutic inertia, reassess and modify treatment regularly (3–6 months)

HEALTHY LIFESTYLE BEHAVIOURS; DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT; SOCIAL DETERMINANTS OF HEALTH

Goal: cardiovascular and kidney risk reduction in high-risk individuals with T2D*

+ASCVD

+Indicators of high CVD risk

+ASCVD/indicators of high CVD risk~

GLP-1RA# with proven CVD benefit **OR** SGLT2i‡ with proven CVD benefit

If HbA_{1c} is above goal

- For individuals on a GLP-1RA, consider adding SGLT2i with proven CVD benefit or vice versa
- Pioglitazone^

+HF

Current or prior symptoms of HF with documented HFrEF or HFpEF

SGLT2i‡

with proven HF benefit in this population

+CKD

eGFR<60 mL/min/1.73m^3 OR albuminuria (ACR ≥3.0 mg/mmol [30 mg/g]). Repeat measurement is required to confirm CKD

+CKD (on maximally tolerated dose of ACEi or ARB)

SGLT2i‡ with primary evidence of reducing CKD progression

- SGLT2i‡ can be started with eGFR ≥20 mL/min/1.73 m^2
- Continue until initiation of dialysis or transplantation
- Glucose-lowering efficacy is reduced with eGFR<45 mL/min/1.73 m^2

OR

GLP-1RA# with proven CKD benefit

If HbA1c is above goal, for individuals on SGLT2i, consider incorporating a GLP-1RA or vice versa

If additional CV and kidney risk reduction, management of other metabolic comorbidities, and /or glycaemic lowering is needed

+Mitigating risk of MASLD or MASH

Agents with potential benefit in MALSD or MASH

GLP-1RA, dual GIP and GLP-1RA, pioglitozone, or combination of GLP-1RA with pioglitazone

Use insulin in the setting of decompensated cirrhosis

Goal: achievement & maintenance of weight and glycaemic goals

+Weight management

Efficacy for weight loss

Very High: Semagiutide, tirzepatide

High: Dulaglutide, liraglutide

Intermediate: GLP-1RA (not listed above), SGLT2i

Neutral: Metformin, DPP-4i

+Achievement and maintenance of glycaemic goals

Metformin or other agent (including combination therapy) that provides adequate EFFICACY to achieve and maintain glycaemic treatment goals
Prioritise avoidance of hypoglycaemia in high-risk individuals

Efficacy for glucose lowering

Very High: Dulaglutide (high dose), semaglutide, tirzepatide, insulin
Combination oral, combination injectable (GLP-1RA and insulin)

High: GLP-1RA (not listed above), metformin, pioglitazone, SGLT2i, sulphonylurea

Intermediate: DPP-4i

If HbA_{1c} is above goal or significant hypoglycaemia or barriers to care are identified

- Refer to DSMES to support self-efficacvy in achievement of treatment goals
- Consider technology (e.g. diagnostic or personal CGN) to identify therapeutic gaps and tailor therapy
- Identify and address SDOH that impact achievement of treatment goals

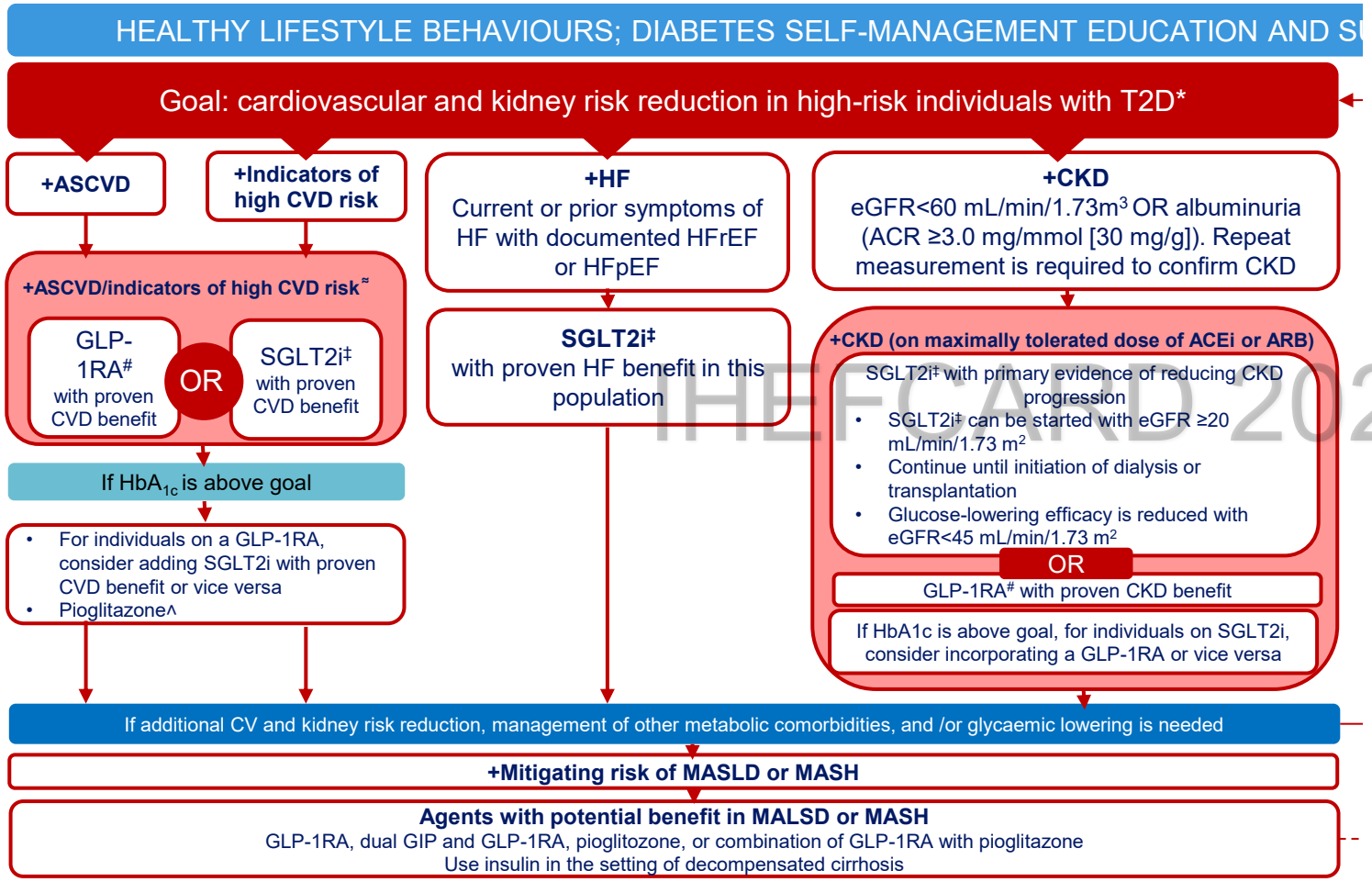
*In people with HF, CKD and established CVD or multiple risk factors for CVD, the decision to use a GLP-1RA or SGLT2i with proven benefit should be independent of background use of metformin; ~A strong recommendation is warranted for people with CVD and a weaker recommendation for those with indicators of high CV risk. Moreover, a higher absolute risk reduction and thus lower numbers needed to treat are seen at higher levels of baseline risk and should be factored into shared decision-making process. ^Low-dose T2D may be better tolerated and similarly effective; §For SGLT2i, CV/renal outcomes trials demonstrate their efficacy in reducing the risk of composite MACE, CV death, all-cause mortality, MI, HHF and renal outcomes in individuals with T2D with established/high risk of CVD; #For GLP-1RAs, CVOTs demonstrate their efficacy in reducing composite MACE, CV death, all-cause mortality, MI, stroke and renal endpoints in individuals with T2D with established/high risk of CVD.

ACEi, angiotensin-converting enzyme inhibitor; ACR, albumin/creatinine ratio; ADA, American Diabetes Association; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; CGM, continuous glucose monitoring; CKD, chronic kidney disease; CV, cardiovascular; CVD, cardiovascular disease; CVOT, cardiovascular outcomes trial; DPP-4i, dipeptidyl peptidase 4 inhibitor; DSMES, diabetes self-management education and support; eGFR, estimated glomerular filtration rate; GLP-1RA, glucagon-like peptide 1 receptor agonist; HF, heart failure; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; HHF, hospitalization for heart failure; MACE, major adverse cardiovascular events; MASH, metabolic dysfunction-associated steatohepatitis; MASLD, metabolic dysfunction-associated steatotic liver disease; MI, myocardial infarction; SDOH, social determinants of health; SGLT2i, sodium-glucose cotransporter 2 inhibitor; T2D, type 2 diabetes.

American Diabetes Association Professional Practice Committee. Diabetes Care 2024;48(suppl1):S181–S206.

ADA Standard of Care 2025

Use of glucose-lowering medications in the management of T2D



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American Diabetes Association Professional Practice Committee. Diabetes Care 2024;48(suppl1):S181–S206.

Semaglutide is the first GLP-1 RA designated as ‘very high’ efficacy for both glucose control and body-weight reduction in the ADA/EASD consensus report[1]

Semaglutide helps the **majority** of patients achieve their **glycaemic target**[2-11]

Up to **80%** of patients with T2D achieve HbA_{1c} <7% with oral and injectable semaglutide

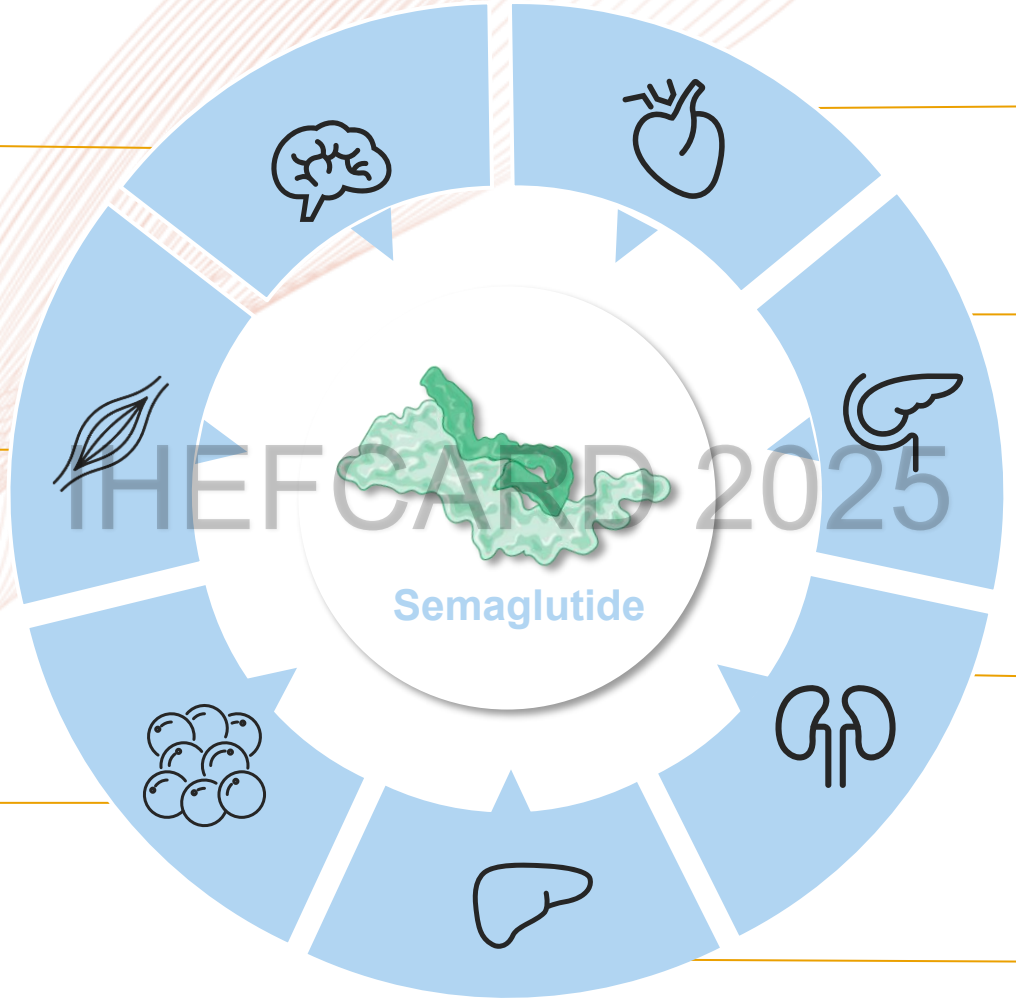
Glycaemic control is shown to be **early** and **sustained** over **104 weeks**[13]

Controlling HbA_{1c} **reduces risk** of **microvascular** complications[12]

These benefits have been **confirmed** in **real-world** settings[14]

- *ADA, American Diabetes Association; EASD, European Association for the Study of Diabetes; GLP-1 RA, glucagon-like peptide-1 receptor agonist; HbA_{1c}, haemoglobin A_{1c}*
- 1. Davies M, et al. Diabetes Care. 2022;45:2753-86. 2. Aroda VR, et al. Diabetes Care. 2019;42:1724-32. 3. Ahrén B, et al. Lancet Diabetes Endocrinol. 2017;5:341-54. 4. Pratley RE, et al. Lancet Diabetes Endocrinol. 2018;6:275-86. 5. Ahmann AJ, et al. Diabetes Care. 2018;4:258-66. 6. Lingvay I, et al. Lancet Diabetes Endocrinol. 2019;7:834-44 (Article & Suppl.). 7. Capehorn MS, et al. Diabetes Metab. 2020;46(2):100-9. 8. Aroda VR, et al. Lancet Diabetes Endocrinol. 2017;5:355-66. 9. Sorli C, et al. Lancet Diabetes Endocrinol. 2017;5:251-60. 10. Rodbard HW, et al. J Clin Endocrinol Metab. 2018;103:2291-301. 11. Zinman B, et al. Lancet Diabetes Endocrinol. 2019;7:356-67. 12. Pozzilli P, et al. J Diabetes Investig. 2014. 23;5:134-41. 13. Marso SP, et al. N Engl J Med. 2016;375:1834-44. 14. Yale J, et al. BMJ Open Diab Res Care. 2022;10:e002619.

Semaglutide's mechanistic effects



Appetite regulation[1,2]
(Reduced food intake and cravings, satiety and improved control of eating)

*Metabolic adaptation[3]
(Maintained energy expenditure during weight loss)

Improvement of body composition[4–6]
(Greater reduction of fat mass relative to lean mass)

Cardiometabolic health[9–11,17]
(Improved CV outcomes, BP, hsCRP, lipid profile)

Glucose regulation[9,10,12–14]
(Reduced risk of T2D, decreased fasting serum insulin and C-peptide and improved CGM endpoints)

Kidney benefits[9,15–18]
Reduced progression of CKD and improved kidney outcomes

Liver benefits[7,8,19]
(Reduced hepatic lipotoxicity, hepatic steatosis and liver fibrosis)

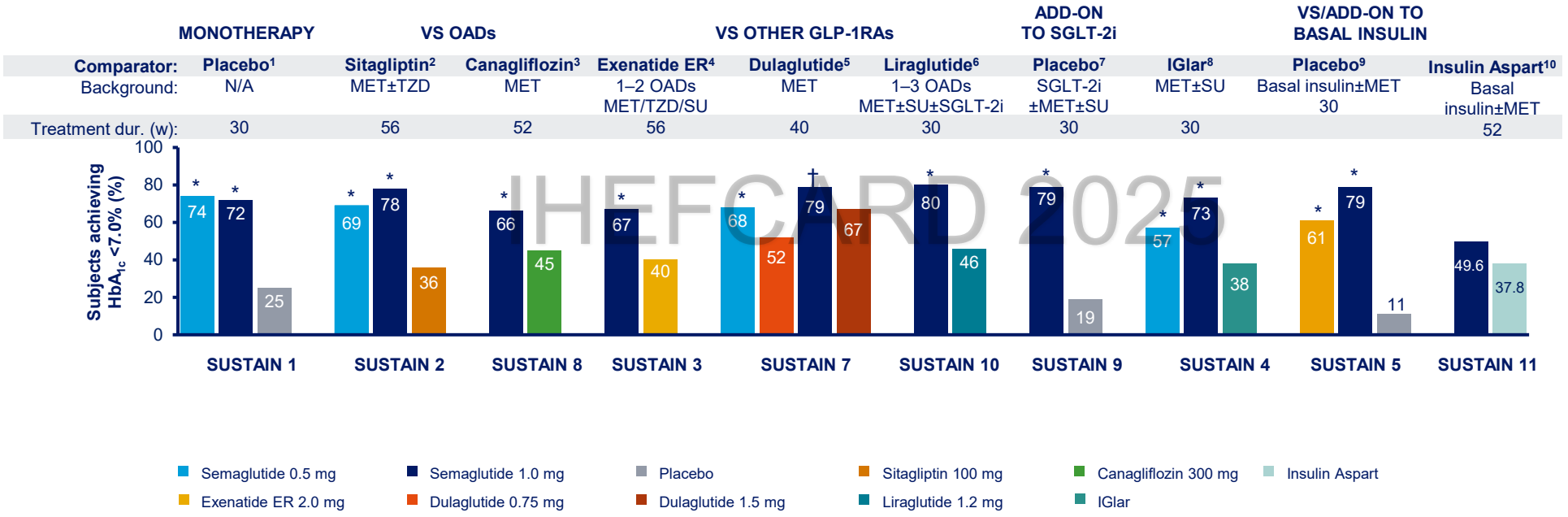
*Data is derived from preclinical models.

BP: blood pressure; CGM: continuous glucose monitoring; eGFR, estimated glomerular filtration rate; HbA1c, glycated haemoglobulin; hsCRP, high-sensitivity C-reactive protein; MASH, metabolic dysfunction-associated steatohepatitis; T2D, type 2 diabetes; UACR, urinary albumin-to-creatinine ratio.

1. Friedrichsen M et al. Diabetes Obes Metab 2021;23(3):754–62; 2. Blundell J et al. Diabetes Obes Metab 2017;19:1242–5; 3. Kuhre R et al. Abstract #73: CagriSema-driven weight loss in diet-induced obese rats depends on counter-regulation of weight loss-associated reduction in energy expenditure. Presented at EASD 2024; 4. Wilding JP et al. J Endocr Soc. 2021 May 3; 5(Suppl 1): A16–A17; 5. Uchiyama S et al. J Clin Med Res 2023;15(7):377–83; 6. Volpe S et al. Nutrients 2022;14(12):2414; 7. Soto-Catalan M et al. Int J Mol Sci 2024; 25(5):2961; 8. Newsome PN et al. N Engl J Med 2021;384:1113–24; 9. Lincoff AM et al. N Engl J Med 2023;389(24):2221–32; 10. Frias JP et al. Lancet (Lond) 2023;402(10403):720–30; 11. Rakipovski G et al. JACC Basic Transl Sci 2018;3(6):844–57; 12. Lingvay I et al. Lancet Diabetes Endocrinol 2019;7(11):834–44; 13. Kapitza C et al. Diabetologia 2017;60(8):1390–99; 14. Korsatko S et al. Diabetes Obes Metab 2018;20(11):2565–73; 15. Colhoun HM et al. Nat Med 2024;30:2058-2066 doi: 10.1038/s41591-024-03015-5; 16. Perkovic V et al. N Engl J Med 2024;391:109-121 doi: 10.1056/NEJMoa2403347; 17. Marso SP et al. N Engl J Med 2016;375:1834–44; 18. Heerspink HJL et al. Diabetes Care 2023;46(4):801–10; 19. Newsome PN et al. Phase 3 ESSENCE Trial: Semaglutide in metabolic dysfunction-associated steatohepatitis (MASH). Presented at The Liver Meeting®, American Association for the Study of Liver Diseases 2024, Nov 19, 2024.

Glycemic Control: SUSTAIN TRIAL PROGRAM

Upto 80% of people with T2D achieve HbA_{1c}<7% with OW semaglutide



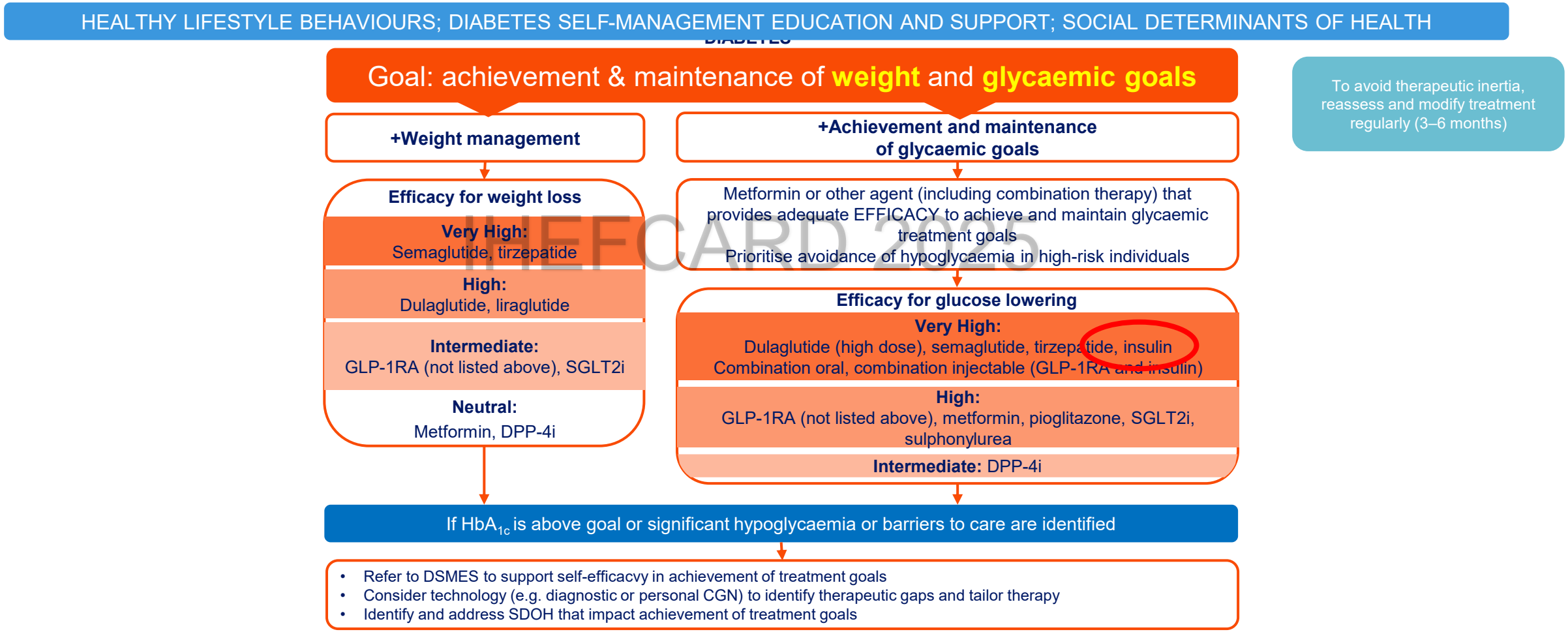
*p<0.0001 vs comparator; †p<0.005 vs comparator. dur., duration; exenatide ER, exenatide extended release; GLP-1RA, glucagon-like peptide-1 receptor agonist; IGlar, insulin glargine; MET, metformin; N/A, not applicable; OAD, oral antidiabetic drug; SGLT-2i, sodium–glucose cotransporter-2 inhibitor; SU, sulphonylurea; TZD, thiazolidinedione; w, weeks.

1. Sorli C et al. Lancet Diabetes Endocrinol 2017;5:251–60; 2. Ahrén B et al. Lancet Diabetes Endocrinol 2017;5:341–54; 3. Lingvay I et al. Lancet Diabetes Endocrinol 2019;7:834–44; 4. Ahmann AJ et al. Diabetes Care 2018;41:258–66; 5. Pratley RE et al. Lancet Diabetes Endocrinol 2018;6:275–86; 6. Capehorn MS et al. Diabetes Metab 2020;46:100–9; 7. Zinman B et al. Lancet Diabetes Endocrinol 2019;7:356–67; 8. Aroda VR et al. Lancet Diabetes Endocrinol 2017;5:355–66; 9. Rodbard HW et al. J Clin Endocrinol Metab 2018;103:2291–301, 10. Kellerer M et al. Diabetes, obesity and metabolism 2022, https://doi.org/10.1111/dom.14765

ADA Standard of Care 2025

Use of glucose-lowering medications in the management of T2D

Emphasises the importance of weight loss



Part of figure 9.3, unchanged except for minor graphical changes such as colours.

ADA, American Diabetes Association; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; CGM, continuous glucose monitoring; DPP-4i, dipeptidyl peptidase 4 inhibitor; DSMES, diabetes self-management education and support; EASD, European Association for the Study of Diabetes; GLP-1RA, glucagon-like peptide 1 receptor agonist; SDOH, social determinants of health; SGLT-2i, sodium-glucose cotransporter 2 inhibitor; T2D, type 2 diabetes.

American Diabetes Association Professional Practice Committee. Diabetes Care 2024;48(suppl1):S181–S206.

Treatment algorithm and criteria for therapy initiation

HbA1C

≥ 7.5 %

Pasien DM lama + OHO (dual/triple)
Dengan HbA1C >7.5% - <9%

Basal insulin OD	Co-Formulation	GLP-1 RA OW	FRC
+/- OHO	+/- OHO		+/- OHO
Dosis 10U malam hari atau 0.2 unit/Kg/BB			
Optimasi Dosis **Dosis maksimal:** 0.5 unit/kgBB/hari			

Target:
GDP/Pre-prandial: 80-130 mg/dL
GD 1 – 2 PP : <180 mg/dL
HbA1C : <7% (evaluasi 3 bulan)

Titrasi:
(Jika nilai GDP atau pre-prandial)
> 180 mg/dL : +4 Unit
130 – 180 mg/dL : +2 Unit
< 130 mg/dL : dosis tetap

PERKENI Guideline 2021

HbA1C

≥9%

Pasien DM Baru
Dengan HbA1C >9% atau
GDP >250 mg/dL
Atau GDS >300 mg/dL

Atau disertai **gejala dekompensasi Metabolik**

Co-Formulation	FRC	GLP-1 RA OW	Basal Plus	Basal Bolus
Mulai dosis 10 Unit	10 Unit		+ Prandial pada jadwal makan terbesar. Basal malam hari	+ Prandial pada ke3 jadwal makan. Basal malam hari
			Dosis prandial mulai 4U/hari atau 10% dosis basal	Basal 10U (bedtime) Prandial 4U
Optimasi dosis **OD □ BID**	Optimasi dosis **OD**		Optimasi dosis	

Target:
GDP/Pre-prandial: 80-130 mg/dL
GD 1 – 2 PP : <180 mg/dL
HbA1C : <7% (evaluasi 3 bulan)

Titrasi:
(Jika nilai GDP atau pre-prandial)
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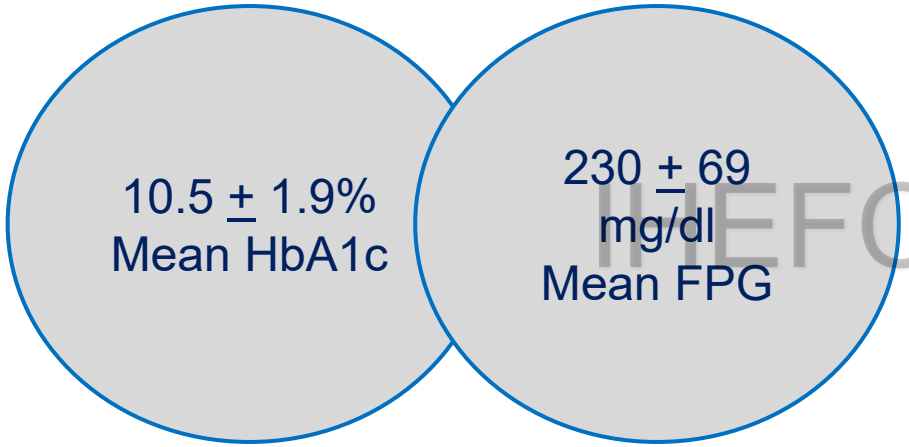
Indonesian Realities in T2D:
will addressing basal only will be enough?



Delay Insulin Use

High Carbohydrate Consumption

Asian populations generally shown a high-carbohydrate consumption, it leads to **high insulin resistance** and **PPG levels.**

National Variations in Comorbidities, Glycosylated Hemoglobin Reduction, and Insulin Dosage in Asian Patients with Type 2 Diabetes: The FINE-Asia Registry - PMC (nih.gov); 2. Kumar, et al. J Diabetol 2020;11:148-57

Clinical profiles of patients who can benefit from IDegAsp

Uncontrolled patient

OAD, Basal Insulin, Premix or Basal Bolus

High HbA1C

With High PPG Excursion

Hypoglycemia

Increase risk of Hypoglycaemia

Lifestyle

Patient with Irregular lifestyle and looking for flexibility in dosing

Complex treatment

Patient who struggle to complex treatment, requiring multiple daily injection

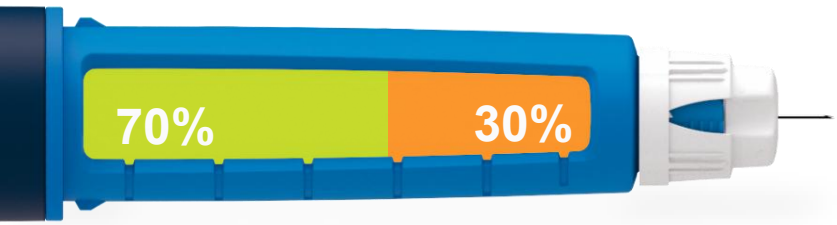
Special populations

Elderly patients/hepatic or renal impairment

Diet

Patient with high carbohydrate intake

Co-Formulation **Insulin** have the potential to address our key challenges



SUPERIOR HbA1C REDUCTIONS[1]

Providing **basal** and **prandial** coverage in one injection[2]

ASSURANCE ON HYPOGLYCEMIA

Co-formulation Insulin contain Insulin **Degludec** with **flat** and **low variability** profile[3]

SIMPLIFYING INSULIN Therapy

Associated with **simple** regimen and **fewer** injection[4]

Summary

- Management of patients with **cardio-kidney-metabolic** diseases requires a **holistic**, **multifactorial**, **person-centric** approach as suggested by treatment guidelines
- **Pharmacotherapy** decision must be made to **prevent complication** and to optimize **quality of life**
- T2D patients with **ASCVD** risk and other **metabolic comorbidities** such as obesity and CKD, **GLP1 RA** might be more beneficial
- Patients with **uncontrolled** T2D who have high HbA1c levels, consume a **carbohydrate-rich** diet, and require a straightforward intensification option can benefit from **IDegAsp**, which offers flexible dosing schedules compared to traditional basal-bolus regimens.
- **Semaglutide** and **co-formulation** insulin are recommended in **guidelines** and has a well-established **efficacy**, **safety** and **tolerability** profile.

Thank You

Disclosure

- **Once-weekly Semaglutide 0.25 – 1 mg available in Indonesia** under the brand name of **Ozempic ®**, which is indicated for the treatment of adults with insufficiently controlled **type 2 diabetes mellitus** as an adjunct to diet and exercise in addition to metformin, metformin and sulphonylurea, metformin and basal insulin, or sodium-glucose cotransporter 2 (SGLT2) inhibitor.

- This is only for educational purpose and no off-label promotion is intended